IMPACT OF ENNUM EZHUTHUM IN LEARNING OF STUDENTS IN PUDUKKOTTAI DISTRICT

A research project report
Submitted
to

STATE COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING
CHENNAI - 600006

Submitted
by
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FOREWORD

Research is an integral part of the academic support activities at DIET, actively pursued by its faculty members. The SCERT (State Council of Educational Research and Training) provides essential guidance and funding for these research initiatives, which include comprehensive district research projects. These projects typically address specific district-level issues or conduct extensive surveys, carried out over a period of six months. The findings from these projects are then disseminated at a state-level program, exclusively convened for this purpose, ensuring that the insights and discoveries are shared with a broader audience for maximum impact.

Dr. M. Dhanasekaran, a dedicated faculty at DIET, has invested considerable effort in identifying relevant problems, conducting thorough research, and assisting teachers in developing innovative teaching methods. His work has been instrumental in bringing new topics and issues to light, thanks to the ongoing research projects.

I highly appreciate Dr. M. Dhanasekaran's commitment and diligence in selecting and executing the district research project titled “Impact of Ennum Ezhuthum in Learning of Students in Pudukkottai District.” His efforts have significantly contributed to enhancing the understanding of educational practices and outcomes in the region.

PRINCIPAL

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EXECUTIVE SUMMARY

This research project aims to investigate the impact of "Ennum Ezuthum," an innovative literacy program, on the learning outcomes of students in Pudukkottai District. The program, which translates to "Literacy and Numeracy" in English, focuses on enhancing basic literacy skills among school-aged children in the district.

The primary objective of the study is to assess the effectiveness of the "Ennum Ezuthum" initiative in improving reading and writing proficiency among students. The research will employ a comprehensive methodology, including surveys, interviews, and academic performance analysis, to gather qualitative and quantitative data.

The significance of this research lies in the potential benefits it could bring to the education system in Pudukkottai District. By understanding the impact of "Ennum Ezuthum" on students' learning, educators, policymakers, and stakeholders can make informed decisions about the integration and expansion of such literacy programs.

The expected outcomes of this research include valuable insights into the strengths and potential areas for improvement in the "Ennum Ezuthum" program. Ultimately, the findings will contribute to the ongoing efforts to enhance educational opportunities and outcomes for students in Pudukkottai District, setting the stage for evidence-based decision-making in the realm of literacy education.

Bonafide Certificate

This is to certify that this project report entitled, "Impact of Ennum Ezhuthum in Learning of Students in Pudukkottai district." which is to be submitted to the State Council of Educational Research and Training, Chennai-6 is a bonafide work of Dr. M.Dhanasekaran, Lecturer, DIET, Pudukkottai, . He has carried out this work under my supervision and guidance. Certified further, that to the best of my knowledge, the work reported herein does not form a part of any other thesis or dissertation based on which a degree or award was conferred on an earlier occasion on this or any other person.

Principal

DIET, Pudukkottai

Declaration

I, the undersigned solemnly declare that the project report entitled, "Impact of Ennum Ezhuthum in Learning of Students in Pudukkottai district." submitted to State Council of Educational Research and Training, Chennai- 6 is a record of bonafide work under the supervision of Principal, District Institute of Education and Training, Pudukkottai. I assert the statements made and conclusions drawn in this project are an outcome of my research work. I further certify that the work contained in the report is original and has been done by me. The work has not been submitted to any other Institution for any other degree/diploma/certificate in any other University in India or abroad. I have followed the guidelines provided by the State Council of Educational Research and Training, Chennai-6 in writing the report.

Signature of the Researcher

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- **Dr. M. Dhanasekaran**

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IMPACT OF ENNUM EZHUTHUM IN LEARNING OF STUDENTS IN PUDUKKOTTAI DISTRICT

INTRODUCTION

1.1. Introduction

Education is the cornerstone of societal progress, empowering individuals and communities alike. In the pursuit of fostering a more inclusive and effective learning environment, various initiatives have been implemented globally to enhance basic literacy skills among school-aged children. Pudukkottai District, nestled in the heart of Tamil Nadu, India, is no exception to this transformative journey in the field of education. As part of this endeavor, the district has witnessed the introduction of an innovative literacy program known as "Ennum Ezuthum," translating to "Numeracy and Literacy" in English.

The research project titled "Impact of Ennum Ezhuthum in Learning of Students in Pudukkottai District" seeks to explore the tangible effects of this program on the academic and literacy outcomes of students in the region. The initiative, aimed at bolstering fundamental reading and writing skills, holds the promise of shaping the

educational landscape of Pudukkottai District and influencing the trajectory of individual student learning journeys. COVID-19 had almost completely disrupted education systems worldwide. This shock was more severe and revealing in developing countries, which had longer periods of full school closures than OECD countries, and where schools and parents were less equipped to pivot to remote instruction. Almost the school going students had missed more than a full academic year and more during the pandemic. It would make much longer time to wake up to the innovations to bridge the learning gap. India offers a leading example of such concerns. Compared to other establishments, schools were first to close and last to open, resulting in about 18 months of school closures. Anticipating the challenge of addressing learning loss when schools reopened, the Government of Tamil Nadu rose to the occasion and piloted an after-school remedial program run by community volunteers for 60-90 minutes daily in the evening in select districts in November 2021.

This program, called Illam Thedi Kalvi ("Education at Doorstep", or ITK), was rolled out state-wide in January 2022 and employed approximately 200,000 volunteers by June 2022. It aims at bridging the learning gap due to Covid-19 pandemic among primary students. The state government has been implementing "Ennum Ezhuthum Mission" from 2022-23 academic year to ensure all students up to eight years are able to read and possess basic arithmetic skills by 2025.They should be able to read simple sentences both in their mother tongue and English and do the four basic Mathematical functions upto the expected standard. Due to the 17 months gap during Covid-19 lockdown, many primary students lack basic reading and writing skills. So, the Department of School

Education planned to conduct a baseline assessment when the schools reopened after summer holidays on June 13 for all children in classes II and III in Government and

Government-aided schools. Based on the outcome of the assessment, the level of children fixed and they grouped. Under this scheme, students grouped according to their learning level and learn letters, numbers through activities. In a class, students divided into three levels Arumbu (first), Mottu (second) and Malar (third) levels. "Students learn letters in the first stage and letters and words in the second stage, letter, words and sentences in the third stage. The activities are designed for Tamil, English and Maths subjects while Environmental studies will be integrated with the languages. Ennum Ezuthum and ITK are being implemented at a very crucial manner in pudukkottai district. The researcher decided to carry out this research after the scheme got implemented to know how it works.

1.2. Background

Situated in the southern region of Tamil Nadu, Pudukkottai District accommodates a diverse array of schools catering to students from various socio-economic backgrounds. Recognizing the evolving educational landscape and the necessity to harness technology for bridging learning disparities, there has been a surge in acknowledging the need for adaptation in recent years. Ennum Ezuthum, a learning platform, emerges as a promising solution to enrich the educational journey of students in Pudukkottai. The genesis of this initiative stemmed from the prolonged closure of schools for over 19 months due to the COVID-19 pandemic in Tamil Nadu. Traditional lessons have proven insufficient in addressing the resultant learning gap, underscoring the importance of tailored support for each child. Ennum Ezhuthum Scheme,

spearheaded by the education department, entails the distribution of workbooks to students in Classes 1 to 3, aimed at evaluating and bridging the educational divide. Envisioned to enhance the quality of primary education in Tamil Nadu, the Ennum

Ezhuthum Mission endeavors to ensure foundational numeracy and literacy skills among students by 2025.

Under the academic leadership of the State Council of Educational Research and Training (SCERT), this mission is slated to commence across all districts of Tamil Nadu from the academic year 2022-23. Aligned with this mission, ASER's findings in South India, particularly in Tamil Nadu, revealed significant deficiencies in basic arithmetic skills among students aged 6 to 18. Despite a high enrollment rate up to Class 12, a substantial portion of students exhibited inadequate learning proficiency, as highlighted by ASER reports.

The launch of the Ennum Ezhuthum Mission came at a crucial juncture, addressing the substantial learning setbacks incurred during the pandemic-induced hiatus in schooling. This initiative is bolstered by the allocation of Rs 66.7 crore from Tamil Nadu's budget for the State Foundational Literacy and Numeracy Mission. Departing from conventional academic targets, the mission prioritizes critical literacy and numeracy skills in Classes 1 to 3, emphasizing a holistic approach encompassing teacher and parental involvement. Through innovative teacher training, revised teaching methodologies, classroom support, and data-driven monitoring, the Ennum Ezhuthum Mission endeavors to elevate students' learning outcomes to grade-appropriate levels, ensuring seamless progression to higher grades while mitigating the widening learning gap.

1.3. Rationale

The decision to undertake this research stems from the pressing need to understand the impact of Ennum Ezhuthum on students' learning outcomes and to identify the potential challenges and opportunities associated with its implementation. By conducting a comprehensive analysis, this project aims to provide valuable insights that can inform educational policies, guide curriculum development, and contribute to the ongoing discourse on technology-driven learning initiatives.

The motivation behind this research initiative arises from the urgent necessity to comprehend the influence of Ennum Ezhuthum on students' educational achievements and to pinpoint the potential obstacles and opportunities linked with its execution. Through a thorough examination, this project endeavors to yield valuable insights capable of shaping educational policies, guiding curriculum evolution, and enriching the ongoing dialogue concerning technology-driven educational endeavors.

This research is initiated due to a critical need to explore the effects of Ennum Ezhuthum on student learning outcomes, aiming to uncover both the challenges and prospects of its application. This comprehensive analysis seeks to deliver insights that are pivotal for shaping educational policies, steering curriculum innovation, and fostering discussions around technology-enhanced educational strategies.

1.4. Scope of the Study

This study specifically delves into the implementation of Ennum Ezhuthum in Pudukkottai District and its effects on students across diverse grade levels. It employs a comprehensive approach encompassing both quantitative and qualitative analyses, utilizing surveys and academic performance assessments to offer a well-rounded comprehension of the subject matter.

The Ennum Ezhuthum initiative aims to ensure that all students in government schools in Tamil Nadu, specifically classes 1, 2, and 3, can read with understanding and possess fundamental arithmetic skills by the year 2025. Additionally, it seeks to address the learning gap resulting from school closures during the COVID-19 lockdown. Building on its initial success and positive outcomes, the Tamil Nadu government plans to extend the 'Ennum Ezhuthum' program to include students in Classes 4 and 5 starting from the academic year 2023-2024.

In the 2022-23 academic session, Ennum Ezhuthum was introduced as a foundational literacy and numeracy program for classes 1 to 3, targeting learning disparities. In its initial phase, the program covered over 27.60 lakh students across 35,835 schools in the state.

For the academic year 2023-24, the State Council of Educational Research and Training, along with the Director of Elementary Education, has instructed all government and aided schools to conduct a baseline survey for class 5 students starting from June 21 to June 30.

Emphasizing activity-based learning, the workbooks include worksheets tailored to three different proficiency levels, along with activities and exercises aligned with students' textbooks. The teacher's handbook provides guidance on engaging students

from either class 4 or classes 4 and 5 together, utilizing activities to enhance the learning experience.

Acknowledging the challenges students faced in grasping foundational concepts post-pandemic, extending the Ennum Ezhuthum Mission to encompass students in classes 4 and 5 would significantly contribute to reinforcing their existing knowledge.

The teacher's handbook underscores the necessity for ongoing support, recognizing that bridging a learning gap of over two years due to the pandemic cannot be achieved within a single academic year. This support focuses on three primary aspects: the non-linear nature of learning necessitating continuous reinforcement, the importance of active learner participation, and the creation of a supportive, enjoyable learning environment.

This study specifically investigates the implementation and impact of the Ennum Ezhuthum initiative in Pudukkottai District, focusing on its effects on students in various grade levels, particularly Classes 1 to 5. The research employs a comprehensive approach encompassing both quantitative and qualitative analyses, utilizing surveys, interviews, and academic performance assessments to provide a well-rounded understanding of the initiative's impact.

Key areas of focus include:

1. **Geographic Scope**: The study is confined to Pudukkottai District in Tamil Nadu, India, encompassing a representative sample of schools within this region.
2. **Grade Levels**: The primary focus is on students in Classes 1 to 5, with a detailed examination of learning outcomes in foundational literacy and numeracy skills.

3. **Data Collection Methods**: The research will employ a mixed-methods approach, including:
    - **Surveys**: Distributed to teachers, students, and parents to gauge perceptions and experiences with the Ennum Ezhuthum initiative.
    - **Academic Performance Assessments**: Analyzing students' progress in reading, writing, and mathematics before and after the implementation of the program.
4. **Time Frame**: The study covers the implementation period from the academic year 2022-23, with a focus on the initial phase and subsequent expansion of the initiative.
5. **Comparative Analysis**: Evaluating the performance and engagement levels of students exposed to the Ennum Ezhuthum program against those who were not, to determine the program's efficacy.
6. **Challenges and Opportunities**: Identifying barriers to effective implementation and potential opportunities for enhancing the program based on feedback and data analysis.
7. **Policy Implications**: Offering recommendations for educational policymakers to refine and scale the Ennum Ezhuthum initiative, as well as informing future literacy and numeracy interventions.

By focusing on these areas, the study aims to provide actionable insights into the effectiveness of Ennum Ezhuthum among primary school students in Pudukkottai District, and to contribute to the broader discourse on educational innovation and policy development.

1.5 Significance of the Study

The investigation into the impact of the Ennum Ezhuthum mission on student learning outcomes in Pudukkottai District holds profound significance in the realm of education. By delving into this research, we aim to not only contribute to the existing knowledge base but also to provide actionable insights for educators, policymakers, and stakeholders. Through practical recommendations, endeavor to optimize the integration of Ennum Ezhuthum and similar platforms, thereby fostering a more effective and engaging learning environment.

Entitled "Impact of Ennum Ezhuthum on Student Learning in Pudukkottai District," this project seeks to uncover the transformative potential of learning, particularly within the unique context of Pudukkottai. While Tamil Nadu has traditionally been hailed for its education quality and progressive reforms, recent studies reveal concerning trends. The 2022 Foundational Learning Study by NCERT underscores the need for a closer examination, with only 20% of Tamil Nadu's children meeting minimum proficiency in Tamil. Furthermore, the 2021 NAS rankings indicate a notable decline in literacy and mathematics performance, highlighting a pressing need for intervention.

Despite the state's robust public service delivery system, foundational learning remains a challenge that extends beyond mere access to resources. Therefore, this research assumes paramount importance in understanding the current state of affairs. While our study focuses on Pudukkottai District, its implications may reverberate throughout Tamil Nadu, shedding light on broader educational challenges and opportunities.The research project titled "Impact of Ennum Ezhuthum on Learning of Students in Pudukkottai District" addresses critical educational concerns by evaluating

the effectiveness of the Ennum Ezhuthum initiative. This need stems from several key factors:

1. **Educational Improvement**: Understanding how Ennum Ezhuthum influences student learning outcomes can help enhance educational strategies and methodologies, ensuring students receive a quality education.
2. **Policy Development**: The findings can inform policymakers about the strengths and weaknesses of the program, aiding in the development of more effective educational policies and initiatives.
3. **Teacher Training**: Insights gained can guide the design of professional development programs for teachers, equipping them with better tools and techniques to improve classroom instruction.
4. **Resource Allocation**: By identifying the most impactful elements of the program, the research can inform more efficient and targeted allocation of educational resources.
5. **Parental and Community Engagement**: The study highlights the importance of parental and community involvement, providing strategies to foster these partnerships for better educational outcomes.

The significance of the research project is multifaceted, impacting various stakeholders within the educational ecosystem:

1. **Enhanced Learning Outcomes**: By evaluating the effectiveness of the Ennum Ezhuthum program, the research provides evidence-based recommendations to improve literacy and numeracy skills among students, crucial for their academic and future career success.
2. **Curriculum Development**: The study's findings can inform the creation of more engaging and effective curricula, tailored to the diverse needs of students and aligned with best practices in educational methodologies.
3. **Teacher Development**: The research underscores the need for ongoing professional development, ensuring teachers are well-equipped to deliver high-quality education and effectively implement innovative teaching strategies.

4. **Policy Impact**: Positive outcomes from the research can influence educational policies at the district and state levels, promoting systemic improvements and the potential scaling of successful programs to other regions.
5. **Community and Parental Involvement**: Demonstrating the critical role of parental and community support, the study encourages stronger collaboration between schools, families, and communities, creating a supportive environment for students.
6. **Long-Term Educational Benefits**: By tracking long-term impacts, the research can provide insights into how early educational interventions shape students' academic trajectories, justifying investments in early childhood education.
7. **Addressing Equity Gaps**: Identifying specific challenges and learning gaps, the research offers targeted interventions to ensure all students, regardless of background, have equal opportunities to succeed.
8. **Scalability and Replication**: The research provides a framework for replicating the Ennum Ezhuthum program in other contexts, ensuring its benefits can be extended to a wider student population.

1.6. Need of the Study

The Ennum Ezhuthum (EE) scheme, introduced by the State Council for Educational Research and Training (SCERT), aims to bridge learning gaps by integrating teaching, learning, assessment, and remedial teaching activities. Designed to address the deficiencies in basic literacy and numeracy skills among students, particularly in navigating regular textbooks, the Ennum Ezhuthum scheme provides essential foundational skills through teacher handbooks and student workbooks equipped with QR codes. These resources empower students with academic knowledge, potentially reducing dropout rates in schools.

In its initial phase, the EE mission focuses on elementary teachers in the Pudukkottai district, aiming to enhance overall student development. This study

investigates the impact of EE on student growth in reading, writing, and math skills during its inaugural year.

Building on the success and positive outcomes observed, the Tamil Nadu government planned to expand the EE scheme to Classes 4 and 5 students starting from the 2023-2024 academic year. With an allocation of Rs 110 crore, the SCERT is gearing up for the expansion, aligning with the scheme's objectives to promote literacy and numeracy among children by the age of eight.

The EE scheme stands out for its student-centric pedagogy, incorporating various engaging activities such as singing, dancing, and puppetry to facilitate learning. Its customized approach caters to diverse learning preferences and aims to make education accessible and enjoyable for all students.

Key features of Ennum Ezhuthum include interactive learning modules, multimedia resources, adaptive learning paths, and robust assessment mechanisms. These elements collectively create a dynamic and personalized learning environment, ensuring that each student receives tailored support to maximize their academic potential.

This research seeks to evaluate the effectiveness of the EE scheme in promoting literacy and numeracy skills among the elementary students, with focus on its implementation in Pudukkottai district. By analyzing student performance and growth over time, this study aims to provide insights into the impact of EE on educational outcomes and inform future educational initiatives.

1.7. Identification of the Problem

The findings of the ASER 2022 survey reveal a troubling decline in children's foundational reading and math abilities, attributable to the compounding effects of the pandemic and prolonged school closure. This regression represents a setback, reversing the educational progress achieved in recent years and reverting outcomes to pre-2012 levels. Specifically, there has been a notable decrease in the proportion of students proficient in reading at grade-appropriate levels, with only 4.8% of Class 3 students demonstrating proficiency in reading at the Class 2 level by 2022. Moreover, the ASER survey underscores disparities in educational outcomes, with certain states like Tamil Nadu exhibiting lower reading proficiency rates compared to national averages. This disparity points to a broader issue of educational inequality that may disproportionately affect students in regions like Pudukkottai District, where access to quality education and resources may be limited.

The decline in fundamental reading and math skills among students, as evidenced by the ASER survey, highlights the urgent need to address issues related to foundational literacy and numeracy (FLN). The initiation of the Ennum Ezhuthum Mission by the Tamil Nadu government acknowledges the necessity to strengthen FLN skills among elementary school students, particularly in response to the disruption caused by school closure.

While initiatives such as the Ennum Ezhuthum Mission aim to enhance student learning outcomes, it is essential to rigorously assess the efficacy of such interventions. By evaluating key performance indicators such as academic achievement, engagement levels, and overall satisfaction, it is crucial to ascertain whether platforms like Ennum

Ezhuthum effectively contribute to the educational journey of students across different standards in Pudukkottai District.

Addressing these identified challenges is imperative for mitigating the adverse impact of educational disruptions and ensuring that students in Pudukkottai District have access to quality education conducive to their academic growth and development. Therefore, this research project aims to delve into this critical area to contribute to understanding and addressing these educational challenges effectively.

1.8. Statement of the Problem

In recent years, there has been growing concern over the declining proficiency in foundational literacy and numeracy skills among elementary school students in Pudukkottai District. The implementation of Ennum Ezuthum, a learning platform, presents an opportunity to address this issue and improve student learning outcomes. However, amidst the challenges posed by the pandemic and prolonged school closures, there remains a need to evaluate the effectiveness of Ennum Ezhuthum in enhancing student learning in the district.

This research aims to investigate the impact of Ennum Ezhuthum on student learning outcomes, including academic achievement, engagement levels, and overall satisfaction. By examining key performance indicators and collecting empirical data from schools in Pudukkottai District, this study seeks to provide insights into the efficacy of Ennum Ezhuthum and contribute to efforts aimed at improving educational outcomes for students in the region.

1.9. Research Questions

1. How has the Ennum Ezhuthum initiative impacted students' academic performance in reading, writing, and mathematics in Pudukkottai District?
2. What are the levels of student engagement in classrooms implementing the Ennum Ezhuthum initiative compared to those that are not?
3. How satisfied are students, teachers, and parents with the outcomes of the Ennum Ezhuthum initiative?
4. What challenges have been encountered in the implementation of the Ennum Ezhuthum initiative, and what are the potential solutions?

1.10. Objectives of the Study

The primary objectives of this research are:

1. To find out the level of perception of teachers towards Ennum Ezhuthum
2. To find out the level of learning in reading, writing and Mathematics among the primary school pupils in terms of background variables.
3. To find out whether there is any significant difference in the learning in reading, writing and Mathematics among the primary school pupils in terms of background variables.
4. To find out whether there is any significant association between the learning of pupils in reading, writing and Mathematics in terms of background variables.

1.11. Hypotheses

1. There is no significant difference in the perception levels of teachers towards Ennum Ezhuthum.

2. There is no significant difference in the level of learning in reading, writing and Mathematics among the 3rd standard primary school pupils.

3. There is no significant difference in the level of learning in reading, writing and Mathematics among the 5th standard primary school pupils.

4.. There is no significant difference in the level of learning in reading, writing and Mathematics among the primary school pupils in terms of background variables.

5. There is no significant difference in learning in reading, writing and Mathematics among the 3rd standard primary school pupils in terms of educational district.

6. There is no significant difference in learning in reading, writing and Mathematics among the 5th standard primary school pupils in terms of educational district.
7. There is no significant difference in learning in reading, writing and Mathematics among the 3rd standard primary school pupils in terms of gender.
8. There is no significant difference in learning in reading, writing and Mathematics among the 5th standard primary school pupils in terms of gender.
9. There is no significant difference in learning in reading, writing and Mathematics among the 3rd standard primary school pupils in terms of locality.
10. There is no significant difference in learning in reading, writing and Mathematics among the 5th standard primary school pupils in terms of locality.
11. There is no significant difference in learning in reading, writing and Mathematics among the 3rd standard primary school pupils in terms of Fathers Educational Qualification.
12. There is no significant difference in learning in reading, writing and Mathematics among the 5th standard primary school pupils in terms of Fathers Educational Qualification.

13. There is no significant difference in learning in reading, writing and Mathematics among the 3rd standard primary school pupils in terms of Mothers Educational Qualification.
14. There is no significant difference in learning in reading, writing and Mathematics among the 5th standard primary school pupils in terms of Mothers Educational Qualification.

1.12. Features of Ennum Ezuthum

The Ennum Ezhuthum (EE) Mission is a pivotal initiative aimed at enhancing the quality of primary education in Tamil Nadu. With the overarching objective of ensuring that all students in Classes 1, 2,3 and 4,5 possess proficient reading and basic arithmetic skills by 2025, the mission also seeks to address the significant learning gaps resulting from the prolonged closure of schools during the COVID-19 pandemic. Under the academic guidance of the State Council of Educational Research and Training (SCERT), the EE Mission was launched across the state of Tamil Nadu starting from the academic year 2022-23.

The Chief Minister Mr. M.K. Stalin inaugurated the ambitious Ennum Ezhuthum Mission, emphasizing its role in mitigating the adverse effects of the pandemic on primary school students' learning outcomes. The program targets students from Classes 1 to 5 in government and government-aided schools, with the goal of ensuring foundational literacy and numeracy for all children under the age of eight by 2025.

1.13. Key Features of Ennum Ezhuthum :

1. **Bridging Learning Gap**: The scheme addresses the learning disparities exacerbated by the COVID-19 pandemic among students aged under 10.
2. **Foundational Literacy and Numeracy**: It aims to equip students with essential reading and arithmetic skills by 2025.
3. **Interactive Learning Approach:** Workbooks distributed to students encourage interactive learning methods and promote reading habits through access to school libraries.
4. **Multisensory Learning:** Lessons are designed in diverse formats including dance, songs, puppetry, and storytelling to engage students and enhance learning outcomes.
5. **Tailored Learning Paths:** Students are grouped based on their learning levels, allowing personalized learning experiences in subjects like Tamil, English, and Mathematics.

The implementation of Ennum Ezhuthum Scheme is complemented by the Illam Thedi Kalvi (ITK) program, initiated in response to the challenges posed by the pandemic. The ITK aims to bridge the learning gap through after-school remedial sessions conducted by community volunteers, targeting the primary students. The concerted efforts of the Tamil Nadu Government demonstrate a proactive approach to address the educational disruptions caused by the pandemic and ensure holistic development among primary students.

Given the critical role of Ennum Ezhuthum and ITK in revitalizing primary education, this research aims to assess the effectiveness of these initiatives, particularly in the Pudukkottai district. By examining the implementation and impact of these

programs, the study seeks to provide valuable insights for improving educational strategies and fostering better learning outcomes among primary students in Tamil Nadu.

1.14. Ennum Ezhuthum and Student Learning Outcomes

The project's primary focus is to assess the impact of Ennum Ezhuthum on student learning outcomes in Pudukkottai District. By examining key performance indicators, such as academic achievement, engagement levels, and overall satisfaction, the research aims to determine the efficacy of the platform in enhancing the educational journey for students across different grades.

The results of the Annual Status of Education Report (ASER 2022) survey, clearly showed the impact of the pandemic and lengthy school shutdown. ASER survey showed a decline in children's basic reading and math skills at the State and national levels. According to the survey report, this reversed the gradual advances made in the interim years and returned the results to their pre-2012 levels.

After 2018, the survey went back to the field in 2022, recruiting 30,737 kids from 920 villages spread throughout 31 districts of the State. In 2018, only 10.2% of Class 3 students in public and private schools were able to read texts at the Class 2-level. By 2022, this figure had fallen to 4.8%. One of the States with the lowest reading proficiency rates was Tamil Nadu. Additionally, the percentage fell nationally, from 27.3% in 2018 to 20.5% in 2022.

The results of the study showed a comparable decline in fundamental reading skills among Class 8 students nationwide and among Class 5 pupils in Tamil Nadu who could read a Class 2-level text. Regarding basic mathematics, just 11.2% of the students in Class 3 and 14.9% of those in Class 5 were able to perform subtraction and division, respectively. Meanwhile, the Ennum Ezhuthum Mission was started by the Tamil Nadu Government to address issues with foundational literacy and numeracy (FLN) among

elementary school students after the lengthy shutdown of schools. The survey's results, which showed that almost 90% of schools had teachers with FLN training, made this clear.

1.15. Limitations of the Study

- The scope of this study is restricted to Pudukkottai District exclusively.
- A sample representing 10 percent of schools in the district has been selected for this research.
- The survey component of this study is limited to 300 primary school teachers.
- The research focuses solely on students in the 3rd and 5th standards.

1.16. Conclusion

In conclusion, the research conducted on the impact of Ennum Ezhuthum in learning among students in Pudukkottai district sheds light on the critical dynamics of educational initiatives within the region. The findings underscore the pressing need to address declining proficiency in foundational literacy and numeracy skills, exacerbated by the challenges brought forth by the COVID-19 pandemic and prolonged school closures. Despite the implementation of Ennum Ezhuthum and similar programs aiming to bolster student learning outcomes, there remains a gap in understanding their efficacy in real-world educational contexts.

The identified problem of declining educational outcomes, as highlighted by the ASER 2022 survey, serves as the impetus for initiatives such as Ennum Ezuthum. However, this study reveals that while such interventions hold promise, their impact may be subject to various limitations. The research project's scope, confined to Pudukkottai district, provides valuable insights into localized challenges and opportunities.

Additionally, the utilization of a sample representing 10 percent of schools and focus on students in the 3rd and 5th standards adds depth to the analysis, albeit with inherent limitations.

Despite these constraints, this research contributes to the ongoing discourse surrounding educational interventions, particularly in regions grappling with educational disparities. By identifying the challenges and opportunities associated with Ennum Ezuthum, this study lays the groundwork for future research endeavors and policy interventions aimed at enhancing student learning outcomes. Ultimately, addressing the identified limitations and building upon the insights gleaned from this study are essential steps towards fostering a more inclusive and effective educational landscape in Pudukkottai District and beyond.

Introduction of the research study is given in this first chapter. The next chapter deals with the review of related literature.

2. Review of related Literature

2.1. Introduction

In order to ensure a thorough understanding of the research topic, the investigator has meticulously engaged in a process of reviewing relevant literature. This involved a comprehensive examination of research abstracts pertinent to the study, as well as a detailed analysis of significant international studies and research conducted within India. By delving into these sources, the investigator aimed to gain insights into the current state of knowledge and identify gaps or areas requiring further exploration.

Furthermore, the investigator has synthesized the findings obtained from these sources to provide a robust foundation for the current research project. This process involved carefully analyzing and synthesizing information from diverse sources, allowing for a nuanced understanding of the topic under study. Through this approach, the investigator sought to ensure that the research project is informed by the latest developments and insights in the field.

2.2. Need for survey of literature

The survey of related literature is an essential component of any research endeavor, serving as a cornerstone for the development of the research framework and methodology. This process involves examining a wide range of sources, including published articles, research reports, encyclopedias, and research abstracts. By engaging in a thorough review of existing literature, the researcher gains valuable insights into the current state of knowledge in their chosen field.

Moreover, the literature review provides the researcher with a solid foundation upon which to build his research program. By identifying key findings, methodologies, and areas of debate within the literature, the researcher can refine their research questions and design an effective research methodology. Additionally, the literature review enables the researcher to situate their study within the broader scholarly conversation, thereby contributing to the advancement of knowledge in the field.

Overall, the literature review is a crucial aspect of the research process, providing the researcher with the necessary context and insights to conduct a rigorous and meaningful study. It is through this process that the researcher can ensure that his research is informed both by existing scholarship and positioned to make a valuable contribution to the field.

2.3. Research on Fundamental Numeracy and Literacy: Comparative Analysis of Studies in India and Worldwide

Jackie Eunjung Relyea (2022) conducted a study aimed to explore the COVID-19 impact on reading achievement growth by Grade 3–5 students in a large urban school district in the U.S. and whether the impact differed by students' demographic characteristics and instructional modality. Specifically, using administrative data from

the district, the researcher investigated to what extent students made gains in reading during the 2020–2021 school year relative to the pre-COVID-19 typical school year in 2018–2019. The Researcher further examined whether the effects of students' instructional modality on reading growth varied by demographic characteristics. Overall, students had lower average reading achievement gains over the 9-month 2020–2021 school year than the 2018–2019 school year with a learning loss effect size of 0.54, 0.27, and 0.28 standard deviation unit for Grade 3, 4, and 5, respectively. Substantially reduced reading gains were observed from Grade 3 students, students from high-poverty backgrounds, English learners, and students with disabilities. Additionally, the findings indicate that among students with similar demographic characteristics, higher-achieving students tended to choose the fully remote instruction option, while lower-achieving students appeared to opt for in-person instruction at the beginning of the 2020–2021 school year. However, students who received in-person instruction most likely demonstrated continuous growth in reading over the school year, whereas initially higher-achieving students who received remote instruction showed stagnation or decline, particularly in the spring 2021 semester. Researcher findings support the notion that in-person schooling during the pandemic may serve as an equalizer for lower-achieving students, particularly from historically marginalized or vulnerable student populations.

Martha Jane Meredith (2022) examines the academic, social, and emotional impacts of the COVID-19 pandemic on high school juniors and seniors. The primary objective of Meredith's study was to explore how the pandemic influenced students' overall well-being and academic performance from the perspective of their teachers.

Utilizing a qualitative methodology, data were collected through individual interviews with educators. The analysis followed a three-phase process: categorization of data under organizational factors, building an explanation in phenomenological form, and re-examination of the data. The study was grounded in humanistic learning theory, emphasizing the holistic development of students.

The findings revealed significant concerns regarding students' attendance, graduation credits, and the shift to online learning. Teachers reported challenges in classroom management, relationship building, and communication, highlighting the necessity of social-emotional learning and trauma-informed practices. The study underscored the need for a supportive learning environment that addresses both academic and emotional needs. Meredith's research contributes valuable insights into the multifaceted effects of the pandemic on secondary education, suggesting that a comprehensive approach is essential for supporting students' recovery and future success.

Nagapati Prabhakar Bhat and colleagues (2021) conducted a study titled "Perception of Teachers Towards Online Teaching and Learning During COVID-19 Pandemic." The study aimed to assess the perceptions, attitudes, and challenges faced by teachers in adopting online teaching methods during the pandemic. This cross-sectional study utilized a revalidated structured questionnaire distributed via Google Forms to teachers from various medical, dental, nursing, and allied health institutions across Karnataka. Data were collected from July 2020 to December 2020, with a sample size of 184 participants.

The findings revealed that while a majority of teachers had prior experience with online teaching, they faced significant obstacles such as difficulty in teaching and assessing students, time management issues, and challenges in maintaining student engagement and motivation. Despite these challenges, 92.4% of the participants suggested continuing online classes during the pandemic, although 86.4% felt that conventional offline lectures were superior. The study highlights the necessity of addressing these obstacles to ensure the effectiveness of e-learning as a viable educational alternative during and beyond the COVID-19 pandemic.

Tuba Kamal and Asheref Illiyan (2021) aimed to examine teachers' perceptions of online teaching and the obstacles they face during the pandemic. Employing a quantitative and sample survey approach, a Google Form questionnaire was used to obtain a sample of 200 Delhi school teachers in March and April 2021. Data were analyzed in SPSS using descriptive statistics, factor analysis, reliability tests, and chi-square tests. Results indicated that on average, teachers have a positive perception of virtual teaching amid COVID-19 for reducing the learning gap and shaping pupils' future during the crisis. However, they encountered several obstacles, such as technical issues and difficulties in online exams and assessment. The findings suggest that educational institutions and policymakers need to enhance the quality of online teaching by embracing the latest instructional strategies and providing continuous training to teachers. This study fills a gap by focusing on the perceptions and challenges of school teachers towards e-learning during an ongoing outbreak, whereas previous research primarily focused on higher education.

Arnab Kundu & Tripti Bej (2021) explore COVID 19 response: An analysis of teachers' perception on pedagogical successes and challenges of digital teaching practice during new normal. The purpose of this exploratory study undertaken between June and August 2020 was to capture teachers' perspectives to explore (a) what kind of pedagogies they have successfully implemented in the face of a pandemic; (b) what hurdles and successes did they encounter while implementing virtual teaching-learning; and (c) how virtual pedagogies can be improved. Data was collected using purposive sampling via 47 social media groups and pages, using internet survey as an instrument from 141 teachers, teaching kindergarten and elementary students, from different regions (continents) of the world. Findings revealed, six success themes and eight major challenges from the voice of teachers experiencing a rapid and unprepared shift to virtual education. Suggestions for improving digital education revolve around four areas which suggest that pupils from marginal socioeconomic households were significantly disadvantaged during the COVID-driven virtual education scheme. This re-search is not preoccupied with identifying universal outcomes but, instead, is focused on how the real virtual teaching experience can help in informing areas of focus for reimagining the approach to education for an uncertain future.

Anke Grotlüschen et al. (2020), conducted a study on Literacy and numeracy: Global and comparative perspectives. This special issue aims to enrich the global conversation on literacy, numeracy, adult education, and basic education within the framework of the United Nations Sustainable Development Goals (SDGs). It addresses theoretical and empirical dimensions of numeracy and mathematical literacy, adult education, and lifelong learning. Despite the challenges posed by the ongoing COVID-19

pandemic, the imperative to adopt a holistic approach to education, beyond mere skills for employability, is underscored. The issue explores the complexities of measuring functional literacy and numeracy, proposing benchmarks for global reporting aligned with SDG targets. Critiques of existing monitoring and measurement methodologies highlight the need for contextualization and critical perspectives. Methodological advancements are discussed, alongside findings from qualitative and quantitative research on literacy and numeracy. Insights reveal the nuanced interplay between practices, competences, and societal contexts, emphasizing the importance of inclusive education policies and research agendas. While acknowledging gaps, especially in the context of the pandemic's impact on adult learning, the issue underscores the urgency of advancing SDG target 4.6 towards inclusive and equitable education opportunities for all.

Yoshinori Shimizu and Renuka Vithal (2022) explore the evolution and interpretations of numeracy and mathematical literacy as drivers for curriculum reform across four countries: Australia, Ireland, South Africa, and Japan. It examines how these concepts are represented in curriculum documents and their implications for teacher education. Numeracy and mathematical literacy have emerged as crucial competencies, influenced by international assessments and national policies. While Australia and Ireland integrate numeracy across subjects, South Africa offers Mathematical Literacy as a standalone subject. In Japan, aspects of mathematical literacy are infused into the regular mathematics curriculum. The chapter underscores the need for conceptual clarity and practical guidance for teachers to effectively develop students' numeracy and mathematical literacy skills.

