

## PERCEPTION OF PRE SERVICE TEACHERS TOWARDS PROMOTION OF INDIGENOUS KNOWLEDGE SYSTEMS IN TRIPURA AT SECONDARY LEVEL

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### Abstract

India is a country with a rich cultural heritage and diverse ethnic groups living in different parts of the country, each with its own unique cultural heritage. The North-eastern region of India is distinct from the rest of the country in terms of its geography, culture, economy, and education. This region is home to a large variety of ethnic groups due to its geo-political specificities, which have resulted in distinct physical and human characteristics. The region is known for its many tribes, each with their language and dialect, but no script. These Indigenous communities have their own unique way of life, traditions, customs, practices, and worldviews, resulting in tremendous diversity within the tribes. Indigenous knowledge systems, also known as traditional knowledge systems, are ancient and extremely ingrained bodies of information. Their roots are in the ancient past. Their systematization and canonization resulted in elite (the Greater Tradition) science. This research aims to investigate the views of pre-service teachers regarding the integration of the Indigenous Knowledge System (IKS) into secondary-level education in Tripura. Despite the various types of education available in Tripura or India, the expected outcomes have not been met since the introduction of Western education. India has been following the ideology of the colonizers for a long time. Even though the Indian government made a lot of initiatives to improve the outcome of education, it has not been successful (Al-Jaro, M. S. (2023)). This is mainly because we have disconnected the teaching and learning process from our own reality and have adopted an external one, which results in students being unaware of their culture, tradition, and heritage, leading to an unfulfilled education. Therefore, it is imperative to facilitate the importance of IKS in the minds of future educators. This will help to execute a program that will impart IKS in the minds of pre-service teachers, which will lead to better education outcomes. Knowledge is power, and the program will help to inspire learners to understand the traditional way of life and the socio-cultural, political, and economic situations of various tribes. This knowledge can then be passed on to the younger generation to develop a positive attitude and be productive in the social field.

**Key Words:** Indigenous Knowledge, Perception of pre service teachers, secondary level

### 1. Introduction

Indigenous knowledge systems, also known as traditional knowledge systems, are ancient and extremely ingrained bodies of information. Their roots are in the ancient past. Their systematization and canonization resulted in elite (the Greater Tradition) science. We are all aware of the significance of this age-old knowledge and technology, combining the wisdom from millennia of trial and error and experimentation. Indigenous knowledge systems (IKS) encompass various aspects such as songs, dances, medicinal procedures, literary, artistic, and scientific works, and agricultural techniques. Incorporating IKS into participatory development methods is gaining national and international attention. In 1981, UNESCO and WIPO established model legislation on folklore to protect and identify IKS, highlighting its importance in the international community. Within Indigenous communities, Indigenous knowledge systems, customs, and beliefs that are passed down from one generation to the next are collectively referred to as Indigenous knowledge (IK). IK is an important source of knowledge that influences how Indigenous groups connect with their surroundings and is essential to advancing both cultural diversity and sustainable development. To meet the specific cultural and educational needs of Indigenous students, there is a growing awareness of the significance of integrating Indigenous knowledge into

pre-service teacher education programs (Berryman et al. Citation2019; De Santolo, Fogarty, and Nakata Citation2016; Kovach Citation2010; Walter Citation 2013). Teachers' attitudes and beliefs about the value and potential contribution of indigenous knowledge determine how they incorporate it into the official school curriculum (Gachanga, 2007). One of the challenges to introducing indigenous knowledge into formal education is teachers need more confidence in the curriculum's capacity to address socioeconomic needs (Dei, 2002; Gachana, 2007; Mwenda, 2003; Semali, 1999). Teachers may struggle to include indigenous knowledge in their lessons because they are unsure which components to include.

