DRAṢṬĀ
Centre for Development Research,
Sustainability & Technical Advancement

IMPACT ASSESSMENT STUDY OF NANRITAM'S EDUCATION FOR ALL (EFA) PROGRAMME

2023

A Report

Rajlakshmi Mallik



ASSESSMENT STUDY CONDUCTED BY:

Centre for Development Research Sustainability and Technical Advancement (C-DRAṢṬĀ), Kolkata

ASSIGNED BY:

Nanritam

Centre for Development Research,
Sustainability & Technical Advancement

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Rajlakshmi Mallik

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Fortunate is the one who can serve. Not many get the opportunity in this materialistic world. Rain falls everywhere but is harvested only in specific places. Same is true in this case. – Sri Sri 108 Birajananda Bharati

अस्माकं अन्तः प्रकाशाय समर्पितः

Dedicated to the Light Within Us

If the poor cannot come to education, education must reach them at the plough, in the factory, everywhere. – Swami Vivekananda

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Foreword

As the world navigates a turning point caused by rapid advances in digital technology over the last few decades, with robots and artificial intelligence trying to edge out traditional labor, it is increasingly clear that the future belongs to nations that can adapt to this changing landscape of work, livelihood and the economy. The key to this adaptability is education--modern, scientific education, that nurtures creativity. As mechanical work is taken over by machines, the human endeavor will have to be more and more focused on more advanced forms of activity, and education is the key to this. This is of particular importance to a country like India with a large population.

An experiment with modern education that is taking place in a most unusual place is the Filix School run by the NGO Nanritam. This school, where the medium of education is English, is located not in a metropolis, nor in an advanced economy, but in a poor, rural region in the state of West Bengal, in eastern India, with largely tribal population. The remarkable success of this school, which has tried to bring in the best methods of teaching from around the world and notably from Finland is creating hope.

To expand the impact of its method of teaching, from 2021 Nanritam started the ambitious program called Education for All (EFA) to spread their method of instruction to other schools across ten districts of West Bengal. I have had a long association with the school run by Nanritam almost from the time of its inception and have been hugely impressed by the quality of education—mathematics, the sciences, literature and language—and by the fluency of students in English and mathematics. However, this was all my impression, and I was curious to know if the quality of education being imparted could be scientifically evaluated.

For this reason I am heartened to read this independent evaluation of Nanritam's EFA program, conducted by the Kolkata-based research institute, Centre for Development Research Sustainability and Technical Advancement (C-DRASTA). What this study, led by Rajlakshmi Mallik, does is to test the impact of the teaching methods used by Filix School and the EFA programme on student learning by statistically comparing data from 46 treatment schools and 10 control schools.

This controlled study confirms my intuitive assessment and, more importantly, it gives details that are impossible to get to by pure intuition. This is what makes the evaluation and report by C-DRASTA valuable. Thus we see that students who have been enrolled for a while in the EFA programme do better than students in non-EFA schools in terms of fundamental literacy and numeracy skills. However, this learning advantage becomes even more pronounced for advanced numeracy and literacy skills. The C-DRASTA study also shows that the English and mathematics books designed by Nanritam for basic literacy and numeracy has a big impact via the EFA teacher training programme.

In short, this report provides statistical evidence of the superior training of students and also of teachers being provided by the Education for All programme. It is no surprise that students from the Filix School have begun to attract international attention. Recently, 6 students from the Filix School were among the finalists in the World Storytelling Championship, organized by AC Enovation, Singapore, and one student, Anushi Nigar, was first runner-up. This is big achievement for a rural school in an emerging market economy, with a majority of students coming from households that are below the national poverty line of India. It is worth keeping in mind that students from 137 nations participated in this contest.

The study by Rajlakshmi Mallik is useful as it stands but, more importantly, it opens up a host of new questions that would be useful to try to find answers to. What we now need to understand is what it is in the system of teaching and books in the EFA schools that gives it the great advantage that is now showing up statistically. Is it the atmosphere of treating

learning as fun? Or the moderns methods of teaching? Or the encouragement to students to engage with the teachers by asking questions and even contesting the claims.

I would like to take this opportunity to thank the author of this report, Rajlakshmi Mallik, the leaders of Nanritam and the outstanding teachers of Filix School who worked hard to make learning fun.

Once we understand the kinds of causal links studied in this report better we will be able to carry out the lessons learned from Nanritam's experience and reported in this report to better the quality of school education everywhere.

Kaushik Basu
Professor of Economics and Carl Marks Professor of International Studies,
Cornell University, Ithaca, New York



Preface:

Aligned with its Mission of *Observe, Reason and Empower* **Centre for Development Research Sustainability and Technical Advancement (C-DRAṢṬĀ)** conducted an **Impact Assessment Study of 'Education for All' Programme (IAEFA)** during July 2022 to January 2023.

Education for ALL (EFA) is an educational services extension programme for spreading numeracy and literacy among children aged three to eight years conceptualised by **Nanritam** in November 2021 and implemented in January 2022.

COVID-19 learning loss resulting from the prolonged school closure during the pandemic aggravated by the acute digital divide for rural and underprivileged communities created an urgent need for an intervention on foundational literacy and numeracy to bridge this gap.

EFA was launched to attend to this immediate need. Conceptually EFA is a significant step towards carrying forward the vision of NIPUN (National Initiative for Proficiency in Reading with Understanding and Numeracy) Bharat Mission of Government of India which is one of the key stones for realisation of NEP, 2020 mandate of achieving universal foundational literacy and numeracy in primary schools by 2025.

The Impact Assessment study has been designed after detailed discussion and interaction with the Organisers of the EFA programme regarding the objectives and various features of the programme-including book content, tiered training process, online training etc. along

with expected outcomes. This was followed by preliminary field visits by the research team.