Mukesh Kumar and Biswajit Behera (2022) conducted a study on Influence of home environment on children's foundational literacy and numeracy skills: A systematic synthesis with India in focus. They stated, India has the mission to ensure that every child attains foundational literacy and numeracy (FLN) skills by the end of grade three. The National Initiatives for Proficiency in Reading with Understanding and Numeracy (NIPUN Bharat) is entrusted to monitor this target. However, the specific factors of the home environment, which vary among Indian children, can explain the low performance in literacy and numeracy. Therefore, this systematic review aimed to comprehensively identify the home environment factors that affect literacy and numeracy learning. Studies published between 2013 and 2022 were searched in the ERIC database. From 383 potentially relevant articles, the researchers included 38 primary studies. Systematic reviews and meta-analytic studies were excluded. The results showed that home learning environment factors do affect numeracy and literacy learning. Prominent factors were family learning background, reading and numerical activities and home resources. Other factors, such as the reading and numeracy interests of children and the parent-child relationship, also play an important role in the acquisition of foundational numeracy and literacy skills.

David J. Purpura and Amy R. Napoli (2015) conducted a study on Early Numeracy and Literacy: Untangling the Relation Between Specific Components. Although it is evident that advanced aspects of numeracy are dependent on the successful acquisition of early skills, this developmental process does not occur in isolation from other academic factors. Early literacy skills are intertwined with the acquisition of early numeracy skills, particularly at the informal numeracy and numeral knowledge phases. However, the localization of these domains 'impact in early numeracy development is

unclear. To address this issue, 180 preschool children 3.13 to 5.88 years (51.1% female, 66.7% Caucasian, 14.4% African-American, 4.4% Hispanic, 14.4% other race/ethnicity) were assessed on measures of print knowledge, vocabulary, informal numeracy, and numeral knowledge. Results indicated that the relation between language and numeral knowledge is fully mediated by informal numeracy skills and the relation between informal numeracy skills and numeral knowledge skills is partially mediated by print knowledge. Explanations of the findings, implications for mathematics education, and future directions are discussed.

Rukhsana Bashir and Tasleema Jan (2023) conducted a study on Foundational Literacy and Numeracy (NEP, 2020) -Urgency, Essential Skills, Challenges and The Integration of Key Areas. The most critical period for growth and development is the initial eight years of a child's life (ages 0 to 8), as this is when the foundation for comprehensive growth and learning is laid. Children who attend a high-quality preschool curriculum reach major social, educational, and intellectual milestones that set them apart from those who do not. Early childhood development is critical for children's long-term development and can significantly impact their school enrolment and involvement. According to research, high-quality early childhood education programs lower the likelihood of dropping out and repeating school and increase educational performance at all levels. With education systems worldwide faltering in various ways, which skills—and at what stage in a student's life-make the most significant difference in their long - term outcomes need emphasis. Foundational literacy and numeracy (FLN) skills are one set of skills that international organizations place a high focus on. It is against this backdrop that the 2020 Policy on Education (NEP, 2020) strongly advocated that Foundational Literacy and Numeracy be strengthened in a mission mode and launched NIPUN- Bharat

with a vision to ensure universal literacy and numeracy for Class 3 children by 2026-27 through coupling together of some critical areas.

Nimish Vasoya **and** ***Rajesh Vansdadiya (2023)*** *conducted study on* **Effective Strategies for Promoting Foundational Literacy and Numeracy in Early Childhood Education.** This research article explores effective strategies for promoting foundational literacy and numeracy in early childhood education. Many children encounter challenges with foundational literacy and numeracy skills during their initial years of schooling, impacting their overall academic success. Through an extensive review of existing literature, this study identifies evidence-based strategies for fostering these essential skills. The research undertook a comprehensive literature review, detailing the search strategy, databases used, and inclusion/exclusion criteria for transparency. The study underscores the significance of various evidence-based strategies, including play-based learning, teacher training and support, family and community involvement, and the integration of technology. Moreover, it emphasizes the importance of cultural relevance and diversity in promoting foundational literacy and numeracy.

Potyrala and Tomczyk (2021) wrote a paper on a study conducted by the Ministry of National Education in Poland. It was conducted among 484 lower secondary school teachers. The digital literacy among these teachers was measured on the basis of acknowledge and competence test. The areas for measurement and assessment included their understanding of judging the sources of information, ethics, privacy among other things. The result shows that the teachers had good understanding of information regarding sexting and privacy but had very little understanding when it came to copyright issues and judging where the information came from. Moreover, the study also

found when it comes to the technical aspects of maintaining privacy, the male instructors were much ahead in knowledge than the female instructors.

Subhanil Banerjee et al. (2023) conducted a study on The Impact of Literacy on COVID-19 Pandemic: An Empirical Analysis on India. The study examines how literacy affects COVID-19. It considered state-level recovery to the total tested ratio and fully vaccinated-to-population ratio as two dependent variables; on the other hand, the state-wise literacy ratio and population density have been considered as independent variables. The success against COVID-19 in India has been achieved through digital retaliation along with the spread of information regarding social distancing, vaccinations, curfews, and lockdowns. The results reveal that the literacy rate impacts both the dependency ratios in a statistically significant and positive way. Quantification of the impact of literacy on COVID-19 is the most novel and unique.

The study by **Chamberlain et al. (2020)** investigates literacy practices during the COVID-19 lockdown, emphasizing the limitations of traditional assessment methods in capturing students' full literacy experiences. Drawing on diverse educational settings, the research explores hybrid literacy practices emerging from home-based and virtual learning environments. It advocates for a broader conceptualization of literacy, highlighting the purposeful role of writing in students' lives. Efforts to sustain community and social engagement in virtual settings are also emphasized, underscoring their importance in supporting students' holistic development amidst crisis.

The study by Lau et al. (2022) delves into the interplay between numeracy and COVID-19, examining how individuals' understanding of numerical data impacts their health-related attitudes and behaviors during the pandemic. Existing literature underscores the challenges individuals face in processing numerical information,

particularly in the context of exponential growth and risk assessment. Basic numeracy skills and COVID-19 health numeracy play pivotal roles in shaping individuals' perceptions and adherence to public health guidelines. By exploring these relationships across different countries, the research aims to provide valuable insights into the influence of numeracy on pandemic responses.

Relyea et al. (2022) study delves into the impact of the COVID-19 pandemic on the reading achievement growth of Grade 3–5 students within a U.S. urban school district, with focus on variations across student demographics and instructional modalities. By analyzing the available data, the study reveals significant learning setbacks during the pandemic, particularly among younger students and those from disadvantaged backgrounds. Moreover, it highlights the differential effects of in-person and remote instruction on reading growth, suggesting that in-person schooling may serve as a potential equalizer for lower-achieving students, offsetting disparities exacerbated by remote learning environments. These findings underscore the importance of targeted interventions to address pandemic-related learning losses and mitigate educational inequalities among diverse student populations.

The study conducted by Coskun and Kara (2022) underscores the far-reaching consequences of the COVID-19 pandemic on primary education, particularly in the realm of mathematical reasoning skills. By employing mediation analysis, the research reveals a stark decline in students' abilities, irrespective of socio-economic status, highlighting the universal impact of school closures. This emphasizes the urgent need for tailored interventions to mitigate learning losses and address disparities exacerbated by the pandemic. Moreover, the study's emphasis on the role of social interaction and cultural learning environments in cognitive development underscores the importance of holistic

approaches to education, even amidst remote learning modalities. These findings not only offer crucial insights into the pandemic's educational ramifications but also underscore the imperative for inclusive and equitable educational practices in the post-pandemic landscape.

Ulrich Ludewig et al. (2022) conducted a study on COVID-19 Pandemic and Student Reading Achievement: Findings from a School Panel Study. Since 2020, the COVID-19 pandemic had an impact on education worldwide. There is increased discussion of possible negative effects on students' learning outcomes and the need for targeted support. We examined fourth graders' reading achievement based on a school panel study, representative on the student level, with $N = 111$ elementary schools in Germany (total: $N = 4{,}290$ students, age: 9–10 years). The students were tested with the *Progress in International Reading Literacy Study* instruments in 2016 and 2021. The analysis focused on (1) total average differences in reading achievement between 2016 and 2021, (2) average differences controlling for student composition, and (3) changes in achievement gaps between student subgroups (i.e., immigration background, socio-cultural capital, and gender). The methodological approach met international standards for the analysis of large-scale assessments (i.e., multiple multi-level imputation, plausible values, and clustered mixed-effect regression). The results showed a substantial decline in mean reading achievement. The decline corresponds to one-third of a year of learning, even after controlling for changes in student composition. We found no statistically significant changes of achievement gaps between student subgroups, despite numerical tendencies toward a widening of achievement gaps between students with and without immigration background. It is likely that this sharp achievement decline was related to the COVID-19 pandemic.

Aramburu (1990) in his speech in the Forty Second session of the international conference on Education at Geneva, pointed out that the best way of avoiding relapse into illiteracy is by strengthening and extending basic education and training. Each person should have the possibility of improving his education in relation to his ability, ambitions and his need for vocational and social retaining.

Bazilashe (1992) in his article on "Literacy: at What Price? - Literacy must Respond" refers to a need arising within the illiterates themselves who's new awareness leads them to want to make themselves literate for a variety of reasons, a fascination with the mystery of books, a desire for the social prestige equivalent to that conferred by school attendance, the desire to grasp new knowledge as a source of power and the desire to direct economic potential achievement without school attendance.12

Delors (1994) in his introductory speech on Education for the Twenty-First Century, during the 44th Session of the International Conference on Education stated that education is confronted with a multitude of demands to be satisfied: (a) those of economic and social development, (b) those of active international Solidarity and also (c) those of an ethical nature.

Patel (1996) conducted a study on "Study habit of pupils and its impact upon their academic achievement". The population comprised of 578 pupils of Class VIII of eight schools each of urban and rural settings of Kheda District of Gujarat. 72 pupils were finally selected through random selection method. The findings of the study were that(i) the achievement scores of the pupils having high and low G.A. were significantly different, (ii) those pupils who had good study habits did get significantly more achievement scores than those who had poor study habits, (iii) it was found that sex and study habits influenced significantly in explaining achievement scores.

Anameze (2002) noted that since education is regarded as an agent of national development, factors that promote academic performance such as effective study habits should be encouraged among students. According to him, the promotion of effective study habits among students should be profound interest to all stakeholders in the field of education.

Medahunsi (2002) noted that good reading skills enable students to make rapid progress and learn as much as they possibly can in all subjects. According to him, good reading skills make students' days in school rich, productive and enjoyable.

Sirohi (2004) conducted a study on under-achievement in relation to study habits and attitudes. A sample of 1000 elementary grade students were taken from X composite schools of South District, Delhi. The study revealed that guidance programme shall lead to better results, improving the achievement of the students and thus their potentialities be maximally utilized. Chacko and Vidhukumar (2020) found the prevalence of specific learning disabilities and its determinants among the school going children in Ernakulam district, Kerala. Children from Grade 4 to Grade 7 were participated in the study and sample was selected through multistage stratified cluster sampling. For screening and confirmation of the diagnosis of specific learning disabilities, NIMHANS index for Specific Learning Disabilities and Malin's Intelligence Scale for Indian Children (MISIC) were used by the researcher. The results revealed that prevalence of Specific Learning Disabilities was 16.49%, out of which prevalence of learning disabilities in mathematics was 9.93%.

Jovanovic et al. (2013) studied the 1424 grade III students (aged 9-10) of primary schools of Serbia. In order to determine their mathematical achievement, tests in mathematics was given to the students. 1078 students including 538 boys and 540

girls completed all five tests. The results revealed that 9.9% of the students were having dyscalculia. This was quite higher than in the other similar studies.

Arun et al. (2013) conducted a cross sectional study on school students of Chandigarh in two phases. 10 schools were randomly selected for the study, five government schools (N=1301, 54.2%) and five private schools (N=1101, 45.8%) The study was conducted in two phases. Socio-demographic proforma, Screening proforma, Malin's Intelligence Scale for Indian Children (MISIC), Standard Progressive Matrices (SPM) and NIMHANS Index for specific learning disabilities tools were used for the study. In phase I, out of the 2402 students, 159 students scored 2 or more on teacher screening proforma and were given tests for intelligence; 148 students had IQ above 80. Thus, 124 students out of 148 students were administered NIMHANS Index for specific learning disability in phase I. 38 students were found to be having specific developmental disorder that gave a prevalence of 1.58 % in phase I. In phase II, 108 students were selected randomly for evaluation for assessing sensitivity of screening proforma for teachers to screen out academic difficulties in students. The class teachers were asked to screen them according to screening proforma used in phase I. Out of the 108 students, 28 students were found to be positive on teacher's screen having IQ more than 80 on intelligence test by Malin's Intelligence Scale for Indian Children (MISIC), and Standard Progressive Matrices.

Filippo and Zoccolotti (2018) examined 325 fifth grade children. Out of which 77 children with learning disabilities were selected for study. The sample consisted of 5 children with dyslexia, 16 with dyscalculia, 7 with a mixed pattern and 49 children in control group. Children were asked to read aloud words presented individually that varied for frequency and length and to respond to a series of simple number tasks i.e.

addition, subtraction, number reading, and number comparisons. Reaction times were measured. Results revealed that the deficit of children with dyscalculia and children with a mixed pattern on numerical tasks could be explained by developmental deficits in reading and numerical skills.

Karabulut and Ozmen (2018) studied the effects of "Understand and Solve" strategy on problems including change of a one-step addition and subtraction of children with mild intellectual disabilities. The researchers also investigated the effects of the "Understand and solve" strategy on the perception, attitudes, knowledge, use, and control of problem solving strategy. 3 students with intellectual disabilities who were 11 to 12 years old participated in the study. A multiple probe design across subjects was used in the study.The findings of this research showed that "Understand and Solve" strategy was effective in teaching students with mild intellectual disabilities and there is a positive effect of the strategy on the students‟ perception and attitudes towards mathematics as well as knowledge, use and control of strategies to solve mathematical problems.

Thuy (2017) constructed a theoretical model of metacognition in Mathematics within the context of problem-solving abilities among the mathematics major students. The study was descriptive survey in nature. The multi stage sampling technique was used to select the samples for the study. A structured questionnaire was used. 18 students of 12th Grade were taken as sample of the study. The class was composed of 4 males and 14 females divided into ability grouping namely group 12A deemed as the higher ability group and group 12B deemed as the lower ability group based on teachers remarks for students.Research findings showed that metacognitive skills can be taught to students to improve their learning.

Megan Kuhfeld et al. (2022) conducted a study on the pandemic has had devastating impacts on learning. What will it take to help students catch up? They explore the profound disruptions to academic achievement wrought by the COVID-19 pandemic, particularly evident in math and reading test scores among 5.4 million U.S. students in grades 3-8. Findings reveal significant declines, with pronounced test-score gaps between students in low-poverty and high-poverty schools. The study underscores the urgency of targeted interventions, leveraging resources like Elementary and Secondary School Emergency Relief (ESSER) funds to address learning losses, especially among underrepresented student subgroups. Comparisons to the effectiveness of common interventions, such as high-dosage tutoring and summer learning programs, provide valuable insights for guiding educational recovery efforts at district and state levels.

Esteban M. Aucejo et al., (2020) conducted a study on the impact of covid-19 on student experiences and expectations: evidence from a survey. In order to understand the impact of the COVID-19 pandemic on higher education, investigators surveyed approximately 1,500 students at one of the largest public institutions in the United States using an instrument designed to recover the causal impact of the pandemic on students' current and expected outcomes. Results show large negative effects across many dimensions. Due to COVID-19: 13% of students have delayed graduation, 40% lost a job, internship, or a job offer, and 29% expect to earn less at age 35. Moreover, these effects have been highly heterogeneous. One quarter of students increased their study time by more than 4 hours per week due to COVID-19, while another quarter decreased their study time by more than 5 hours per week. This heterogeneity often followed existing socioeconomic divides; lower-income students are 55% more likely to have delayed graduation due to COVID-19 than their higher-income peers. Finally, researchers show

that the economic and health related shocks induced by COVID-19 vary systematically by socioeconomic factors and constitute key mediators in explaining the large (and heterogeneous) effects of the pandemic.

Radhika bhula and John Floretta (2020) addressed to the pressing issue of maintaining quality education accessibility during the COVID-19 pandemic. Highlighting three key insights, including empowering caregivers for at-home learning, implementing low-stakes assessments, and customizing instruction to address learning gaps, the study provides actionable strategies to mitigate the impact of school closures on student learning outcomes. By fostering collaboration among stakeholders and leveraging evidence-based approaches, this research aims to accelerate progress towards achieving universal quality education.

Synthesis of Reviews on Education, Literacy, and Numeracy with a Focus on the COVID-19 Impact

The collection of studies and reviews offers comprehensive insights into the evolving landscape of education, literacy, and numeracy, particularly in the context of the COVID-19 pandemic. Here's a synthesis that encapsulates the key themes, findings, and implications:

COVID-19's Impact on Student Achievement

Several studies focused on the disruption caused by the COVID-19 pandemic on student achievement. The research by Jackie Eunjung Relyea (2022) assessed the impact on reading achievement in a large U.S. urban school district. It found significant learning losses among Grade 3–5 students during the 2020–2021 school year compared to pre-pandemic levels, with lower-achieving students and those from high-poverty backgrounds being particularly affected. This study also highlighted the differential

effects of in-person and remote instruction, indicating that in-person schooling might act as an equalizer for students from marginalized groups.

Similarly, the study by Ulrich Ludewig et al. (2022) examined reading achievement among German fourth graders, confirming a substantial decline in performance, which corresponded to a loss of about one-third of a year's learning. This underscores the significant educational disruptions caused by the pandemic.

Literacy and Numeracy in a Global Context

Anke Grotlüschen et al. (2020) explored literacy and numeracy within the framework of the United Nations Sustainable Development Goals (SDGs), emphasizing the importance of a holistic approach to education. The study delved into global challenges, including measurement complexities, and highlighted the impact of COVID-19 on adult education and lifelong learning.

Mukesh Kumar and Biswajit Behera (2022) addressed the influence of home environments on children's foundational literacy and numeracy skills, with a focus on India. Their findings indicate that factors like family learning background, reading activities, and parent-child relationships play a crucial role in literacy and numeracy learning.

David J. Purpura and Amy R. Napoli (2015) explored the relationship between early literacy and numeracy skills in preschool children, indicating that these domains are interconnected, particularly during the early developmental stages.

Numeracy and COVID-19 Health Literacy

Yoshinori Shimizu & Renuka Vithal (2022) analyzed the evolution of numeracy and mathematical literacy across four countries, emphasizing the role of curriculum reform in promoting these skills. They found that numeracy plays a critical role in

shaping individuals' health-related attitudes and behaviors during the COVID-19 pandemic, indicating that these skills are essential for understanding risk assessment and public health guidelines.

Education Policy and Strategies for Learning Recovery

Megan Kuhfeld et al. (2022) investigated the educational impacts of the COVID-19 pandemic on U.S. students in grades 3-8, revealing significant declines in math and reading test scores, with pronounced disparities based on socio-economic status. The study underscores the importance of targeted interventions to address learning losses.

Radhika Bhula and John Floretta (2020) offered practical strategies to maintain quality education during the pandemic, emphasizing the need for flexible instruction, low-stakes assessments, and caregiver empowerment for at-home learning.

Overall, these studies and reviews collectively underscore the far-reaching impact of the COVID-19 pandemic on education, literacy, and numeracy. They point to significant declines in student achievement, particularly among marginalized groups, and call for tailored interventions to address learning losses. The importance of holistic approaches to education, coupled with targeted support and inclusive policies, is highlighted as a key component of the recovery process in a post-pandemic world.

COVID-19's Impact on Student Well-Being and Academic Performance

Martha Jane Meredith (2022) investigates the academic, social, and emotional impacts of the pandemic on high school juniors and seniors, emphasizing the holistic development of students. Significant concerns were noted regarding students' attendance, graduation credits, and the shift to online learning. Teachers reported challenges in classroom management, relationship building, and communication, underscoring the need for

social-emotional learning and trauma-informed practices. This study highlights the necessity of a supportive learning environment that addresses both academic and emotional needs.

Nagapati Prabhakar Bhat et al. (2021) assess the perceptions and challenges faced by teachers in adopting online teaching methods during the pandemic. Despite having prior experience with online teaching, teachers encountered significant obstacles such as difficulty in teaching and assessing students, time management issues, and maintaining student engagement and motivation. While a majority supported continuing online classes, they still preferred conventional offline lectures. This study underscores the need to address these challenges to ensure the effectiveness of e-learning as a viable educational alternative.

Teacher Perceptions and Challenges in Online Teaching

Tuba Kamal and Asheref Illiyan (2021) examine teachers' perceptions of online teaching and the obstacles they face during the pandemic. The study finds that while teachers generally view virtual teaching positively for reducing the learning gap and shaping pupils' futures, they encounter technical issues and difficulties in online exams and assessments. This highlights the need for educational institutions and policymakers to enhance the quality of online teaching through the adoption of the latest instructional strategies and continuous teacher training.

Arnab Kundu and Tripti Bej (2021) explore teachers' perceptions of the successes and challenges in digital teaching during the pandemic. Their findings reveal six success

themes and eight major challenges, with significant disadvantages for students from marginal socioeconomic households. The study suggests areas for improving digital education, emphasizing the need to reimagine educational approaches for an uncertain future.

Key Implications and Future Directions

These studies collectively underscore the far-reaching impact of the COVID-19 pandemic on education, highlighting significant concerns regarding student achievement and well-being, particularly among marginalized groups. They emphasize the importance of addressing both academic and emotional needs through comprehensive support systems, effective online teaching strategies, and continuous teacher training.

The necessity of adopting holistic approaches to education, coupled with targeted interventions and inclusive policies, is highlighted as a crucial component of the recovery process in a post-pandemic world. Ensuring that teachers are well-equipped and supported to deliver effective online education is essential for mitigating the pandemic's impact on education and fostering a resilient and equitable learning environment for all students.

2.4. Conclusion

The survey of related literature has helped the investigator to have clear perspective of the problem chosen for the present investigation. The review related literature has enabled the investigator to formulate the relevant hypotheses, research questions, variables, research design, experimentation, construction and validation of the tools for the present study based on this review, a suitable methodology and well-planned procedure for present investigator is adopted and it is explained in further chapters.

3. Methodology

3.1. Introduction

"All the progress is born of enquiry. Doubt is often better than over confidence, for it leads to investigation "is a famous Hudson maxim in the context of which the significance of research can be understood. Research includes scientific and inductive thinking and it promotes the development of logical habits of thinking and organization.

The success of any research depends upon suitable methodology with specific operational steps and well-constructed tools (Suchitha, 2010).

3.2. Research Design

The research design adopted for this study is the survey method, incorporating a quantitative approach to explore the impact of Ennum Ezhuthum on student learning outcomes in Pudukkottai district. This design is chosen for its effectiveness in systematically collecting and analyzing data from a large population, which is essential for understanding the comprehensive effects of the educational intervention.

The study employs two primary tools to gather data:

1. **Student Achievement Assessment Tool**: This tool is designed to evaluate the achievement levels of 3rd and 5th standard students following the implementation of Ennum Ezhuthum. It includes standardized tests and assessments that measure students' proficiency in key subject areas. The data collected from this tool will provide quantitative evidence on the academic progress and learning outcomes of the students, offering insights into how the program has influenced their educational attainment.
2. **Teacher Perception and Student Behavior Survey**: This tool aims to capture the perceptions of teachers regarding the Ennum Ezhuthum program and its impact on student behavior. It includes a series of structured questionnaires that seek teachers' opinions on the effectiveness of the program, any observed changes in student engagement, and behavioral shifts since the program's implementation. The responses will provide a qualitative dimension to the study, offering a contextual understanding of the program's impact from the educators' perspective.

By combining data from these two tools, the study aims to provide a holistic understanding of the program's effectiveness. The quantitative data will be analyzed using statistical methods to identify trends, correlations, and significant differences in student achievement before and after the program's implementation. Additionally, the qualitative data from teachers' surveys will be

analyzed to identify common themes and insights that complement the quantitative findings.

This mixed-methods approach enhances the validity and reliability of the results by triangulating findings from different sources. It allows the researchers to cross-verify data, ensuring a robust and comprehensive analysis of the Ennum Ezhuthum program's impact. The combination of quantitative trends and qualitative nuances offers a more nuanced examination of the research questions, providing a detailed and multi-faceted view of the educational intervention's outcomes.

In summary, the survey method employed in this study is instrumental in capturing a broad spectrum of data related to student achievement and teacher perceptions. It enables a thorough exploration of the Ennum Ezhuthum program's impact, contributing valuable insights that can inform future educational practices and policies in the Pudukkottai district.

3.3. Selection of Sample

1. **Stratified Random Sampling Technique**: This method involves dividing the population into subgroups or strata based on specific characteristics such as school type, geographical location, and student demographics. In the case of this study, the population consists of primary school teachers in Pudukkottai district. Stratification allows researchers to ensure that each subgroup within the population is adequately represented in the sample, thus enabling more accurate generalizations about the entire population.

2. **Purpose of Stratification**: Stratification serves several purposes in the sampling process. Firstly, it helps in reducing sampling bias by ensuring that each subgroup has a proportional representation in the sample. Secondly, it allows researchers to compare and analyze data within each stratum, providing insights into how different factors may influence the study outcomes. Lastly, it enhances the precision of estimates by accounting for variations within the population.
3. **Purposive Sampling for Diversity**: In addition to stratified random sampling, purposive sampling is also employed to select both students and teachers. Purposive sampling involves deliberately selecting participants based on specific criteria, such as diversity in backgrounds and experiences. This ensures that the sample includes a wide range of perspectives, thereby enhancing the richness and depth of the data collected.
4. **Enhancing Robustness and Validity**: By combining stratified random sampling with purposive sampling, the study's sampling strategy aims to enhance the robustness and validity of the findings. The comprehensive approach ensures that the sample is representative of the population and captures a broad spectrum of perspectives. This, in turn, increases the reliability and credibility of the study's conclusions.
5. **Data Collection Process**: The researcher gathered data from 2399 3rd and 5th standard students, and 281 teachers from 113 schools across all 13 Blocks of Pudukkottai District.
6. **Significance of Sampling Strategy**: The sampling strategy is critical in ensuring that the research findings accurately reflect the characteristics and experiences of

primary school teachers in Pudukkottai District. It provides a structured approach to data collection, minimizes sampling bias, and enhances the credibility of the study's results. Additionally, the comprehensive sampling strategy allows for a nuanced analysis of the research questions and provides valuable insights for informing educational policies and practices.

7. **Purposeful Sampling**: Purposeful sampling is employed alongside stratified random sampling to select both students and teachers based on specific criteria, such as diversity in backgrounds and experiences. This ensures that the sample includes a wide range of perspectives, enriching the depth and breadth of the data collected. Purposeful sampling is particularly useful for capturing unique or underrepresented viewpoints that may not be adequately represented through random sampling alone.

Overall, the combination of these sampling techniques allows researchers to address various aspects of the research objectives, minimize biases, enhance the representativeness of the sample, and maximize the richness of the data collected. By employing multiple sampling methods, the study aims to increase the robustness, validity, and credibility of its findings, ultimately providing valuable insights for informing educational policies and practices.

The map showing 13 blocks of Pudukkottai District.

3.4. Construction of Research Tool

The construction of the research tools was a critical phase of the study, aimed at ensuring the validity and reliability of the instruments used to collect data. The investigator employed two distinct tools: one focused on assessing the academic performance of 3rd and 5th-standard students, referred to as the "Assessment Tool for 3rd and 5th," and another designed to gauge student behavior and teacher perception, known as the "Student Behavior and Teacher Perception Tool." This process involved

several key steps, each meticulously planned and executed to align with the objectives of the Ennum Ezhuthum initiative.

1. Literature Review

To develop these tools, the investigator first conducted an extensive literature review. This review encompassed research studies, reports, and best practices at state, national, and international levels. The goal was to gather insights and frameworks that would inform the design of effective and relevant assessment tools. The literature review provided a solid theoretical foundation, ensuring that the tools would be grounded in proven educational research and methodologies.

2. Tool Preparation Workshop

Based on the insights gained from the literature review, a Tool Preparation Workshop was organized on January 10 and 11, 2024, at DIET, Pudukkottai. This workshop marked a significant milestone in the project. It brought together ten proficient teachers with expertise in primary education and assessment design. The collaborative environment of the workshop facilitated the development of high-quality questions and evaluation criteria.

During the workshop, participants focused on creating 50 questions for both 3rd and 5th graders across three core subjects: Tamil, English, and Mathematics. The questions were carefully designed to cover various cognitive levels, ensuring a balanced assessment of students' abilities:

- **Lower Order Thinking (40%)**: Questions aimed at assessing basic knowledge and comprehension skills.

- **Middle Order Thinking (40%)**: Questions designed to evaluate application and analysis capabilities.
- **Higher Order Thinking (20%)**: Questions that challenged students to demonstrate synthesis and evaluation skills.

3. Development of the Student Behavior and Teacher Perception Tool

In parallel, the project engaged primary school teachers to contribute to the development of a tool that evaluate student behavior and teacher perceptions. This tool aimed to capture qualitative data on how teachers perceived the impact of the Ennum Ezhuthum initiative on student behavior and overall classroom dynamics.

3.5. Validation and Pilot Testing

Before validation, the student assessment scale for 3rd and 5th standard consisted of 30 multiple-choice questions with a single best response (each question had 1 score) for present research concepts. The Student Behavior and Teacher Perception questionnaire consisted of 32 five-point scale questions, each question carrying 1 score and categorized into five dimensions: Teacher Reflection (8 statements), Student Behavior (8 statements), Level-Based Assessments (5 statements), Learning Corners (6 statements), and Classroom Climate (5 statements).

Teachers were allotted 1 hour to complete and submit the questionnaire. Answering all questions was mandatory, and any unanswered questions were given a score of zero with no negative marking.

Item validity was established through item analysis. To establish content validity, both tools were administered to primary teachers and students in Pudukkottai district. Their feedback led to modifications in the wording of some questions, thereby establishing content validity.

Once the tools were formulated, they underwent a rigorous face validity assessment by a panel of experts in educational research and assessment. This step ensured that the tools accurately measured what they were intended to and were free from bias.The tools were then piloted in 10 schools within the district. The pilot testing phase involved administering the tools to a sample of students and teachers, followed by a thorough analysis of the responses. This phase was crucial for identifying any potential issues with the tools and making necessary adjustments.

3.6. Reliability

In the present study, the investigator used the test-retest method and Cronbach's alpha to establish the reliability of both tools. After an interval, the same test was administered to the same set of teachers. The correlation coefficient was found to be 0.79 for the Student Behavior and Teacher Perception Tool and 0.8963 for the Student Assessment Tool, indicating high reliability.

3.7. Pilot Study

A pilot study, or feasibility study, is a small-scale experiment designed to test logistics and gather information before a larger study to improve its quality and

efficiency. A pilot study can reveal deficiencies in the design of a proposed experiment or procedure, which can then be addressed before time and resources are expended on large-scale studies (Doug Altman et al., 2006). A well-conducted pilot study, with a clear list of aims and objectives within a formal framework, encourages methodological rigor, ensures scientific validity and publish ability, and leads to higher quality research (Lancaster et al., 2004).

The investigator conducted a pilot study to select and modify the tool. The tool was administered in 10 schools in Pudukkottai district. Based on this pilot study, the entire research work was designed and channelized by the investigator.

Refinement of Tools

Based on the feedback and data collected during the pilot phase, the Assessment Tool for 3rd and 5th was refined. The original 50 questions were reduced to 30, focusing on eliminating questions that were either unrelated, too difficult, or too easy. This refinement process ensured that the remaining questions were well-balanced and effective in assessing the students' academic performance accurately.

Similarly, the "Student Behavior and Teacher Perception Tool" was reviewed and adjusted based on the pilot results, ensuring that it effectively captured the necessary qualitative data.

Finalization and Implementation

The final versions of both tools were prepared and printed for use in the main study. The comprehensive development process, involving expert validation, pilot

testing, and rigorous refinement, ensured that the tools were robust, reliable, and aligned with the study's objectives.

This meticulous approach to constructing the research tools provided a strong foundation for collecting high-quality data, ultimately contributing to the credibility and validity of the study's findings. The refined tools enabled the investigator to gather meaningful insights into the academic performance of students and the perceptions of teachers, providing valuable data to inform educational policies and practices in the Pudukkottai district.

3.8. Data Collection Methods

Surveys

Structured surveys were administered to both students and teachers to gather quantitative data on their perceptions, experiences, and learning outcomes related to Ennum Ezuthum. The survey instruments were designed based on the research objectives and will include Likert scale questions, multiple-choice questions, and open-ended prompts. Surveys were distributed electronically or in paper format, depending on the accessibility of technology in the target schools.

Tool Administration

The researcher extensively reviewed literature related to Ennum Ezhuthum, including studies at the state, national, and international levels. Following thorough exploration, the researcher opted to organize a workshop for tool preparation. The Tool Preparation Workshop took place on January 10 and 11, 2024, at DIET, Pudukkottai, involving the selection of 10 proficient teachers. These teachers were tasked with formulating a set of 50 questions for 5th and 3rd graders subjects. The questions were to adhere to specific conditions, with 40% focusing on Lower Order Thinking, 40% on

Middle Order Thinking, and 20% on Higher Order Thinking. Once the tool was constructed, it underwent face validity assessment by experts. The next step in the research involved conducting a pilot study for reliability. Concurrently, collaboration with primary teachers extended the project to include the development of a tool assessing student behavior and teacher perception. Once constructed, the tool underwent a face validity assessment by experts.

Subsequently, the tool was distributed to 10 schools for pilot study. Following this, a reliability test using the Cronbach alpha method was conducted by the investigator. Two finalized tools emerged from this process.

A workshop "Tool Pruning Workshop" was conducted at DIET with the aim of refining and optimizing the tools for effective implementation.

After finalizing the tools, the investigator proceeded to administer them, selecting 10% of schools from each of the 13 blocks in Pudukkottai district. The data collection was carried out by DIET faculty and BRTEs, who executed the process by gathering information from the selected schools.

The following DIET faculties and BRTEs were involved in the data collection process:

Name of the Faculty	Name of the Block	Name of the schools
Dr.G.Anandaraju Senior Lecturer No. of Schools: 7	Gantharvakottai	PUPS, Kalluppatti
		PUPS, Kumaran Colony
		PUMS, Kantharvakottai
		PUPS, Thachankurichi
		PUPS, Komapuram
		PUPS, Annanagar
		PUPS, Kaadavarayanpatti
Mr.M. Mariyappan Senior Lecturer No. of Schools: 9	Ponnamaravathi	PUPS, Konnaiyur
		PUPS, Mulangudi
		PUPS, Konnaipatti
		PUPS, Sundaram
		PUPS, Pagavanpatti

		PUPS, Pillaiyarpatti
		PUPS, Anjupulipatti
		PUMS, Mailapur
		PUPS, Thenur
Dr.G.Thirumurugan Senior Lecturer No. of Schools: 8	Thirumayam	PUMS, Pilakkudipatti
		PUPS, Arasanthampatti
		PUPS, Kottur
		PUPS, Manavalankarai
		PUPS, Nagarathupatti
		PUPS, Thalampatti (south)
		PUPS, Thulayanoor
		PUPS, Yenappatti
Mr. S.Gunaseelan, BRTE, No. of Schools: 4	Auvudaiyarkovil	PUPS, Kothaimangalam
		.PUMS, Kalabam
		PUPS, Vilaankattur
		PUPS, Chinnapattamangalam
Mr.Selvaraj, Supervisor (I/C) No. of Schools: 5	Auvudaiyarkovil	PUPS, Idayankollai
		PUPS, Thunjanur
		PUPS, Kundagavayal
		PUPS, Kodugavayal
		PUPS, Koodaloor
Dr.A.C.Palanisamy Senior Lecturer No. of Schools: 5	Kundrandarkovil	PUPS, Keeranoor
		PUMS, Pallathuppatti
		PUPS, Keelananchur
		PUPS, Maruthur
		PUPS, K.Parapatti
Dr.S. Thangarasu Lecturer No. of Schools: 11	Thiruvarankulam	PUPS, Vanniyanviduthi
		PUPS, Araiyappatti
		PUPS, Kovilpatti
		PUPS, Samathuvapuram
		PUPS, Karuvankudiyiruppu
		PUPS, Araiyappatti (South)
		.PUPS, T. Periyanayagipuram
		PUPS, Vamban
		.PUPS, Thoppukkollai
		PUPS, Kovilur
		PUMS, Alangudi
Dr.M. Dhanasekaran Lecturer No. of Schools: 20	Karambakkudi	PUMS.Nampanpatti
		PUPS, Kaathaan viduthi
		PUPS, Maankottai
		PUPS, Therkuppatti(M)

		PUPS, Melappatti(M)
		PUPS, Nariyankollai
		PUPS, Kalabam
		PUPS, Anumaarkovil
		PUPS, Karambakkudi
		PUPS, Keelapatti(M)
	Pudukkottai	PUMS, Bosenagar
		PUMS,Ashok nagar
		Anna Memorial Primary School, Usilankulam
		PUPS,Keelappatti
		PUPS, Sempattividuthi
		PUMS, Melaviduthi
		PUPS, Vadimanaipatti
		PUPS, Sevukampatti
		PUMS, Mookampatti
	Thiruvarankulam	PUMS, Mettuppatti
Dr.M.A. Sankaran Lecturer No. of Schools: 8	Aranthangi	PUPS, Pallathivayal
		PUMS, Aalppiranthan
		PUPS, Vaarappur
		PUMS, Annamalaiyaan kudiyiruppu
		MPS,Aranthangi
		PUMS, Nayakkarpatti
		PUMS, Vigneshwarapuram
		PUPS, Karuvidaicherry
Dr.K.Meenatchi Lecturer No. of Schools: 6	Annavasal	PUPS,ADW, Kurukalaiyapatti
		PUPS, Kallampatti
		PUPS, Kothandaramapuram
		PUPS, Senthamangalam
		PUPS, Vagaipatti
		PUPS, M.Panampatti
Mrs.U.Bhuvaneshwari Lecturer No. of Schools: 8	Arimalam	PUPS, Sivapuram
		PUPS Melathemuthupatti
		PUPS, Neivasalpatti
		PUPS, Vanniyampatti
		PUPS, Mirattunilai
		PUPS, Vadakkupatti

		PUPS, Namanasamuthiram Kudiyiruppu
		PUPS, Therkuponnappatti
Selvi.G.Syamala Lecturer No. of Schools: 6	Annavasal	PUMS, Perunchunai
		PUPS, Sokkanathampatti
		PUPS, Sellukkudi
		PUPS, Perumanaadu
		PUPS, Ayingudi
		PUPS,Maruthanthalai
Dr.R.Gobalakrishnan Lecturer No. of Schools: 6	Manamelkudi	PUPS, Manamelkudi
		PUPS, Melasthanam
		PUMS, PR Pattinam
		PUPS, Vadakkur
		PUMS, KJ Pattinam
		PUPS, Pattankadu
Mrs.Sasikala Lecturer No. of Schools: 10	Viralimalai	PUPS, Viralimalai
		PUPS,Viralur
		PUPS, Vaanathirayanpatti
		PUPS, Koothkkudi
		PUPS, Pallarnatham
		PUPS, Athippallam
		PUPS, Kodaalikkudi
		PUPS, Kulakaranpatti
		PUPS, Rajalipatti
		PUPS, Nampampatti
	Total	**113**

Standardized academic tests were conducted to assess students' proficiency in reading, writing, and mathematics as well as teacher perception on Ennum Ezhuthum. These assessments administered after the implementation of Ennum Ezuthum to measure changes in learning outcomes over time. The tests aligned with the curriculum and learning objectives of the program.