### **1.1. Perception of Pre Service Teachers towards Indigenous Knowledge**

The perception of pre-service teachers towards the promotion of indigenous knowledge systems has had varying levels of impact in different areas in terms of policy application. As a result of these programs, there has been some increase in the teaching of traditional culture within the existing curriculum. Although this includes many positive adjustments to the formal school curriculum, it is still challenging to develop an educational system that is unrelated to their culture and an alternative to what has failed for tribes. The way that indigenous knowledge systems are promoted will be greatly influenced by pre-service teachers' perceptions of who will implement these programs, as they are the programs' future agents. The loss of these sophisticated, lifetime skills and knowledge is threatened by globalization and the largely Western educational system. The value of the indigenous knowledge system and the inability of the state's formal education system to attract tribal children and dropouts have been acknowledged by the many educational initiatives carried out over the past 20 years with the help of both government and non-governmental organizations to improve the quality of education in indigenous areas. This has enabled the promotion of indigenous knowledge and skills within the official education system, in addition to mastering the basic curriculum. This initiative was spurred by the Hon'ble Prime Minister A. B. Bari Memorial International Conference of 2002 on "Innovating for Excellence: Role of Science and Education in Tribal Areas," where Indian President Dr. A.P.J. Abdul Kalam emphasized the importance of establishing a setting where the learning process is connected to the tribal community's culture and way of life in order to promote sustainable growth. This led to the launching of the National Curriculum Framework Programme 2005, the UNESCO Bangkok consultation of 2007 on "Revitalizing Indigenous Knowledge for Sustainable Upland Development in Asia," and the Rajiv Gandhi Shiksha Mission, Tripura, launched in 2007 to improve education in the state. The study aims to assess the perception of pre-service school teachers with regard to the promotion of indigenous knowledge in Tripura. The study is relevant in the context that indigenous knowledge is a significant aspect of the indigenous culture in Tripura. The advancement of the indigenous knowledge system in education, which was as per Plato's dictum, "Knowledge which is acquired under compulsion obtains no hold on the mind," and Rousseau's doctrine implied that education should develop and ingrain a love for learning that will last the individual's lifetime. These were based on the traditional systems of imparting skills and knowledge as per the requirements of the tribe. In some cases, these systems have continued to the present day.

### **1.2. Indigenous Knowledge Systems**

Indigenous knowledge is a constantly evolving body of knowledge that is acquired through continuous learning and adaptation to the environment over time. Jamil, M., Urooj, T., & Waqar, Y. (2024). It is specific to a particular community and has been passed down through generations. The indigenous knowledge is flexible and dynamic in nature, and it changes in response to the alterations in the natural and human worlds around them. In recent years, there has been a growing interest in indigenous knowledge, particularly due to environmental

and developmental concerns. Many believe that Western science and state management systems have failed to sustain the delicate ecological and social systems of indigenous peoples. Akbar, R. A. (2002). While there is considerable diversity in indigenous knowledge and practices, there are some common themes, and it is closely linked to subsistence, including the utilization of shared resources. Indigenous knowledge is a system of learning based on cause and effect. It is acquired through a long-term process of experimentation, observation, and practice and passed down through generations. This knowledge allows indigenous people to make informed decisions about agriculture, animal husbandry, health, and natural resource management. Indigenous knowledge is crucial for the sustainable management of biological and natural resources that are essential to people's lives. The term "indigenous knowledge systems" refers to the complex, dynamic, and living systems of knowledge that are transmitted through cultural traditions and institutions. This knowledge is often found in oral and written form and encompasses a wide range of utilitarian and philosophical purposes (Millward, P. 2012). It includes wise words, poetry, and song, as well as explicit instruction and advice. Indigenous knowledge is a collection of information passed down through generations of culture. Overall, indigenous knowledge is a valuable and tried-and-true resource that is still widely used by the majority of the world's population in a rapidly changing environment. Its breadth is as extensive as the term "culture" itself, and it serves as the foundation for decision-making for indigenous peoples globally in a variety of domains.