Based on the understanding and insight thus gained the study is designed to address three broad and major aspects of EFA programme to ensure a comprehensive bird's eye view. The objectives thus identified are as follows:

Objective 1: Assessing Impact on Student Learning Outcomes; **Objective 2:** Curriculum Validation; **Objective 3:** Process Validation.

The study is based on secondary data shared by Nanritam from base line assessment and mid-term assessment as well as primary data obtained from field visits by the research team. The study has been based on observation and feedbacks of both the direct beneficiaries and other stake holders and has covered approximately three thousand students (EFA and non-EFA), along with EFA and non-EFA teachers and experts from education and related fields. A combination of Statistical and Qualitative research methods has been used to analyse and interpret the data.

To highlight and delineate the effectiveness of EFA programme control groups have been identified after careful consideration of other socio-economic factors which might impact student learning outcomes.

The mid-term impact assessment study is expected to add to the EFA programme by identifying the key change makers and factors that have been critical to its effectiveness and initiate the development of a framework for evaluation as a continuous process that is embedded in the EFA programme.

The statistical study is an attempt at measurement and quantification of the impact of EFA. However casual observation made during the field visits and interactions with the organisers of EFA programme also reveal a few other interesting facets.

One is the spontaneous dedication of the team members of Nanritam. The other feature which is somewhat connected with the first is the continuous monitoring of the programme by the organisers - a very crucial factor for ensuring the effectiveness of any intervention such as EFA.

We are extremely grateful to Prof. Kaushik Basu for introducing C-DRAṢṬĀ to Nanritam's work, his faith in Team-C-DRAṢṬĀ's capability and laying the foundation to the Midterm Impact Assessment Study. The study has also been enriched by his subsequent comments and involvement. Finally I take this opportunity to express our gratitude to Prof. Kaushik Basu for writing the inspirational Foreword to this report which is also indicative of the future course of action for continuing and expanding the efforts at Foundational Literacy and Numeracy (FLN) and assessing its impact on learning outcomes among children aged three to nine years – the key beneficiaries of FLN.

The insightful comments of the C-DRAṢṬĀ Advisor, Prof. Diganta Mukherjee and the solidarity and support of the Trustees, Sri. Arun Prasad Mallik, Dr. Abhinandan Sinha, Sri. Saurav Sarkar, Dr. Aparajita Dhara, and Heads, Sri. Sanjit Mitra and Smt. Sarada Ramamoorthy is highly appreciated as always.

This research would not have been possible without the tireless efforts of the research and technical support team at C-DRAṢṬĀ, Smt. Surosree Nath, Smt. Debarati Dutta and Sri. Arnab Dutta who have helped with their many fold efforts in extensive desk review of literature, data collection, compilation, processing, analysis, field visits and very importantly preparation of this report. Without their hard work and sincere efforts this report would not have been seen the light of day.

We are grateful to members of Nanritam for stimulating interactions and their spontaneous support with information as and when required.

In this context I would like to mention the names of Smt. Ranjana Sengupta (Secretary, Nanritam), Sri. Sarada Namhata, Smt. Ruma Guha Neogi – Principal Filix School of Education, Dr. Shyamal Dutta, Dr. Bharati Bakshi and Sri. Jagannath Goswami, with whom my interactions have been, to say the least very intense and informative. I would also like to thank Smt. Tanusree Patra, Smt. Priyanka Ghosh, Smt. Susmita Saha, Smt. Aditi Mondal, Sri. Debashish Roy and Sri. Somsuvro Chatterjee for sharing their experience about the development and implementation of EFA curriculum and providing administrative support. However this list is nowhere near even half of all the names I would like to mention. I also thank the faculty and students of Filix School of Education and participating EFA schools visited by us for their detailed feedback, voluntary participation and enthusiastic interaction which have helped to enrich the study.

Finally a note of thanks in advance to the readers of this report for their time and inputs which if shared with us will help us to enrich IAEFA study in the true spirit of impact assessment where stakeholders are of crucial importance.

Rajlakshmi Mallik
President and Head, Research and Training
Centre for Development Research
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January 2023

Executive Summary

Impact Assessment Study of Nanritam's Education for All (EFA) Programme

This report is based on an **Impact Assessment Study of Nanritam's 'Education for All' Programme (IAEFA)**conducted by **Centre for Development Research Sustainability and Technical Advancement (C-DRAṢṬĀ)** during July 2022 to January 2023. EFA is an educational services extension programme for foundational numeracy and literacy to bridge the gap in numeracy and literacy among children aged three to eight years that was created due to prolonged school closure during the pandemic. The programme has been conceptualised and implemented by Nanritam since November 2021.

The Impact Assessment study has been designed after detailed discussion and interaction with the Organisers of the EFA programme regarding the objectives and various features of the programme - including book content, tiered training process, online training etc. along with expected outcomes. This was followed by preliminary field visits by the research team.

Based on the understanding and insight thus gained the study is designed to address three aspects of EFA programme.
Objective 1: Assessing Impact on Student Learning Outcomes; **Objective 2:** Curriculum Validation; **Objective 3:** Process Validation.

The study is based on secondary data from base line assessment and mid-term assessment grades of students. Along with student grades primary data has been obtained from field visits to EFA schools by the research team involving intensive interaction with students as well as teachers. For teacher training workshop evaluation data has been collected and

collated from both past feedbacks by participant teachers as well as telephonic interviews of EFA teachers conducted by the research team based on a structured questionnaire.

To highlight and delineate the effectiveness of EFA program control groups have been identified after careful consideration of other socio-economic factors which might impact student learning outcomes. 46 treatment schools and 10 control schools have been sampled for the study from the districts of Purulia, Bankura and South 24 Parganas. Baseline and midterm grades of over 2839 EFA and non-EFA students and feedbacks of approximately 10 percent EFA teachers has been covered by the study.

The treatment schools are initially selected based on quota sampling so that there is an adequate representation of all school types - private, government and other learning centres along with various clusters. Control schools have been selected from schools which dropped out of the EFA programme after initially participating in the base line assessment.