Data Collection Process

The data collection process for this study was meticulously planned and executed to ensure the reliability and validity of the collected data. The process involved multiple stages, including training of data collectors, actual data collection, and monitoring to ensure quality and consistency.

1. **Preparation and Training**: Prior to the commencement of data collection, the investigator organized a comprehensive tool orientation training for the selected data collectors, consisting of DIET (District Institute of Education and Training) educators and BRTEs (Block Resource Teacher Educators). This training was crucial to familiarize the data collectors with the research instruments, including the survey tools and assessment methods. The training sessions covered the following key aspects:
    - **Understanding the Research Objectives**: Ensuring that data collectors comprehended the study's goals and the importance of accurate data collection.
    - **Detailed Tool Orientation**: Providing in-depth explanations and demonstrations on how to administer the assessment tools and surveys for both students and teachers.
    - **Ethical Considerations**: Emphasizing the importance of ethical data collection practices, including obtaining informed consent, ensuring confidentiality, and maintaining impartiality.
2. **Selection of Data Collectors**: The DIET educators and BRTEs were carefully selected based on their experience and familiarity with the primary education

system in Pudukkottai District. Their expertise and local knowledge were instrumental in facilitating smooth data collection.

3. **Pilot Testing**: Before the full-scale data collection, a pilot test was conducted to identify any potential issues with the research instruments or the data collection process. Feedback from the pilot test was used to make necessary adjustments to the tools and procedures.
4. **Data Collection Execution**: Following the training, the data collection phase was initiated. The trained DIET educators and BRTEs were deployed to various schools across all 13 Blocks of Pudukkottai District. The data collection involved:
    - **Student Assessments**: The researchers gathered data from 2399 3rd and 5th standard students. The assessments aimed to evaluate the students' academic performance in key subjects, including Tamil, English, and Mathematics. The tools used were designed to measure the impact of the Ennum Ezhuthum program on student learning outcomes.
    - **Teacher Surveys**: Data was also collected from 281 primary school teachers. The surveys focused on understanding teacher perceptions of the Ennum Ezhuthum program, their experiences with its implementation, and any observed changes in student behavior and learning.
5. **Coordination and Supervision**: Throughout the data collection period, the investigator and a team of supervisors maintained close coordination with the data collectors. Regular check-ins and supervision ensured adherence to the data collection protocols and addressed any issues or challenges faced by the data collectors.
6. **Data Quality Assurance**: To ensure the quality and consistency of the collected data, several measures were implemented:

- **Cross-Verification**: Random checks and cross-verifications were conducted to confirm the accuracy of the data recorded by the collectors.
- **Data Cleaning**: Post-collection, the data underwent a thorough cleaning process to identify and rectify any inconsistencies or errors.

7. **Documentation and Storage**: All collected data was meticulously documented and securely stored to maintain confidentiality and integrity. The data was then prepared for analysis, with appropriate coding and organization to facilitate a comprehensive evaluation of the research questions.
8. **Feedback and Reflection**: After completing the data collection, a debriefing session was held with the data collectors to gather their feedback on the process. This feedback was valuable for reflecting on the strengths and areas for improvement in the data collection strategy.

The systematic and rigorous approach to data collection ensured that the study's findings would be robust, reliable, and reflective of the actual conditions in the primary schools of Pudukkottai District. The collected data provided a solid foundation for analyzing the impact of the Ennum Ezhuthum program and informing future educational policies and practices.

3.9. Data Analysis Techniques

Quantitative data collected through surveys and academic assessments will be analyzed using statistical software such as SPSS or R. Descriptive statistics, such as means, frequencies, and percentages, will be computed to summarize the data. Inferential statistics, including t-tests, ANOVA, employed to identify significant differences and associations between variables.

3.10. Design of the study

<table>
<tr><th>Sl. No</th><th>Type</th><th colspan="4">Source</th></tr>
<tr><td>1</td><td>Nature of Research</td><td colspan="4">Survey method</td></tr>
<tr><td rowspan="2">2</td><td rowspan="2">Variables</td><td>Independent Variable</td><td colspan="3">Dependent variables</td></tr>
<tr><td>Ennum Ezuthum</td><td colspan="3">Learning of Students</td></tr>
<tr><td>3</td><td>Tools used</td><td>Student Achievement tools for 3rd and 5th standards and Student Behavior and Teacher Perception Tool</td><td colspan="3"></td></tr>
<tr><td rowspan="2">4</td><td rowspan="2">Samples selected</td><td>3rd students</td><td>5th Students</td><td>Primary school teachers</td><td>Total</td></tr>
<tr><td>1179</td><td>1220</td><td>281</td><td>2680</td></tr>
<tr><td>5</td><td>Data Analysis</td><td colspan="4">Statistical analysis such as mean score and graphical representation.</td></tr>
</table>

Planning and Implementation

- To Develop the research instrument
- To Conduct a pilot study
- To Validate and ensure the reliability of the instrument
- To Carry out the survey
- To Analyze the data to derive findings

Primary Data Collection

The investigator gathered primary data for the survey, including the number of primary schools in the district and its blocks, as well as the total number of students and teachers.

Survey Execution

A total of 1179 third-grade students were evaluated using the validated tool, while 1220 fifth-grade students took part in the same assessment process. Additionally, 281 primary school teachers from 13 blocks in Pudukkottai District participated in the survey, which was administered to them using the validated tool.

Analysis of data

After collecting data from the respondents, the investigator evaluated and gave proper score to each questionnaire depending upon on the respondent's answers. Finally, those scores were plotted in the master table. The scores were given to each and every statement for used the statistical analysis.

3.11. Statistical technique used

Statistical technique serves the fundamental purpose of descriptive and inferential analysis.

1. Mean

The mean was measured by following formula.

$$\text{Mean} = \sum fx / N$$

Were,

$fx \Rightarrow$ value of the x ^{the} item correctly

$\sum \Rightarrow$ Symbol of the summation

$N \Rightarrow$ Total number of items

2. Standard deviation

$$\sigma = \sqrt{\sum fd^2 / N - [\sum fd/N]^2} \times Ci$$

3. Critical ratio test (t – test)

$$t = M1 \sim M2 / \sqrt{\sigma_1^2 / N1 + \sigma_2^2 / N2}$$

Were,

$M1 \Rightarrow$ Mean of the first group

$M2 \Rightarrow$ Mean of the second group

$\sigma_1 \Rightarrow$ Standard deviation of the first group

$\sigma_2 \Rightarrow$ Standard deviation of the second group

$N1 \Rightarrow$ number of cases in the first group

$N2 \Rightarrow$ number of cases in the second group

ANOVA Test:

ANOVA (Analysis of Variance) is a statistical test used to analyze the differences among group means in a sample. It tests the null hypothesis that the means of several groups are equal. ANOVA works by comparing the variance between group means to the variance within groups. If the variance between groups is significantly larger than the variance within groups, it suggests that there are differences among the group means.

ANOVA is commonly used when there are three or more groups to compare. It helps determine whether there are statistically significant differences between the means of the groups.

There are different types of ANOVA tests depending on the design of the study:

1. One-Way ANOVA: This is used when there is only one independent variable (factor) with three or more levels (groups). It tests whether the means of the groups are significantly different from each other.
2. Two-Way ANOVA: This is used when there are two independent variables (factors) and their interaction, and it examines whether there are significant main effects of each independent variable and whether there is an interaction effect between them.
3. Multi-Way ANOVA: This is an extension of the two-way ANOVA to include more than two independent variables.

   ANOVA provides an F-statistic and a p-value to determine whether the observed differences between group means are statistically significant. If the p-value is less than a predetermined significance level (usually 0.05), the null hypothesis is rejected, indicating that there are significant differences among the group means. If the p-value is greater than the significance level, then there is insufficient evidence to reject the null hypothesis, suggesting that there are no significant differences among the group means.

3.12. Conclusion

In this chapter, the investigator explained the method and procedure followed for the present study under the captions like selection of the tool, sampling technique and collection of data. In the next chapter in detailed statistical analysis and inference drawn are presented.

4. Statistical analysis and Interpretation of data

4.1. Introduction

However valid, reliable and adequate the data may be, they do not serve any useful purpose unless they are carefully processed, systematically sifted, classified and tabulated, scientifically analyzed, interpreted and rationally concluded. Once, the data were collected through valid tools, correct conclusions (Bharathi, 2010).

Interpretation of data is an extremely important and useful branch of science of statistics. Statistical facts by themselves have no utility, but interpretation makes it possible to utilize the collected data in various fields of activity. The usefulness of collected data lies in its proper interpretation. The most essential work in any research problem is the use and application of statistical tools in analyzing and interpreting the research data.

This chapter deals with the statistical analysis of the data, interpretation with relevant tables and diagrams. Thus, interpretation is the careful, logical and critical examination of the result analysis. This is useful in making statements about what the result analysis indicates.

In this chapter, the data presented in the tables are analyzed statistically, with a brief interpretation provided after each one. The data are described using the mean and standard deviation. The chapter outlines a detailed study conducted by the investigator,

focusing on the following key aspects for accurate and scientific interpretation of the data collected:

i. **Data Accuracy** To ensure the accuracy of the data collection, the investigator personally visited the schools and sought the help of the faculty to gather information directly from the respondents. This approach aimed to ensure precise and reliable data, leading to valid conclusions.

ii. **Data Sufficiency** For this study, data was collected from students in the 3rd and 5th standards using validated questionnaires. Additionally, data from primary school teachers was gathered using the "Student Behavior and Teacher Perception" tool. This comprehensive data collection aimed to achieve objectivity and support proper analysis and interpretation. The collected data is deemed sufficient and reliable for the study's objectives.

iii.Classification and Tabulation

This is one of the important steps used by the investigator in data analysis in order to get accurate interpretation. In the present study, the collected data are systematically classified and tabulated.

iv. Applicability of Possible Statistical Treatment

Before analyzing the data, statistical experts were consulted for the Applicability of Possible Statistical Treatment of data. The data are analyzed with the help of Micro Soft Excel software. Hence, relevant statistical techniques are used for analysis and interpretation of data.

4.2. Data Collection and Analysis

A total of 2399 samples were collected from all 13 blocks of Pudukkottai district, including 281 primary teachers, 1220 fifth-grade students, and 1179 third-grade students. Pudukkottai district has two educational districts: Pudukkottai and Aranthangi. Pudukkottai Educational District comprises of seven blocks: Pudukkottai, Gandarvakottai, Thirumayam, Annavasal, Kundandarkovil, Ponnamaravathi, and Viralimalai. Aranthangi Educational District has six blocks: Thiruvarankulam, Karambakudi, Aranthanki, Avodaiyarkovil, Manamelkudi, and Arimalam.

For this research, a random sample consisting of 10% of schools from each of the 13 blocks was selected. Within these selected schools, all the third-standard students, the fifth-standard students, and the primary teachers were used as sample in the study. Among the 1179 third stadard students sampled, there were 562 male students and 617 female students and fifth standard 554 male students and 666 female students. Out of 281 primary teachers, 55 were male, and 226 were female.

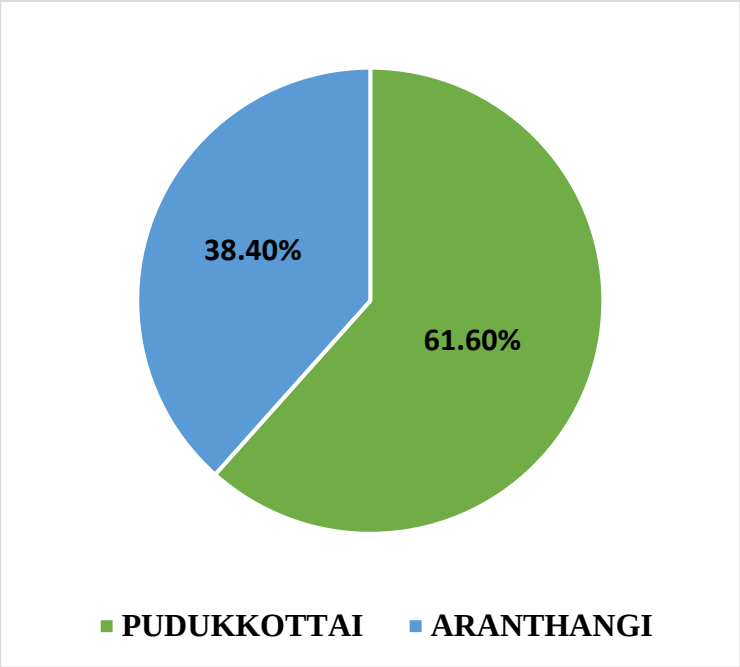
The survey was conducted by the investigator along with DIET faculty and Block Resource Teacher Educators (BRTEs). The data collection instrument for the teachers consisted of a questionnaire with 33 statements rated on a five-point scale. Additionally, for each academic subject—Tamil, English, and Mathematics—30 multiple-choice questions, matching exercises, and fill-in-the-blank questions were used, with one point assigned to each question. These questions were designed to assess concepts related to the research study.

4.3. Data Analysis

After collection of data investigator corrected the student response and teacher response. From the response the investigator analyzed the data and formed the findings. The tool named student behavior and teacher perception were analyzed the data and detail below,

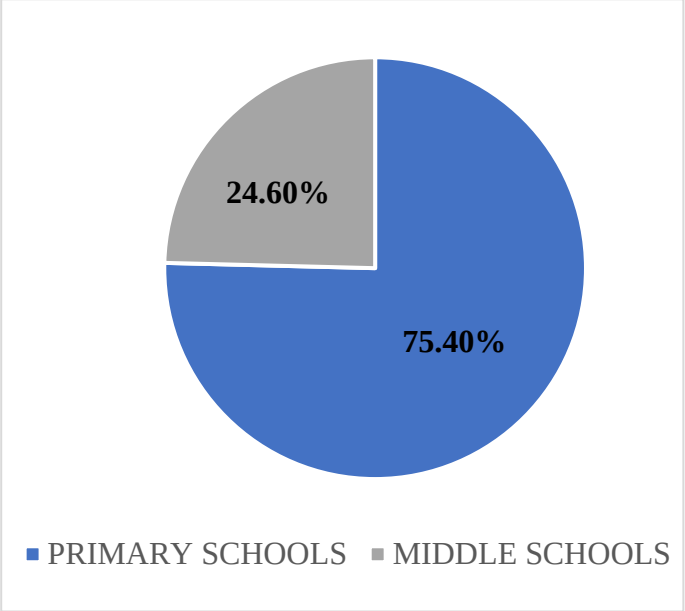
The data from student behavior and teacher perception assessments are analyzed and presented in the charts and tables below.

EDUCATIONAL DISTRICT



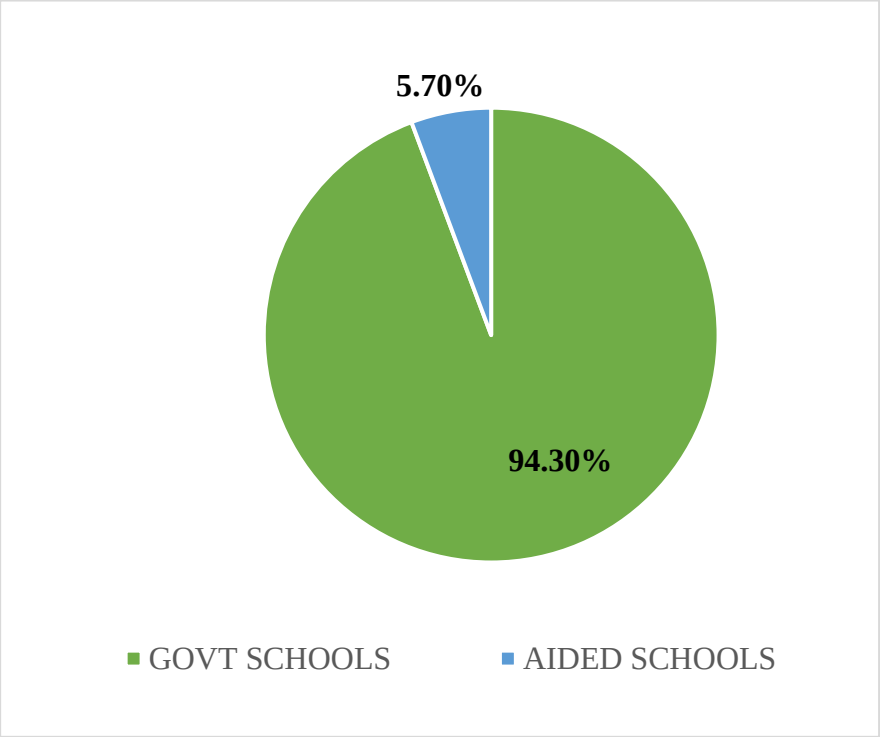
Educational District	No. of teachers participated
Pudukkottai	173
Aranthangi	108
Total	281

SCHOOL TYPE



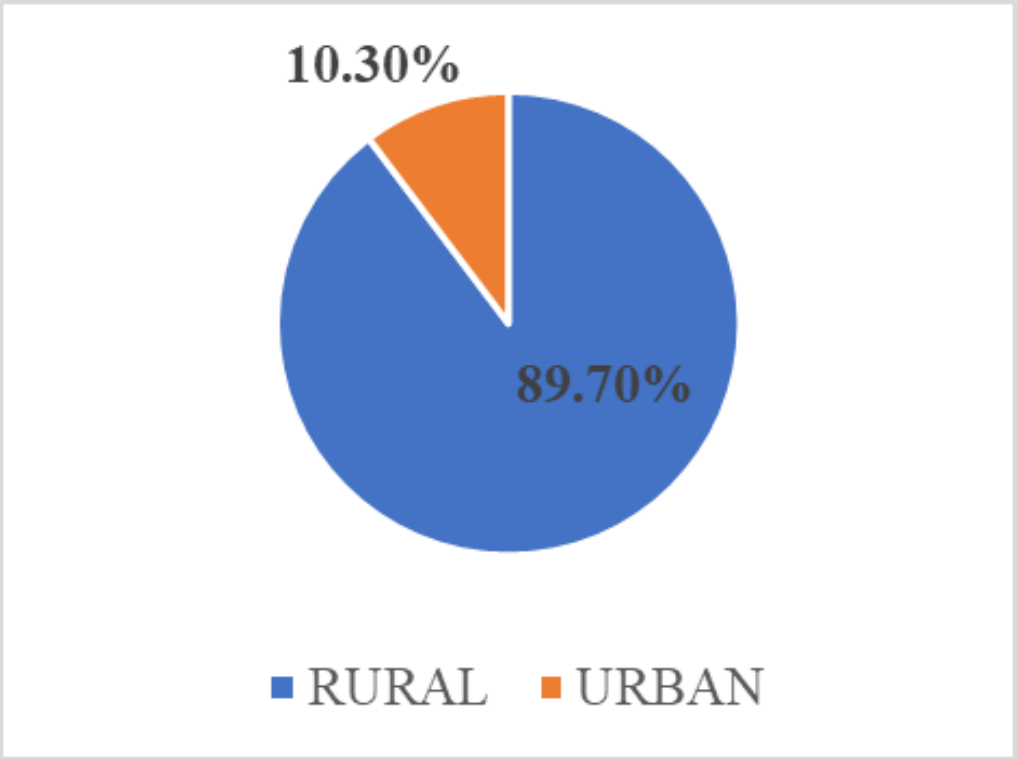
School Type	No. of teachers participated
Primary schools	212
Middle schools	69
Total	281

SCHOOL MANAGEMENT



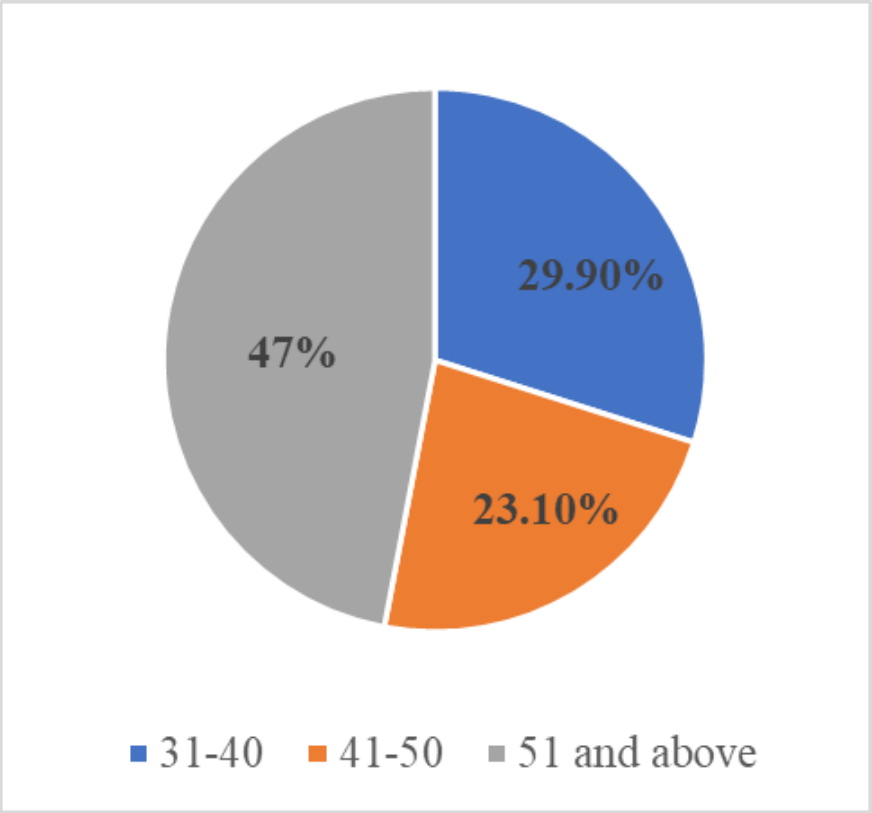
School Management	No. of teachers participated
Government Schools	265
Govt. Aided Schools	16
Total	281

SCHOOL LOCATION



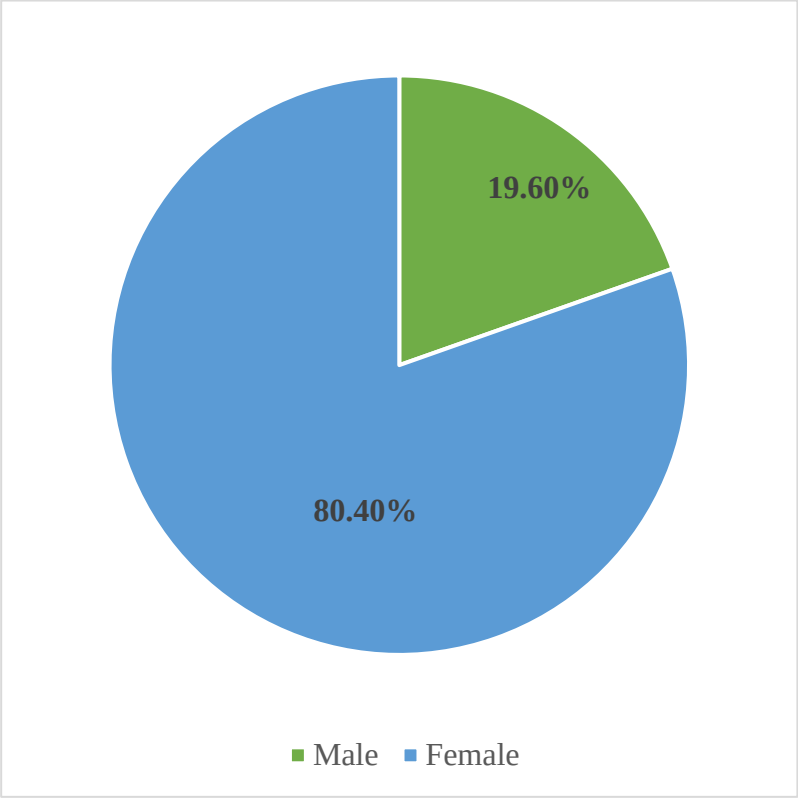
School location	No. of teachers participated
Rural	252
Urban	29
Total	281

AGE OF TEACHERS



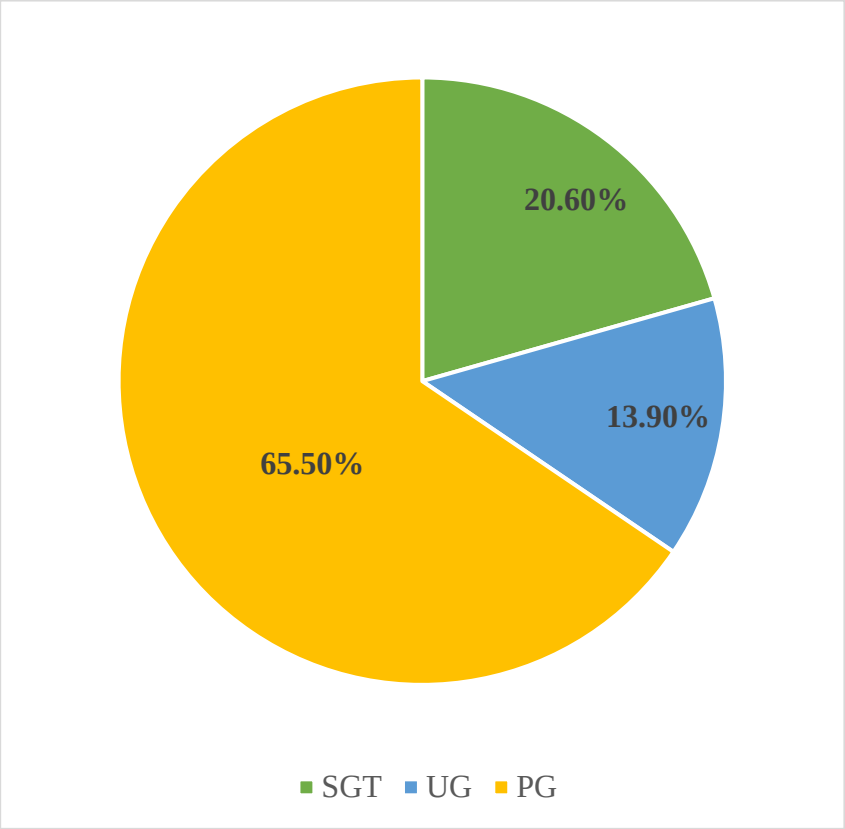
Age Group	No. of teachers
20-30	NIL
31-40	84
41-50	65
51 and above	132
TOTAL	281

GENDER OF TEACHERS



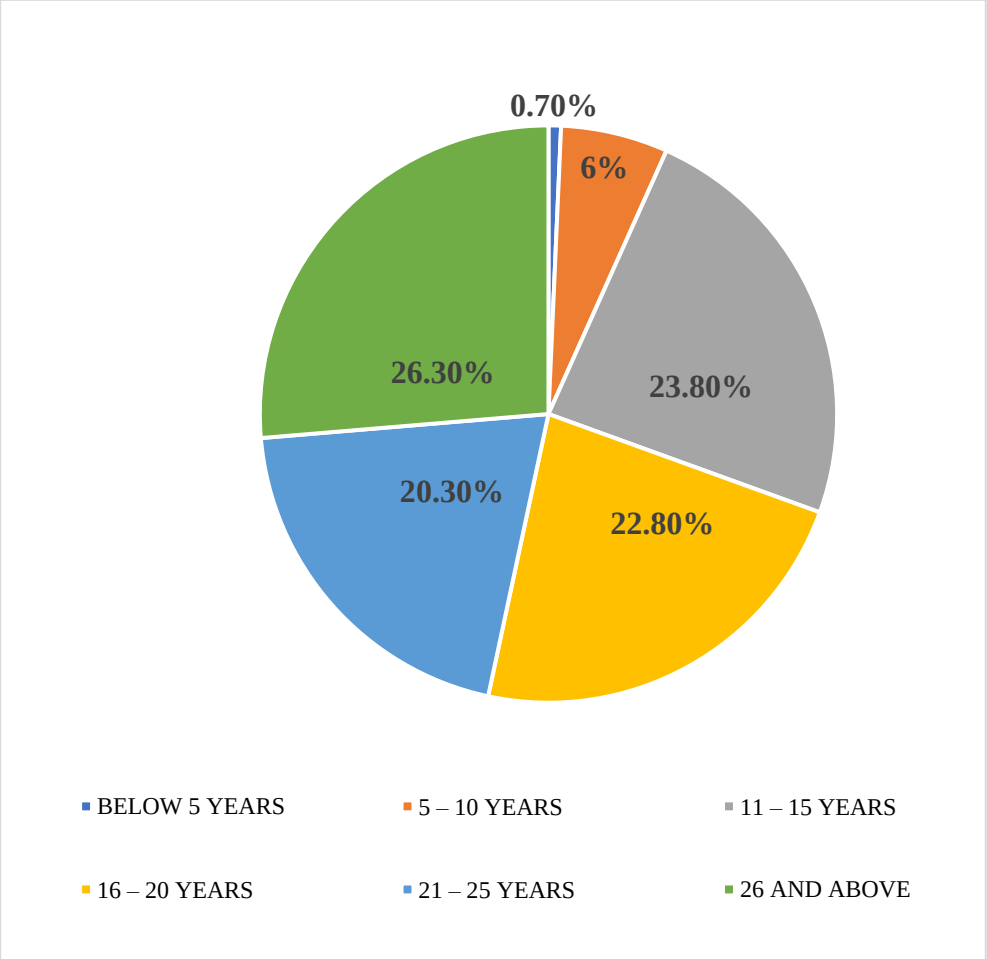
Gender	No. of teachers participated
Male	55
Female	256
Total	281

EDUCATIONAL QUALIFICATION



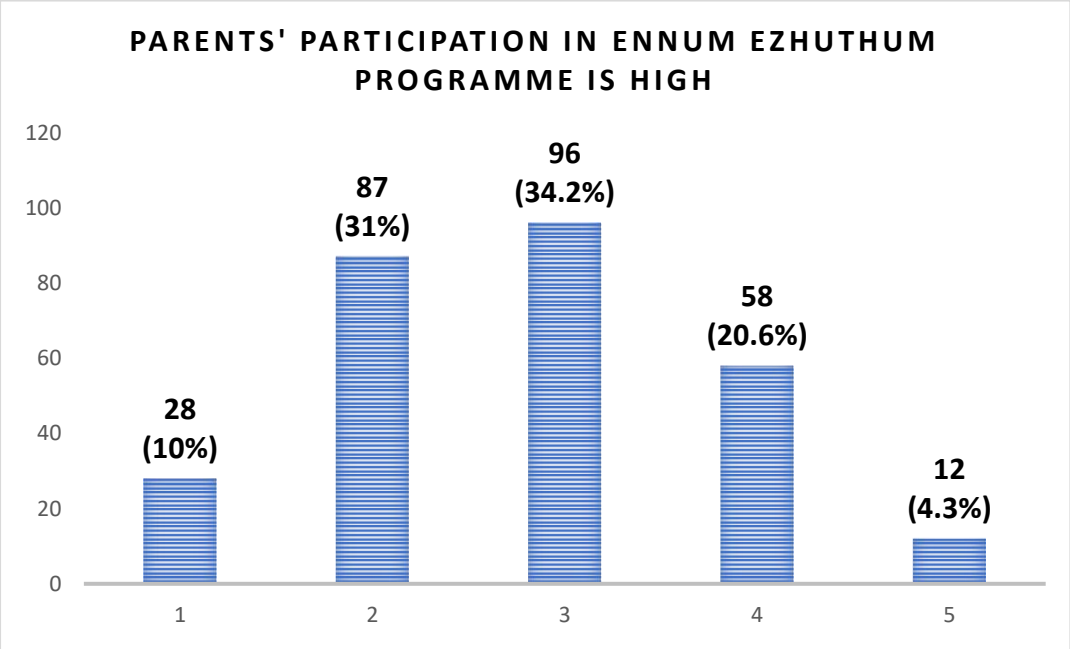
Designation	No. of teachers participated
SGT	58
UG	39
PG	184
TOTAL	281

WORK EXPERIENCE



Years of experience	No. of teachers participated
Below 5 years	2
5-10 years	17
11-15 years	67
16-20 years	64
21-25 years	57
26 and above	74
Total	281

1. Parents' participation in the Ennum Ezhuthum program



Parents' participation in Ennum Ezhuthum programme is high

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
20 (10 %)	87 (31%)	**96 (34.2%)**	58 (20.6 %)	12 (4.3%)

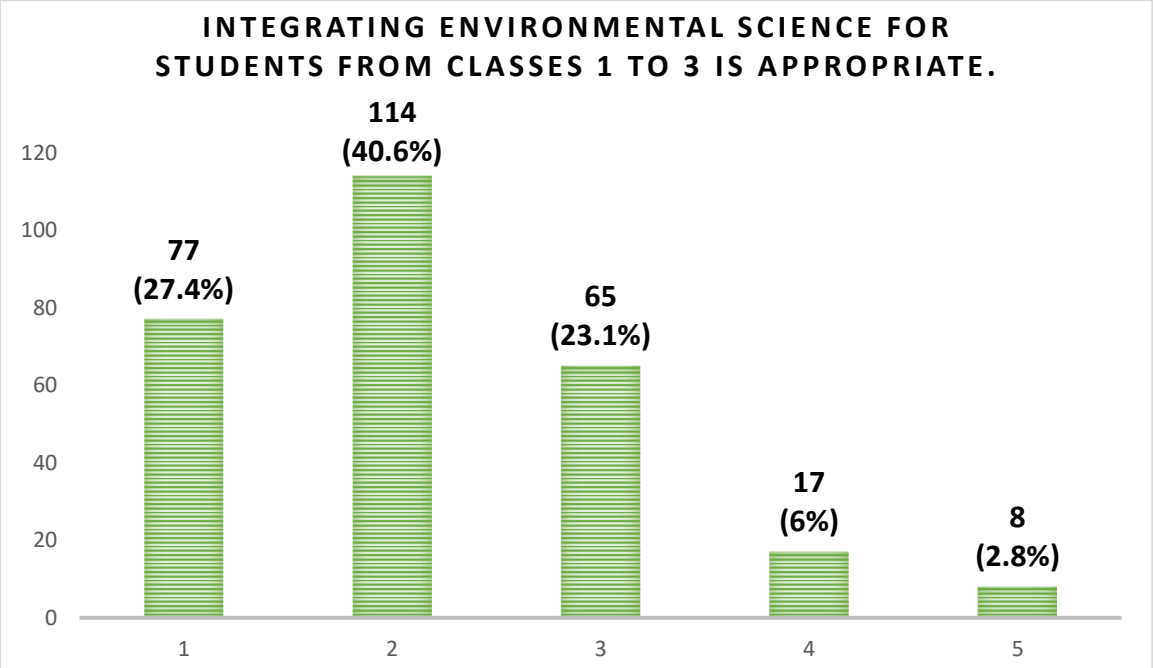
- **Neutral is the most common response:** The largest proportion of respondents (34.2%) are neutral, indicating that many people don't have a strong opinion on the level of parents' participation in the program. This could suggest a lack of awareness or indifference.
- **Agree and Strongly Agree account for 41% of responses:** About 10% strongly agree and 31% agree with the statement that parents' participation in the program is high. This

indicates that a significant portion of the respondents view parents' involvement positively.

- **Disagree and Strongly Disagree represent 24.9% of responses:** About 20.6% disagree and 4.3% strongly disagree, suggesting that nearly a quarter of the respondents perceive parents' participation as lower than expected or lacking.

The mixed responses in this dataset suggest varied experiences or perspectives on the level of parental involvement in the Ennum Ezhuthum program. While some respondents feel that parental participation is strong, a considerable number are either indifferent or feel that participation is lacking. This disparity could indicate potential areas for program improvement, focusing on increasing parental engagement or addressing factors that might lead to low participation.