### **1.3. Background of the Study**

With more than 1500 dialects spoken across the nation and about 400 tribal communities, India is renowned for its extraordinary cultural and traditional diversity. The indigenous knowledge systems (IKS), which are specific to each local culture and have been developed over thousands of years, reflect this diversity. IKS is developed in harmony with the local social and ecological environment and encompasses all facets of human life, including spiritual, material, natural, and cultural. In India, IKS are primarily practiced by tribal communities, which make up around eight percent of the total population of the country. Unfortunately, many of these communities are marginalized and living below the poverty line, facing social, economic, and political discrimination. In recent years, rapid cultural change has occurred within these communities due to acculturation and modernization processes, with younger generations often migrating to urban areas and losing touch with their cultural roots (Şentürk, C. 2021). As a result, there is now a growing awareness among tribal groups about the importance of preserving their culture, and many initiatives have been undertaken to educate and involve them in this process. However, this requires the cooperation of teachers who work in tribal areas, who may or may not be from the tribal community themselves. It is therefore important that these teachers have a deep understanding and value for IKS, as they play a crucial role in preserving and promoting it among tribal children (Xiong, M.-x. 2022). Investigating the perception of pre-service teachers towards IKS is an important task for research, as these new educational tools have the potential to change the education scenario of tribal children in India.

### **1.4. Purpose of the Study**

The purpose of this research was to examine pre-service teachers' perceptions regarding the promotion of indigenous knowledge systems (IKS). The issue with IKS is that it can act as a means of preserving and promoting cultural heritage through education. Pre-service teachers have an essential role in transmitting cultural heritage as part of education to the younger generation. If they do not believe in or understand the importance of this, the effort will be futile. Their beliefs and understanding will determine the success of preserving cultural heritage through education in the classroom. Regardless of the constraints they may face,

they hold the power to decide what is included or excluded from the taught curriculum. Pre-service teachers are individuals who are currently studying education courses in higher education institutions and are the teachers of the future. They differ from in-service teachers, and there have been numerous studies conducted on them. Therefore, they should be treated as a unique group, and efforts should be made to prepare them as professional teachers. This research was conducted with them in mind.

## 2.0. Study objectives:

### The study aims to achieve the following goals:

1. To assess how pre service teachers' attitudes toward Indigenous knowledge differ by gender.
2. To identify how pre service teachers' attitudes toward Indigenous knowledge vary by stream.
3. To figure out how pre service teachers' attitudes toward Indigenous knowledge vary by location.
4. To investigate how pre service teachers' attitudes toward Indigenous knowledge vary depending on the kind of educational institution they attend.

### 2.1.Hypotheses:

1. There exists a significant difference in attitude between male and female pre service teachers towards Indigenous Knowledge.
2. There exists a significant difference in attitude between science and arts pre service teachers towards Indigenous Knowledge.
3. There exists a significant difference in attitude between rural and urban pre service teachers towards Indigenous Knowledge.
4. There exists a significant difference in attitude between Govt and Private pre service teachers towards Indigenous Knowledge.

**3.0.Methodology:** To achieve the objective, i.e., to measure the perception of pre-service teachers towards the promotion of indigenous knowledge systems in Tripura at the secondary level, a survey has been carried out with the help of a five-point perception scale comprising 15 statements. The five points are Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D), and Strongly Disagree (SD). 153 pre-service students from the state of Tripura participated in this survey. The simple random sampling method is used to select the 153 pre-service teachers. Out of these 153 pre-service students, 89 are from B. Ed, 21 are from M. Ed, and 43 are from the D. El. Ed course. A standardized procedure has been followed while constructing the perception scale. After standardization, the test-retest reliability is found to be 0.81, and the construct validity is found to be 0.76.

### 3.1 Data Analysis and Result:

#### 1. Analysis of 1<sup>st</sup> Hypothesis:

H1: There exists a significant difference in attitude between male and female pre service teachers towards Indigenous Knowledge.