A combination of Statistical and Qualitative research methods has been used to analyse and interpret the data. Major findings based on exploration of empirical evidence are listed below.

Student Learning Outcomes:

- ✓ Findings reveal an overall positive impact of Nanritam's EFA programme on fundamental literacy and numeracy skills among children enrolled in the programme. There has been marked improvement in the modal and median (along with average) midterm grades among EFA students as compared with the baseline assessment grades. This is even more pronounced for slightly advanced numeracy and literacy skills like in case of vowels, words, sentences or subtraction with borrowing, multiplication and division.

- ✓ Comparison of baseline and midterm assessment grades of students from control group schools who dropped out of the programme shows little or no improvement.

- ✓ Comparison of midterm assessment grades for treatment and control group schools also show a marked difference in terms of numeracy and literacy skills in favour of the treatment schools.

Curriculum and Process Validation based on Participant teacher feedback:

- ✓ Teacher feedback was collected on (i) **Programme Overview** covering the objective and duration of the training programme among others, (ii) **Programme Features** consisting of questions on content, structure, presentation and design (involving online and offline training sessions, WhatsApp groups for problem solving, video recordings of online classes) (iii) **Programme Outcome and Impact** including questions on confidence about using TLMs as taught in class, the effectiveness of training experience post training etc. The set of questions asked in September 2022 survey covered aspects which were highlighted in past feedback by teachers regarding training workshops attended by them along various other features of teacher training programme.

- ✓ For each of the eighteen aspects identified the participant teachers were asked to rate the aspect in terms of usefulness, relevance, effectiveness, helpfulness, clarity and other attainment and satisfaction parameters ina scale of 0 to 10 with step size 0.5.

- ✓ Other than sufficiency of training duration other criteria like whether objectives of training were explained clearly and participation and encouragement by trainers were mostly given ratings of 8 and above. There has been a common demand for more face to face training sessions.

- ✓ The helpfulness of English and Mathematics books designed by Naritam for foundational literacy and numeracy is one of the strongest features of the EFA

teacher training programme as an aid for teaching more effectively in class. The helpfulness of offline class has much greater acceptability than online classes.

- ✓ For both training programme features (content and design) and their impact (in terms of its effectiveness in instilling confidence in participant teachers about the use of TLMs in class and actually teaching more effectively) the satisfaction levels are high. More than 50% teachers have given a rating of 10 to confidence regarding use of TLMs.

- ✓ The median (the mid-point of the data set when it is ranked) and modal (most frequently occurring) rating for the various aspects of the teacher training programme by participant teachers varies between 8 to 10 for most of the dimensions.

- ✓ Measures of association track the pattern of any of co-movements in variables. Computations of the Spearman correlation which is commonly used for ordinal data reveal the following: Preference for offline and online classes are mostly independent decisions. Poor internet connectivity is a major factor that adversely influences the usefulness of online classes. Generally high rating given to confidence about use of TLMs, are associated with high rating given to effectiveness of training experience and clarity in objective of training and move together in the same direction.

FOREWORD

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CHAPTER 1

Introduction

1.1 Foundational Literacy and Numeracy: International and National Perspective

There is a global consensus regarding the importance of Education as a key agent for transforming the world. This is encapsulated in United Nation's Sustainable Development Goal SDG 4 which is about Quality Education. SDG 4 seeks to 'ensure inclusive, equitable and quality education and promote lifelong learning opportunities for all' as part of United Nation's Sustainable Development Agenda 2030.

Among the ten targets associated with this goal the first two **focuses on equal access to free, publicly funded, quality primary and pre-primary education**. Among the remaining targets two also highlight the need **to increase the supply of qualified teachers** in developing countries and to **build and upgrade schools that are safe and child, disability and gender sensitive.**

All the four targets are indicative of the importance of achieving universal foundational literacy and numeracy among children as the basis of Quality Education. *[BOX 1.1, Appendix I, provides excerpts from UN official website regarding targets associated with SDG Goal 4 that focus on primary and pre-primary education.]*

The **National Education Policy (NEP),** 2020 of Government of India clearly elucidates the need to ensure universal quality and equitable foundational literacy and numeracy at the primary and pre-primary level by 2026-2027. The **National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN Bharat)** launched in July 2021 by the

Ministry of Education is as step in this direction. The NIPUN Bharat initiative constitutes the national mission on **Foundational Literacy and Numeracy (FLN)** in India.

It is also reflective of the importance of strengthening primary and pre-primary education as the building blocks for Quality Education at all levels. FLN also has a specific component dedicated to teacher training viz. **NISHTHA FLN** in recognition of the importance of quality teachers in carrying FLN forward. *[BOX 1.2 and BOX 1.3, Appendix I, present a schematic outline of the various components like DIKSHA FLN, NISHTHSA FLN, Lakshya, Balvatika and policy actions undertaken under the FLN programme.]*

1.2 COVID-19 Loss: Impact on Learning

The impact of COVID-19 pandemic on Education is among the key areas that account for COVID-19 Loss with long term effects across many dimensions. The pandemic precipitated a global learning crisis with 147 million children missing over half of in-person instruction. It also increased the incidence of drop out with 24 million learners in pre-primary to university level education to never return to school.

Inequities in education system across socio economic divide got aggravated and existing inequities like digital divide between urban and rural sector contributed to make the gap even wider and acute. *[BOX 1.4, Appendix I, on COVID-19 induced learning loss provides a summary of research findings by UNESCO, Asian Development Bank (ADB) and other national and global organizations regarding the extent of COVID-19 induced learning loss and responses to counter the same.]*

1.3 Nanritam's Education for All (EFA) Programme

The **Education for All (EFA)** initiative by Nanritam - an educational outreach programme for foundational numeracy and literacy among children aged three to eight years - was conceived in November 2021 and launched in January 2022.The immediate objectiveis to **bridge the learning loss among children aged 3 years to 8 years that has been created due to prolonged school closure during the pandemic**. The inequities already embedded in the

system like the **rural urban digital divide** made the COVID-19 learning loss for rural and underprivileged communities more acute which called for immediate and urgent action.