2. Integrating environmental science for students:



Integrating environmental science for students from classes 1 to 3 is appropriate.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
77 (27.4 %)	**114 (40.6%)**	65 (23.1%)	17 (6 %)	8 (2.8%)

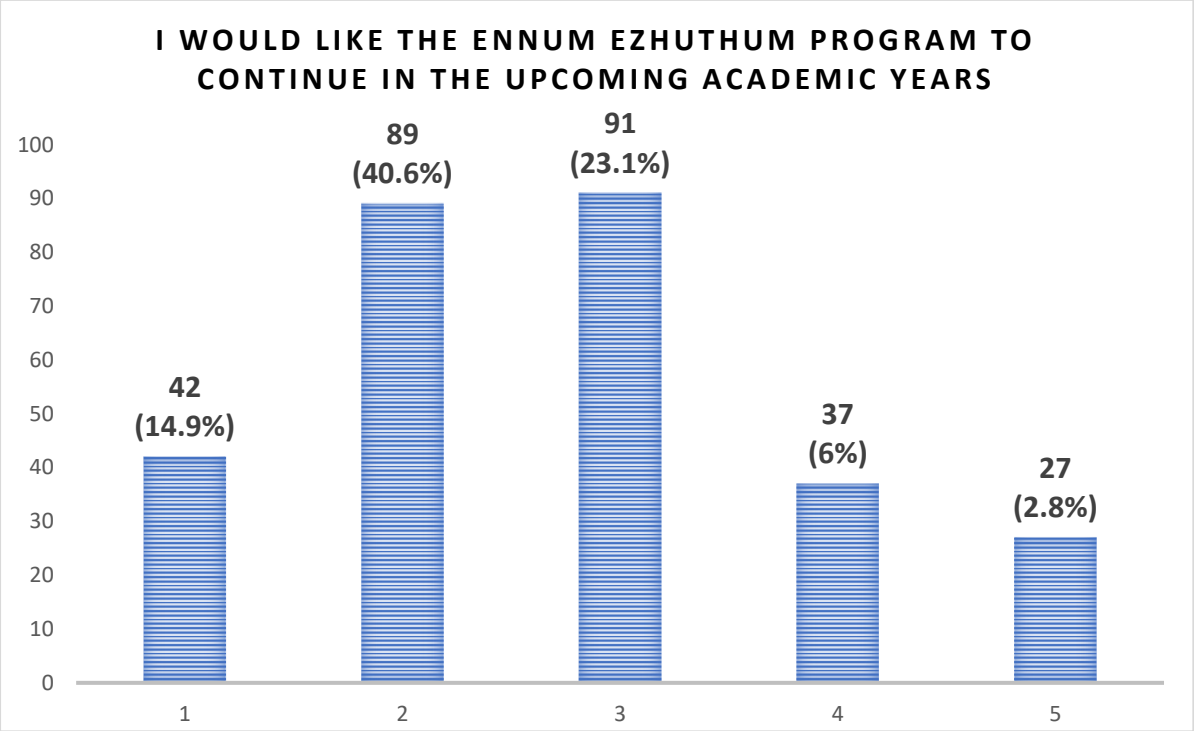
- **Majority are in favor of integration:** A combined total of 68% (27.4% strongly agree and 40.6% agree) support the integration of environmental science for students from classes 1 to 3. This suggests that a large proportion of respondents recognize the importance of introducing environmental science to younger students, possibly to foster early environmental awareness and responsibility.
- **Neutral responses are significant:** A notable portion of respondents (23.1%) is neutral, indicating that they neither strongly support nor oppose the idea. This could

suggest that these respondents need more information or have mixed feelings about the relevance or implementation of environmental science for younger students.

- **A minority disagrees with integration:** The disagreement rate is relatively low, with 6% disagreeing and 2.8% strongly disagreeing, totaling 8.8%. This group might have concerns about the age appropriateness of the subject matter, potential curriculum overload, or other factors that could make environmental science less appealing for younger students.

Overall, the data indicates that most respondents support integrating environmental science into Ennum Ezuthum, suggesting that they see value in introducing environmental concepts to children at a young age. However, with a significant portion of neutral responses and a small group of dissenting opinions, there might be a need to address specific concerns or provide more information to convince the hesitant respondents about the benefits of early environmental education.

3.Ennum Ezhuthum Program Continuation



I would like the Ennum Ezhuthum program to continue in the upcoming academic years

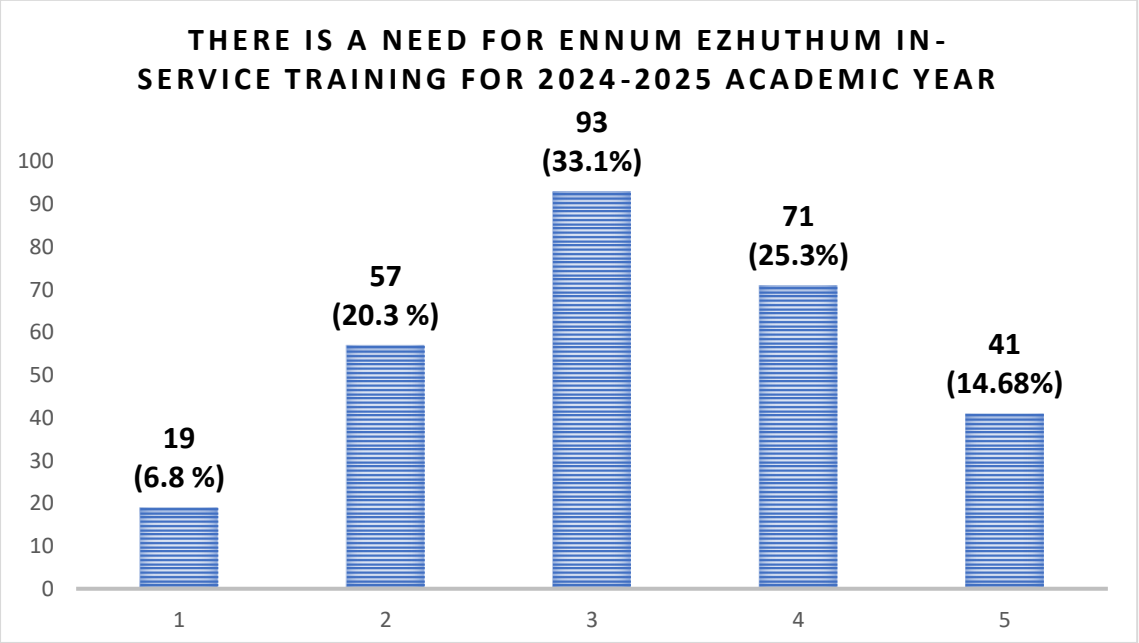
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
42 (14.9 %)	89 (31.7%)	**91 (32.4%)**	37 (13.2 %)	22 (7.8%)

- **Support is relatively high, but with significant neutrality:** The data shows that 14.9% of respondents strongly agree and 31.7% agree, totaling 46.6% in favor of continuing the program. This indicates that nearly half of the respondents support the program's continuation, which reflects a positive sentiment toward its impact and relevance.

- **Neutrality is significant:** The largest portion of respondents, 32.4%, are neutral on this issue, suggesting that a substantial group of people are undecided or indifferent about the program's continuation. This could imply that they lack sufficient information or have mixed feelings about the program's effectiveness or impact.
- **Opposition to continuation is relatively low but notable:** Together, 13.2% of respondents disagree and 7.8% strongly disagree, totaling 21% who do not support the program's continuation. This opposition could stem from various factors, such as dissatisfaction with the program's outcomes, disagreement with its methods, or other underlying concerns.

Overall, the data suggests that while there is a significant level of support for continuing the Ennum Ezhuthum program, there is also a considerable amount of neutrality and some opposition. To strengthen support and address concerns, the program might need to focus on demonstrating its effectiveness, addressing any issues that lead to disagreement, and providing more information to those who are neutral or undecided.

4. In-Service Training



There is a need for Ennum Ezhuthum in-service training for 2024-2025 academic year

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
19 (6.8%)	57 (20.3%)	**93 (33.1%)**	71 (25.3 %)	41 (14.6%)

- **Support is relatively high, but with significant neutrality:** The data shows that 14.9% of respondents strongly agree and 31.7% agree, totaling 46.6% in favor of continuing the program. This indicates that nearly half of the respondents support the program's continuation, which reflects a positive sentiment toward its impact and relevance.

- **Neutrality is significant:** The largest portion of respondents, 32.4%, are neutral on this issue, suggesting that a substantial group of people are undecided or indifferent about the program's continuation. This could imply that they lack sufficient information or have mixed feelings about the program's effectiveness or impact.
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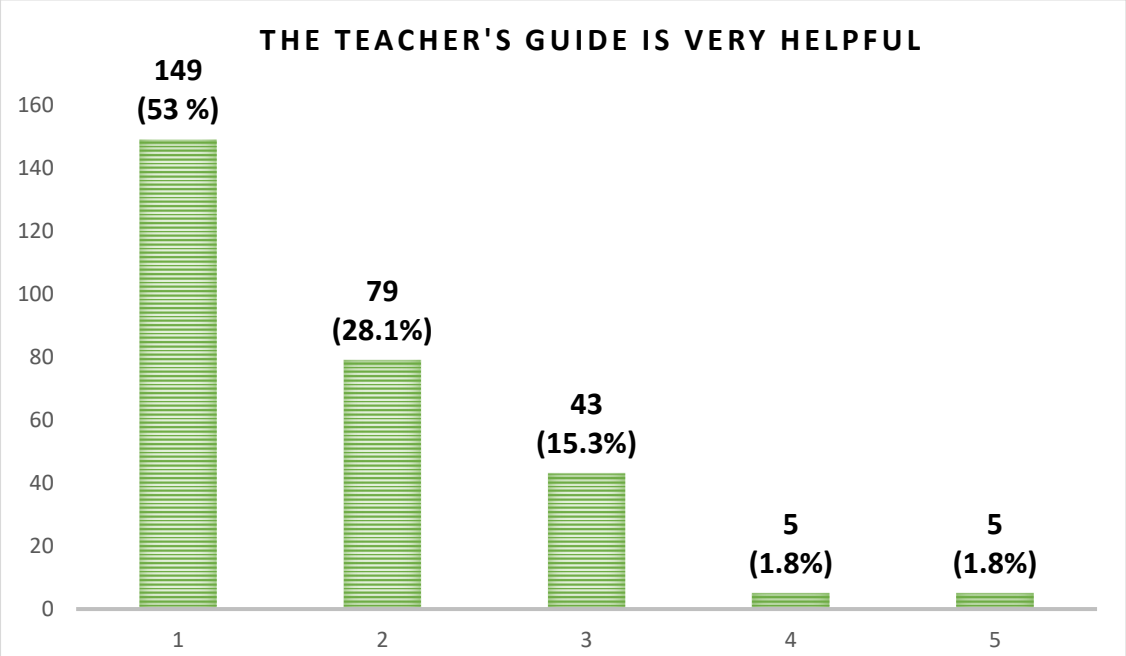
5. Teacher's Guide Utility



The teacher's guide is very helpful

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
149 **(53%)**	79 (28.1%)	43 (15.3%)	5 (1.8 %)	5 (1.8%)

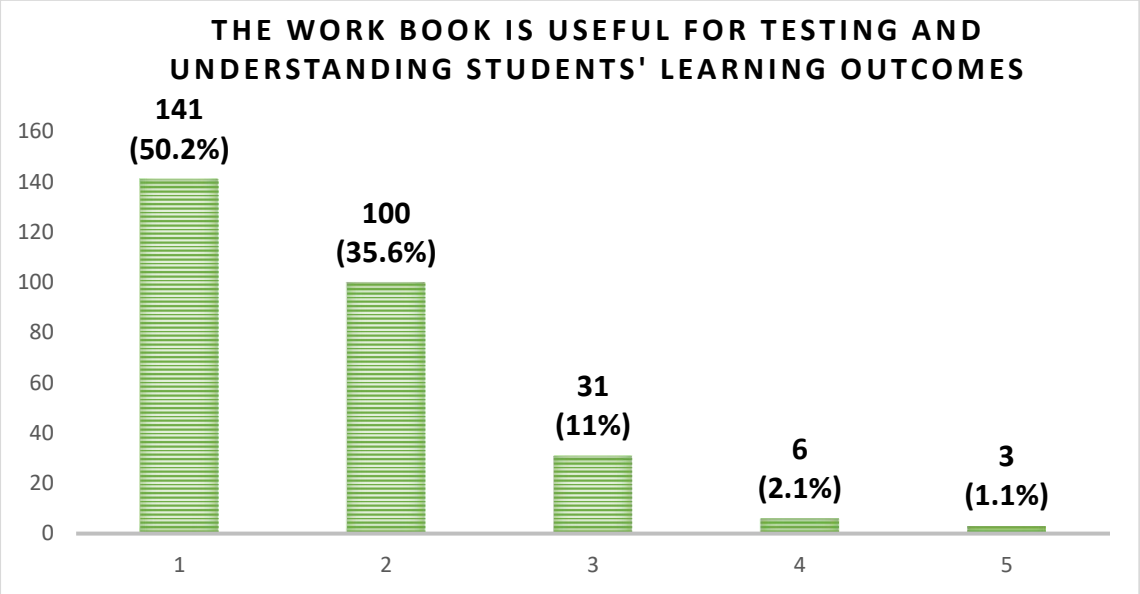
- **High Level of Agreement:** The majority of respondents (53%) strongly agree that the teacher's guide is very helpful, with an additional 28.1% agreeing. This total of 81.1% indicates a strong positive perception of the teacher's guide among users, suggesting that it plays an essential role in assisting them with their tasks.
- **Moderate Neutrality:** A significant proportion of respondents (15.3%) are neutral. This could indicate that these respondents have not used the guide extensively or have a more

reserved opinion on its utility. Neutrality might also suggest room for improvement or further refinement of the guide.

- **Low Level of Disagreement:** The proportion of those who disagree (1.8%) or strongly disagree (1.8%) is quite low, totaling only 3.6%. This low level of disagreement suggests that very few users find the guide unhelpful, indicating overall effectiveness.

Overall, this data shows that the teacher's guide is generally perceived as helpful, with a significant majority supporting its use. The guide appears to be a valuable resource for teachers. The moderate level of neutrality suggests that some users might not have strong opinions or that there is a need for further development or customization to meet their needs. The low level of disagreement indicates that the guide is generally well-accepted, but the reasons behind the dissent should be explored to ensure that the guide can be improved to address these concerns.

6. Workbook's Usefulness



The work book is useful for testing and understanding students' learning outcomes

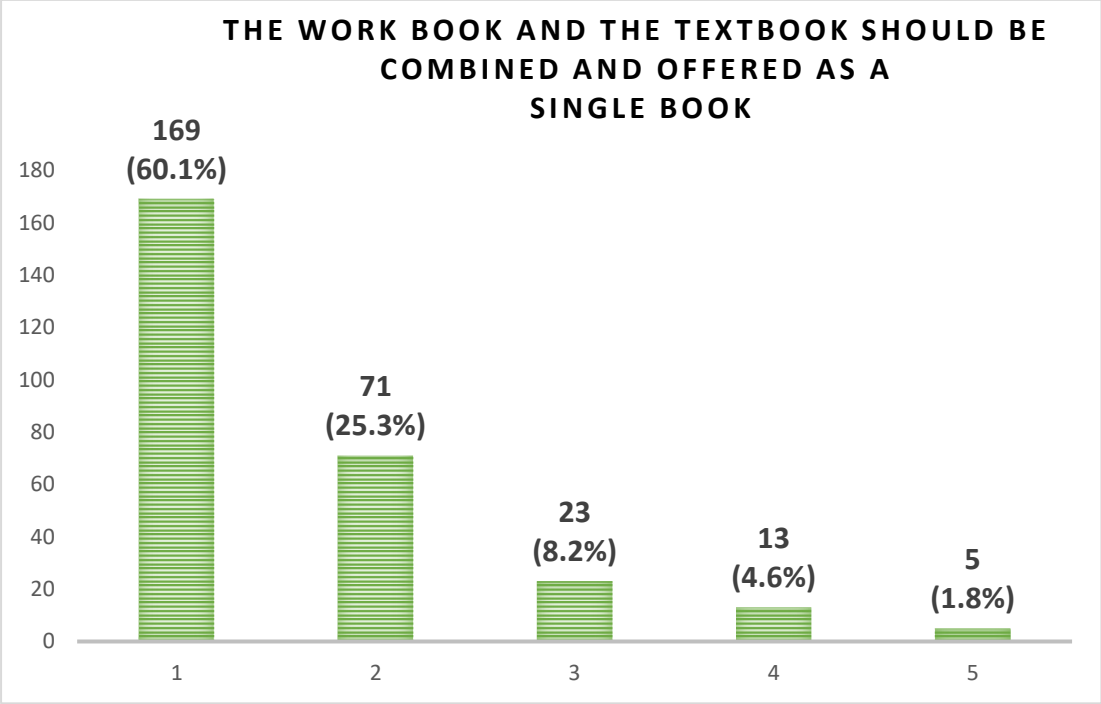
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
141 (50.2%)	100 (35.6%)	31 (11%)	6 (2.1 %)	3 (1.1%)

- **Strong Positive Perception:** The majority of respondents (50.2%) strongly agree that the workbook is useful for testing and understanding students' learning outcomes. An additional 35.6% agree. This combined 85.8% indicates that most respondents view the workbook as an effective tool for evaluating student learning.

- **Moderate Neutrality:** About 11% of respondents are neutral, suggesting that they might not have a strong opinion or enough experience with the workbook to judge its usefulness. This neutrality could indicate an opportunity for further engagement or clarity about the workbook's role in the learning process.
- **Very Low Disagreement:** Only 2.1% disagree and 1.1% strongly disagree, totaling 3.2% who view the workbook as less useful. This minimal level of disagreement suggests that the workbook generally meets the needs of teachers, with only a small fraction finding it lacking.

Overall, the data shows that the workbook is widely regarded as a useful tool for testing and understanding students' learning outcomes. The high level of agreement indicates that it plays a key role in the educational process, helping teachers assess students' comprehension and learning progress. The moderate neutrality suggests there might be some room for improvement or more communication about the workbook's benefits. The low level of disagreement indicates that, while few, the dissenting opinions might point to specific areas for enhancement or customization to better meet the needs of all users.

7. Combining Workbook and Textbook



The work book and the textbook should be combined and offered as a single book

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
169 **(60.1%)**	71 (25.3%)	23 (8.2%)	13 (4.6 %)	5 (1.8%)

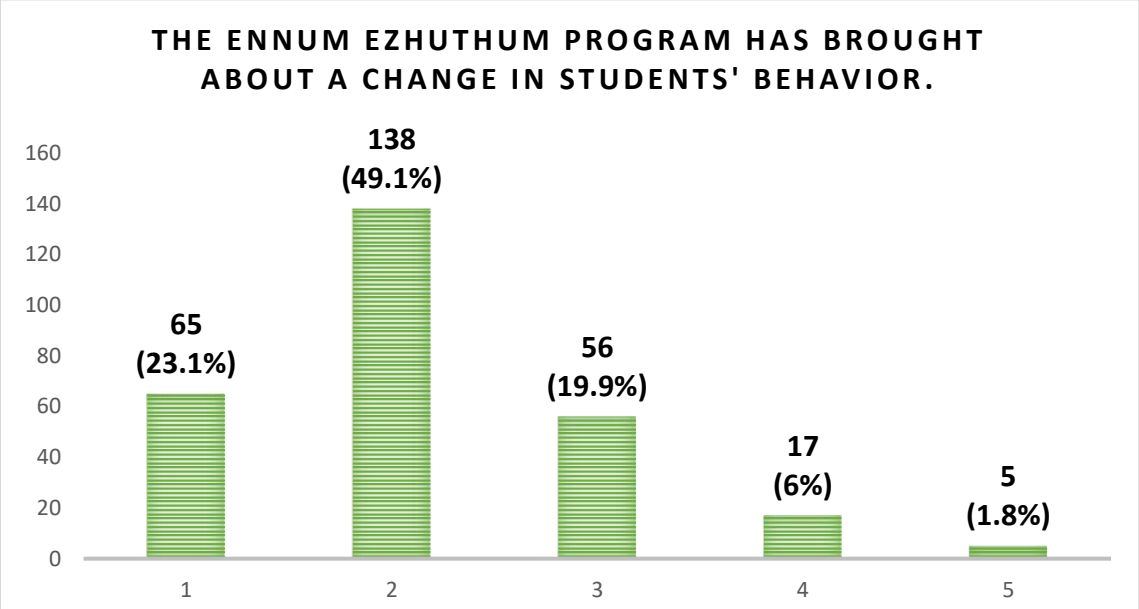
- **Strong Support for Combining Workbook and Textbook:** A significant majority of respondents (60.1%) strongly agree with combining the workbook and textbook, while an additional 25.3% agree. This combined total of 85.4%

suggests strong support for offering a unified book, indicating that many people see benefits in this approach.

- **Moderate Neutrality:** About 8.2% of respondents are neutral, suggesting that they do not have strong feelings about the idea of combining the workbook and textbook. This could indicate a lack of preference or uncertainty about the impact of merging the two books.
- **Low Level of Disagreement:** Only 4.6% disagree and 1.8% strongly disagree, totaling 6.4% who oppose combining the workbook and textbook. This relatively small proportion could reflect concerns about flexibility, usability, or other aspects of keeping the workbook and textbook separate.

Overall, the data shows that there is substantial support for combining the workbook and textbook into a single book. This indicates that many respondents view this approach as convenient, practical, or beneficial for educational purposes. The moderate level of neutrality suggests that some people are indifferent or undecided, while the low level of disagreement indicates that the idea of combining the two books is generally well-received, with only a small minority opposing it.

8. Behavioral Changes in Students



The Ennum Ezhuthum program has brought about a change in students' behavior.

Strongly Agree	**Agree**	Neutral	Disagree	Strongly Disagree
65 (23.1%)	**138 (49.1%)**	56 (19.9%)	17 (6 %)	5 (1.8%)

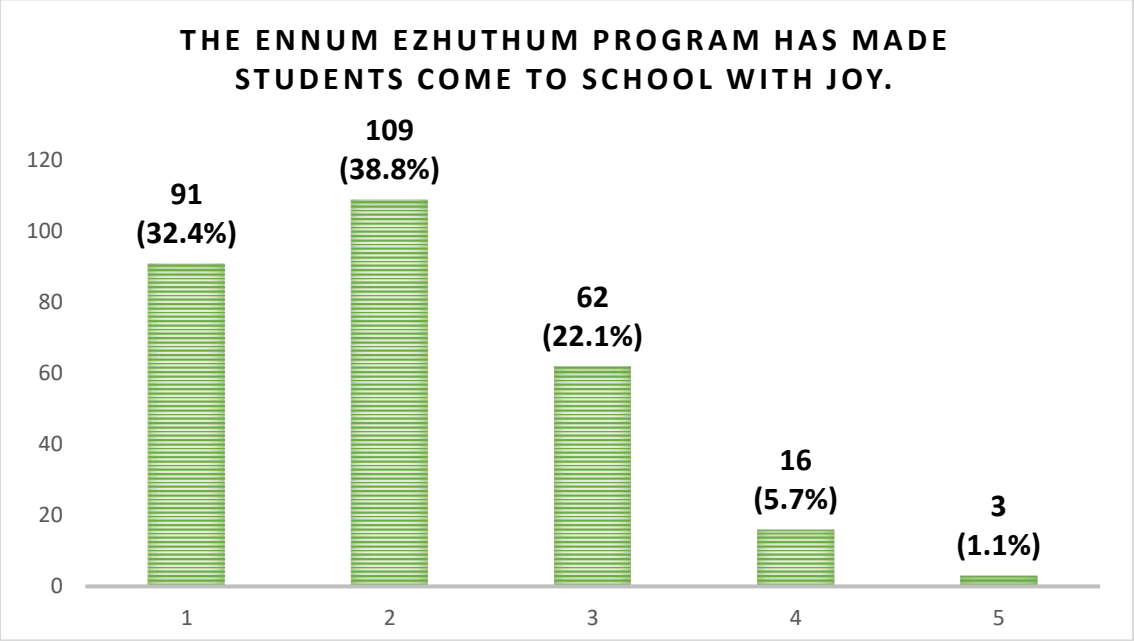
- **Significant Positive Agreement:** The largest proportion of respondents (49.1%) agree that the Ennum Ezhuthum program has brought about a change in students' behavior, while 23.1% strongly agree. This combined total of 72.2% suggests that most respondents believe the program has positively influenced student behavior, indicating that the program's objectives are being met.

- **Moderate Neutrality:** Approximately 19.9% of respondents are neutral, indicating that a notable portion of people neither agree nor disagree that the program has caused a behavioral change. This could suggest that they haven't observed a clear impact or need more time to evaluate the program's effects.
- **Low Level of Disagreement:** The combined percentage of those who disagree (6%) and strongly disagree (1.8%) is relatively low, totaling only 7.8%. This small proportion indicates that a few respondents do not see a significant change in student behavior due to the program.

Overall, the data shows a strong indication that the Ennum Ezhuthum program has had a positive impact on students' behavior, with a significant majority agreeing or strongly agreeing with this statement. The moderate neutrality suggests that some respondents are unsure or require more evidence to confirm a change in behavior. The low level of disagreement indicates that very few people view the program as having no effect or a negative effect on student behavior.

These findings suggest that the Ennum Ezhuthum program is successful in achieving behavioral changes among students, but there might be opportunities to strengthen the program to address the neutral and dissenting opinions. Further studies or feedback could help identify the aspects that contribute to the program's success and areas that might need additional focus or improvement to ensure that the positive impact is consistent across all participants.

9. Joy in Attending School



The Ennum Ezhuthum program has made students come to school with joy.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
91 (32.4%)	**109 (38.8%)**	62 (22.1%)	16 (5.7 %)	3 (1.1%)

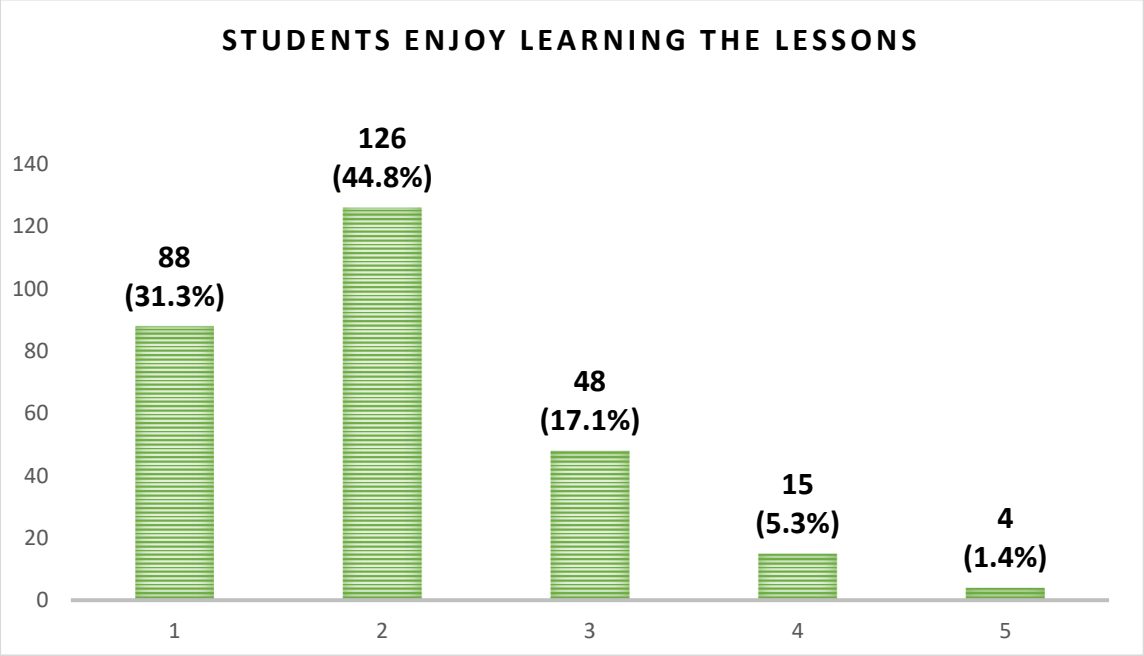
- **High Agreement with Joyful School Attendance:** A significant proportion of respondents agree that the Ennum Ezhuthum program has made students come to school with joy, with 38.8% agreeing and 32.4% strongly agreeing. This combined total of 71.2% suggests that a clear majority believe the program has created a positive and joyful atmosphere, encouraging students to come to school with enthusiasm.

- **Moderate Neutrality:** Approximately 22.1% of respondents are neutral, indicating that a considerable portion of respondents neither agree nor disagree with the statement. This neutrality could suggest that these respondents have yet to observe a clear change or are uncertain about the program's influence on students' enthusiasm for school.
- **Low Level of Disagreement:** The combined percentage of those who disagree (5.7%) and strongly disagree (1.1%) is low, totaling 6.8%. This indicates that very few respondents see the program as having a negative impact on students' attitude toward attending school.

Overall, the data demonstrates that the Ennum Ezhuthum program has a positive impact on students' joy and willingness to attend school, with a significant majority agreeing or strongly agreeing with this statement. The moderate level of neutrality might suggest that some respondents need more time to observe the effects or require more compelling evidence. The low level of disagreement suggests that a small portion of respondents feel the program hasn't made a notable difference in students' attitudes.

These findings indicate that the Ennum Ezhuthum program is likely contributing to a more positive school environment, encouraging joyful learning and attendance. Further analysis or feedback could help understand the reasons behind the neutral and disagreeing responses, providing insights into areas where the program could focus to strengthen its impact and ensure consistent enthusiasm among all students.

10. Enjoyment of Learning Lessons



Students enjoy learning the lessons.

Strongly Agree	**Agree**	Neutral	Disagree	Strongly Disagree
88 (31.3%)	**126** **(44.8%)**	48 (17.1%)	15 (5.3 %)	4 (1.4%)

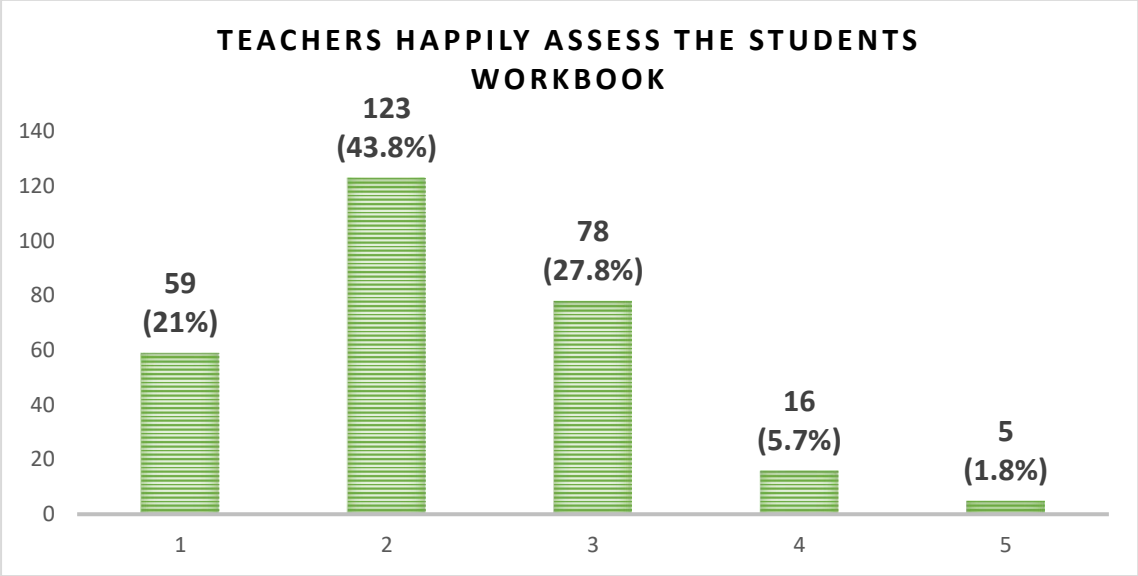
- **Strong Agreement on Enjoyment of Learning:** A significant proportion of respondents (44.8%) agree that students enjoy learning their lessons, while an additional 31.3% strongly agree. This combined total of 76.1% suggests a positive sentiment among students toward their lessons, indicating that they find the learning experience engaging and enjoyable.

- **Moderate Neutrality:** Approximately 17.1% of respondents are neutral, indicating that a notable number of respondents are unsure or indifferent about whether students enjoy learning their lessons. This neutrality might reflect mixed experiences or a lack of observation regarding students' enthusiasm.
- **Low Level of Disagreement:** A combined 6.7% of respondents disagree or strongly disagree, with 5.3% disagreeing and 1.4% strongly disagreeing. This low level of disagreement indicates that only a small minority perceive a lack of enjoyment in learning.

Overall, the data shows that a majority of respondents believe students enjoy learning their lessons, with a strong indication of positive engagement. The moderate neutrality suggests that some respondents may need more evidence to confirm their perception or that they have observed mixed attitudes among students. The low level of disagreement indicates that most people believe students generally find their lessons enjoyable, with only a small number holding a negative view.

These findings suggest that students are likely engaged in their learning experiences, which is a positive outcome. To further boost enjoyment, teachers could explore activities and teaching methods that are more interactive and engaging. Understanding the reasons behind the neutral and disagreeing responses could also help identify areas for improvement to ensure a consistently enjoyable learning experience for all students.

11. Teacher's Attitude towards Workbook Assessment



Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
59 (21%)	**123 (43.8%)**	78 (27.8%)	16 (5.7 %)	5 (1.8%)

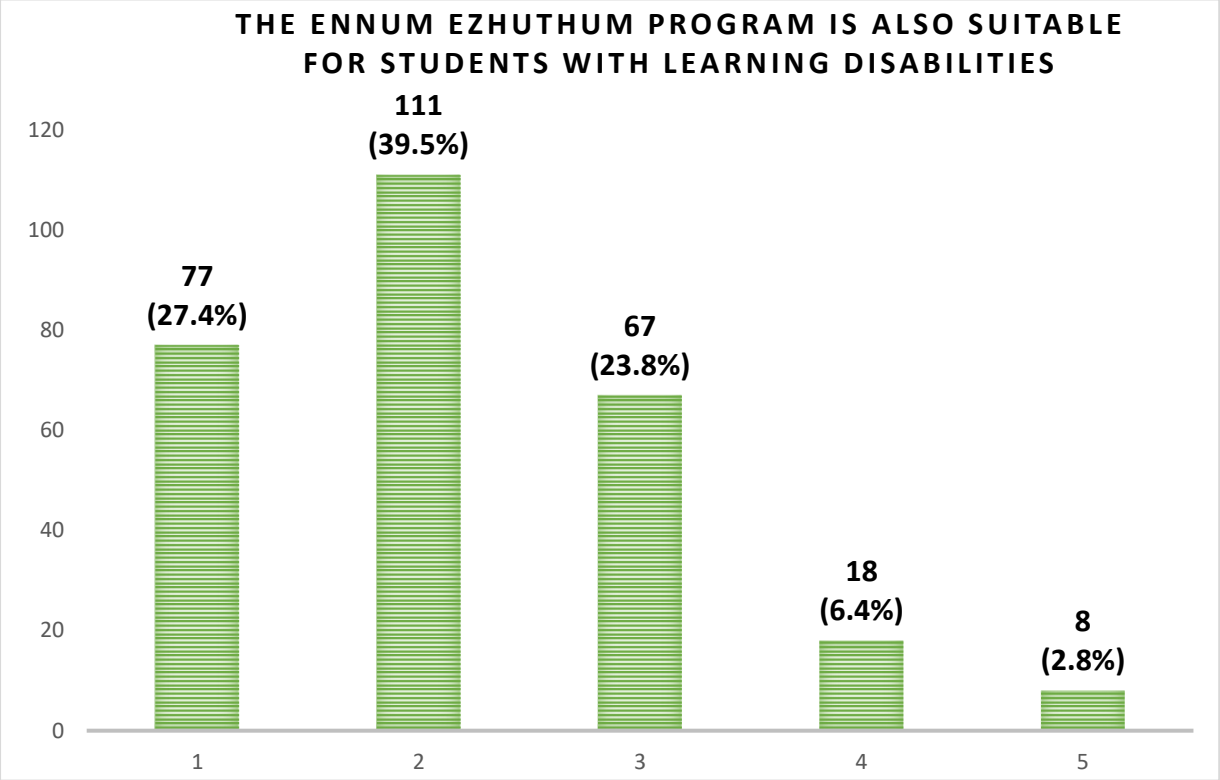
- **Majority of Teachers are Happy to Assess:** A significant portion of respondents agree that teachers happily assess the student workbook, with 43.8% agreeing and 21% strongly agreeing. This combined total of 64.8% suggests that most teachers view workbook assessment in a positive light, indicating that it is a satisfying or rewarding aspect of their work.

- **Moderate Neutrality:** About 27.8% of respondents are neutral, indicating a considerable portion of teachers who may not have strong feelings about assessing workbooks. This neutrality might suggest a more routine approach to the task or varying levels of enthusiasm.
- **Low Level of Disagreement:** A combined 7.5% of respondents disagree (5.7%) or strongly disagree (1.8%), indicating that a small minority of teachers do not find workbook assessment enjoyable. This could reflect particular challenges, preferences, or workloads that make the task less appealing.

Overall, the data indicates that a majority of teachers are happy to assess the student workbook, showing a generally positive attitude toward this aspect of their role. The moderate neutrality might suggest variability in teachers' experience or feelings about workbook assessment, while the low level of disagreement indicates that only a small proportion find it disagreeable.

To further understand the factors contributing to this perception, it would be useful to explore what makes workbook assessment enjoyable for teachers, as well as the reasons behind neutrality or disagreement. This can guide efforts to ensure that the assessment process is efficient, effective, and as enjoyable as possible for teachers. Addressing any underlying issues related to workload, clarity, or resources might further increase teacher satisfaction with workbook assessment.