Gender	N	Mean	SD	SE	t	p value
Female	110	55.6	4.681	0.446	1.915	0.057
Male	43	57.19	4.398	0.671		

Table 1: Gender wise Indigenous Knowledge Attitude difference between Male and Female pre service teachers via t Test

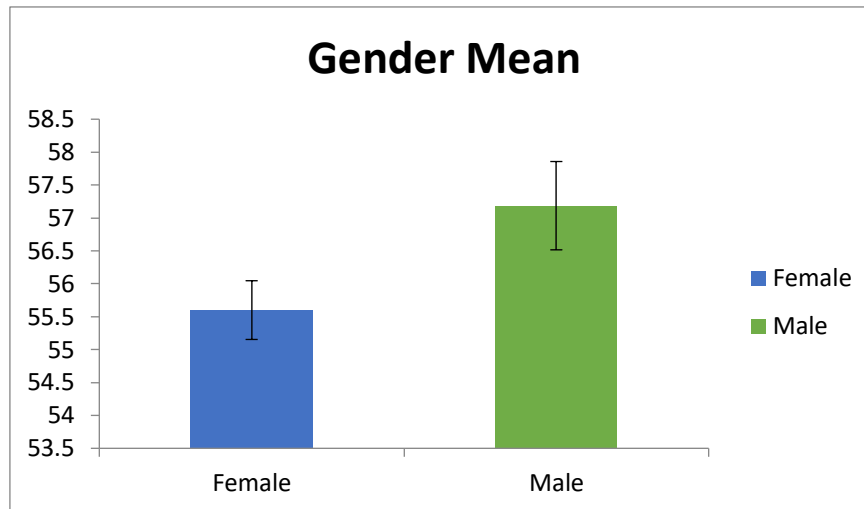


Fig 1: Graphical Representation of Gender wise Indigenous Knowledge Attitude Comparison between Male and Female students

From the Table and the Graphical representation, it is found that in female the Mean, SD and SE are 55.6, 4.681 and 0.446 respectively whereas in case of male the Mean, SD and SE are 57.19, 4.398 and 0.671 respectively. On carrying out t test, the t value and p values are found to be 1.915 and 0.057 respectively.

As the calculated value of p is found to be 0.057, which is much greater than 0.05, hence the hypothesis is rejected at 5% level of significance ( $p > 0.05$ ) and it can be stated that there exists no significant or contrasting difference between female and male pre service teachers towards Indigenous Knowledge.

## 2. Analysis of 2<sup>nd</sup> Hypotesis.

H2: There exists a significant difference in attitude between science and arts pre service teachers towards Indigenous Knowledge.

Academic Discipline	N	Mean	SD	SE	t	p value
Science	102	55.794	4.521	0.447	0.9474	0.345
Arts	51	56.549	4.888	0.684		

Table 2: Academic Discipline wise Indigenous Knowledge Attitude difference between Science and Arts pre service teachers via t Test

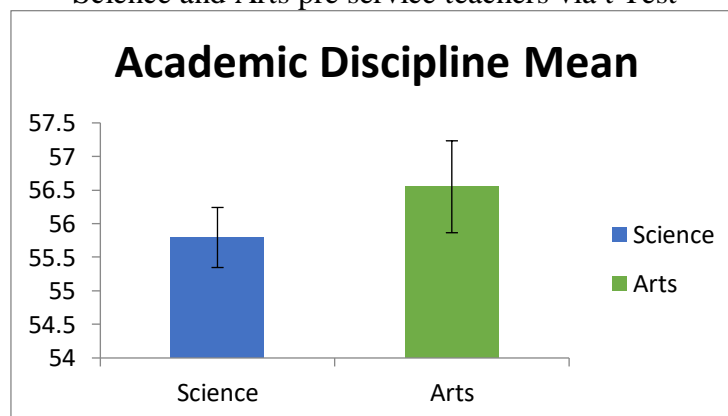


Fig 2: Graphical Representation of Academic Discipline wise Indigenous Knowledge Attitude Comparison between Science and Arts pre service teachers

From the Table and the Graphical representation, it is found that in Science pre service teachers the Mean, SD and SE are 55.794, 4.521 and 0.447 respectively whereas in case of Arts pre service teachers the Mean, SD and SE are 56.549, 4.888 and 0.684 respectively. On carrying out t test, the t value and p values are found to be 0.9474 and 0.345 respectively.