However the underlying intent of the programme goes much further. The programme is conceptualised with the broader objective of making **foundational literacy and numeracy accessible to ALL children** irrespective of socio- cultural, spatial or economic divide. The other aspect is use of **innovative and well tested teaching pedagogy** developed by Nanritam that makes **learning more of fun and play for the children**. Accordingly the third aspect of the programme is its 'train the trainer' which involves **creating quality teachers** by training them in this new pedagogy and TLMs.

Thus EFA is a significant step forward aligned with both **United Nations SDG 4: Quality Education** and the **NIPUN Bharat Mission** of Government of India. The latter is one of the key stones for realisation of NEP, 2020 mandate of achieving universal foundational literacy and numeracy in primary schools by 2025. *[BOX1.5, Appendix I, presents details of the EFA objectives, features and planned targets for outreach].*

1.4 Scope of the IAEFA Study

The objective of this study is to assess and evaluate the midterm impact of Nanritam's EFA programme with respect to its intended objectives and planned targets. The study has been designed after detailed discussion and interaction with the organisers of the EFA programme regarding the objectives, programme features - including book content of 'My Journey in English' and 'Amar Anker Jagat' and other TLMs, tiered teacher training process, online training, monitoring and tracking etc.- along with expected outcomes of the initiative.

This was followed by preliminary field visits by the research team. Based on the understanding and insight thus gained the study is designed to assess three aspects of EFA programme.

Objective 1: Assessing Impact on Student Learning Outcomes; **Objective 2:** Curriculum Validation; **Objective 3:** Process Validation.

To highlight and delineate the effectiveness of EFA program control groups have been identified after careful consideration of other socio-economic factors which might impact student learning outcomes.

The specific research and measurement questions that follow from the management questions are outlined below.

Objective 1: Assessing impact on student learning outcomes of EFA initiative

1A: MEASURING AND EVALUATING IMPACT (Treatment Group*)

- How far EFA programme has impacted the literacy and numeracy skills of the students enrolled in the EFA programme (henceforth EFA students or treatment group students*)?
- Is the impact measured in terms of increase in midterm scores of EFA students compared to base line score, significant?

1B: COMPARING IMPACT: EFA Vs NON-EFA (Treatment Vs Control)**

- How do the midterm scores of the EFA students compare with the midterm scores of students not enrolled in EFA programme (henceforth non-EFA students or control group students**)?
- How does theimpact on learning outcome, measured by difference between mid-term and base line scores, for the EFA students compare with those of non-EFA students?
- Is the impact on learning outcomes for EFA students significantly larger than that of non-EFA students?

1C: IDENTIFYING FACTORS CONDUCIVE TO IMPACT

- How do the difference in midterm and baseline scores of EFA students compare across different types of school? Is the difference significant? Are there any school type effects?
- How do the difference in midterm and baseline scores of EFA students compare across categories of socio-economic factors such as gender, parents' occupation and whether the participant is a first generation learner? Are the differences significant? Are there any category level effects for socio-economic factors on learning outcomes of EFA students?

Objective 2: Curriculum Validation

- How far the EFA book content and teaching pedagogy is an enabling factor in making teaching learning process more easy and effective for both teachers and students?

Objective 3: Process Validation

- How far the EFA teacher training programme, a key component in knowledge transfer process, has been effective in transferring knowledge about new and innovative child sensitive teaching pedagogy to participant teachers?
- How far has the EFA teacher training programme helped teachers to have a better understanding of class room environment, student psyche and be more effective teachers in class?

The finding of this study is expected to address the broader objective of identifying the programme features that are key change makers and factors that have been critical to the effectiveness of the EFA programme. It also helps to delineate the best practices as inputs for development of a framework for evaluation as a continuous process that is embedded in the EFA programme.

APPENDIX - I

BOX 1.1: Targets Associated with UN Sustainable Development Goal 4: Quality Education with focus on pre-primary and primary education

Target 4.1 Free Primary and Secondary Education

By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.

The provision of 12 years of free, publicly-funded, inclusive, equitable, quality primary and secondary education – of which at least nine years are compulsory, leading to relevant learning outcomes – should be ensured for all, without discrimination.

Target 4.2 Equal Access to Pre-primary Education.

By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education.

The provision of at least one year of free and compulsory quality pre-primary education is encouraged, to be delivered by well-trained educators, as well as that of early childhood development and care.

Target 4.a Build and Upgrade Safe Schools

Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all

This target addresses the need for adequate physical infrastructure and safe, inclusive environments that nurture learning for all, regardless of background or disability status.

Target 4.c Increase the Supply of Qualified Teachers in Developing Countries

By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and Small Island developing States.

Teachers are the key to achieving all of the SDG 4 targets. It requires urgent attention, with a more immediate deadline, because the equity gap in education is exacerbated by the shortage and uneven distribution of professionally trained teachers, especially in disadvantaged areas. As teachers are a fundamental condition for guaranteeing quality education, teachers and educators should be empowered, adequately recruited and remunerated, motivated, professionally qualified, and supported within well-resourced, efficient and effectively governed systems.