12. Suitability for Learning Disabilities



Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
77 (27.4 %)	**111 (39.5 %)**	67 (23.8 %)	18 (6.4 %)	8 (2.8 %)

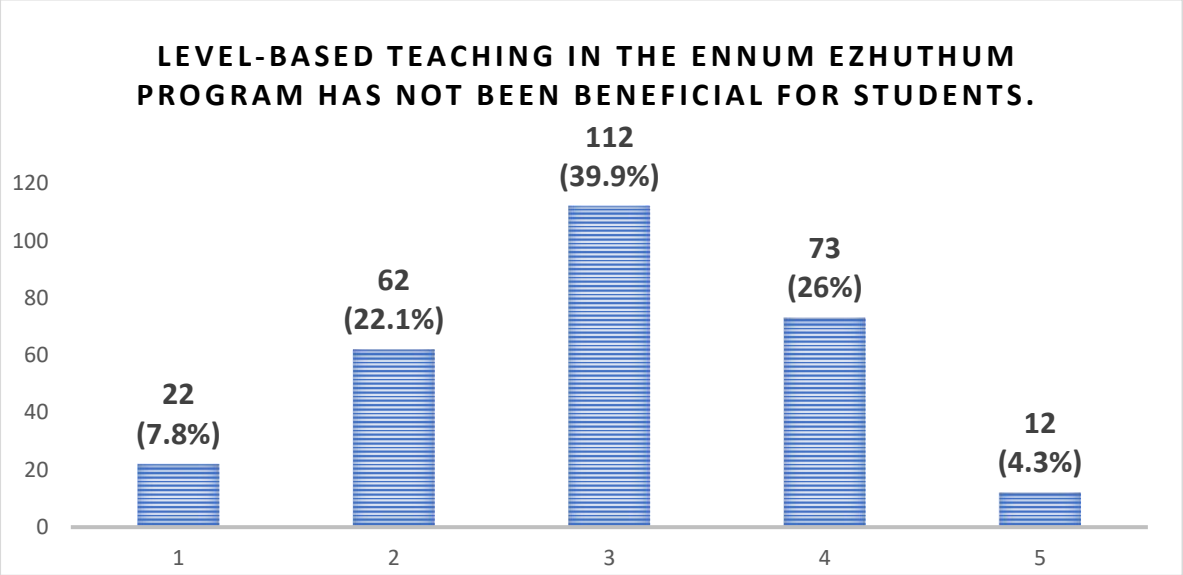
- **Majority Agreement on Suitability:** A significant portion of respondents (39.5%) agree that the Ennum Ezhuthum program is suitable for students with learning disabilities, with 27.4% strongly agreeing. This combined total of 66.9% indicates that most respondents believe the program is appropriate for students with learning disabilities, suggesting that it provides supportive resources or an accommodating approach.

- **Moderate Neutrality:** A notable portion of respondents (23.8%) are neutral, indicating that many people are unsure or indifferent about the program's suitability for students with learning disabilities. This could suggest uncertainty about the program's specific adaptations for these students or a lack of personal experience with its application in this context.
- **Low Level of Disagreement:** A combined total of 9.2% of respondents disagree (6.4%) or strongly disagree (2.8%), indicating that a small but significant minority does not find the program suitable for students with learning disabilities. This could point to areas where the program may not fully address the unique needs of these students.

Overall, the data shows that a majority of respondents believe the Ennum Ezhuthum program is suitable for students with learning disabilities. The moderate level of neutrality might suggest that more information is needed to determine whether the program is effectively designed for such students. The relatively low level of disagreement indicates that only a minority of respondents perceive the program as unsuitable, which could be due to specific unmet needs or challenges in adapting the program for students with learning disabilities.

These findings suggest that the Ennum Ezhuthum program is generally viewed as accommodating for students with learning disabilities, though there may be opportunities to address any areas of concern. Understanding the reasons behind neutrality and disagreement could help identify specific factors that need further attention, ensuring that the program is inclusive and effective for all students, regardless of their learning abilities.

13. Effectiveness of Level-Based Teaching



Strongly Agree	Agree	**Neutral**	Disagree	Strongly Disagree
22 (7.8 %)	62 (22.1 %)	**112 (39.9 %)**	73 (26 %)	12 (4.3 %)

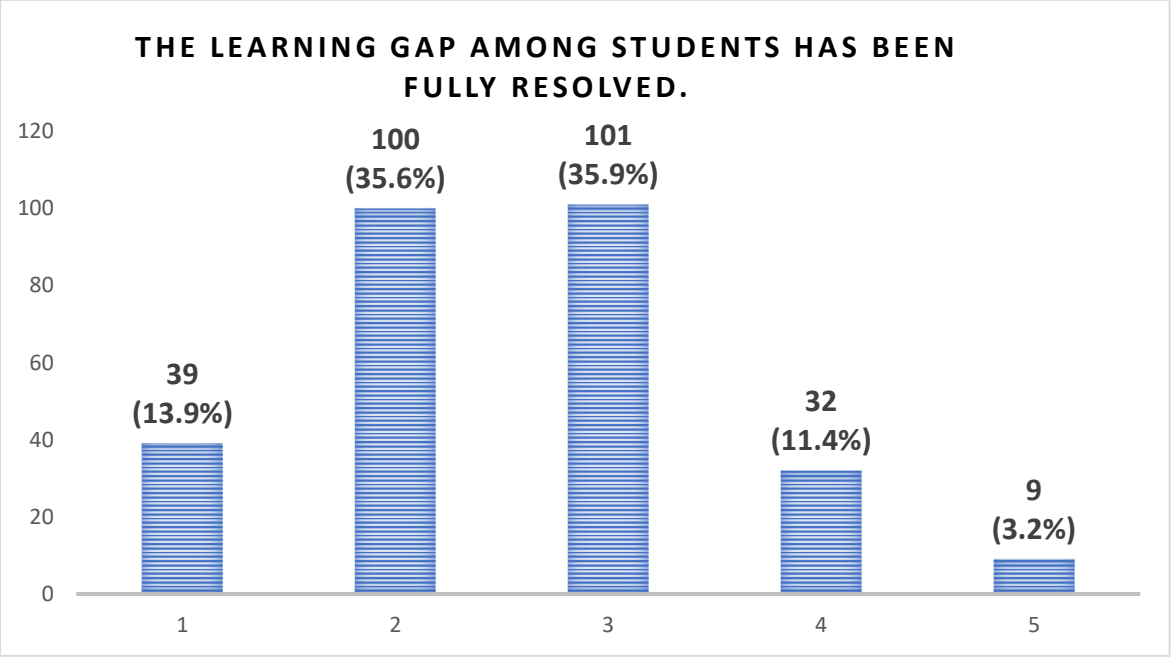
- **Majority Neutrality:** A significant portion of respondents (39.9%) are neutral on this statement, indicating that many people have not formed a clear opinion about whether level-based teaching has been beneficial or not. This could suggest that they require more evidence or that they perceive mixed outcomes from the program.
- **Substantial Disagreement with the Statement:** A combined total of 30.3% of respondents disagree (26%) or strongly disagree (4.3%), indicating that a significant minority believes that level-based teaching has, in fact, been beneficial for students. This suggests that many respondents see value in this approach.
- **Moderate Agreement with the Statement:** About 22.1% of respondents agree, while 7.8% strongly agree, totaling 29.9%. This indicates that a notable minority

believes that level-based teaching has not been beneficial for students, possibly due to perceived limitations or negative experiences with this teaching method.

Overall, the data suggests that there is a wide range of opinions regarding the effectiveness of level-based teaching in the Ennum Ezhuthum program. The large neutral group could indicate uncertainty or a need for more data to form a solid opinion. The level of disagreement with the statement shows that many respondents find level-based teaching beneficial, while the moderate agreement with the statement suggests that a significant number see it as ineffective.

These findings point to the need for further investigation into the implementation and outcomes of level-based teaching in this program. Understanding the reasons behind neutrality, as well as exploring the experiences of those who agree with the statement, could provide valuable insights into why level-based teaching might not meet the expectations of some educators or stakeholders. This, in turn, could guide efforts to improve the program to ensure it benefits all students.

14. Resolution of Learning Gaps



Strongly Agree	Agree	**Neutral**	Disagree	Strongly Disagree
39 (13.9 %)	100 (35.6 %)	**101 (35.9 %)**	32 (11.4 %)	9 (3.2 %)

- **Moderate Agreement on Gap Resolution:** A combined total of 49.5% of respondents agree or strongly agree that the learning gap among students has been fully resolved, with 35.6% agreeing and 13.9% strongly agreeing. This suggests that nearly half of the respondents believe progress has been made in closing learning gaps among students.
- **High Level of Neutrality:** The largest portion of respondents (35.9%) is neutral, indicating that a considerable number of people do not have a clear opinion on

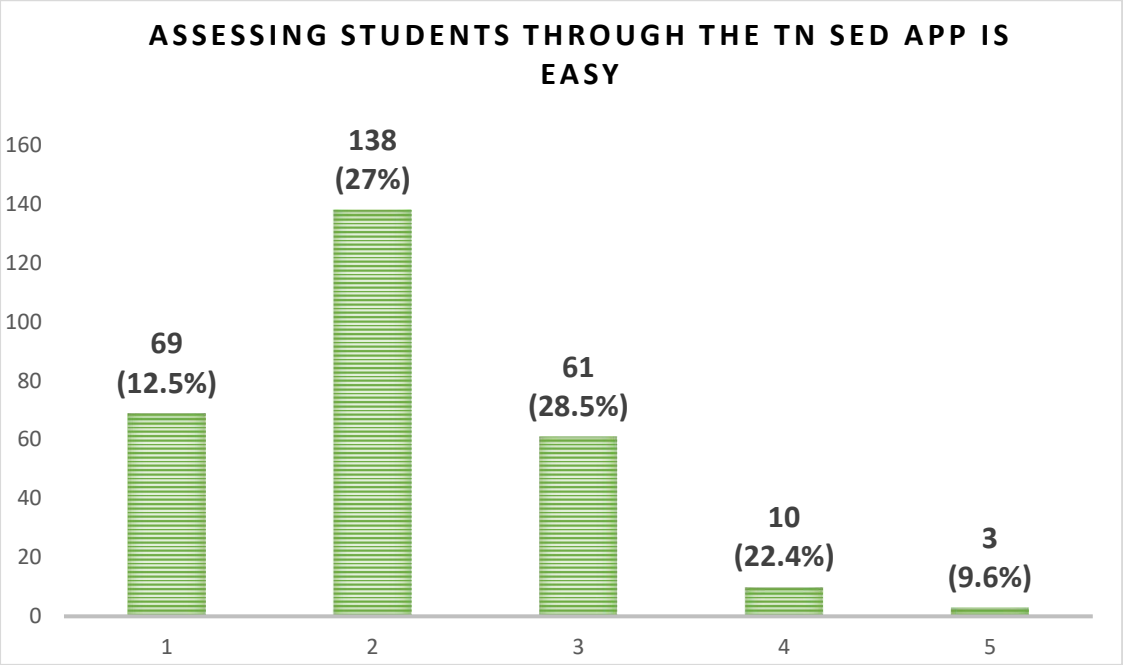
whether the learning gap has been resolved. This could indicate uncertainty, a lack of specific evidence, or mixed experiences regarding the learning gap.

- **Low Disagreement with the Statement:** A combined total of 14.6% of respondents disagree or strongly disagree with the statement, indicating that a smaller group feels the learning gap has not been fully resolved. This disagreement might reflect ongoing disparities or perceived shortcomings in addressing the gap.

Overall, the data suggests that while there is moderate agreement that the learning gap among students has been resolved, a significant proportion of respondents remain neutral, with a smaller group in disagreement. The moderate agreement indicates that there is a perception of progress, possibly due to effective interventions or improved educational practices. The high level of neutrality might suggest that respondents require more information or have mixed views on the success of gap-closing measures. The low level of disagreement implies that while some progress has been made, there is still work to be done to fully resolve learning gaps.

To better understand the underlying factors contributing to these results, further exploration into what aspects of learning gaps have been addressed successfully and which still require attention could be helpful. This could guide future efforts to ensure that all students receive the support they need to achieve equitable learning outcomes.

15. TN SED APP Usability



Assessing students through the TN SED App is easy

Strongly Agree	Agree	**Neutral**	Disagree	Strongly Disagree
35 (12.5 %)	76 (27 %)	**80 (28.5 %)**	63 (22.4 %)	27 (9.6 %)

- **Moderate Agreement on Ease of Use:** A total of 39.5% of respondents agree or strongly agree that assessing students through the TN SED APP is easy, with 27% agreeing and 12.5% strongly agreeing. This indicates that a significant portion of respondents find the app relatively easy to use for student assessment.
- **High Neutrality:** The largest proportion of respondents (28.5%) are neutral, suggesting a considerable number of people have no strong opinion on the ease of

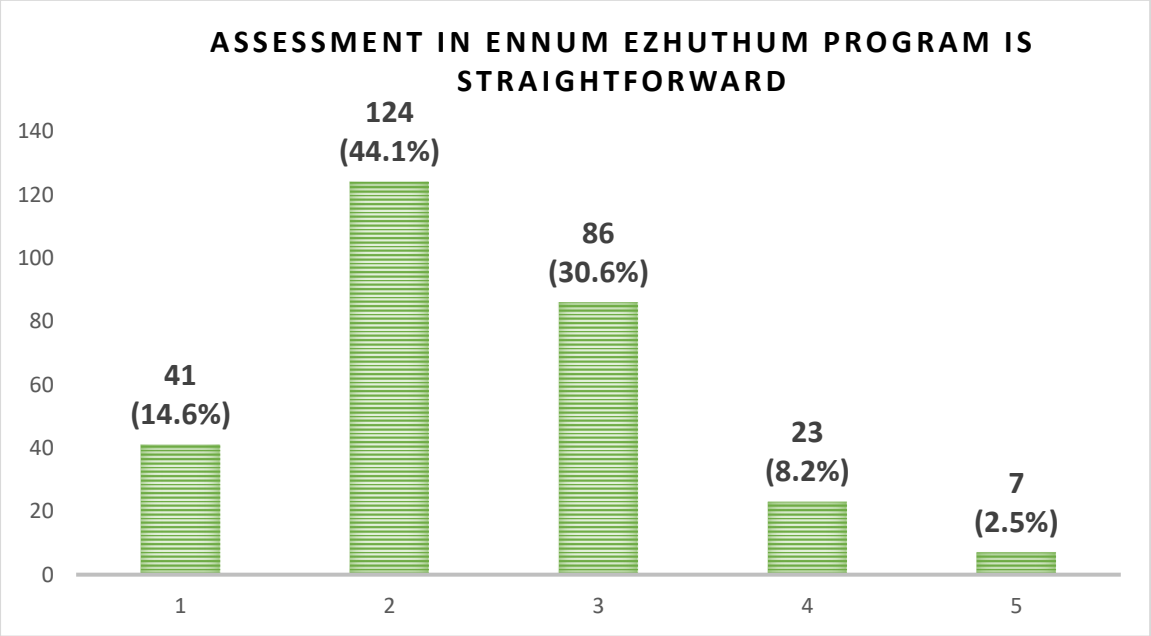
using the TN SED APP for assessment. This might indicate mixed experiences, uncertainty, or a need for more familiarity with the app's functionalities.

- **Significant Disagreement:** A combined total of 32% of respondents disagree (22.4%) or strongly disagree (9.6%) that the app is easy to use for assessment, indicating a notable portion of users who find it challenging or difficult to use. This level of disagreement suggests that there might be usability issues, technical challenges, or a lack of training on how to effectively use the app.

Overall, the data indicates that while a significant portion of respondents find the TN SED APP relatively easy to use for assessing students, a larger number are either neutral or disagree with the statement. This might suggest that there's a need to improve the user interface, provide more training, or address technical issues to ensure a smoother experience for users.

Understanding the reasons behind the high neutrality and significant disagreement could offer insights into specific areas for improvement. It might be beneficial to gather feedback from users who are neutral or disagree to identify common pain points and work on enhancing the app's usability to make it more user-friendly for teachers.

16. Ease of Evaluation



Assessment in Ennum Ezhuthum program is straightforward

Strongly Agree	**Agree**	Neutral	Disagree	Strongly Disagree
41 (14.6 %)	**124 (44.1 %)**	86 (30.6 %)	23 (8.2 %)	7 (2.5 %)

- **Majority Agreement on Ease of Evaluation:** A total of 58.7% of respondents agree or strongly agree that it is easy to evaluate in the Ennum Ezhuthum program, with 44.1% agreeing and 14.6% strongly agreeing. This suggests that a significant majority find the evaluation process in this program relatively straightforward.
- **High Neutrality:** A considerable portion of respondents (30.6%) are neutral, indicating that they have no strong opinion on whether the evaluation process is easy.

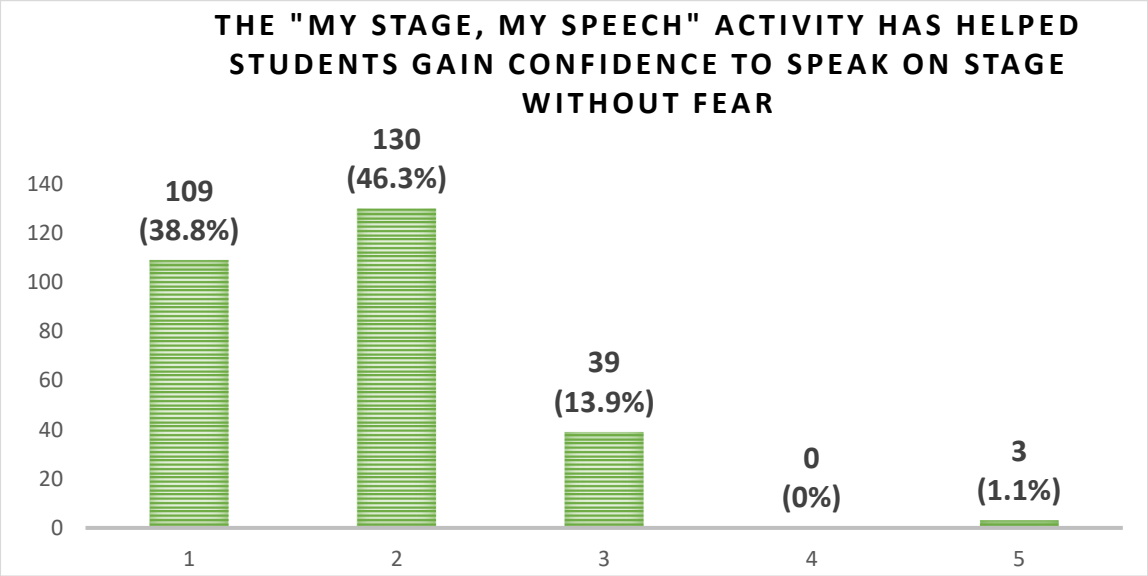
This could suggest that the ease of evaluation varies or that respondents have not had sufficient experience to form a clear view.

- **Low Level of Disagreement:** A combined total of 10.7% of respondents disagree or strongly disagree, with 8.2% disagreeing and 2.5% strongly disagreeing. This indicates that a relatively small minority find the evaluation process challenging or difficult.

Overall, the data suggests that the majority of respondents find it easy to evaluate in the Ennum Ezhuthum program, indicating that the program's evaluation methods are generally user-friendly. The high level of neutrality could indicate that some respondents need more information or experience with the program to form a strong opinion. The low level of disagreement suggests that only a small group finds the evaluation process difficult.

These findings point to a positive perception of the ease of evaluation in the Ennum Ezhuthum program. To better understand the factors contributing to neutrality and disagreement, it would be useful to explore the specific aspects of the evaluation process that might need improvement or clarification. This could guide efforts to ensure that the evaluation process is consistently straightforward and accessible for all users.

17. Impact on Student Confidence:



The "My Stage, My Speech" activity has helped students gain confidence to speak on stage without fear.

Strongly Agree	**Agree**	Neutral	Disagree	Strongly Disagree
109 (38.8 %)	**130 (46.3 %)**	39 (13.9 %)	0 (0 %)	3 (1.1 %)

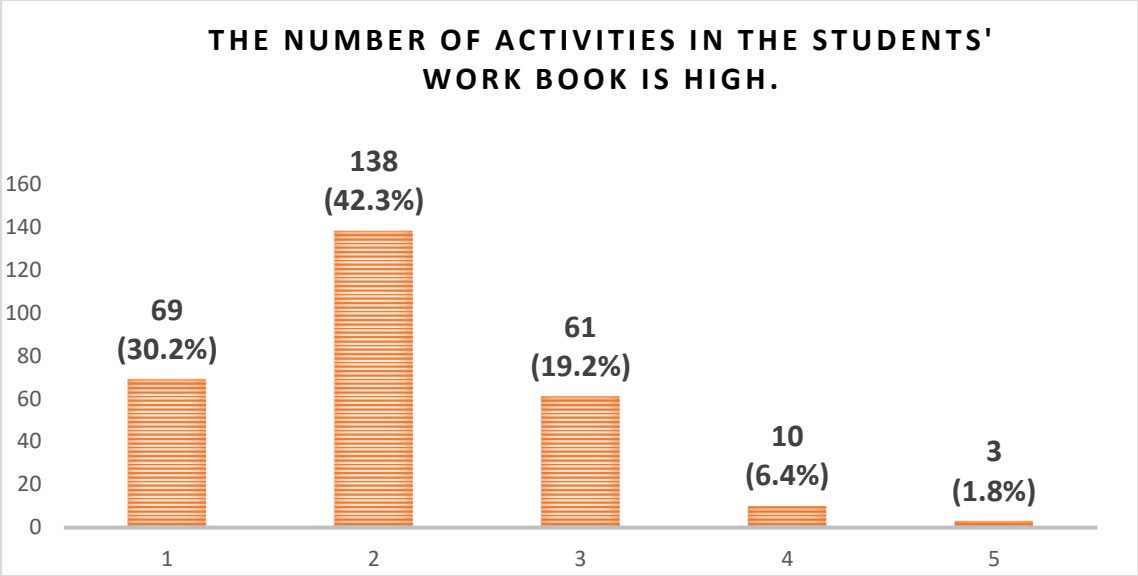
- **Strong Positive Impact on Confidence:** A total of 85.1% of respondents agree or strongly agree that the "My Stage, My Speech" activity has helped students gain confidence to speak on stage without fear, with 46.3% agreeing and 38.8% strongly agreeing. This suggests that the activity is highly effective in building student confidence and reducing stage fright.

- **Moderate Neutrality:** A smaller proportion of respondents (13.9%) are neutral, indicating that some respondents are undecided or indifferent about the activity's impact on student confidence. This could suggest they haven't observed its effects firsthand or are unsure about its overall effectiveness.
- **Minimal Disagreement:** Only 1.1% of respondents strongly disagree with the statement, indicating a very small minority who believe the activity has not helped students gain confidence. Notably, there are no respondents who simply disagree, indicating almost universal acknowledgment of the activity's positive impact.

Overall, the data suggests that the "My Stage, My Speech" activity is highly effective in helping students gain confidence to speak on stage without fear. The high level of agreement, with a significant proportion strongly agreeing, demonstrates that the activity is successful in achieving its objective. The moderate neutrality might suggest that some respondents need more evidence or experience to form a strong opinion. The minimal disagreement indicates that only a tiny portion of respondents view the activity as ineffective.

These findings suggest that "My Stage, My Speech" is a valuable tool for boosting student confidence in public speaking. Given the high level of positive feedback, the activity seems well-received and impactful. To further increase its effectiveness, it might be helpful to address any reasons for neutrality or the rare cases of strong disagreement, ensuring that the activity continues to meet the needs of all students.

18. Number of Workbook Activities



The number of activities in the students' work book is high.

Strongly Agree	**Agree**	Neutral	Disagree	Strongly Disagree
85 (30.2 %)	**119 (42.3 %)**	54 (19.2 %)	18 (6.4 %)	5 (1.8 %)

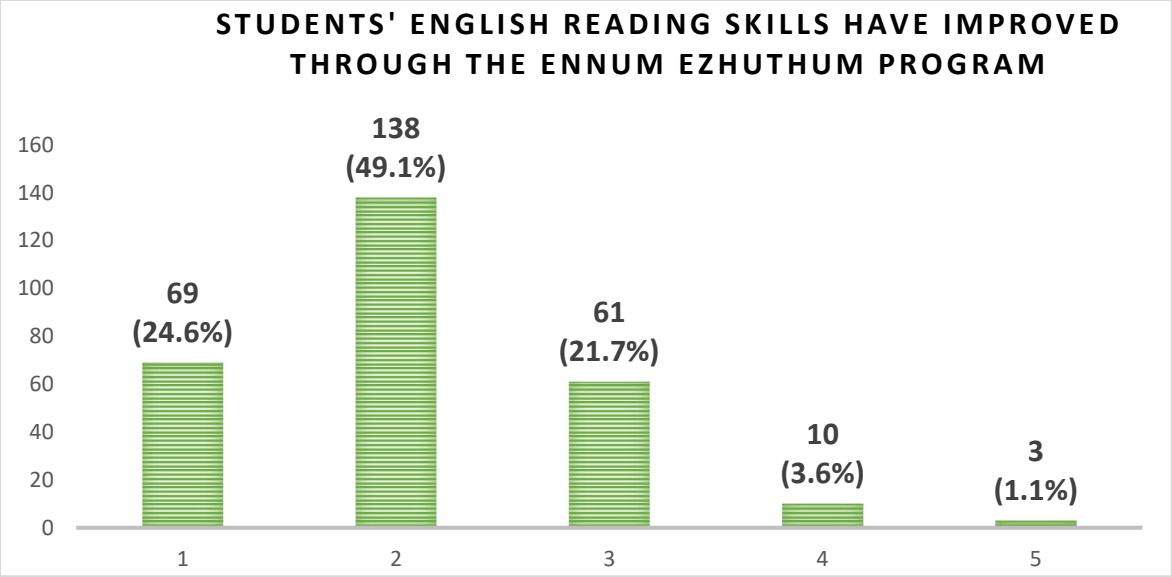
- **Majority Agreement that the Number of Activities is High:** A total of 72.5% of respondents agree or strongly agree that the workbook contains a high number of activities, with 42.3% agreeing and 30.2% strongly agreeing. This suggests that most respondents feel the workbook is packed with a significant number of exercises and activities.

- **Moderate Neutrality:** A considerable proportion of respondents (19.2%) are neutral, indicating that they neither agree nor disagree with the statement. This could suggest uncertainty about what constitutes a high number of activities or a lack of strong opinion on the matter.
- **Low Level of Disagreement:** A combined total of 8.2% of respondents disagree or strongly disagree, with 6.4% disagreeing and 1.8% strongly disagreeing. This indicates that a small minority do not find the number of activities in the workbook to be particularly high, perhaps perceiving it as manageable or balanced.

Overall, the data suggests that a majority of respondents believe the number of activities in the students' workbook is high, indicating that the workbook provides a rich array of exercises for students. The moderate level of neutrality might suggest that some respondents are unsure about the ideal number of activities or don't have strong feelings on the subject. The low level of disagreement indicates that only a small proportion of respondents find the workbook's activity count to be low or appropriate.

These findings suggest that the workbook is generally seen as having a high volume of activities, which could be beneficial for providing a variety of learning experiences. However, to further understand the implications of this data, it might be helpful to explore the reasons behind neutrality and disagreement. This can shed light on whether a high number of activities is seen as positive or potentially overwhelming, guiding any adjustments to ensure that the workbook remains engaging and manageable for students and teachers.

19. Improvement in English Reading Skills



Students' English reading skills have improved through the Ennum Ezhuthum program

Strongly Agree	**Agree**	Neutral	Disagree	Strongly Disagree
69 (24.6 %)	**138 (49.1 %)**	61 (21.7 %)	10 (3.6 %)	3 (1.1 %)

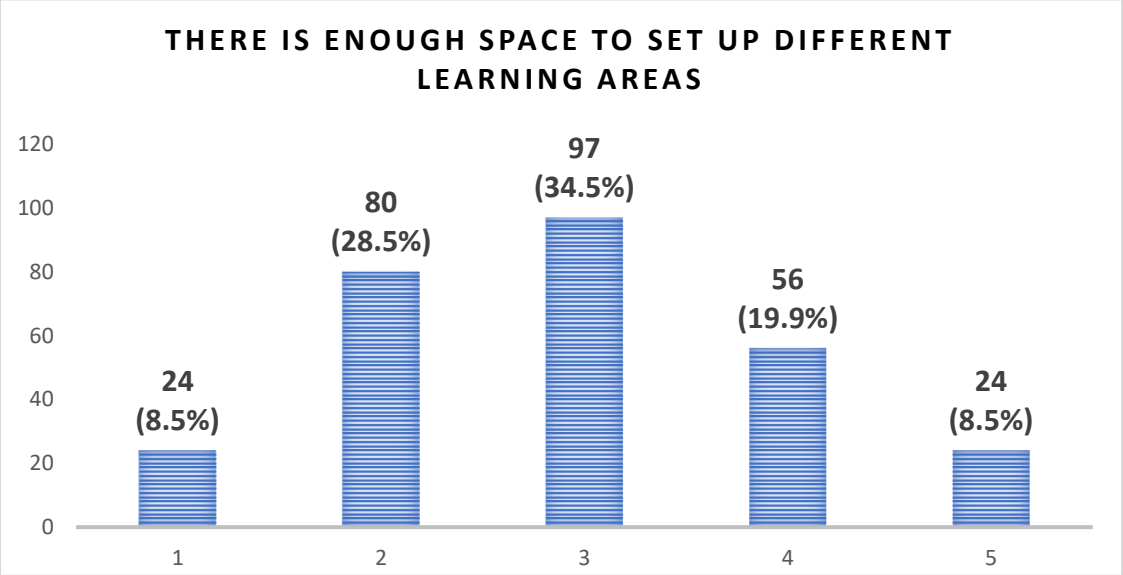
- **High Agreement on Improved Reading Skills:** A total of 73.7% of respondents agree or strongly agree that students' English reading skills have improved through the Ennum Ezhuthum program, with 49.1% agreeing and 24.6% strongly agreeing. This significant majority suggests that the program is effective in enhancing students' English reading abilities.

- **Moderate Neutrality:** A considerable proportion of respondents (21.7%) are neutral, indicating that many people neither agree nor disagree with the statement. This could suggest a lack of direct evidence or uncertainty about the program's impact on reading skills.
- **Low Level of Disagreement:** A combined total of 4.7% of respondents disagree or strongly disagree, with 3.6% disagreeing and 1.1% strongly disagreeing. This indicates that only a small minority do not believe the program has improved English reading skills among students.

Overall, the data suggests that the Ennum Ezhuthum program has had a positive impact on students' English reading skills, with a significant majority of respondents agreeing or strongly agreeing with this statement. The moderate level of neutrality might suggest that some respondents require more data or direct observation to form a strong opinion, while the low level of disagreement indicates that most people view the program as beneficial for reading skills.

These findings indicate that the Ennum Ezhuthum program is generally perceived as successful in improving students' English reading skills. To further strengthen this perception, exploring the reasons behind neutrality could be valuable, identifying any areas where the program might need to demonstrate more visible impact. Understanding the sources of disagreement, albeit minimal, can also offer insights into any aspects of the program that may need improvement or greater focus to ensure that it consistently meets its objectives.

20. Space for Learning Corner



There is enough space to set up different learning areas

Strongly Agree	Agree	**Neutral**	Disagree	Strongly Disagree
24 (8.5 %)	80 (28.5 %)	**97 (34.5 %)**	56 (19.9 %)	24 (8.5 %)

- **Moderate Agreement on Availability of Space:** A total of 37% of respondents agree or strongly agree that there is enough space to set up different learning areas, with 28.5% agreeing and 8.5% strongly agreeing. This suggests that a significant portion of respondents believe that there is adequate space to create varied learning environments.
- **High Neutrality:** The largest proportion of respondents (34.5%) is neutral, indicating that many people neither agree nor disagree with the statement. This could

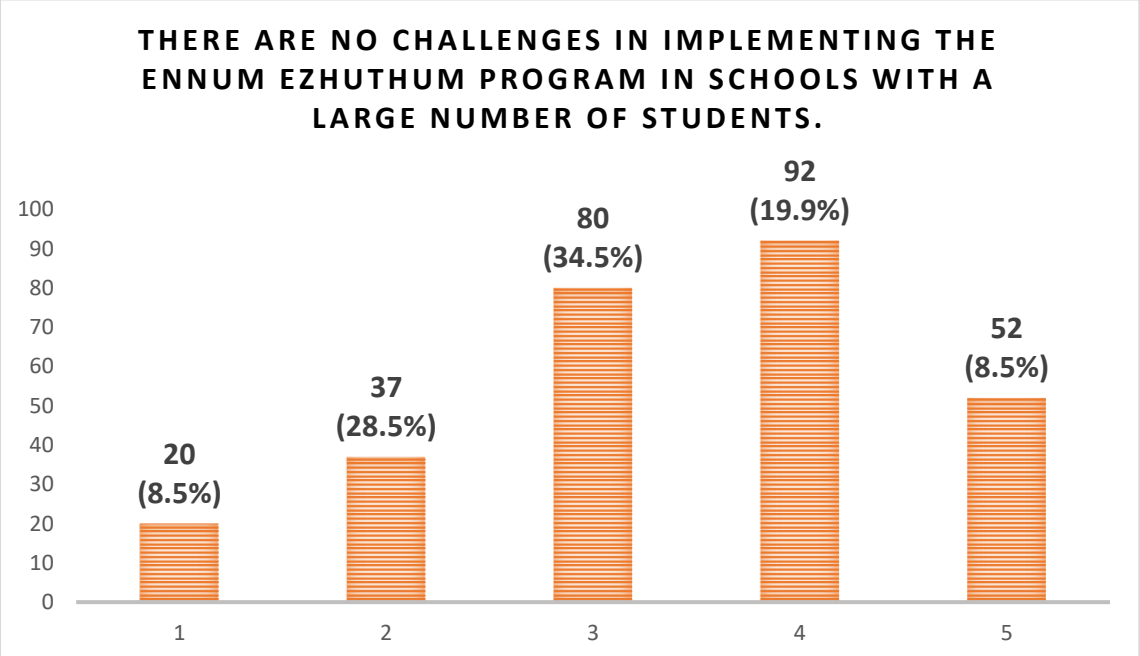
suggest uncertainty about what constitutes "enough space," variability in school infrastructure, or a lack of direct observation of different learning areas.

- **Moderate Disagreement:** A combined total of 28.4% of respondents disagree or strongly disagree, with 19.9% disagreeing and 8.5% strongly disagreeing. This indicates that a significant minority find that there isn't sufficient space to set up different learning areas.

Overall, the data suggests that opinions are mixed regarding whether there is enough space to set up different learning areas, with a moderate level of agreement, high neutrality, and a notable level of disagreement. The moderate agreement indicates that some respondents believe the space is sufficient, possibly reflecting schools with flexible layouts or effective use of available areas. The high neutrality might indicate uncertainty or a lack of clarity on what constitutes adequate space for learning areas. The moderate disagreement suggests that a significant minority finds space to be a constraint, possibly due to limited infrastructure or overcrowding.

These findings indicate that the question of sufficient space is complex and may vary depending on the context. To better understand the reasons behind neutrality and disagreement, further exploration could be helpful, identifying the specific challenges schools face when setting up different learning areas. This can guide efforts to improve or optimize space utilization to create effective learning environments for students.

21. Challenges in Large Schools



There are no challenges in implementing the Ennum Ezhuthum program in schools with a large number of students.

Strongly Agree	Agree	Neutral	**Disagree**	Strongly Disagree
20 (7.1 %)	37 (13.2)	80 (28.5%)	**92 (32.7%)**	52 (18.5 %)

- **Significant Disagreement with the Statement:** A total of 51.2% of respondents disagree or strongly disagree that there are no challenges in implementing the Ennum Ezhuthum program in schools with a large number of students, with 32.7% disagreeing and 18.5% strongly disagreeing. This suggests that a majority

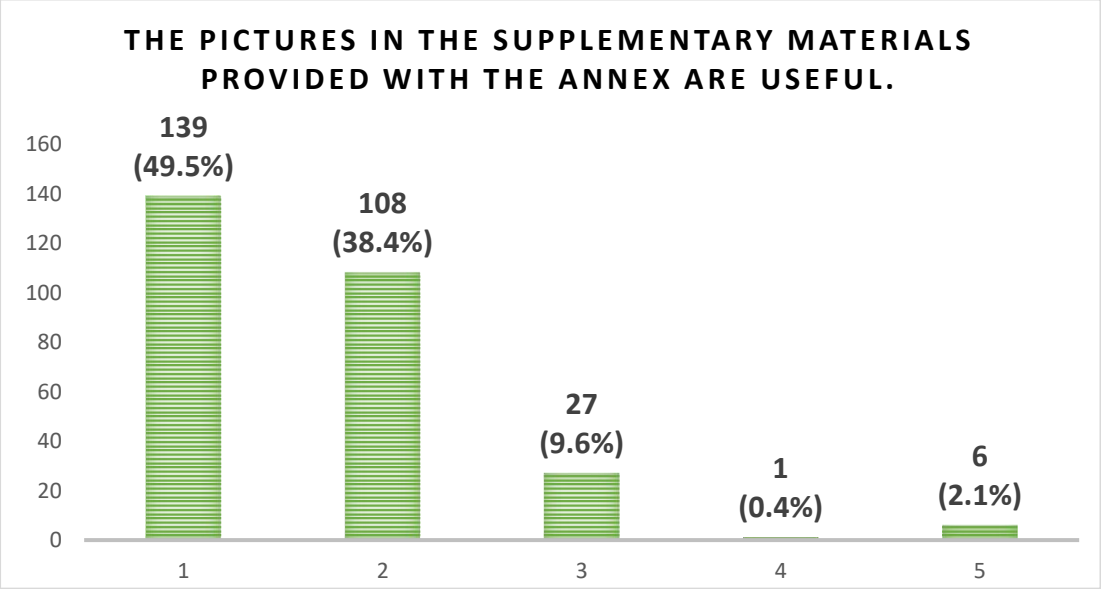
of respondents find that challenges do exist in implementing the program in schools with large student populations.

- **High Neutrality:** A considerable proportion of respondents (28.5%) are neutral, indicating that they are uncertain or have mixed views on whether challenges exist. This neutrality could suggest variability in the challenges faced or insufficient information to form a strong opinion.
- **Low Agreement with the Statement:** A combined total of 20.3% of respondents agree or strongly agree that there are no challenges in implementing the program in large schools, with 13.2% agreeing and 7.1% strongly agreeing. This suggests that a smaller minority find it relatively smooth to implement the program even with a large number of students.