As the calculated value of p is found to be 0.345, which is much greater than 0.05, hence the hypothesis is rejected at 5% level of significance ( $p > 0.05$ ) and it can be stated that there exists no significant or contrasting difference between science and arts pre service teachers towards Indigenous Knowledge.

Analysis of 3<sup>rd</sup> Hypothesis.

H3: There exists a significant difference in attitude between rural and urban pre service teachers towards Indigenous Knowledge.

Locality	N	Mean	SD	SE	t	p value
Urban	68	55.41	4.776	0.579	0.683	0.495
Rural	85	55.94	4.751	0.515		

Table 3: Locality wise Indigenous Knowledge Attitude difference between Urban and Rural pre service teachers via t Test

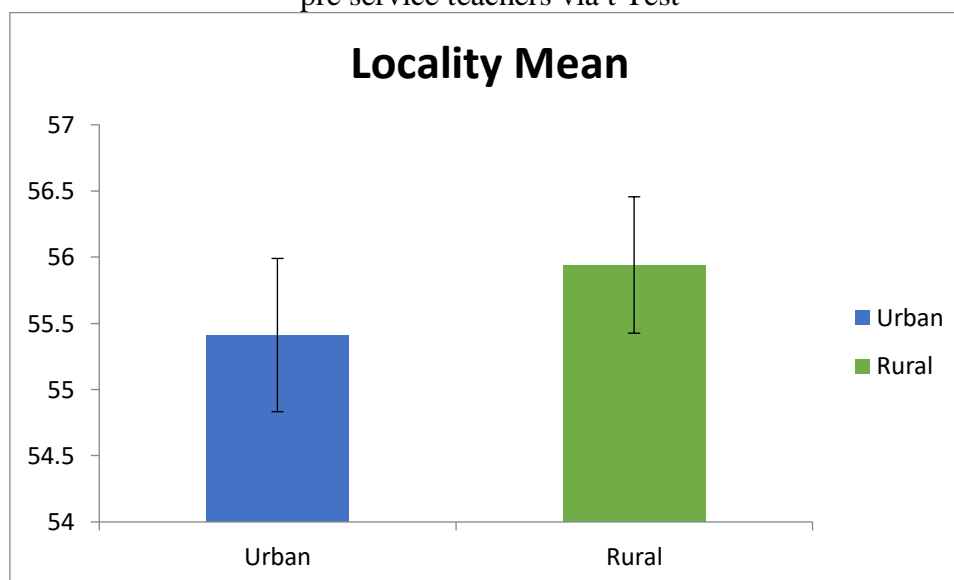


Fig 3: Graphical Representation of Locality wise Indigenous Knowledge Attitude Comparison between Urban and Rural pre service teachers

From the Table and the Graphical representation, it is found that in Science pre service teachers the Mean, SD and SE are 55.41, 4.776 and 0.579 respectively whereas in case of Arts pre service teachers the Mean, SD and SE are 55.94, 4.751 and 0.515 respectively. On carrying out t test, the t value and p values are found to be 0.683 and 0.495 respectively.

As the calculated value of p is found to be 0.495, which is much greater than 0.05, hence the hypothesis is rejected at 5% level of significance ( $p > 0.05$ ) and it can be stated that there exists no significant or contrasting difference between Urban and Rural pre service teachers towards Indigenous Knowledge.

Analysis of 4<sup>th</sup> Hypothesis.

H4: There exists a significant difference in attitude between Govt and Private pre service teachers towards Indigenous Knowledge.