Source: www.undp.org

BOX 1.2. National Education Policy and NIPUN Bharat

National Education Policy (NEP), 2020

- This envisions an education system that contributes directly to transforming India, sustainably into an equitable and vibrant knowledge society, by providing high-quality education to all
- Focus on school education, higher education, professional education, adult education, online and digital education
- **According the highest priority to achieving Foundational Literacy and Numeracy for all students by Grade 3**
- Making foundational learning the highest priority for the country
- Launching a National Mission on Foundational Literacy and Numeracy (FLN)
- Achieving universal FLN in primary schools by 2026-27

NIPUN Bharat
(*National Initiative for Proficiency in Reading with Understanding and Numeracy*)
July 2021
A National Mission on Foundational Literacy and Numeracy (FLN)

Vision:
To create an enabling environment to ensure universal acquisition of foundational literacy and numeracy, so that by 2026-27 every child achieves the desired learning competencies in reading, writing and numeracy at the end of Grade III and not later than Grade V.

Objectives:

- ✓ To ensure an inclusive classroom environment by incorporating play, discovery, and activity-based pedagogies, linking it to the daily life situations of the children and formal inclusion of children"s home languages.
- ✓ To enable children to become motivated, independent, and engaged readers and writers with comprehension possessing sustainable reading and writing skills.
- ✓ To make children understand the reasoning in the domains of number, measurement, and shapes; and enable them to become independent in problem solving by way of numeracy and spatial understanding skills.
- ✓ To ensure availability and effective usage of high-quality and culturally responsive teaching learning material in children"s familiar/home/mother language(s).
- ✓ To focus on continuous capacity building of teachers, head teachers, academic resource persons and education administrators.
- ✓ To actively engage with all stakeholders i.e., Teachers, Parents, Students and Community, policy makers for building a strong foundation of lifelong learning.
- ✓ To ensure assessment 'as, of and for' learning through portfolios, group and collaborative work, project work, quizzes, role plays, games, oral presentations, short tests, etc
- ✓ To ensure tracking of learning levels of all students.

Features:

- Holistic development of a child
- Inclusive and contextualized teaching pedagogy
- Learning assessments at each foundational stage and early identification of learning gaps
- Lakshya or learning goals
- NISHTHA for Empowering Teachers
- DIKSHA for FLN
- Foudational Learning Study (FLS)

For strengthening efforts of FLN a large scale FLS has been undertaken by NCERT in March 2022 covering 86000 Grade 3 students from 10000 schools. It aims to provide reliable and valid data about grade 3 students to know their ability in FLN and extent of learning outcome. FLS will help set baseline for NIPUN Bharat and set proficiency benchmarks in FLN.

Source: Compiled by C-DRAṢṬĀ

BOX 1.3 Foundational Literacy and Numeracy Programme in India:Features

HOLISTIC DEVELOPMENT OF A CHILD	INCLUSIVITY AND CONTEXTUALISATION	LEARNING ASSESSMENTS
Three development goals: Goal 1-HW (Health and Wellbeing) Goal 2-EC (Effective Communicators) Goal 3-IL (Evolved and Involved Learners who are able to connect with their environment) -	Pedagogy for creating an inclusive classroom through emphasis on: - Child centered pedagogy - Interactive classroom including authentic, appropriate, and accessible toys and materials - Toy-based pedagogy - Activity based/ experiential learning - Play based - Art-integrated/sport-integrated - Story-telling-based - ICT-integrated learning - Contextualisation of materials keeping in view the linguistic and social diversity of each State/UT	Early identification of learning gaps and learning difficulties at each foundational stage including children with special needs so that there can be possibilities of early intervention through referral to specialists. Levels of assessment: School Based Assessment (SBA) at the foundational stage should be stress-free and largely through qualitative observation based on performance of the child in a multitude of experiences and activities Large-scale standardised assessment at the State, National or the International level focuses on the 'System' and describes the educational health of the nation, state or district.
LAKSHYAS	**FLN NISHTHA** *(National Initiative for School Heads' and Teachers' Holistic Advancement)*	**DIKSHA** *(Digital Infrastructure for Knowledge Sharing)*
Learning Goals of the Mission The overall literacy and numeracy targets to achieve the objectives of the Mission are set in the form of Lakshya or Targets for Foundational Literacy and Numeracy. starting from the *Balvatika (Pre-school)*: (a) Recognises letters and corresponding sounds (b)Reads simple words comprising of at least 2 to 3 alphabets (c) Recognizes and reads numerals up to 10(d)Arranges numbers/objects/shapes /occurrence of events in a sequence *Grade 1:* (a) Reads small sentences consisting of at least 4-5 simple words in an age appropriate unknown text (b)Read and write numbers up to 99 (c) Perform simple addition and subtraction *Grade 2:* (a) Read with meaning 45-60 words per minute (b) Read and write numbers up to 999 (c) Subtract numbers up to 99 *Grade 3:* (a) Read with meaning at least 60 words per minute (b) Read and write numbers up to 9999 (c) Solve simple multiplication problems	Empowering Teachers In view of the challenges of in-service teacher training across the different stages of school education, an innovative integrated programme of teacher training has been designed by NCERT Specific Teacher Training Modules focusing on FL&N will be designed through NISHTHA FLN-NISHTHA modules will specifically contain a module on bridging the language barrier and teaching in mother tongue/regional language/home language FLN-NISHTHA will contain a specific module on peer learning and how parents can be utilized as volunteers in the schools	Expanding the scope and use of DIKSHA for FLN Enable Student Learning (range from explanation videos, interactive assessment items, worksheets, reading materials, etc.) Literacy content: Read Along –digital read-along material; Reading Comprehension; Grammar Question Bank; Children's literature - local lore and folk tales Numeracy content: Explanation Video Type; Short videos clarifying misconceptions; Real World Example Videos; Assessment Banks Enable Teacher Professional Development Various teacher training resources including: Training modules, Supportive materials for the training sessions, like hand-outs, videos, reading resources, Teaching-learning materials, Instructional strategies, teacher handbook, activity booklets etc.