Overall, the data indicates that the majority of respondents believe that there are challenges in implementing the Ennum Ezhuthum program in schools with a large number of students. The high neutrality might suggest that experiences vary depending on the specific school or context. The low level of agreement indicates that only a minority find the implementation process straightforward in schools with a large student body.

These findings suggest that implementing the Ennum Ezhuthum program in large schools can be challenging. To address these challenges, it would be useful to understand the specific issues faced by schools with large student populations, such as classroom management, resource allocation, or teacher-student ratios. This can guide efforts to overcome these obstacles, ensuring the program's successful implementation in schools of all sizes.

22. Usefulness of Pictures in Materials



The pictures in the supplementary materials provided with the annexure are useful.

Strongly Agree	Agree	Neutral	**Disagree**	Strongly Disagree
139 (49.5%)	108 (38.4%)	27 (9.6%)	1 (0.4%)	6 (2.1%)

- **High Level of Agreement on Usefulness:** A combined total of 87.9% of respondents agree or strongly agree that the pictures in the supplementary materials are useful, with 49.5% strongly agreeing and 38.4% agreeing. This suggests that the vast majority find the visuals in the supplementary materials helpful, indicating that they likely enhance understanding and engagement.
- **Low Neutrality:** A smaller proportion of respondents (9.6%) are neutral, suggesting that these respondents do not have a strong opinion on the usefulness of the pictures.

This could indicate variability in their experience with the supplementary materials or a lack of direct usage.

- **Minimal Disagreement:** A combined total of only 2.5% of respondents disagree or strongly disagree with the statement, with 0.4% disagreeing and 2.1% strongly disagreeing. This indicates that very few people find the pictures unhelpful, suggesting that the visuals are generally well-designed and effective.

Overall, the data shows a high level of agreement that the pictures in the supplementary materials provided with the annexure are useful. The high level of strong agreement suggests that the visuals significantly contribute to the value of these materials. The low neutrality could indicate that most respondents have had positive experiences with these materials, while the minimal disagreement indicates that only a few have found the pictures to be unhelpful or lacking.

These findings suggest that the supplementary materials with pictures are well-received and considered useful by most respondents. To ensure continued effectiveness, it could be helpful to explore the reasons behind the small level of neutrality and disagreement, identifying any specific areas for improvement or gaps in the supplementary materials. This could guide efforts to maintain high levels of engagement and usefulness in educational materials.

General Impact of EE Program

- **Positive Outcomes in Multiple Areas:** The Ennum Ezhuthum program generally received positive feedback, with most respondents agreeing or strongly agreeing that it brings about changes in student behavior, increases confidence in public speaking, and improves English reading skills.

Learning Environment

- **Challenges in Large Schools:** While the program is broadly effective, implementing it in schools with large numbers of students presents challenges. A majority of respondents noted difficulties in this area, indicating that schools with high student-to-teacher ratios or resource constraints may require additional support.
- **Space Constraints:** Opinions are mixed regarding whether there is enough space to set up different learning areas, with notable levels of disagreement. This suggests that some schools might struggle with space limitations, affecting their ability to create diverse learning environments.

Teaching Materials and Assessments

- **High-Quality Supplementary Materials:** The pictures in the supplementary materials are widely considered useful, with the majority of respondents strongly agreeing or agreeing on their value. This indicates that these materials are effectively enhancing learning and engagement.
- **Varied Experiences with Workbook Assessment:** While the majority of respondents find the number of activities in the workbook high, the need for teacher assistance to complete them varies. The workbook's design could require additional support for some students, suggesting a balance between challenge and manageability.

Teacher Perceptions

- **Mixed Perceptions on Assessment Tools:** The ease of evaluating in the Ennum Ezhuthum program and using the TN SED APP has mixed responses, with a considerable proportion of neutrality and some disagreement. This might indicate the need for improved training or app usability.
- **Varied Agreement on Level-Based Teaching:** Respondents are divided on whether level-based teaching in the program has been beneficial. These highlights potential disparities in effectiveness depending on the classroom context or implementation.

Student Experiences

- **Enhanced Joy in School Attendance:** The program appears to foster a positive attitude for students toward attending school, with a significant majority agreeing that it helps them come to school with joy.
- **Mixed Opinions on Workbook Assistance:** While many students require teacher assistance to complete workbook exercises, some respondents believe that students can complete them with less guidance, suggesting a diverse range of learning needs.

Overall, the synthesis indicates that the Ennum Ezhuthum program has been successful in fostering positive outcomes for students, with broad agreement on its benefits in several key areas. However, certain challenges, especially in large schools or related to space constraints, may need to be addressed. Additionally, variations in teacher and student experiences suggest opportunities for further refinement, particularly in assessment tools and level-based teaching. These insights can guide the EE program to ensure consistent success and adaptability across different educational contexts.

4.3.1. Descriptive and Inferential analysis

The students' achievements were analyzed and values are tabulated and are shown in Table.

3rd standard	**NAS 2021** (Highest LO Mark)	After Ennum Ezuthum	Difference
Tamil	48%	93%	45%
English	48%	89%	41%
Mathematics	50%	82%	32%

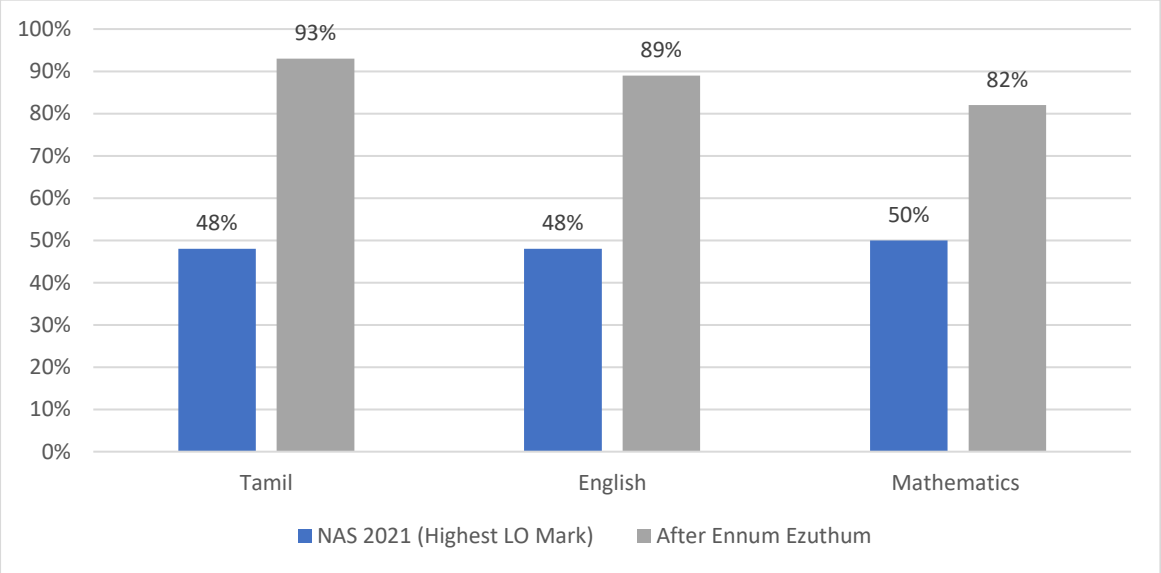


Figure presents a comparison between the survey test scores and the NAS 2021 results. The NAS 2021 mean score for Learning Outcomes in class 3, focusing on the reading competency L304—which encompasses reading small passages with comprehension, identifying main ideas, details, sequences, and drawing conclusions—is 48% on average across the district. However, in this survey, following the implementation of the Ennum Ezuthum program, the district's average performance percentage in Tamil language has risen to 93%, while in English, the average is 89%. In terms of mathematics, the NAS 2021 average score is 50%, but the survey following the

Ennum Ezuthum program implementation shows an average of 82% for 3rd standard students.

5th Standard	**NAS 2021** (Highest LO Mark)	After Ennum Ezhuthum	Difference
Tamil	40%	86.75%	47%
English	40%	79.43%	39%
Mathematics	42%	78.62%	37%

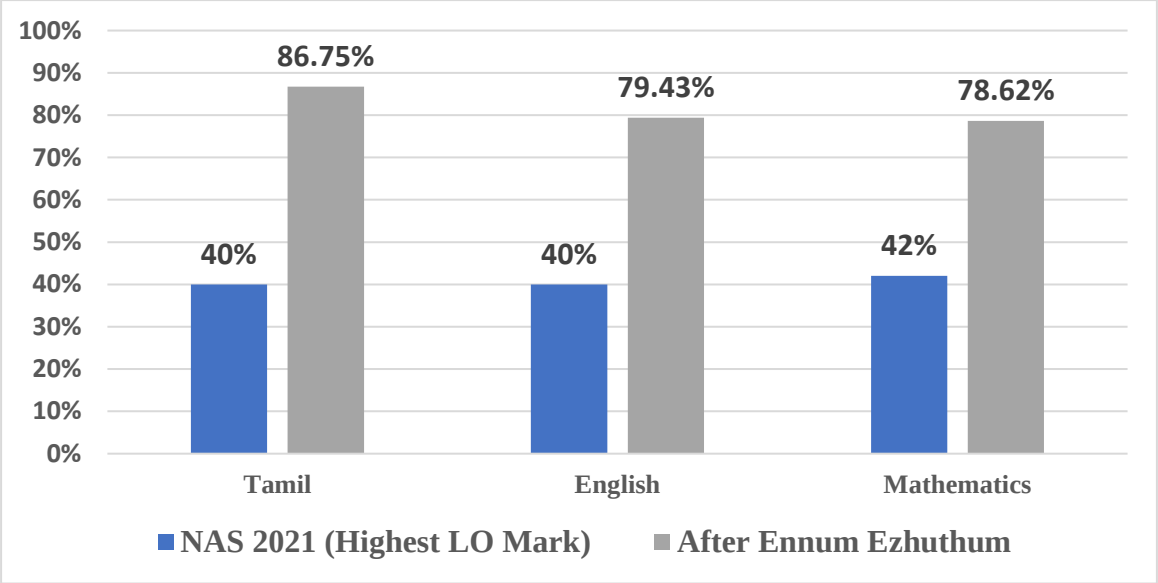
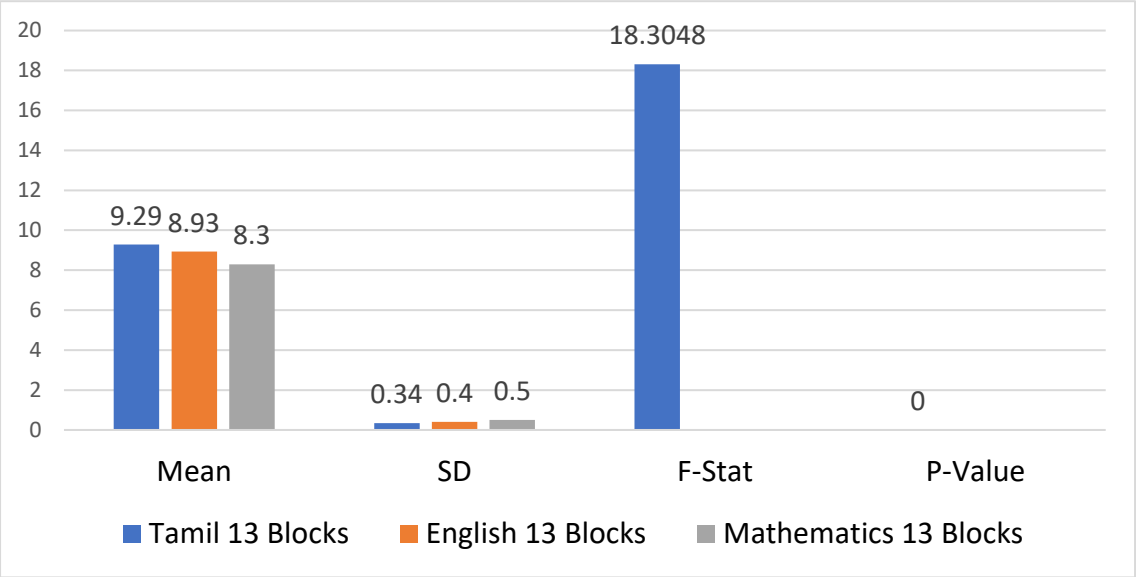


Figure presents a comparison between the survey test scores and the NAS 2021 results for 5th standard students, highlighting the significant impact of the Ennum Ezhuthum program on learning outcomes in Tamil, English, and Mathematics. The NAS 2021 highest Learning Outcome (LO) mark for Tamil was 40%; however, after implementing the Ennum Ezhuthum program, student performance in Tamil increased to 86.75%, showing a remarkable improvement of 47 percentage points. In English, the highest LO mark in

NAS 2021 was 40%, and following the program, performance rose to 79.43%, reflecting a significant improvement of 39 percentage points. For Mathematics, the NAS 2021 highest LO mark was 42%, and after the program, performance climbed to 78.62%, indicating a notable increase of 37 percentage points. This comparison clearly illustrates the substantial positive impact of the Ennum Ezhuthum program, with its comprehensive approach and effective strategies significantly elevating students' proficiency in these core subjects and emphasizing the importance and success of targeted educational interventions.

1. There is no significant difference in the level of learning in reading, writing and Mathematics among the 3rd standard primary school pupils.

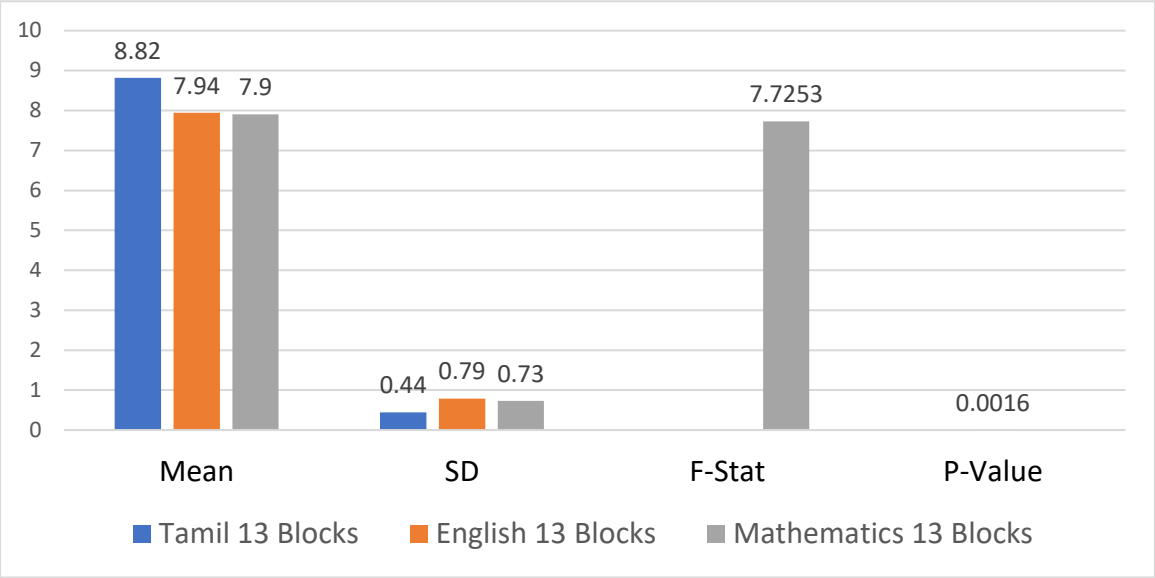


Subject	N	Mean	SD	F-Stat	P-Value
Tamil	13 Blocks	**9.29**	**0.34**	**18.3048**	0
English	13 Blocks	**8.93**	**0.40**		
Mathematics	13 Blocks	**8.30**	**0.50**		

- The F-statistic value for the comparison of learning levels in reading, writing, and mathematics among primary school pupils is 18.3048.
- The associated p-value is 0.
- Since the p-value is less than the chosen significance level (typically 0.05), so the null hypothesis is rejected.
- Therefore, there is sufficient evidence to conclude that there is a significant difference in the level of learning in reading, writing, and mathematics among 3rd standard primary school pupils.

2. There is no significant difference in the level of learning in reading, writing and Mathematics among the 5th standard primary school pupils.

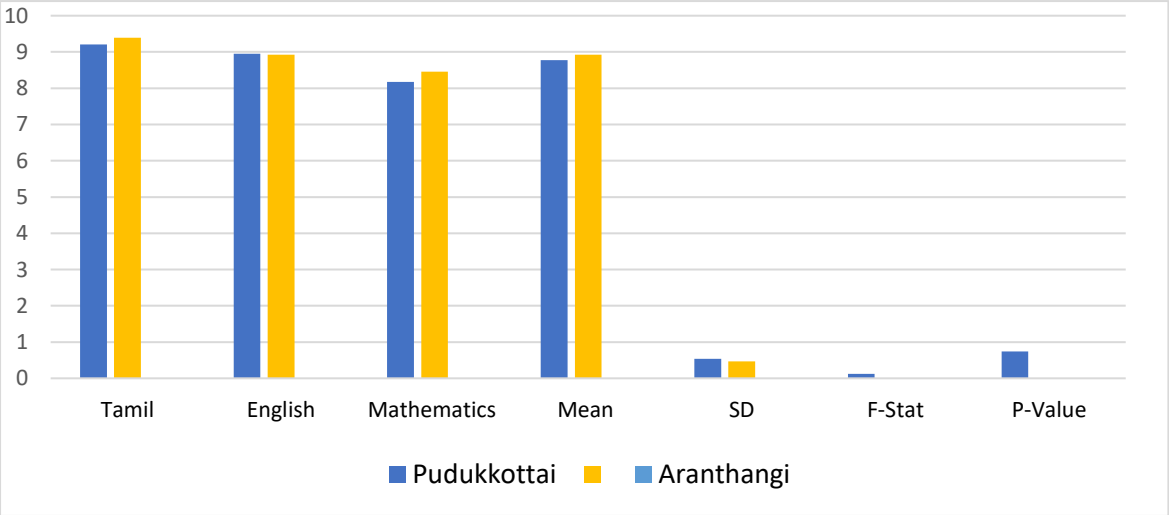
Subject	N	Mean	SD	F-Stat	P-Value
Tamil	13 Blocks	8.82	0.44	7.7253	0.0016
English	13 Blocks	7.94	0.79		
Mathematics	13 Blocks	7.90	0.73		



- The F-statistic value for the comparison of learning levels in reading, writing, and mathematics among primary school pupils is 7.7253.
- The associated p-value is 0.0016.
- Since the p-value is less than the chosen significance level (typically 0.05), so the null hypothesis is rejected.
- Therefore, there is sufficient evidence to conclude that there is a significant difference in the level of learning in reading, writing, and mathematics among the 5th standard primary school pupils.

3. **There is no significant difference in learning in reading, writing and Mathematics among the 3rd standard primary school pupils in terms of educational district.**

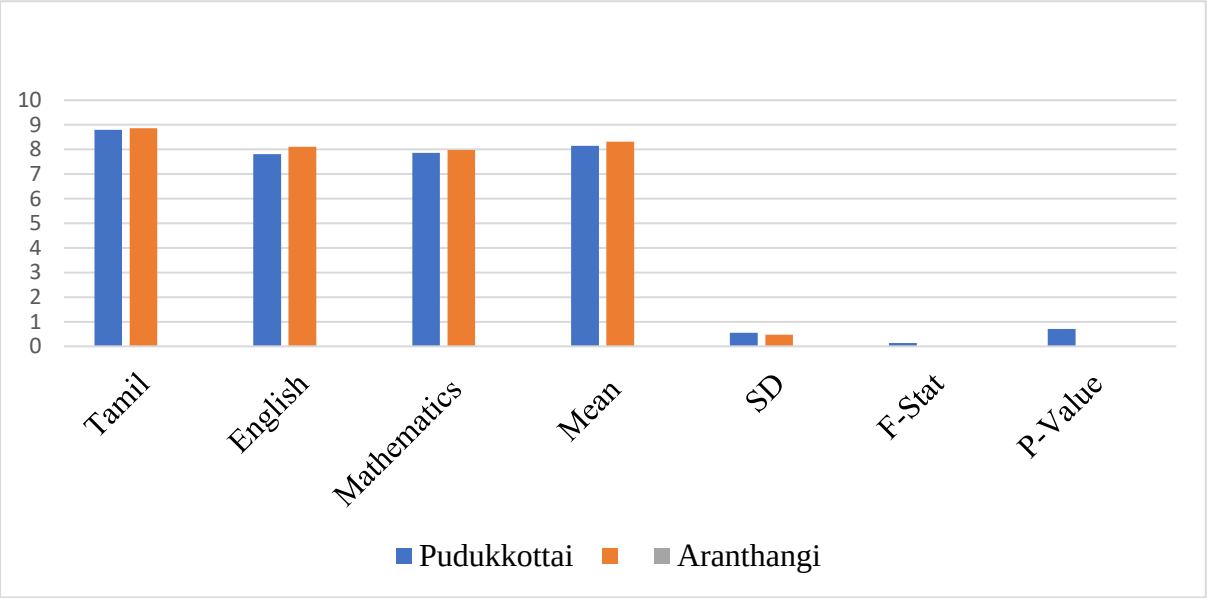
Educational District	Pudukkottai	Aranthangi
Tamil	9.21031	9.394468
English	8.951072	8.923069
Mathematics	8.172488	8.456549
Mean	8.778	8.9247
SD	0.5401	0.469
F-Stat	0.1262	
P-Value	0.7404	



The p-value (0.7404) is greater than the conventional significance level of 0.05. Therefore, fail to reject the null hypothesis. There is no significant difference in learning outcomes between the two educational districts.

4. **There is no significant difference in learning in reading, writing and Mathematics among the 5th standard primary school pupils in terms of educational district.**

Educational District	Pudukkottai	Aranthangi
Tamil	8.792812	8.865242
English	7.801637	8.105921
Mathematics	7.854833	7.971791
Mean	8.14	8.31
SD	0.55	0.48
F-Stat	0.14	
P-Value	0.71	

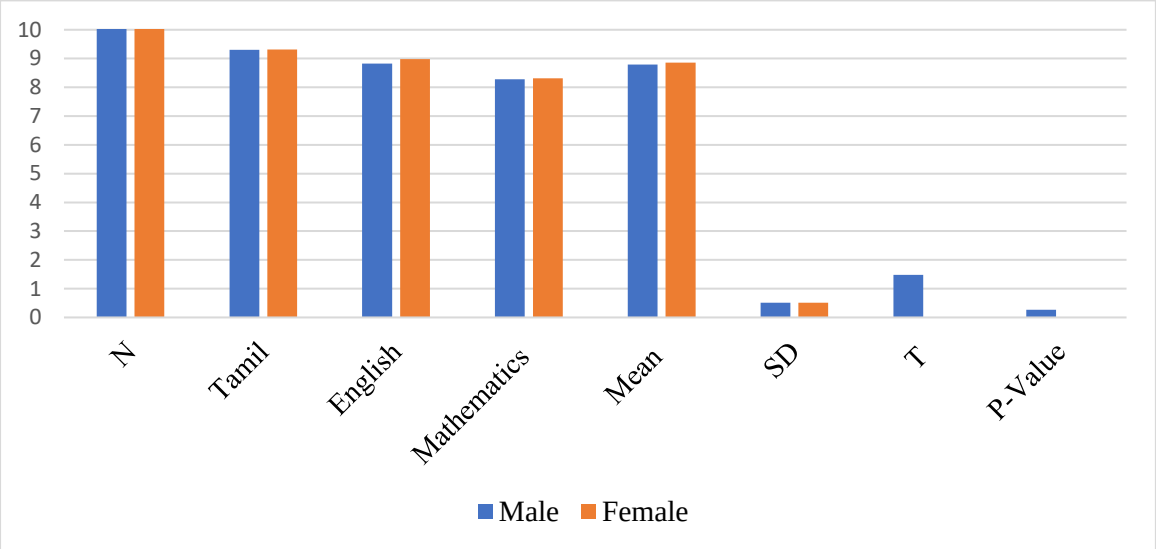


- The null hypothesis states that there is no significant difference in learning in reading, writing, and mathematics among 5th standard primary school pupils in terms of educational district.
- The F-statistic (0.14) is less than 1, indicating a small difference.

- The associated p-value (0.71) is greater than the typical significance level of 0.05.
- Since the p-value is greater than 0.05, so the null hypothesis is accepted.
- Therefore, based on the data provided, there is no statistically significant difference in learning in reading, writing, and mathematics among 5th standard primary school pupils in terms of educational district.

5. **There is no significant difference in learning in reading, writing and Mathematics among the 3rd standard primary school pupils in terms of gender.**

Gender	Male	Female
N	562	617
Tamil	9.298932	9.311183
English	8.822064	8.980551
Mathematics	8.27758	8.309562
Mean	8.79	8.86
SD	0.51	0.51
F-Stat	1.4750	
P-Value	0.27	



- Based on the provided data, there is no evidence to reject the null hypothesis, indicating that there is no significant difference in learning between male and female primary school pupils for any of the subjects: Tamil, English, or Mathematics. The analysis suggests that there is no significant difference in learning in reading, writing,

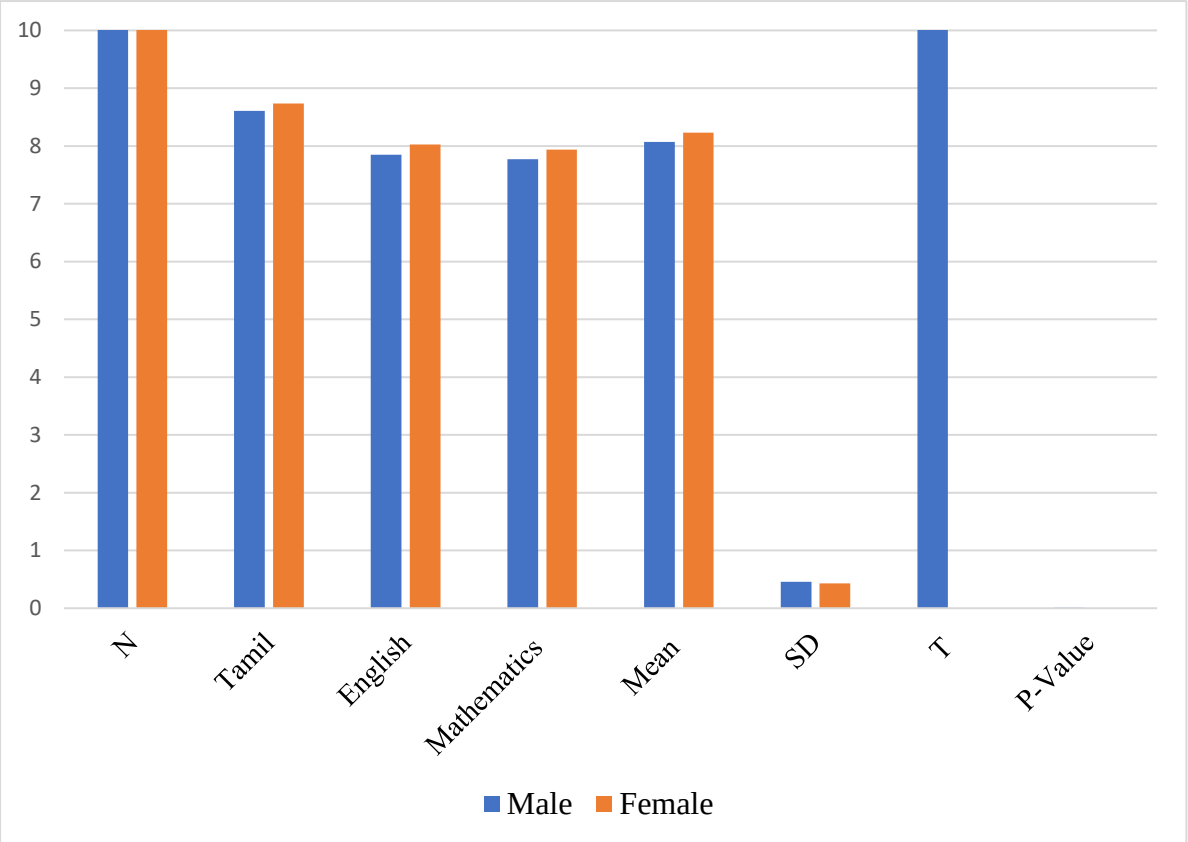
and mathematics between male and female primary school pupils based on the provided data. So the hypothesis is accepted.

- These findings provide insights into gender similarities in academic performance among primary school pupils across multiple subjects.

In summary, the provided data and statistical analysis indicate no significant difference in learning between male and female primary school pupils for the subjects Tamil, English, and Mathematics.

6. **There is no significant difference in learning in reading, writing and Mathematics among the 5th standard primary school pupils in terms of gender.**

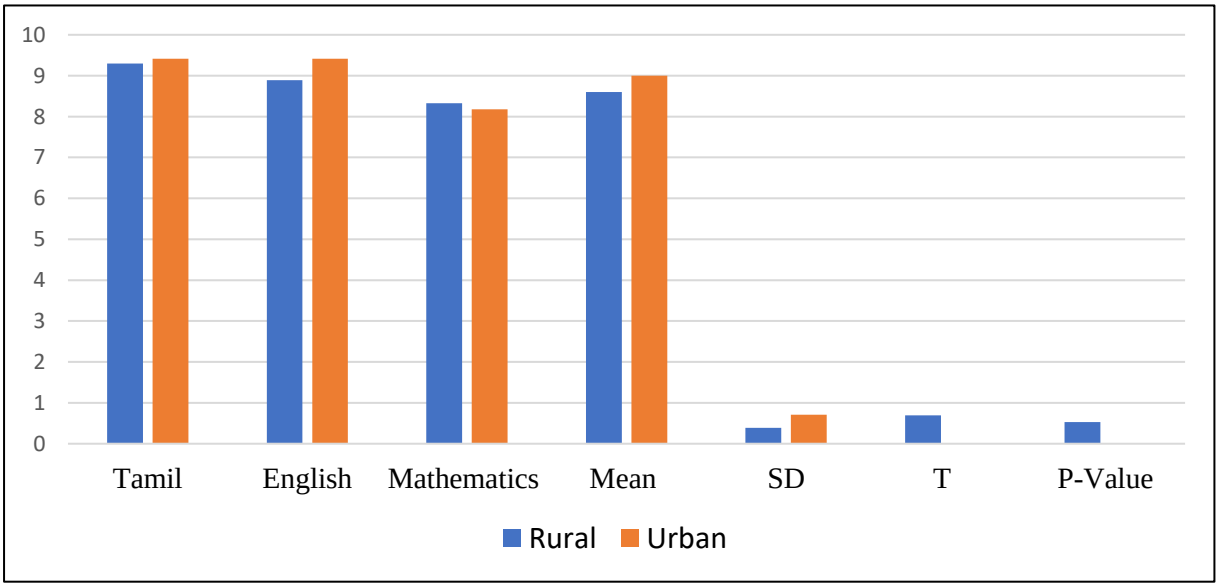
Gender	Male	Female
N	554	666
Tamil	8.606498	8.732733
English	7.84657	8.024024
Mathematics	7.770758	7.935435
Mean	8.07	8.23
SD	0.46	0.43
F-Stat	10.14	
P-Value	0.0096	



- Based on the provided data and the significant p-values for Tamil, English, and Mathematics, there is strong evidence to reject the null hypothesis for these subjects, indicating significant differences between male and female 5th standard primary school pupils.
- These findings highlight the presence of gender differences in learning outcomes among 5th standard primary school pupils across multiple subjects.
- In summary, the analysis indicates significant differences in learning outcomes between male and female 5th standard primary school pupils in the subjects of Tamil, English, and Mathematics.

7. There is no significant difference in learning in reading, writing and Mathematics among the 3rd standard primary school pupils in terms of locality.

Locality	Rural	Urban
Tamil	9.297696	9.411765
English	8.886636	9.411765
Mathematics	8.322581	8.176471
Mean	8.60	9.00
SD	0.39	0.71
F-Stat	0.69	
P-Value	0.53	



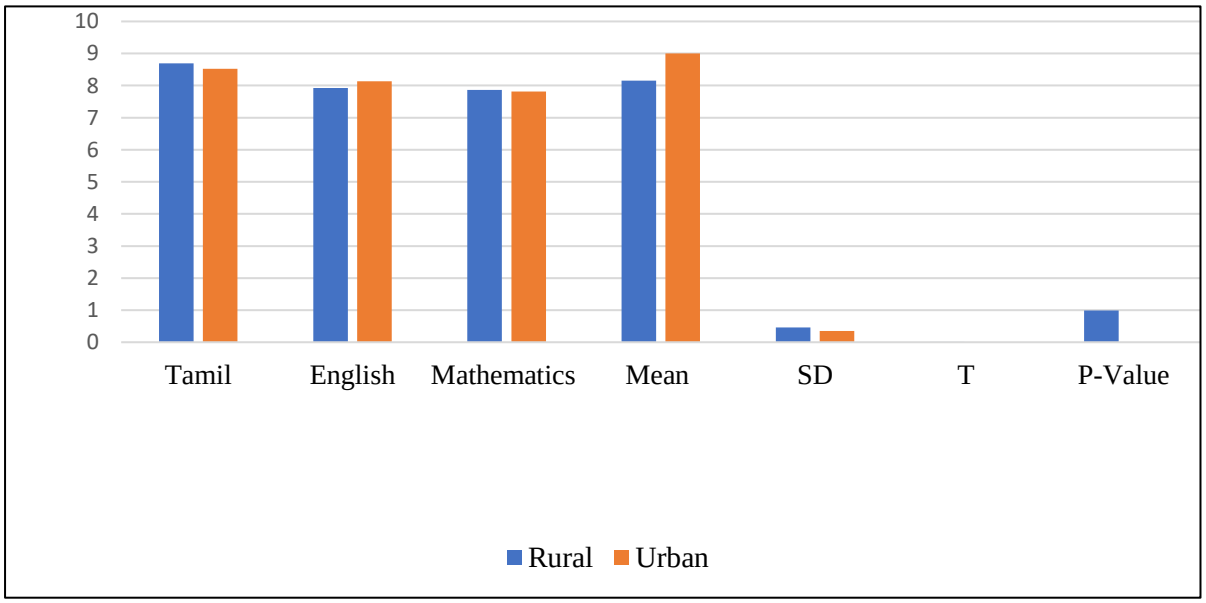
For all the three subjects, the mean scores are relatively close between rural and urban areas. In other words, there's no significant gap in learning outcomes between the two localities.

The p-values, which indicate the probability of obtaining results as extreme as the ones observed if the null hypothesis were true (i.e., if there were no difference between rural and urban areas), are all above the conventional significance level of 0.05. This suggests that there is no statistically significant difference in learning outcomes between rural and urban areas for any of the subjects.

Therefore, based on this analysis, it can be concluded that there is no significant difference in learning in reading, writing, and mathematics among third standard primary school pupils in terms of their locality, whether rural or urban.

8. **There is no significant difference in learning in reading, writing and Mathematics among the 5th standard primary school pupils in terms of locality.**

Locality	Rural	Urban
Tamil	8.690693	8.528455
English	7.92062	8.130081
Mathematics	7.864051	7.813008
Mean	8.15	9.00
SD	0.46	0.35
F-Stat	0.0038	
P-Value	0.99	



Based on the statistical analysis comparing the learning outcomes of fifth standard primary school pupils in reading, writing, and mathematics by locality (rural or urban),

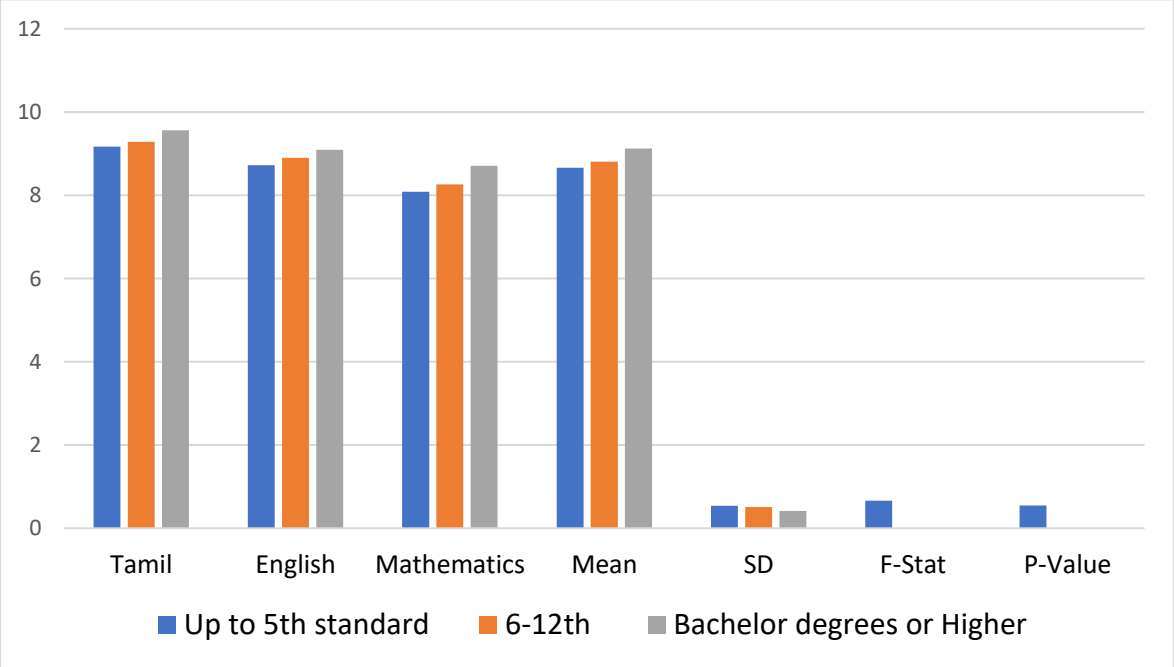
the results indicate that there is no significant difference in learning outcomes between the two localities.