Academic Institution	N	Mean	SD	SE	t	p value
Govt	49	57.20	4.645	0.664	2.142	0.033*
Private	104	55.50	4.564	0.447		

\* denotes significant difference i.e. the result is significant at 5% ( $p < 0.05$ ) level of significance

Table 4: Academic Institution wise Indigenous Knowledge Attitude difference between Govt and Private pre service teachers via t Test

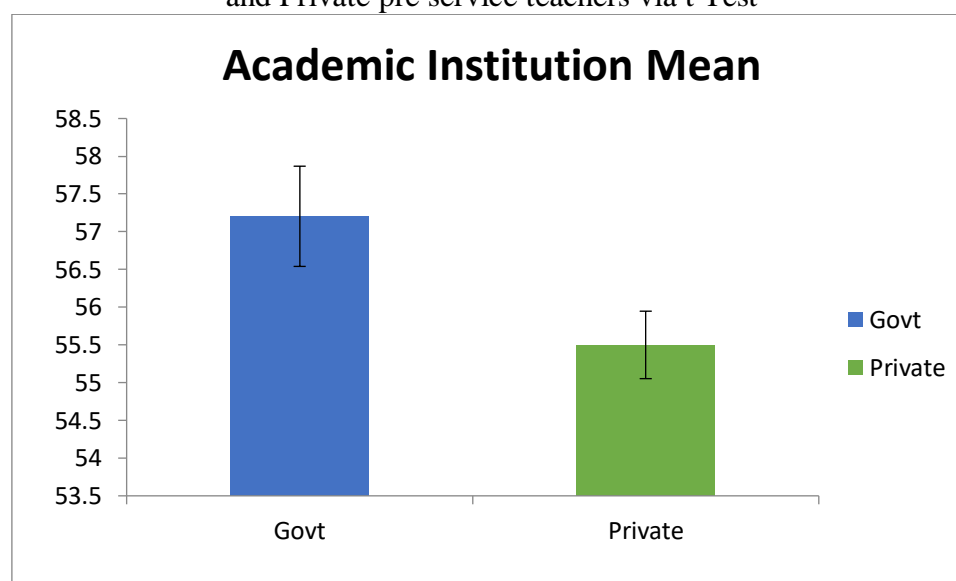


Fig 4: Graphical Representation of Academic Institution wise Indigenous Knowledge Attitude Comparison between Govt and Private pre service teachers

From the Table and the Graphical representation, it is found that in Govt pre service teachers, the Mean, SD and SE are 57.20, 4.645 and 0.664 respectively whereas in case of Private pre service teachers the Mean, SD and SE are 55.50, 4.564 and 0.447 respectively. On carrying out t test, the t value and p values are found to be 2.142 and 0.033 respectively.

As the calculated value of p is found to be 0.033, which is much smaller than 0.05, hence the hypothesis is accepted at 5% level of significance ( $p < 0.05$ ) and it can be stated that there is a significant or contrasting difference exists between Govt and Private pre service teachers towards Indigenous Knowledge.

### 3.2 Findings and Discussion :

According to the first analysis, there are 43 male and 110 female teachers out of the 153 pre-service teachers. There exists no significant or contrasting difference between female and male pre-service teachers towards Indigenous Knowledge. Students require various educational experiences because teachers of both genders provide different viewpoints and experiences, helping students to grasp a variety of connections both inside and outside the classroom. The research indicates that both male and female pre-service teachers play a crucial role in promoting indigenous knowledge systems and providing a well-rounded education to students. From the second table and the graphical representation, it is found that there exists no significant or contrasting difference between science and arts pre-service teachers towards Indigenous Knowledge. The Indian Knowledge System's emphasis on cultural enrichment significantly impacts learners by exposing them to India's rich heritage, fostering a strong sense of identification and pride, and fostering an attachment to their traditions. Teaching science involves hands-on experiments, field excursions, and