Source: Compiled by C-DRAṢṬĀ

nipunbharat.education.gov.in
https://www.education.gov.in;
https://pib.gov.in

BOX 1.4 COVID-19 Learning Loss: Global Trends

Report Title: (1) Mission: Recovering Education in 2021 (2) UNESCO's education response to COVID-19 (November 2022)

UNESCO (United National Educational, Scientific and Cultural Organization)
WORLD BANK
UNICEF (United Nations International Children's Emergency Fund)

1. School closures have put children's learning, nutrition, mental health, and overall development at risk. Closed schools also make screening and delivery for child protection services more difficult. Some students, particularly girls, are at risk of never returning to school.
2. Most children have lost substantial instructional time and may not be ready for curricular that were age- and grade- appropriate prior to the pandemic.
3. Children require remedial instruction to get back on track. The pandemic also revealed a stark digital divide that schools can play a role in addressing by ensuring children have digital skills and access.
4. Teachers are in an unprecedented situation where they must make up for substantial loss of instructional time from the previous school year and teach the current year's curriculum. They must also protect their own health in school.
5. Teachers need training, coaching, and other means of support to get the job done. They will also need to be prioritized for the COVID-19 vaccination, after frontline personnel and high-risk populations. School closures also demonstrated that in addition to digital skills, teachers may also need support to adapt their pedagogy to deliver instruction remotely
6. From the outset UNESCO's Education Sector worked with ministries of education, public and private partners and civil society to ensure continued learning for all children and youth. Key in its initiatives was the establishment of the Global Education Coalition, a new model for international cooperation which develops innovative responses to help countries cope with the after effects of the crisis. It counts more than 175 members working around three central themes: gender, connectivity and teachers.

Report Title: (1) ADB's COVID-19 Response for Developing Asia Surpasses $20 Billion (September 2021) (2) How to Recover Learning Losses from COVID-19 School Closures in Asia and the Pacific (July 2022)

ADB (Asian Development Bank)

1. Worldwide on an average, students lost half a year's worth of learning (Patrinos, Vegas, and Carter-Rau 2022). In India and Pakistan, students learned significantly less during the pandemic than before it started.
2. In Riau Province, Indonesia, 40% fewer students in Grades 2 and 3 could read and comprehend text in 2021 than in 2018.
3. Extended time out of school combined with negative shocks to household income during the pandemic also led to higher dropout rates.
4. Surveys conducted in half of Bangladesh's 64 districts revealed that 13% of primary-level students in 2021 were planning to drop out of school (Li, Sharma, and Matin 2021).
5. ADB's committed assistance to help its developing member countries address the COVID-19 pandemic including vaccination support.

Source: Compiled by C-DRAṢṬĀ

BOX 1.4 COVID-19 Learning Loss: Global Trends (cont.)

Report Title: COVID-19 and Education: The Lingering Effects of Unfinished Learning (July 2021)

McKinsey & Company

1. Students in predominantly low-income schools and in urban locations also lost more learning during the pandemic than their peers in high-income rural and suburban schools.
2. Considering data over time, some interesting patterns emerge.
   Taking math as an example, as schools closed their buildings in the spring of 2020, students fell behind rapidly, learning almost no new math content over the final few months of the 2019–20 school year. Over the summer, we assume that they experienced the typical "summer slide" in which students lose some of the academic knowledge and skills they had learned the year before. Then they resumed learning through the 2020–21 school year, but at a slower pace than usual, resulting in five months of unfinished learning by the end of the year.
3. In reading, however, the story is somewhat different. As schools closed their buildings in March 2020, students continued to progress in reading, albeit at a slower pace.
   During the summer, it is assumed that students' reading level stayed roughly flat, as in previous years. The pace of learning increased slightly over the 2020–21 school year, but the difference was not as great as it was in math, resulting in four months of unfinished learning by the end of the school year (Exhibit 3). Put another way, the initial shock in reading was less severe, but the improvements to remote and hybrid learning seem to have had less impact in reading than they did in math.
4. Opportunity gaps have existed in our school systems for a long time. As schools build back from the pandemic, districts are also recommitting to providing an excellent education to every child

Report Title: Annual Status of Education Report (ASER) Survey (2005-2021)