For all three subjects (Tamil, English, Mathematics), the mean scores are relatively close between rural and urban areas. Additionally, the p-value for all subjects is above the conventional significance level of 0.05.

In Mathematics, although the mean score for the rural area is slightly lower than that of the urban area, the p-value (0.99) suggests that this difference is not statistically significant. Therefore, it can be concluded that the observed difference in Mathematics scores between rural and urban areas is likely due to random variation rather than a true difference in learning outcomes.

9. **There is no significant difference in learning in reading, writing and Mathematics among the 3rd standard primary school pupils in terms of Father Educational Qualification.**

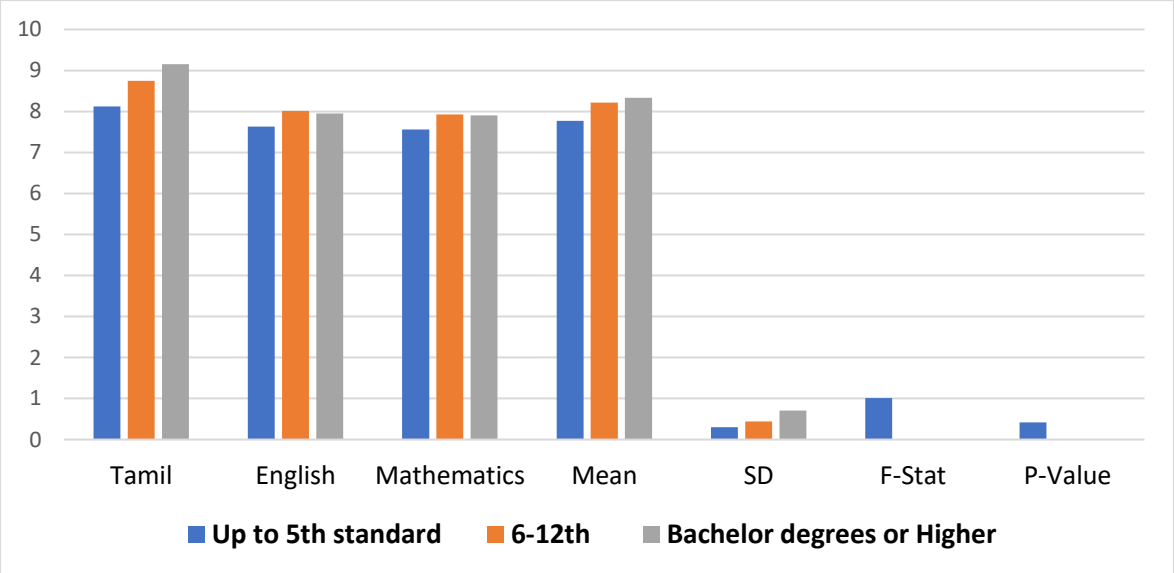
Father's Educational Qualification	Up to 5th standard	6 – 12th	Bachelor degrees or Higher
Tamil	9.17	9.28	9.56
English	8.72	8.90	9.09
Mathematics	8.08	8.26	8.71
Mean	8.66	8.81	9.12
SD	0.54	0.51	0.42
F-Stat	0.6595		
P-Value	0.55091		



- The ANOVA analysis tests whether there are statistically significant differences in the mean scores of Tamils, English, and Mathematics among the different educational qualification categories.
- Since the p-value (0.55091) is greater than the typical significance level of 0.05, there is insufficient evidence to reject the null hypothesis. It is accepted.
- This suggests that, based on the provided data, there are no statistically significant differences in the mean scores of Tamils, English, and Mathematics among the different educational qualification categories.
- In other words, the level of father's educational qualification does not appear to have a significant impact on the scores in Tamil, English, and Mathematics.

10. **There is no significant difference in learning in reading, writing and Mathematics among the 5th standard primary school pupils in terms of Father Educational Qualification.**

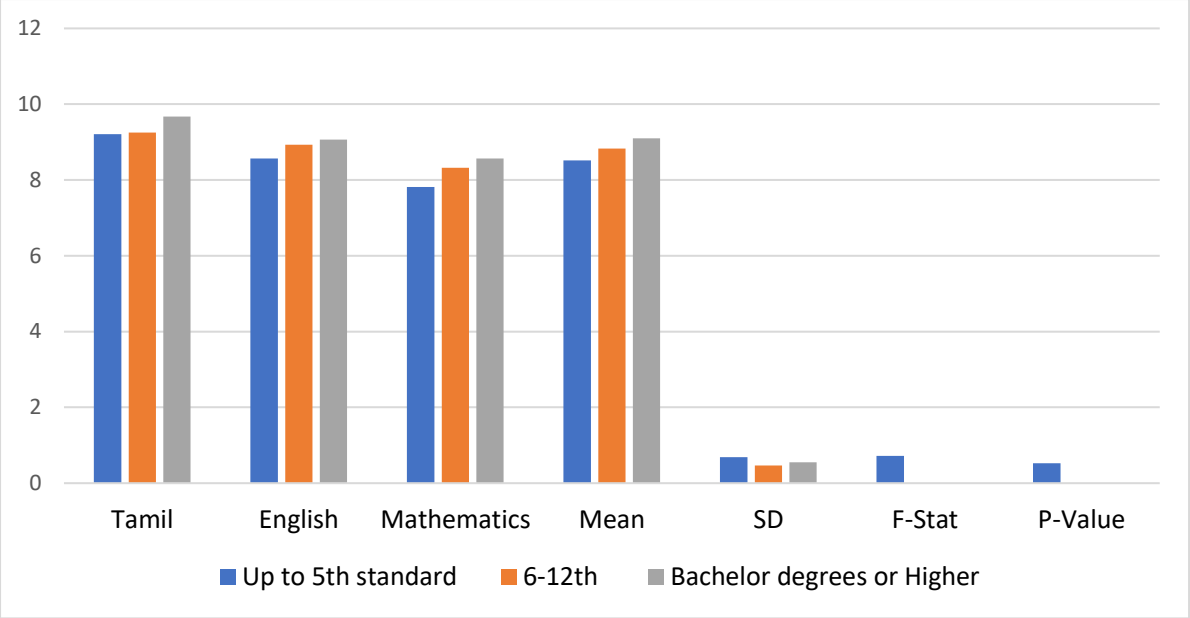
Father's Educational Qualification	Up to 5th standard	6 – 12th	Bachelor degrees or Higher
Tamil	8.123288	8.745704	9.157025
English	7.630137	8.0126	7.950413
Mathematics	7.561644	7.927835	7.900826
Mean	7.77	8.22	8.33
SD	0.30	0.44	0.71
F-Stat	1.0077		
P-Value	0.4194		



- Since the p-value (0.4194) is greater than the typical significance level of 0.05, there is insufficient evidence to reject the null hypothesis.
- This suggests that, based on the provided data, there are no statistically significant differences in learning outcomes (reading, writing, and mathematics) among 5th standard primary school pupils based on their fathers' educational qualifications. It is accepted.
- In other words, regardless of their fathers' educational background, there doesn't seem to be a significant impact on the learning outcomes of the pupils in terms of reading, writing, and mathematics.

11. **There is no significant difference in learning in reading, writing and Mathematics among the 3rd standard primary school pupils in terms of Mothers Educational Qualification.**

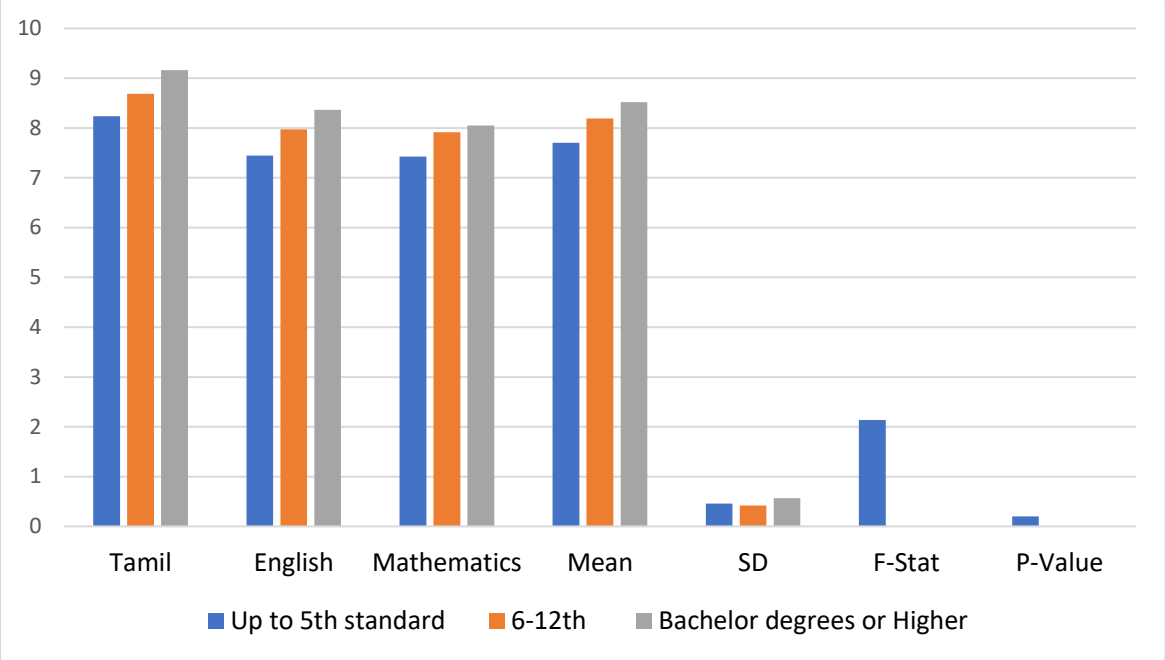
Mother's Educational Qualification	Up to 5th standard	6 – 12th	Bachelor degrees or Higher
Tamil	9.209302	9.252252	9.670886
English	8.565891	8.926802	9.063291
Mathematics	7.813953	8.318694	8.56962
Mean	8.52	8.83	9.10
SD	0.69	0.47	0.55
F-Stat	0.724		
P-Value	0.5228		



- Since the p-value (0.5228) is greater than the typical significance level of 0.05, there is insufficient evidence to reject the null hypothesis.
- This suggests that, based on the provided data, there are no statistically significant differences in learning outcomes (reading, writing, and mathematics) among 3rd standard primary school pupils based on their mothers' educational qualifications. It is accepted.
- In other words, regardless of their mothers' educational background, there doesn't seem to be a significant impact on the learning outcomes of the pupils in terms of reading, writing, and mathematics.

12. **There is no significant difference in learning in reading, writing and Mathematics among the 5th standard primary school pupils in terms of Mothers Educational Qualification.**

Mother's Educational Qualification	Up to 5th standard	6 – 12th	Bachelor degrees or Higher
Tamil	8.233696	8.685457	9.15942
English	7.445652	7.97407	8.362319
Mathematics	7.423913	7.9177	8.050725
Mean	7.70	8.19	8.52
SD	0.46	0.42	0.57
F-Stat	2.1349		
P-Value	0.1994		



- Since the p-value (0.1994) is greater than the typical significance level of 0.05, there is insufficient evidence to reject the null hypothesis.
- This suggests that, based on the provided data, there are no statistically significant differences in learning outcomes (reading, writing, and mathematics) among 5th standard primary school pupils based on their mothers' educational qualifications. It is accepted.
- In other words, regardless of their mothers' educational background, there doesn't seem to be a significant impact on the learning outcomes of the pupils in terms of reading, writing, and mathematics.

The table below outlines the participation of schools and 3rd standard students from each block in the research.

Sl.No	Name of the Block /school	No. of students
ANNAVASAL		
1	ADW, KURUKALAIYAPPATTI	6
2	PUMS, PERUNCHUNAI	16
3	PUPS, GOTHANDARAMAPURAM	1
4	PUPS, KALLAMPATTI	10
5	PUPS, MARUTHANTHALAI	4
6	PUPS, VAAGAIPATTI	13
7	PUPS, AYINKUDI	17
8	PUPS, M. PANAMPATTI	7
9	PUPS, SELLUKUDI	11
10	PUPS, SENDHAMANGALAM	12
11	PUPS, SOKKANATHANPATTI	17
12	PUPS.PERUMANADU	9
	Total	**123**
ARANTHANGI		
1	MPS, ARANTHANGI	6
2	PUMS, AALAPIRANTHAN	9
3	PUMS,ANNAMALAIYAN KUDIYIRUPPU	10
4	PUMS, NAYAKARPATTI	13
5	PUMS, VIGNESHWARAPURAM	8

6	PUPS, KARUVIDAISERI	2
7	PUPS, PALLATHIVAYAL	7
8	PUPS, VAARAPOOR	3
	Total	**58**
	ARIMALAM	
1	PUPS, VADAKKUPATTI	10
2	PUPS, MELATHEMUTHUPATTI	6
3	PUPS, MIRATTUNILAI	20
4	PUPS, NAMANASAMUTHIRAM	9
5	PUPS, NEIVASALPATTI	6
6	PUPS, SIVAPURAM	3
7	PUPS, VANNIYAMPATTI	5
	Total	**59**
	AVUDAIYARKOIL	
1	PUMS, KALABAM	7
2	PUPS, IDAYNKOLLAI	4
3	PUPS, KODUKAVAYAL	6
4	PUPS, KOODALOOR	2
5	PUPS, KUNDAGAVAYAL	5
6	PUPS, CHINNAPATTAMANGALAM	1
7	PUPS, KODHAIMANGALAM	4
8	PUPS, THUNJANOOR	1
9	PUPS, VILANKATTUR	7
	Total	**37**

	GANDHARVAKKOTTAI	
1	PUMS, GANDHARVAKOTTAI	10
2	PUPS, KAADAVARAYANPATTI	1
3	PUPS, KALLUPPATTI	15
4	PUPS, KOMAPURAM	9
5	PUPS, KOMAPURAM (ANNA NAGAR)	9
6	PUPS, THACHANKURICHI	7
7	PUPS, INDHRANAGAR	7
	Total	**58**
	KARAMBAKKUDI	
1	GPS, KALABAM	5
2	PUMS, MYLAPORE	6
3	PUPS, ANJUPULIPPATTI	8
4	PUPS, ANUMARKOIL	5
5	PUPS, BAGAVANDIPATTI	13
6	PUPS, KARAMBAKUDI	11
7	PUPS, KATHANVIDUTHI	3
8	PUPS, THERKUPPATTI	6
9	PUPS, KEELAPPATTI	34
10	PUPS, NARIYANKOLLAI	5
	Total	**96**
	PONNAMARAVATHI	
1	PUPS, KONNAIYOOR	27
2	PUPS, MAANKOTTAI	9

3	PUPS, MOOLANGUDI	3
4	PUPS, PILLAYARPATTI	6
5	PUPS, PUTHUPPATTI	6
6	PUPS, THENOOR	5
7	PUPS, KONNAIPPATTI	12
8	PUPS, SUNDHARAM	8
	Total	**76**
	KUNNANDARKOIL	
1	PUMS, MOSAKKUDI	17
2	PUMS, PALLATHUPATTI	5
3	PUPS, KEERANOOR	5
4	PUPS, K. PARAPPATTI	1
5	PUPS, KEELANAANJUR	5
6	PUPS, KULATHOOR	5
7	PUPS, MARUTHUR	7
8	PUPS, PRAGADHAMBALPURAM	2
9	PUPS, SAVARIYARPATTINAM	3
	Total	**50**
	MANAMELKUDI	
1	PUMS, MELASTHANAM	18
2	PUMS, PR. PATTINAM	13
3	PUPS, KRISHNAJIPATTINAM	19
4	PUPS, VADAKKUR	12
5	PUPS, MANAMELKUDI	27

6	PUPS, PATTANGADU	7
	Total	**96**
	PONNAMARAVATHY	
1	PUMS MYLAPORE	6
2	PUPS, ANJUPULIPPATTI	8
3	PUPS, BAGAVANDIPATTI	13
4	PUPS, KONNAIYOOR	27
5	PUPS, MOOLANGUDI	3
6	PUPS, PILLAYARPATTI	6
7	PUPS, THENOOR	5
8	PUPS, KONNAIPPATTI	12
9	PUPS, SUNDHARAM	8
	Total	**88**
	PUDUKKOTTAI	
1	ANNA MEMORIAL	2
2	MMS, BOSE NAGAR	20
3	PUMS, ASHOKNAGAR	22
4	PUMS, MELAVIDUTHI	12
5	PUMS, MOOKKAMPATTI	17
6	PUPS KEEZHAPPATTI	5
7	PUPS SAMMATTIVIDUTHI	10
8	PUPS, VAADIMANAIPPATTI	1
9	PUPS, SEVUGAMPATTI	8
	Total	**97**

	THIRUMAYAM	
1	PUMS, PILAKKUDIPATTI	24
2	PUPS, ARASANTHAMPATTI	4
3	PUPS, KOTTUR	20
4	PUPS, MANAVALANKARAI	4
5	PUPS, NAGARATHUPATTI	8
6	PUPS, THALAMPATTI (SOUTH)	7
7	PUPS, THULAYANOOR	2
8	PUPS, YENAPPATTI	4
	Total	**73**
	THIRUVARANKULAM	
1	PUMS, METTUPATTI	26
2	PUMS.ALANGUDI	14
3	PUPS, KOVILOOR	5
4	PUPS, KOVILPATTI	5
5	PUPS, PERIYANAYAKIPURAM	5
6	PUPS, ARAYAPATTI	16
7	PUPS, ARAYAPATTI (SOUTH)	10
8	PUPS, KARUVANKUDIYIRUPPU	4
9	PUPS, SAMATHUVAPURAM	5
10	PUPS, SANDHAPPETTAI	5
11	PUPS, THOPPUKKOLLAI	4
12	PUPS, VAMBAN	4
13	PUPS, VANNIYANVIDUTHI	12

	Total	**115**
	VIRALIMALAI	
1	PUPS, KODALIKKUDI	12
2	PUPS, KOOTHAKKUDI	11
3	PUPS, KULAKKARANPATTI	12
4	PUPS, PALLARNATHAM	14
5	PUPS, PALLATHIVAYAL	5
6	PUPS, RAJALIPATTI	29
7	PUPS, VANATHIRAYANPATTI	6
8	PUPS, VIRALIMALAI	29
9	PUPS, VIRALOOR	12
10	PUPS, ATHIPPALLAM	12
11	PUPS, NAMPAMPATTI	11
	Total	**153**
	Grand Total	**1179**

The table below outlines the participation of schools and 5th standard students from each block in the research.

S.No	Block/School	No. of Students
	ANNAVASAL	
1	ADW,KURUKALAIYAPPATTI	5
2	PUMS, PERUNCHUNAI	20
3	PUPS, SELLUKKUDI	9
4	PUPS, GOTHANDARAMAPURAM	7
5	PUPS, KALLAMPATTI	14
6	PUPS, MARUDHANDTHALAI	11
7	PUPS, VAAGAIPATTI	8
8	PUPS, AIYNKUDI	16
9	PUPS, ANNAVASAL	8
10	PUPS, M. PANAMPATTI	3
11	PUPS, PERUMANADU	15
12	PUPS, SENDHAMANGALAM	15
13	PUPS, SOKKANATHANPATTI	17
	Total	**148**
	ARANTHANGI	
1	MPS, ARANTHANGI	7
2	PUMS, AALAPIRANTHAN	9

3	PUMS, ANNAMALAIYAN KUDIYIRUPPU	11
4	PUMS, NAYAKARPATTI	11
5	PUMS, VIGNESHWARAPURAM	9
6	PUPS, KARUVIDAISERI	1
7	PUPS, PALLATHIVAYAL	6
8	PUPS, VAARAPOOR	3
	Total	**57**
	ARIMALAM	
1	PUPS, MIRATTUMALAI	18
2	PUPS, NAMANASAMUTHIRAM	6
3	PUPS, NEIVASALPATTI	3
4	PUPS, PONNAMPATTI (SOUTH)	14
5	PUPS, VADAKKUPATTI	5
6	PUPS, MELATHEMUTHUPATTI	10
7	PUPS, SIVAPURAM	2
8	PUPS, VANNIYAMPATTI	3
	Total	**61**
	AVUDAIYARKOIL	
1	PUMS, KALABAM	5
2	PUPS, KODUKAVAYAL	2
3	PUPS, KUNDAGAVAYAL	3
4	PUPS, CHINNAPATTAMANGALAM	7

5	PUPS, IDAYANKOLLAI	5
6	PUPS, KODHAIMANGALAM	3
7	PUPS, KOODALOOR	5
8	PUPS, THUNJANOOR	4
9	PUPS, VILANKATTUR	9
	Total	**43**
	GANDHARVAKKOTTAI	
1	PUMS, GANDHARVAKOTTAI	15
2	PUPS, KAADAVARAYANPATTI	2
3	PUPS, KALLUPPATTI	15
4	PUPS, KOMAPURAM	12
5	PUPS, KOMAPURAM (ANNA NAGAR)	7
6	PUPS, THACHANKURICHI	9
7	PUPS, INDHRANAGAR	6
	Total	**66**
	KARAMBAKUDI	
1	GPS, KALABAM	2
2	PUMS, NAMBANPATTI	10
3	PUPS, ANUMARKOIL	12
4	PUPS, KARAMBAKUDI	18
5	PUPS, KATHANVIDUTHI	5
6	PUPS, MAANKOTTAI	10

7	PUPS, PUTHUPPATTI	7
8	PUPS, THERKUPPATTI	3
9	PUPS, KEELAPPATTI	19
10	PUPS, NARIYANKOLLAI	6
	Total	**92**
	KUNNANDARKOIL	
1	PUMS, MOSAKKUDI	13
2	PUMS, PALLATHUPATTI	5
3	PUPS, K. PARAPPATTI	4
4	PUPS, KEERANOOR	5
5	PUPS, KEELANAANJUR	6
6	PUPS, KULATHOOR	5
7	PUPS, MARUTHUR	4
8	PUPS, PRAGADHAMBALPURAM	4
9	PUPS, SAVARIYARPATTINAM	4
	Total	**50**
	MANAMELKUDI	
1	PUMS, MELASTHANAM	32
2	PUMS, PR. PATTINAM	18
3	PUPS, KRISHNAJIPATTINAM	21
4	PUPS, VADAKKUR	10
5	PUPS, MANAMELKUDI	30

6	PUPS, PATTANGADU	7
	Total	**118**
	PONNAMARAVATHY	
1	PUMS, MYLAPORE	10
2	PUPS, ANJUPULIPPATTI	12
3	PUPS, BAGAVANDIPATTI	11
4	PUPS, KONNAIYOOR	28
5	PUPS, MOOLANGUDI	5
6	PUPS, PILLAYARPATTI	11
7	PUPS, SUNDHARAM	5
8	PUPS, THENOOR	5
9	PUPS, KONNAIPPATTI	8
	Total	**95**
	PUDUKKOTTAI	
1	ANNA MEMORIAL	4
2	MMS, BOSE NAGAR	32
3	PUMS, ASHOKNAGAR	29
4	PUMS, MELAVIDUTHI	12
5	PUMS, MOOKKAMPATTI	22
6	PUPS SAMMATTIVIDUTHI	10
7	PUPS, VAADIMANAIPPATTI	4
8	PUPS, KEEZHAPPATTI	11

9	PUPS, SEVUGAMPATTI	12
	Total	**136**
	THIRUMAYAM	
1	PUMS, PILAKKUDIPATTI	12
2	PUPS, ARASANTHAMPATTI	3
3	PUPS, KOTTUR	12
4	PUPS, MANAVALANKARAI	4
5	PUPS, NAGARATHUPATTI	6
6	PUPS, THALAMPATTI (SOUTH)	10
7	PUPS, THULAYANOOR	10
8	PUPS, YENAPPATTI	3
	Total	**60**
	THIRUVARANKULAM	
1	PUMS, METTUPATTI	20
2	PUMS, THIRUVARANKULAM	2
3	PUMS, ALANGUDI	11
4	PUPS, ARARYAPPATTI (SOUTH)	5
5	PUPS, KARUVAL KUDIYIRUPPU	4
6	PUPS, KOVILPATTI	10
7	PUPS, KOVILUR	9
8	PUPS, PERIYANAYAKIPURAM	8
9	PUPS, SAMATHUVAPURAM	7

10	PUPS, SANDHAPETTAI	3
11	PUPS, THOPPUKOLLAI	5
12	PUPS, ARAYAPPATTI	14
13	PUPS, VANNIYANVIDUTHI	12
	Total	**110**
	VIRALIMALAI	
1	PUPS, KOOTHAKKUDI	11
2	PUPS, KULAKKARANPATTI	14
3	PUPS, PALLARNATHAM	14
4	PUPS, RAJALIPATTI	30
5	PUPS, VANATHIRAYANPATTI	14
6	PUPS, VIRALIMALAI	26
7	PUPS, VIRALOOR	20
8	PUPS, ATHIPPALLAM	26
9	PUPS, KODALIKKUDI	5
10	PUPS, NAMPAMPATTI	24
	Total	**184**
Grand Total		**1220**

The following table displays the scores of 3rd standard students in Tamil, English, and Mathematics from every block in the study.

Sl.No	Union	Tamil	English	Maths	Total
1	Manamelkudi	9.305344	8.905004	8.294317	26.50466
2	Auvudaiyarkovil	9.891892	9.081081	9.243243	28.21622
3	Karambakkudi	9.488372	8.837209	8.348837	26.67442
4	Pudukkottai	9.154639	9.216495	8.247423	26.61856
5	Thiruvarankulam	9.747826	9.173913	8.156522	27.07826
6	Annavasal	9.04065	8.99187	8.276423	26.30894
7	Arimalam	8.864407	8.610169	7.610169	24.94915
8	Aranthangi	9.068966	8.931034	9.086207	27.08621
9	Viralimalai	8.830065	8.496732	7.993464	25.32026
10	Ponnmaravathy	9.613636	9.170455	8.590909	27.375
11	Kunnandarkovil	9.02	9.2	8	26.22
12	Gandharvakkottai	9.224138	7.965517	7.482759	24.67241
13	Thirumayam	9.589041	9.616438	8.616438	27.82192

The following table displays the scores of 5th-standard students in Tamil, English, and Mathematics from every block in the study.

Sl. No	Union	Tamil	English	Maths	Total
1	Manamelkudi	8.864407	8.152542	7.932203	24.94915
2	Auvudaiyarkovil	9.418605	9.325581	8.976744	27.72093
3	Karambakkudi	8.67541	7.943443	7.860656	24.47377
4	Pudukkottai	8.551471	8.095588	7.044118	23.69118
5	Thiruvarankulam	8.645455	7.745455	7.590909	23.98182
6	Annavasal	8.871622	8.439189	8.385135	25.69595
7	Arimalam	8.377049	7.57377	7.04918	23
8	Aranthangi	9.210526	7.894737	8.421053	25.52632
9	Viralimalai	8.358696	8.065217	8.211957	24.63587
10	Ponnmaravathy	9.357895	8.031579	8.578947	25.96842
11	Kunnandarkovil	8.66	7.46	7.74	23.86
12	Gandharvakkottai	8.166667	5.863636	6.409091	20.43939
13	Thirumayam	9.583333	8.65625	8.614583	26.85417

4.4. Conclusion

The "Impact of Ennum Ezhuthum in Learning of Students in Pudukkottai District" project has yielded significant insights into the effectiveness of this educational initiative. Through a comprehensive survey method that assessed the achievement levels of 3rd and 5th standard students and gathered teacher perceptions, the study highlighted several key findings.

1. **Improved Student Performance**: The assessment results indicated marked improvements in the learning outcomes of students in Tamil, English, and Mathematics. The implementation of Ennum Ezhuthum has successfully bridged learning gaps and enhanced students' academic performance across these core subjects.
2. **Positive Teacher Perceptions**: Teachers reported favorable views regarding the Ennum Ezhuthum initiative. They observed notable improvements in student engagement, comprehension, and overall behavior. The program's structured approach and supportive resources have empowered teachers to deliver more effective and engaging lessons.
3. **Enhanced Student Behavior**: Alongside academic improvements, there was a noticeable positive shift in student behavior. Teachers noted that students displayed increased enthusiasm for learning, better classroom participation, and improved discipline. This behavioral change is attributed to the interactive and student-centered methodologies promoted by Ennum Ezhuthum.
4. **Comprehensive Support**: The initiative provided extensive support materials and training for teachers, which played a crucial role in its successful implementation. The professional development sessions equipped teachers with the necessary skills and knowledge to effectively utilize the program's resources, thereby enhancing their teaching practices.
5. **Broader Educational Impact**: The project's findings suggest that Ennum Ezhuthum has not only improved individual student outcomes but also contributed to the overall educational environment in Pudukkottai District. The initiative has fostered a culture of continuous improvement and innovation in teaching and learning practices.

In conclusion, the "Impact of Ennum Ezhuthum in Learning of Students in Pudukkottai District" project has demonstrated that well-structured educational interventions, supported by robust teacher training and resources, can significantly enhance student learning outcomes and behavior. The positive results from this study provide a strong foundation for the continued expansion and refinement of the Ennum Ezhuthum initiative, with the potential to further elevate the quality of education in the district. Future research and ongoing evaluation will be essential to sustain these gains and address any emerging challenges.

This chapter described the different statistical techniques used for the study and also mentioned analysis and interpretation of data. Summary of findings and conclution will be given in the next chapter V.

5. Summary and Conclusion

5.1. Introduction

The most important part of any research is its finding. The finding leads the investigator in drawing conclusions and in offering appropriate suggestions and recommendations. This is a summary of the research work, including the statement of the problem, objective of the study, sampling procedure, methodology and conclusion of the study and suggestion and recommendations.

The Summary and Findings section is the most important part of the research report, because it reviews all the information that has been presented in its previous sections. This section includes a brief restatement of the problem, a description of the procedure followed and discussion of finding and conclusions of the study.

5.2. Summary of the study

The methodology section outlines the approach and techniques used in conducting the research on the impact of Ennum Ezuthum on student learning outcomes in Pudukkottai District. It begins with an introduction emphasizing the importance of research methodology and suitable operational steps for successful research. The research design is identified as quantitative, aiming for a comprehensive exploration of the program's effectiveness through triangulation of findings.

The selection of the sample involves the use of various techniques, including stratified random sampling and purposive sampling, to ensure representation and diversity among primary school teachers and students. The sampling strategy aims to minimize bias, enhance the credibility of results, and provide valuable insights for educational policies.

The construction of research tools involves the development of assessment tools for students and perception tools for teachers, following a thorough literature review and expert validation. The data collection methods include surveys and academic performance assessments aligned with the program's objectives and curriculum.

Quantitative data analysis techniques, such as descriptive and inferential statistics, are employed to analyze the collected data. The validation and reliability of the research tools are established through methods such as content validity, test-retest reliability, and Cronbach's alpha.

A pilot study was conducted to test the logistics and gather information before the main study, ensuring methodological rigor and higher quality research. The study's design is summarized, highlighting the nature of research, variables, tools used, sample sizes, and data analysis methods.

Planning and implementation involve the development of research instruments, pilot study, validation, data collection, and analysis. The primary data collection process involved evaluating third and fifth-grade students and surveying primary school teachers across the district.

In summary, the methodology section provides a detailed overview of the research approach, sample selection, tool construction, data collection, analysis techniques, validation processes, and execution of the survey, ensuring a systematic and rigorous investigation into the impact of Ennum Ezuthum on student learning outcomes.

In the data collection and analysis phase, a total of 2399 samples were gathered from all 13 blocks of Pudukkottai district. This sample comprised of 281 primary teachers, 1220 fifth- standard students, and 1179 third- standard students. The district has two educational districts: Pudukkottai and Aranthangi, each containing six and seven blocks.

To ensure representation, a random sample of 10% of schools from each of the 13 blocks was selected. In these schools, all third-standard and fifth- standard students, as well as primary teachers, were taken for the study. The demographics of the sampled students and teachers were recorded, revealing details such as gender distribution, school type, school management (government or aided), designation, educational district, age, location (rural or urban), educational qualification, and work experience.

Data collection was conducted by the investigator along with DIET faculty and Block Resource Teacher Educators (BRTEs). Teachers responded to a questionnaire consisting of 33 statements rated on a five-point scale, while students were assessed with multiple-choice questions in Tamil, English, and Mathematics.

Following data collection, the investigator analyzed the responses to derive findings. Details of the analysis were provided, including the distribution of schools by type, management, designation, educational district, age groups, gender, school location, educational qualification, and work experience. This analysis aimed to provide a comprehensive understanding of the sampled population and their perspectives, contributing to the overall research objectives.

5.3. Findings of the study

As per the statistical data, the following are the main findings of the study:

1. **Parents' Participation in the Ennum Ezhuthum Program:**
   - Strong positive support exists for the program's parental involvement, with a combined 41% strongly agreeing or agreeing that participation is high. While a significant portion remains neutral, indicating mixed opinions, the level of disagreement is comparatively low.
2. **Integration of Environmental Science:**
   - A substantial majority, comprising 68%, strongly agree or agree that integrating environmental science into early education is appropriate. This suggests widespread support for introducing environmental concepts to younger students, with dissenting opinions forming a minority.
3. **Continuation of the Ennum Ezhuthum Program:**
   - Nearly half of the respondents, totaling 46.6%, express strong support for the program's continuation. While neutrality is prevalent among respondents, indicating a need for more information or mixed feelings, the opposition is relatively low, suggesting overall positive sentiment.
4. **In-Service Training for the Program:**
   - Despite a significant neutral response, 27.1% either strongly agree or agree that there is a need for in-service training for the upcoming academic year. While opposition exists, it is not dominant, indicating potential receptiveness to further training opportunities.

5. **Teacher's Guide Utility:**

- A substantial majority of 81.1% either strongly agree or agree that the teacher's guide is helpful, indicating widespread positive perception. Dissent is minimal, suggesting that the guide is generally well-accepted and effective.

6. **Workbook's Usefulness for Student Learning:**

- The majority, representing 85.8%, strongly agree or agree that the workbook is useful for testing and understanding students' learning outcomes. Dissenting opinions are notably low, indicating broad consensus on the workbook's effectiveness.

7. **Combining Workbook and Textbook:**

- Strong support, accounting for 85.4%, exists for combining the workbook and textbook into a single book. While neutrality and opposition are present, they constitute a minority, suggesting overall favorable attitudes toward integration.

8. **Change in Students' Behavior due to the Program:**

- The majority, comprising 72.2%, agree or strongly agree that the program has brought about a change in students' behavior. Dissent is minimal, indicating widespread perception of the program's positive impact.

9. **Effect on Students' Joy in Attending School:**

- A significant majority, totaling 71.2%, agree or strongly agree that the program has made students come to school with joy. Dissent is minimal, suggesting widespread belief in the program's positive influence.

10. **Enjoyment of Learning Lessons:**

- A strong majority, representing 76.1%, agree or strongly agree that students enjoy learning their lessons. Dissenting opinions are minimal, indicating broad consensus on the positive engagement of students.

11. **Teacher's Attitude towards Workbook Assessment:**

- A substantial majority, comprising 64.8%, agree or strongly agree that teachers happily assess the student workbook. Dissent is low, suggesting that most teachers find workbook assessment satisfying or rewarding.

12. **Ennum Ezhuthum Program Suitability for Students with Learning Disabilities**: A majority of respondents (66.9%) believe that the Ennum Ezhuthum program is suitable for students with learning disabilities, indicating a perceived effectiveness in providing supportive resources or accommodating approaches.

13. **Effectiveness of Level-Based Teaching**: There is a wide range of opinions regarding the effectiveness of level-based teaching in the Ennum Ezhuthum program, with a significant portion of respondents (30.3%) disagreeing or strongly disagreeing. This suggests varying perceptions of its efficacy among educators or stakeholders.

14. **Resolution of Learning Gaps**: While there is moderate agreement (49.5%) that learning gaps among students have been resolved, a significant proportion of respondents (35.9%) remain neutral. This indicates the ongoing uncertainty or mixed experiences regarding the success of interventions aimed at closing learning gaps.

15. **Ease of Use of TN SED APP for Assessment**: Views are divided on the ease of assessing students through the TN SED APP, with a notable portion of respondents (32%) disagreeing or strongly disagreeing. This suggests potential usability issues or challenges in utilizing the app effectively for assessment purposes.
16. **Ease of Evaluation in the Ennum Ezhuthum Program**: The majority of respondents (58.7%) find it easy to evaluate in the Ennum Ezhuthum program, indicating positive perceptions of the program's evaluation methods. However, a notable portion (30.6%) remains neutral, suggesting a need for further clarity or experience with the evaluation process.
17. **Impact of "My Stage, My Speech" Activity on Student Confidence**: The "My Stage, My Speech" activity is widely perceived as highly effective in helping students gain confidence to speak on stage without fear, with minimal disagreement (1.1%) indicating almost universal acknowledgment of its positive impact.
18. **Number of Activities in the Student Workbook**: Most respondents (72.5%) agree that the workbook contains a high number of activities, suggesting a perception of rich content. However, a moderate level of neutrality (19.2%) indicates varying opinions on what constitutes an appropriate number of activities.
19. **Improvement of Students' English Reading Skills**: There is a high level of agreement (73.7%) that the Ennum Ezhuthum program has improved students' English reading skills, indicating widespread recognition of its effectiveness in this aspect.

20. **Availability of Space for Different Learning Areas**: Opinions are mixed regarding the availability of space to set up different learning areas, with a notable portion of respondents (28.4%) disagreeing or strongly disagreeing. This suggests varying perceptions of space constraints in creating diverse learning environments.
21. **Challenges in Implementing the Ennum Ezhuthum Program in Schools with Large Student Populations**: A majority of respondents (51.2%) disagree or strongly disagree that there are no challenges in implementing the program in schools with a large number of students. This suggests that overcoming obstacles related to classroom management, resource allocation, or teacher-student ratios may be necessary for successful implementation in such settings.
22. **Usefulness of Pictures in Supplementary Materials**: The vast majority of respondents (87.9%) agree or strongly agree that the pictures in the supplementary materials provided with the Ennum Ezhuthum program are useful. This indicates that the visuals significantly contribute to understanding and engagement, enhancing the overall effectiveness of the materials.
23. **Overall Learning Differences Between Standards**:

- Comparing pre- and post-implementation of the Ennum Ezuthum program, there are significant improvements in Tamil, English, and Mathematics scores for both 3rd and 5th standard students.