unconventional methods. Arts teachers provide a unique perspective that can inform resource management decisions, land-use planning, reclamation, and conservation strategies. This approach helps students gain knowledge, conceptual understanding, and problem-solving skills, enabling informed decision-making in scientific contexts. Incorporating Indigenous ways of knowing into teaching can foster a more inclusive learning environment, allowing students to understand the cultural history and practices of Indigenous peoples. Both social science and science instructors can help students understand scientific events by designing engaging classes, explaining complex subjects clearly, and engaging with experiments, ultimately motivating students to respect the natural world. From the third table and the graphical representation, it is found that there exists no significant or contrasting difference between urban and rural pre-service teachers towards Indigenous Knowledge. Teachers in both rural and urban areas are essential to promoting indigenous knowledge systems in the classroom and enhancing students' standards of living. Teachers in both rural and urban areas frequently act as the foundation of their communities. They interact with the community and offer emotional support in addition to teaching. The lack of urban-style resources in schools and settling contributes to the dissatisfaction with teaching in rural areas; however, this study reveals that teachers in both rural and urban areas support students' acquisition of indigenous knowledge by providing them with information and by creating an environment that fosters learning.

From the table and the graphical representation, it is found that there is a significant or contrasting difference between government and private pre-service teachers towards Indigenous Knowledge. Just as access to high-quality education may promote economic growth and development, likewise can organized and constructed schools positively affect the achievement of pupils. Both public and private educational systems are required to fulfill the various learning needs. Considering the advantages and disadvantages of both public and private educational systems is essential to meeting India's diverse educational needs. Students have been drawn to private schools because of their superior facilities, cutting-edge curricula, and more adaptable classroom management strategies. Although it has enhanced education and given private universities a competitive advantage, it has also raised concerns about the accessibility, price, and ability of government institutions. This study revealed that pre-service teachers in private schools have a major impact on the secondary level promotion of indigenous knowledge systems in Tripura.

According to the study, pre-service teachers value Indigenous Knowledge (IK) regardless of gender, subject background, or rural-urban setting, demonstrating its universal applicability for holistic education. Teacher education programs should promote collaborative and interdisciplinary approaches that integrate cultural heritage with scientific and creative practices, as male and female educators, as well as instructors of science and the arts, bring complementary perspectives to the classroom. In a similar vein, the dedication of both urban and rural educators points to the necessity of resource-sharing programs and community-based projects that strengthen cultural transmission and overcome contextual differences. However, the divergent responses from government and private pre-service teachers highlight the need to fill the gaps between institutions by ensuring that government teacher training institutes have adaptable curricula, state-of-the-art facilities, and innovative teaching strategies. Pre-service teachers can be better prepared to protect cultural heritage while also giving students problem-solving skills and global competencies by methodically integrating Indigenous Knowledge into training programs, encouraging equity among institutions, and supporting inclusive and experiential pedagogies.



#### 4.0 Conclusion :

In conclusion, pre-service teachers support the secondary-level indigenous knowledge systems in Tripura. Promoting indigenous knowledge is crucial to equipping future educators with the information, abilities, and training they need to start teaching. It assures that educators have all they need to satisfy the different requirements of their learners, provide productive learning environments, and maintain the highest levels of practice. The quality of teaching and learning may be raised by supporting pre-service education, which will increase student outcomes and contribute to the overall excellence of education. Teachers are more qualified to answer queries from students, give appropriate assistance, and deliver accurate and relevant education when they have a thorough understanding of indigenous knowledge systems. Pre-service education ensures that instructors are prepared to give their children a strong foundation of indigenous knowledge by improving their understanding of the subject information. because pre-service education provides aspiring educators with instructional practices and pedagogical expertise that have been tried, tested, and proved successful. It provides aspiring educators with an introduction to various teaching pedagogies, evaluation approaches, and classroom management tactics that assist learners in advancing indigenous knowledge systems. Teachers who get pedagogical training throughout their pre-service education are better prepared to establish learning environments for their students that effectively incorporate indigenous knowledge.

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