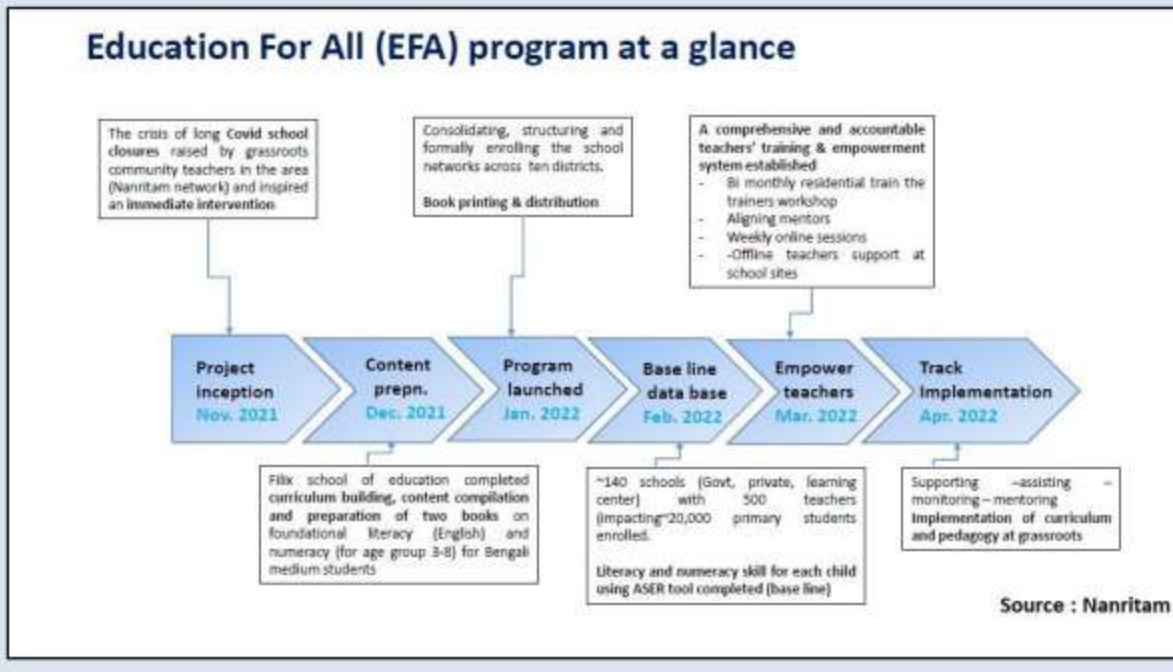
Pratham Education Foundation

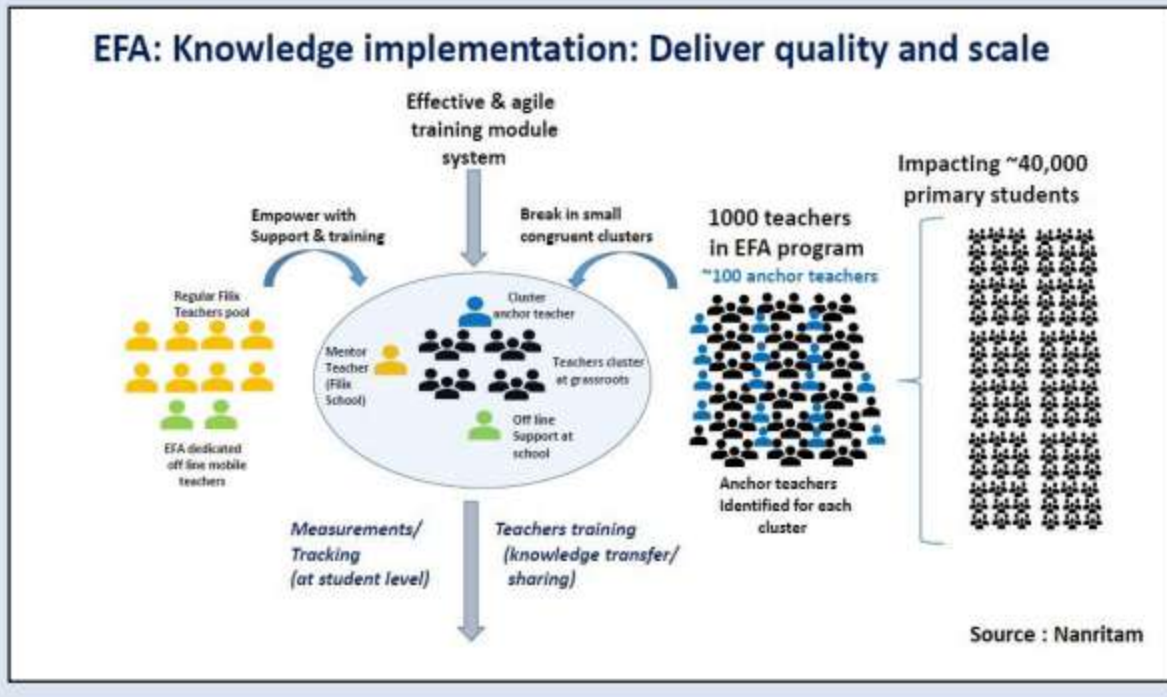
1. Report data on schooling status and the ability to do basic reading and arithmetic tasks for children in the 5-16 age group in rural India.
2. ASER 'Beyond Basics' focus on the abilities, experiences, and aspirations of youth in the 14-18 age group.
3. ASER 'Early Years' examine key early language, early numeracy, cognitive, and socio emotional indicators for children age 4-8 years.
4. ASER 2021, report an unprecedented jump in government school students, and a 10-year low in private school enrolments.
5. A growing dependency on private tuition classes.
6. There exists a stark digital divide, which carries the risk of severely affecting the learning abilities of primary grade students.
7. From having no experience of pre-primary class or anganwadis to the lack of access to digital devices, the pandemic has left the youngest entrants in India's formal education system particularly vulnerable.
8. 65.4% teachers flagged the problem of children being "unable to catch up" as one of their biggest challenges.

Source: Compiled by C-DRAṢṬĀ

https://thedocs.worldbank.org; https://www.unesco.org; https://www.adb.org; https://www.mckinsey.com; https://www.drishtiias.com

BOX 1.5: EFA Objectives, Features and Planned Targets for Outreach





Compiled by C-DRAṢṬĀ

CHAPTER 2

Methodology

2.1 Data Collection Design

The impact assessment study is based on both secondary and primary data. Data has been collected, collated and tabulated from existing management information system, documents and in-depth interaction with the management regarding the same. The secondary data sources were used to develop data collection instruments for collection of primary data. Primary data was collected through telephonic and personal interviews.

Field visits by the research team to EFA schools have been a complementary and confirmatory source of information. Intensive interaction with the stakeholders – students, teachers and school management – and observations made during the visits has been a rich source of information on diverse aspects and stakeholder perception of EFA. Field experience and field reports are presented in Chapter 3.

2.1.1 Variables of Interest

Objective 1: Learning Outcomes and Impact

In keeping with the primary objective of the study the major variable of interest are student assessment grades as measures of student learning outcomes. Base line grades and midterm grades are considered as measures of learning status. Difference between them is considered as a measure of impact of EFA on learning outcome.