24. Impact on Learning Levels:

- For 3rd standard pupils, there are significant differences in learning levels in reading, writing, and mathematics, rejecting the null hypothesis.
- Similarly, for 5th standard pupils, significant differences exist in learning levels across subjects, rejecting the null hypothesis.

25. **Impact of Educational District and Locality**:

- There are no significant differences in learning outcomes among educational districts for both 3rd and 5th standard pupils.
- Likewise, there are no significant differences in learning outcomes between rural and urban areas for both standards.

26. **Gender Differences**:

- Among 3rd standard pupils, there is no significant difference in learning outcomes between males and females in Tamil, English, or Mathematics.
- However, among 5th standard pupils, there are significant gender differences in learning outcomes for Tamil, English, and Mathematics.

27. **Parental Educational Qualification**:

- For both mothers' and fathers' educational qualifications, there are no significant differences in learning outcomes among 3rd standard pupils.
- Similarly, for 5th standard pupils, there are no significant differences in learning outcomes based on parental educational qualifications.

5.4. Suggestions for further research

The following suggestions are made to pursue further investigation.

1. **Longitudinal Study on Program Sustainability**: longitudinal study can be conducted to assess the long-term sustainability and effectiveness of the Ennum Ezuthum program on student learning outcomes. This study could track students' academic performance over several years to evaluate the persistence of program benefits and identify any potential decline in impact over time.

2. **Qualitative Investigation of Program Implementation**: The quantitative findings with qualitative research to explore can be complimented the factors influencing the successful implementation of the Ennum Ezuthum program. Conduct interviews or focus groups with teachers, students, parents, and program administrators to gain insights into their experiences, perceptions, and challenges encountered during program execution.
3. **Comparative Analysis Across Different Program Components**:

   A comparative analysis can be undertaken to assess the relative effectiveness of different components of the Ennum Ezuthum program, such as parental involvement initiatives, integration of environmental science, or in-service training for teachers. This could involve examining variations in program outcomes based on the degree of implementation or emphasis on specific program elements.
4. **Exploration of Gender-Based Learning Strategies**: A gender-based learning strategies within the Ennum Ezuthum program can be investigated to understand how teaching approaches and classroom dynamics may impact male and female students differently. This research could explore innovative pedagogical techniques tailored to address gender-specific learning preferences and challenges.
5. **Examination of Socioeconomic Factors**: The influence of socioeconomic factors, such as parental education levels, income levels, and access to resources, can be explored on student learning outcomes within the Ennum Ezuthum program. This research could help identify disparities in program effectiveness across different socioeconomic groups and inform targeted interventions to address equity gaps.

6. **Investigation of Regional Variations**: A comparative analysis of program implementation and outcomes across different regions or educational districts can be explored to identify regional variations in program effectiveness. This research could examine contextual factors, resource allocation, and local educational policies that may influence program outcomes in diverse settings.
7. **Evaluation of Teacher Training Programs**: The impact of teacher training programs within the Ennum Ezuthum initiative can be evaluated on instructional practices, classroom management, and student engagement. This research could assess the effectiveness of various professional development approaches in enhancing teacher competencies and improving student learning outcomes.
8. **Assessment of Program Adaptability**: The adaptability and scalability of the Ennum Ezuthum program in different educational contexts and settings can be studied. This research could explore modifications or adaptations needed to tailor the program to meet the unique needs and challenges of schools with varying demographics, infrastructure, and resources.
9. **Exploration of Innovative Assessment Methods**: Innovative assessment methods, beyond traditional standardized tests, to measure student learning outcomes within the Ennum Ezuthum program can be further explored. This could involve the development and validation of alternative assessment tools that capture a broader range of student competencies, such as critical thinking, creativity, and problem-solving skills.
10. **Impact of Program on Holistic Student Development**: The broader impact of the Ennum Ezuthum program on holistic student development, including social-emotional learning, character formation, and civic engagement can be investigated.

This research could employ mixed-methods approaches to assess changes in student attitudes, behaviors, and values attributable to program participation.

5.5.Educational Implications

The research project titled "Impact of Ennum Ezuthum in Learning of Students in Pudukkottai District" explores the influence of the Ennum Ezuthum initiative on the academic performance and learning experiences of students. Based on the findings of this research, several educational implications can be drawn:

1. **Enhanced Literacy and Numeracy Skills**: The study may reveal that the Ennum Ezuthum program significantly improves students' literacy and numeracy skills. This finding underscores the importance of targeted educational interventions in foundational learning, suggesting that similar programs could be expanded to other districts to enhance basic education standards.
2. **Curriculum Development**: Insights from the research could inform curriculum developers about the effectiveness of integrating Ennum Ezuthum methodologies into the standard curriculum. This could lead to the creation of more engaging and effective learning materials that cater to the diverse needs of students.
3. **Teacher Training and Professional Development**: The success of Ennum Ezuthum might highlight the need for continuous professional development for teachers. Training programs can be designed to equip teachers with the necessary skills and strategies to implement similar initiatives, thereby improving overall teaching quality.
4. **Policy Formulation**: Positive outcomes from the study could influence educational policy decisions at the district or state level. Policymakers might consider adopting

or scaling up the Ennum Ezuthum approach in other regions, contributing to systemic educational improvements.

5. **Parental and Community Involvement**: The research may show that community and parental involvement play a crucial role in the success of educational programs like Ennum Ezuthum. This could encourage schools and educational authorities to foster stronger partnerships with parents and local communities to support students' learning journeys.
6. **Resource Allocation**: Findings could indicate the need for adequate resources, such as teaching aids, books, and digital tools, to support the Ennum Ezuthum initiative. This information can guide stakeholders in allocating resources more effectively to maximize educational outcomes.
7. **Student Engagement and Motivation**: If the study reveals that students are more engaged and motivated due to the Ennum Ezuthum program, educators can adopt similar pedagogical approaches to enhance student interest and participation in learning activities.
8. **Addressing Learning Gaps**: The research might identify specific areas where students struggle despite the program's implementation. This information can help educators develop targeted interventions to address these learning gaps, ensuring that all students benefit equally.
9. **Long-term Educational Outcomes**: By tracking the long-term impact of the Ennum Ezuthum initiative, the research can provide valuable insights into how early educational interventions influence students' academic trajectories and career prospects. This can justify the investment in early childhood education programs.
10. **Scalability and Replication**: The success of the Ennum Ezuthum program in Pudukkottai District could serve as a model for other regions. The research can

provide a framework for replicating the program in different contexts, taking into account local needs and challenges.

In conclusion, the findings of the "Impact of Ennum Ezuthum in Learning of Students in Pudukkottai District" research project have the potential to significantly influence various aspects of the educational landscape, from curriculum design and teacher training to policy formulation and community involvement. By leveraging these insights, stakeholders can work towards creating a more effective and inclusive educational system that benefits all students.

5.6. Conclusion

In conclusion, this research project has provided valuable insights into the impact of the Ennum Ezuthum program on student learning outcomes in the Pudukkottai District. Through a systematic methodology that included quantitative analysis and sampling techniques, this study aimed to comprehensively explore the effectiveness of the program and its various components.

The findings of the study highlight several key points. First, there is strong positive support for parental involvement in the program, indicating its perceived importance among the stakeholders. Additionally, integrating environmental science into early education subjects is widely supported, suggesting recognition of the value of holistic learning approaches.

Moreover, the majority of respondents express support for the continuation of the Ennum Ezuthum program, indicating overall positive impact towards its implementation. The effectiveness of the EE program elements such as in-service training, teacher guides, workbooks, and integration of textbooks is also evident from the findings, with high levels of agreement on their utility and impact.

However, the study also reveals some areas for further investigation and improvement. For instance, while there is perceived suitability of the program for students with learning disabilities, there are varying opinions on the effectiveness of level-based teaching and the resolution of learning gaps. Additionally, challenges in implementing the program in schools with large student populations and the usability of assessment tools warrant further exploration.

Moving forward, suggestions for future research include conducting longitudinal studies to assess program sustainability, qualitative investigations to understand implementation factors, and comparative analyses to evaluate different program components. Exploring gender-based learning strategies, socioeconomic influences, regional variations, and innovative assessment methods are also recommended to deepen understanding and inform targeted interventions.

Overall, this research contributes to the ongoing dialogue on educational interventions aimed at improving student learning outcomes. By addressing the findings and recommendations outlined in this study, educators, policymakers, and researchers can work towards enhancing the effectiveness and inclusivity of programs like Ennum Ezuthum, ultimately fostering a more equitable and enriching learning environment for all students.

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DISTRICT PROJECT TOOL

பெயர் *(Name)* : _____ வகுப்பு *(Class)* : 3

பள்ளியின் பெயர்*(School Name)* : _____

ஒன்றியம்*(Block)* :_____

I) பாலினம் *(Sex)* : ஆண் / பெண் *(Male/Female*

II) அமைவிடம்*(Location)* : கிராமம் / நகரம் *Village/Town*

III) தந்தையின் கல்வித்தகுதி : *Up to 5 / 6-12 /* பட்டப் படிப்பு*(Bachelor's degree or higher)*
(Father's Educational Qualification)

IV) தாயின் கல்வித்தகுதி : *Up to 5 / 6-12 /* பட்டப்படிப்பு*(Bachelor's degree or higher)*
(Mother's Educational Qualification)

தமிழ்

I) சரியானவற்றை தேர்வு செய்க.

01) குயில்_____ (கரையும், கூவும், அலறும், கத்தும்)

02) சரியான சொல்லை வட்டமிடு

அ) மெழுகுபத்தி ஆ) மெழுகுவர்த்தி இ) மெழுகுவத்தி ஈ) மெழுகு

03) படத்திற்குரிய சொல்லை இணைப்பேன்

கெண்டி

நெல்

கட்டெறும்பு

பெட்டி

4) பொருத்துக

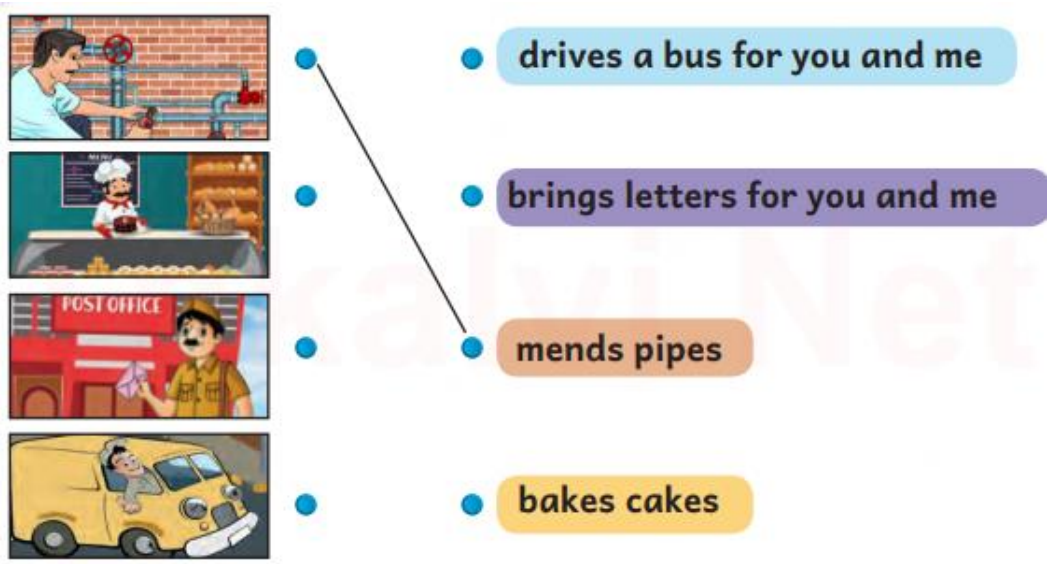
I) ஏழு வண்ணங்களில் தெரிவேன்	*அ)*	*மேகம்*
II) வானில் நகர்ந்து கொண்டு இருப்பேன்	*ஆ)*	*மின் மினிப் பூச்சி*
III) எனக்கு இறக்கைகள் இருக்கும் இரவில் ஒளிர்வேன்	*இ)*	*வானவில்*

ENGLISH

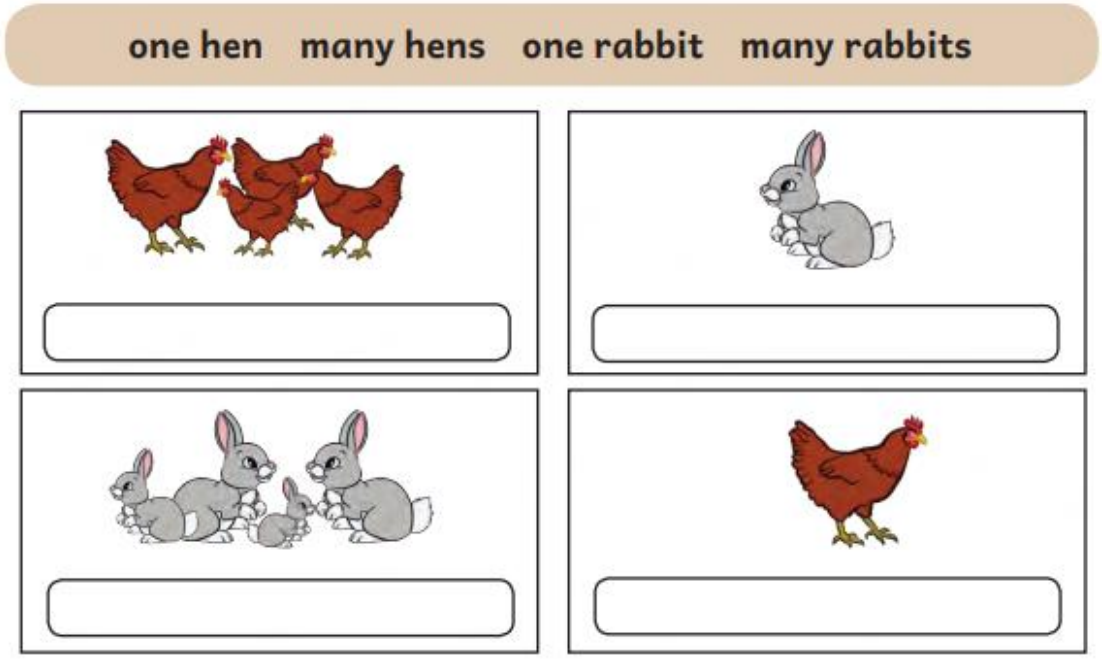
6) Choose the correct word and complete the sentences:

He _____ (Play/ plays) cricket every evening.

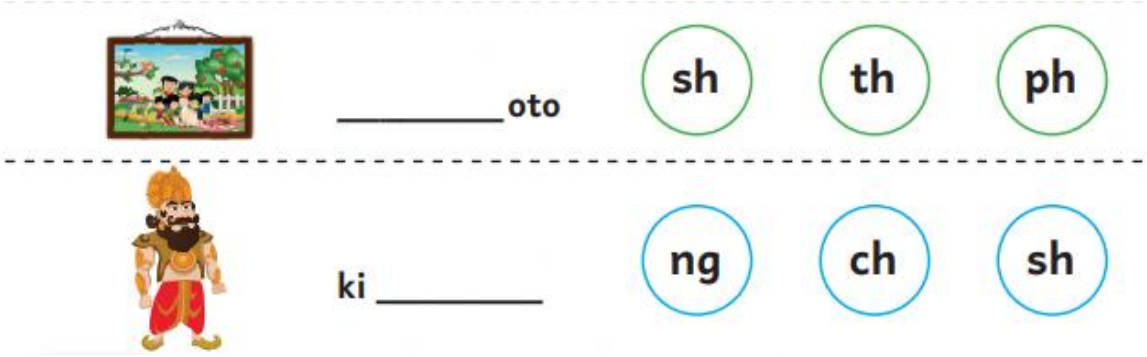
7) Read and match (3 Marks)



8) Look at the pictures and write the word: (4 Marks)



9) Choose and Write (2 Marks)



10) 94 ஐ இவ்வாறு எழுதலாம்?
94** can be written as **?

அ) 900 + 4 ஆ) 9 + 4 இ) 90 - 4 ஈ) 90 + 4

11) 82 க்கும் 88 க்கும் இடையில் எத்தனை எண்கள் உள்ளது ?

How many numbers are between 82 and 88?

அ) 6 ஆ) 5 இ) 4 ஈ) 0

12) 26 பூக்களை 5 கூடைகளில் சமமாகப் பங்கிட்டால் மீதம் எத்தனை பூக்கள் இருக்கும் ?
If 26 flowers are divided evenly into 5 baskets, how many flowers will remain?

அ)1 ஆ) 5 இ) 8 ஈ) 2

13) மிகக் குறைந்த அளவினைத் தேர்ந்தெடு.
Select the smallest measurement.

அ) 410 மிலி ஆ) 420 மிலி இ) 405 மிலி ஈ) 720 மிலி

14) தொடர் அமைப்பை நிறைவு செய்க.
Complete the sequence
85, 83, 81, 79, ____

15) பொருத்துக. (*Match the following)*

I. 68	*அ. சதுர வடிவம் (Square shape)*
II. 99	*ஆ. வட்ட வடிவம் (Circular shape)*
III. சமோசா (Samosa)	*இ. ஒற்றை எண் (Odd number)*
IV. வளையல் (Bangle)	*ஈ. இரட்டை எண் (Even number)*
V. 4 பக்கங்கள் சமம் (All sides are equal)	*உ. முக்கோண வடிவம் (Triangular shape)*

PROJECT TOOL – 2

பெயர் *(Name)* : _____ வகுப்பு *(Class)* : 5

பள்ளியின் பெயர்*(School Name)* : _____

ஒன்றியம்*(Block)* :_____

V) பாலினம் *(Sex)* : ஆண் / பெண் *Male/Female*

VI) அமைவிடம்*(Location)* : கிராமம் / நகரம் *Village/Town*

VII) தந்தையின் கல்வித்தகுதி: *Up to 5 / 6-12 /* பட்டப் படிப்பு *(Bachelor's degree or higher)*
(Father's Educational Qualification)

VIII) தாயின் கல்வித்தகுதி : *Up to 5 / 6-12 /* பட்டப்படிப்பு*(Bachelor's degree or higher)*
(Mother's Educational Qualification)

தமிழ்

மரபுச் சொற்களைப் பொருத்துக

1) குரங்கு - பிளிறும் _____

2) சிங்கம் - சீறும் _____

3) பாம்பு - கர்ஜிக்கும் _____

4) யானை - அலப்பும் _____

கொடுக்கப்பட்ட சொற்களைப் பயன்படுத்தி தொடர்களை உருவாக்குக

(நாங்கள், பாடம், மாடுகள், படித்தோம், மேய்ந்தன)

5) _____

6) _____

7. **சரியான எழுத்தைத் தேர்ந்தெடுத்து எழுது**

வ____வில் ஓரி வாரித்தரும் வ____ளல். *(ல், ள், ழ்)*

8. பின்வரும் வாக்கியத்தை சரியாக எழுதுக

செழித்தால் நாடு காடு செழிக்கும்

_____

9) விடைக்கேற்ற வினாவை உருவாக்கு

சிலந்திக்கு எட்டு கால்கள் உள்ளன.

_____

10) கூற்று-1: தமிழர்களின் பாரம்பரிய விளையாட்டுகள் ஜல்லிக்கட்டு, சிலம்பாட்டம், வில்வித்தை போன்றவை ஆகும்.

கூற்று-2: தமிழர்களின் பாரம்பரிய விளையாட்டுகளில் வில்வித்தை மட்டுமே ஒலிம்பிக் போட்டியில் சேர்க்கப்பட்டுள்ளது.

சரியான கூற்றினை தேர்வு செய்க.

அ) கூற்று- 1 சரி, கூற்று -2 தவறு

ஆ) கூற்றுகள் இரண்டும் தவறு

இ) கூற்றுகள் இரண்டும் சரி

ஈ) கூற்று-1 தவறு கூற்று-2 சரி

English

1. ***Choose the appropriate adverb based on the image***

a) *Celebrate sadly*

b) *Celebrate sorrowfully*

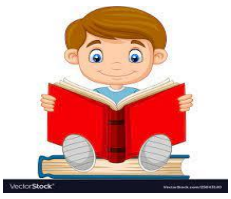
c) *Celebrate joyfully*

d) *Celebrate fearfully*

2. ***Which is the correct clipped word for Examination -***

a) *Ekcam* b) *Exam* c) *Ecame* d) *Exami*

3. ***write the correct pronoun for the given sentence by using the picture***



(He / She / It / They)

_____ *is reading.*

4. ***Choose the correct meaning of the underlined word***

They watched the ffireworks show with wonder.

a) *confidence* b) *surprise* c) *Thunder* d) *panic*

5. ***Identify the rhyming word for "school" from the options_____***

a) *Sky* b) *hot* c) *fool* d) *cat*

6. Complete the sentence with the suitable word

This box is _____ heavy to lift.

a) to b) too c) two d) for

7. Choose the correct opposite word of the underlined word

I am disturbed by his behaviour.

a) quite b) systematic c) troubled d) happy

8. write the correct pronoun of the following sentence

(He / She / It)

Raju is a small boy. _____ saw a blue whale.

9. Identify the correct synonym for the word "happy":

a) Sad b) Joyful c) Angry d) Tired

10. write the correct article of the picture (a, an, the)

She is _____ girl.

கணக்கு

1) உன் வீட்டுத் தோட்டத்தைச் சுற்றி வேலி அமைக்க கீழ்க்கண்ட எந்த அளவீட்டைப் பயன்படுத்துவாய் ?
Which measurement would you use to build a fence around your home garden?

அ) பரப்பளவு *(Area)* ஆ) கொள்ளளவு *(Volume)*

இ) சுற்றளவு*(Circumference)* ஈ) நிறுத்தலளவு*(Capacity)*

2) இயல் எண்களின் வரிசை
Sequence of natural numbers

அ) *1,2,3,4,5,6 .....* ஆ) *2,4,6,8,10.....*

இ) *1,3,5,7,9 .....* ஈ) *5,10,15,20,25....*

3) கீழ்கண்டவற்றுள் பகா எண்ணை வட்டமிடுக.
"Circle the prime number among the following

அ) 4 ஆ) 5 இ) 9 ஈ) 12

4) FACE என்பது 15 எனில் BAG என்பது _____
If FACE is 15, then BAG is _____.

அ) 10 ஆ) 15 இ) 51 ஈ) 33

5) 3 கி. கி மற்றும் 500 கி என்பது _____ கிராம்
3 kg and 500 g is equivalent to _____ grams

அ) 350 ஆ) 3500 இ) 3550 ஈ) 3000

6) ¼ லி, 1 லி, ½ லி, ¾ லி என்பது முறையே
¼ L, 1 L, ½ L, ¾ L in the correct order:

அ) 250 மிலி, 500 மிலி, 750 மிலி, 1000 மிலி

ஆ) 250 மிலி, 1000 மிலி, 750 மிலி, 500 மிலி

இ) 250 மிலி, 1000 மிலி, 500 மிலி, 750 மிலி

ஈ) 500 மிலி, 750 மிலி, 250 மிலி, 1000 மிலி

7) ₹1 என்பது 100 பைசாக்கள் எனில் ₹5 என்பது _____
If ₹1 is 100 paise, then ₹5 is equivalent to _____

அ) 50 பைசாக்கள்

ஆ) 500 பைசாக்கள்

இ) 5000 பைசாக்கள்

ஈ) 100 பைசாக்கள்

8) 5 கி.கி தக்காளியின் விலை ₹75 எனில் 2 கி.கி தக்காளியின் விலை எவ்வளவு?
If 5 kg of tomatoes cost ₹75, then how much will 2 kg of tomatoes cost?

அ) ₹15 ஆ) ₹35 இ) ₹30 ஈ) 45

9) திங்கட்கிழமை வாங்கிய பாலின் அளவு 7 லி 300 மி.லி செவ்வாய்க்கிழமை வாங்கிய பாலின் அளவு 12 லி 500 மி.லி எனில் இரண்டு நாட்களிலும் வாங்கிய மொத்தப் பாலின் அளவு எவ்வளவு?
The total volume of milk bought on Monday (7 L 300 mL) and Tuesday (12 L 500 mL) is _____.

அ) 21 லி 800 மி.லி ஆ) 19 லி 800 மி.லி

இ) 20 லி 800 மி.லி ஈ) 22 லி 800 மி.லி

10) 5×3×2 ன் மதிப்பு
The value of 5×3×2 is:

அ) 30 ஆ) 10 இ) 0 ஈ) 20

PROJECT TOOL – 3

மாவட்ட ஆசிரியர் கல்வி மற்றும் பயிற்சி நிறுவனம், புதுக்கோட்டை

உறுதிமொழி

அன்பான ஆசிரிய பெருமக்களுக்கு,

புதுக்கோட்டை, மாவட்ட ஆசிரியர் கல்வி மற்றும் பயிற்சி நிறுவனத்தில் விரிவுரையாளராக பணியாற்றும் முனைவர் மா.தனசேகரன் ஆகிய நான் மாநில கல்வியியல் ஆராய்ச்சி மற்றும் பயிற்சி நிறுவனம், சென்னை, இயக்குனரின் ஆணைப்படியும், புதுக்கோட்டை மாவட்ட ஆசிரியர் கல்வி மற்றும் பயிற்சி நிறுவனம், முதல்வர் அவர்களின் வழிகாட்டுதலோடும், மாவட்ட ஆசிரியர் கல்வி மற்றும் பயிற்சி நிறுவனம் சார்பாக ***IMPACT OF ENNUM EZUTHUM IN LEARNING OF STUDENTS IN PUDUKKOTTAI DISTRICT*** என்ற தலைப்பில் செயல் திட்ட ஆய்வினை மேற்கொள்கின்றேன். அதற்காக தகவல் திரட்டும் பணிக்காக தங்களை அனுகியுள்ளேன். இதில் உள்ள ஆய்வு வினா நிரல்களை கூர்ந்தாய்வு செய்து படித்துப் பார்த்து தங்களது கருத்தை எந்தவித தயக்கமுமின்றி பதிவிடுமாறு கனிவுடன் கேட்டுக் கொள்கிறேன்.

ஆய்வாளர்:
முனைவர் மா.தனசேகரன், விரிவுரையாளர்,
மாவட்ட ஆசிரியர் கல்வி மற்றும் பயிற்சி நிறுவனம்,
புதுக்கோட்டை.

Pledge

Dear Respected Teachers,

I, Dr. M. Dhanasekaran, serving as a lecturer at the District Institute of Education and Training Pudukottai, am conducting a project-based study titled "Impact of Ennum Ezuthum in Learning of Students in Pudukottai District" on the instruction of the Director of the State Council of Educational Research and Training, Chennai, and under the guidance of the Principal of the District Institute of Teacher Education and Training, Pudukottai. I am approaching you for the purpose of data collection. I request you to read the questions and provide your responses without any hesitation.

01. ஆசிரியர் பெயர்
01. Name of the Teacher: :

02. பள்ளியின் பெயர்
02. Name of the School: :

03. பள்ளி வகை : தொடக்கப்பள்ளி / நடுநிலைப்பள்ளி
03. Type of School : *Primary School /Middle School*

04. பள்ளி மேலாண்ம : அரசு பள்ளி / அரசு உதவி பெறும் பள்ளி
04. School Management : *Government School / Government-aided School*

05. பதவி : இடைநிலை ஆசிரியர் *(Secondary Grade Teacher)*
05. Designation : பட்டதாரி ஆசிரியர் *(Graduate Teacher)*
தொடக்கப்பள்ளி தலைமை ஆசிரியர் *(Primary School Head Master)*
நடுநிலைப்பள்ளி தலைமை ஆசிரியர் *(Middle School Headmaster)*

பிற *(Others)*

06. கல்வி மாவட்டம் : புதுக்கோட்டை / அறந்தாங்கி
06. Educational District : Pudukkottai / Aranthangi

07. ஒன்றியம்
07. Union :

08. வயது (Age) : 20-30
31-40
41-50
51 Above

09. பாலினம் (Sex) : ஆண் / பெண்
Male / Female

10. பள்ளி அமைவிடம் (School Location) : கிராமம் / நகரம்
Village / Town

11. கல்வித்தகுதி (Educational Qualifications) : இடைநிலை / இளங்கலை/ முதுகலை
Secondary Grade / Bachelor's Degree / Master's Degree

12. கற்பிக்கும் வகுப்புகள் (Classes Taught) : 1 / 2 / 3 / 4 / 5

13. பணி அனுபவம் (ஆண்டுகளில்) : < 5 / 5 to 10 / 11 to 15 / 16 to 20 / 21 to 25 / Above 25
Work Experience (in years)

ஒவ்வொரு வினாவிற்கும் 5 விதமான தேர்வுகள் தரப்பட்டுள்ளன.
அவற்றுள் வினாவிற்கு பொருத்தமான விடையைத்
தேர்வு செய்யவும்
1. முழுமையாக ஒப்புக் கொள்கிறேன்
2. ஒப்புக் கொள்கிறேன்
3. எதுவும் சொல்வதற்கில்லை
4. மறுக்கிறேன்
5. முழுமையாக மறுக்கிறேன்
Each question has 5 types of answers.
Choose the answer that best fits the question:
1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree

ஆசிரியர் பிரதிபலிப்பு (Teacher Reflection)

வினா எண்	வினா	1	2	3	4	5
1	எண்ணும் எழுத்தும் திட்டத்தில் பெற்றோர்களின் பங்கேற்பு அதிகமாக உள்ளது *Parents' participation in the Ennum Ezhuthum program is high*					
2	சூழ்நிலையியல் ஒருங்கிணைப்பு ஒன்று முதல் மூன்று வகுப்பு மாணவர்களுக்கு வழங்கப்பட்டிருப்பது சரியானது.					

	Integrating environmental Science for students from classes 1 to 3 is appropriate					
3	எண்ணும் எழுத்தும் திட்டமானது வரும் கல்வி ஆண்டுகளிலும் தொடர வேண்டும் என விரும்புகிறேன்.					
	I would like the Ennum Ezhuthum program to continue in the upcoming academic years.					
4	*2024 – 2025* கல்வி ஆண்டிற்கு எண்ணும் எழுத்தும் பணியிடைப் பயிற்சி மீண்டும் தேவை.					
	There is a need for Ennum Ezhuthum in-service training for the 2024-2025 academic year.					
5	ஆசிரியர் கையேடு மிகவும் உதவியாக உள்ளது.					
	The teacher's guide is very helpful.					
6	பயிற்சி புத்தகமானது மாணவர்களின் கற்றல் விளைவுகளை சோதித்து அறிய பயனுள்ளதாக உள்ளது.					
	The work book is useful for testing and understanding students' learning outcomes.					
7	பயிற்சி புத்தகம் மற்றும் பாட புத்தகம் இரண்டையும் இணைத்து ஒரே புத்தகமாக வழங்க வேண்டும் .					
	The work book and the textbook should be combined and offered as a single book					
8	எண்ணும் எழுத்தும் திட்டம் மாணவர்களின் எதிர் கால கற்றல் அடிப்படைகளை மனதில் வைத்து உருவாக்கப்பட்ட ஒன்றாகும் .					
	The Ennum Ezhuthum program is designed with the future learning foundations of students in mind.					

Student Behaviour

வினா எண்	வினா	*1*	*2*	*3*	*4*	*5*
1	எண்ணும் எழுத்தும் திட்டம் மாணவர்களின் நடத்தையில் மாற்றம் கொண்டு வந்துள்ளது.					
	The Ennum Ezhuthum program has brought about a change in students' behavior.					
2	எண்ணும் எழுத்தும் திட்டம் மாணவர்களை மகிழ்ச்சியுடன் பள்ளிக்கு வர வைத்திருகிறது.					
	The Ennum Ezhuthum program has made students come to school with joy.					
3	மாணவர்கள் பாடத்தை விரும்பி படிக்கிறார்கள்.					
	Students enjoy learning the lessons.					
4	ஆசிரியர்கள் மாணவர் பயிற்சி நூலை மகிழ்வுடன் மதிப்பீடு செய்கின்றனர்.					

	Teachers happily assess the student work book.					
5	மீத்திறன் கொண்ட மாணவர்களுக்கு ஏற்ற திட்டமாக எண்ணும் எழுத்தும் அமைந்துள்ளது.					
	The Ennum Ezhuthum program is suitable for gifted students.					
6	கற்றலில் குறைபாடு உள்ள மாணவர்களுக்கும் ஏற்ற திட்டமாக எண்ணும் எழுத்தும் அமைந்துள்ளது.					
	The Ennum Ezhuthum program is also suitable for students with learning disabilities					
7	எண்ணும் எழுத்தும் திட்டத்தில் நிலைவாரியான கற்பித்தல் மாணவர்களுக்கு பயனுடையதாக இல்லை.					
	Level-based teaching in the Ennum Ezhuthum program has not been beneficial for students.					
	மாணவர்களின் கற்றலில் ஏற்பட்ட இடைவெளி முழுமையாக சரி செய்யப்பட்டு விட்டது.					
	The learning gap among students has been fully resolved.					

Level Based Assessment

வினா எண்	வினா	*1*	*2*	*3*	*4*	*5*
1	***TN SED APP* முலம் மாணவர்களை மதிப்பீடு செய்வது எளிதாக இருக்கிறது.**					
	Assessing students through the TN SED APP is easy.					
2	**மலர் நிலையில் உள்ள ஆங்கில பயிற்சி நூலில் கொடுக்கப்பட்டுள்ள *My Journal* செயல்பாடு வடிவமைக்கப் பட்டதன் நோக்கம் மாணவர்களிடம் நிறைவேறி உள்ளது.**					
	The purpose behind the "My Journal" activity in the English workbook at the beginner level has been fulfilled among the students.					
3	**பயிற்சி புத்தகத்தில் உள்ள பயிற்சிகளை மாணவர்கள் செய்து முடிக்க ஆசிரியரின் துணை முழுமையாக தேவைப்படுகிறது.**					
	To complete the exercises in the workbook, students need full assistance from the teacher.					
4	**எண்ணும் எழுத்தும் திட்டத்தில் மதிப்பீடு செய்வது எளிதாக உள்ளது .**					
	"It is easy to evaluate in the Ennum Ezuthum program					
5	**நிலை வாரியான கற்பித்தல் ஆசிரியர்களுக்கு எளிமையான செயலாக உள்ளது .**					
	Level-based teaching is a simple process for teachers.					

Learning Corners

வினா எண்	வினா	*1*	*2*	*3*	*4*	*5*
1	**என் மேடை என் பேச்சு செயல்பாட்டினால் மாணவர்களுக்கு மேடையில் ஏறி பயமின்றி பேசும் திறன் மேம்பட்டுள்ளது.**					
	The "My Stage, My Speech" activity has helped students gain confidence to speak on stage without fear.					
2	**என் பக்கம் செயல்பாடுகள் அனைத்தும் மாணவர்கள் தாமாகவே செய்கின்றனர்.**					
	Students do all the activities in "En Pakam" on their own.					
3	**மாணவர்களின் பல்வேறு விதமான திறன்களை வெளிக்கொணரும் வகையில் செயல்பாடுகள் அமைந்துள்ளன.**					
	The activities are designed to bring out a variety of skills among the students.					
4	**மாணவர்களின் பயிற்சி நூலில் உள்ள செயல்பாடுகளின் எண்ணிக்கை அதிகமாக உள்ளது.**					
	The number of activities in the students' work book is high.					
5	**மாணவர்களின் ஆங்கில வாசிப்புத்திறன் எண்ணும் எழுத்தும் திட்டத்தில் மேம்பட்டுள்ளது.**					
	Students' English reading skill has improved through the Ennum Ezhuthum program					
6	**களங்கள் அமைக்க போதுமான இட வசதி உள்ளது.**					
	There is enough space to set up different learning areas					

Class Room Climate

வினா எண்	வினா	*1*	*2*	*3*	*4*	*5*
1	**ஆசிரியர் உதவியுடன் மட்டுமே அனைத்து செயல்பாடுகளையும் மாணவர்கள் செய்கின்றனர்.**					
	Students do all activities only with the help of the teacher					
2	**கற்றல் கற்பித்தல் செயல்பாடுகளை மேற்கொள்வதற்கு போதுமான வகுப்பறை வசதிகள் உள்ளன.**					
	There are adequate classroom facilities to carry out teaching and learning activities					

3	**மாணவர் எண்ணிக்கை அதிகமாக உள்ள பள்ளிகளில் எண்ணும் எழுத்தும் திட்டத்தை செயல்படுத்துவதில் சிரமங்கள் எதுவும் இல்லை.** *There are no challenges in implementing the Ennum Ezhuthum program in schools with a large number of students.*					
4	**பின்னிணைப்பில் கொடுக்கப்பட்டுள்ள துணைக் கருவிகளின் படங்கள் உபயோகமாக உள்ளது .** *The pictures in the supplementary materials provided with the annex are useful.*					
5	**கற்றல் கற்பித்தல் செயல்பாடுகளுக்கு ஆசிரியர் கையேட்டில் கொடுக்கப்பட்டுள்ள விரைவு துலங்கல் குறியீடு மிகவும் பயன்படுகிறது.** *The quick response codes given in the teacher's guide are very useful for teaching and learning activities.*					

Photos

Workshop Inauguration for Tool Preparation

.

Teachers preparing questions

.

Workshop focusing on Tool Pruning

Tool Orientation workshop for Field Investigators

The investigator conducted data collection in the schools

The investigator on data collection in the schools

The field investigator at data collection in the schools

The field investigator on data collection in the schools

The field investigator in data collection in the schools

Teachers and students actively participated in the survey.