Literacy: Ability to Read and Write

The learning outcome for literacy is captured separately for reading and writing skills at different levels of difficulty. Reading and writing skills are measured in five dimensions each as listed below:

(1) Capital letters (2) Small letters (3) Vowels (4) Words (5) Simple sentences

Numeracy:

Skills in numeracy are captured in terms of nine dimensions:

(1) Number recognition 1 to 9 (2) Number recognition 10 to 100 (3) Simple Addition (4) Addition with carry (5) Simple subtraction (6) Subtraction with borrowing (7) Multiplication (8) Division (9) Shapes recognition

Factors Affecting Learning Outcomes:

Among the other variables of interest are the factors extraneous to the EFA programme that may affect student learning outcomes. Among the factors identified are quality of school facilities and management which may be captured by (1) school type, (2) age (in completed years), (3) sex (4) standard of student; and socio-economic factors such as (5) parents' occupation, (6) social group, (7) whether the child is first generation learner, (8) family size, (9) schooling status and (10) economic status.

Objectives 2 and 3: Curriculum and Process

Objectives two and three of the study is about evaluation of the key components of EFA programme. This includes (a) innovative content, curriculum and teaching pedagogy designed by Nanritam for easier knowledge transfer to the children and (b) teacher training workshops conducted by mentor teachers as a means transfer of knowledge mentioned in (a) above to existing pool of teachers operating at the grassroots level.

Teachers constitute the most critical link in the knowledge transfer process. So measuring teachers' perception about the usefulness and ease of implementation of the TLMs and innovative teaching pedagogy they were trained in are identified among major variables of interest aligned with objectives two and three.

Data Type:

The variables identified are ordinal and nominal categorical variables. The data generated particularly student grades for literacy and numeracy, socio-economic factors affecting learning outcomes is mostly numerical ordered data although for nominal variables like school type the data is unordered numerical data. Category descriptions and labels for socio-economic variables of interest are listed in Table 2.1 in Appendix - II. Along with numerical data some textual data from participant teacher feedback forms for the March and June 2022 teacher training workshops have also been used.

2.1.2 Data Sources and Sampling Design

Student Grades

The study is based on secondary data from tabulated base line assessment and mid-term assessment grades of students from sampled schools, shared by Nanritam.

To highlight and delineate the effectiveness of EFA program control group of schools have been identified along with treatment group of schools. Control schools or non-EFA schools are learning centres that did not participate in EFA programme. Treatment or EFA schools are those schools which implemented the EFA curriculum.

The treatment schools are initially selected based on stratified random sampling so that there is an adequate representation of all school types - private, government and other learning centres. However in case of unwillingness of a school to participate in the midterm assessment a few schools in the original sample drawn up based on random sampling, have been replaced with similar and willing school type.

Control group schools are identified after careful consideration of other socio-economic factors which might impact student learning outcomes and ensuring their similarity across control and treatment group schools.Control schools have been sampled from schools which dropped out of the EFA programme after initially participating in the base line assessment.[1]

[1]The treatment schools have been sampled from 96 schools which registered for EFA and continued to participate.

46 treatment schools with 2050 students and 10 control schools with 789 students have been initially sampled for the study from the districts of Purulia, Bankura and South 24 Parganas. However, 80 students from one EFA or treatment school belonging to 'Other Learning Centre' category remained absent on the day of midterm test. Final sample including tabulated baseline and midterm grades of 1970 EFA students from 45 treatment schools and 789 non-EFA students from 10 control schools have been used for assessing impact on literacy and numeracy skills among students enrolled in pre-primary and primary classes. Table 2.2 below summarises the sample composition for sampled schools.

Table 2.2: Impact Assessment of EFA: Sampling Design

		Treatment (Schools implementing EFA pedagogy and TLMs)	Control (Schools following their own pedagogy)
School			
	Government	**5**	**3**
	Private	**17**	**3**
	Other Learning Centre*	**23***	**4**
		45*	**10**
Students			
	Government	**341**	**432**
	Private	**1066**	**179**
	Other Learning Centre*	**563***	**178**
		1970*	**789**

**The figures reported in the table exclude the missing data on midterm grades of 80 students from one treatment school belonging to 'Other Learning Centre' category who remained absent on day of midterm test.*

Source: C-DRAṢṬĀ

Teacher feedback:

For teacher training evaluation, qualitative data consisting of narratives has been collected and collated from feedbacks by participant teachers of the teacher training workshops held in March and June 2022.

The secondary data has been complemented with primary data. A structured questionnaire based on rating scale of 0 to 10 has been designed using the observations from previous feedbacks along with questions on other aspects of teacher training. Participant teacher feedback on perception, helpfulness, usefulness and relevance of teacher training workshops has been collected through telephonic interviews by the research team, in September 2022. The list of questions covered by the survey is presented in Table 2.3 in Appendix – II.

A total of 95 feedback forms – 49 feedback forms from March 2022 workshop and 46 feedback forms form June 2022 workshop have been reviewed. The survey in September 2022 covers a sample of 35 participant teachers as recommended by Nanritam. The sample consisting mostly of anchor teachers and a few cluster teachers have been interviewed telephonically after circulating the questionnaire over email and WhatsApp.

2.1.3 Field Visit: 10to 13 August 2022

The field visit covered a span of four days during which the research team visited ten schools from among different school types namely Government Schools, Private Schools and Other Learning Centres which includes coaching centres, community learning centres and informal cluster schools.

The school visits comprised of research team observing ongoing classes as well as attending prearranged or spontaneous meetings with students, teachers and school management. The interactions involved indirect questions on students' and teachers' awareness, experience, feeling, familiarity, association and attitude towards the EFA curriculum, particularly the two books "Amar Anker Jagat" and "My Journey in English".

Students were also asked direct questions on number recognition, ascending and descending numbers, addition, subtraction, multiplication, recognition of shapes and colours, association of colours with objects and figures, matching of images, recognition, reading and writing of alphabets, application of vowels, small words and simple sentences. Writing skills were tested through students writing their names or drawing objects and writing object names.

Teachers were also asked to share their experience about the use of the EFA TLMs, teaching pedagogy and books in class. They were also requested to give feedback about the adequacy of the duration, frequency and mode of the EFA teacher training workshops.

2.2 Presentation, Analysis and Interpretation of Data

A combination of qualitative and quantitative or statistical research methods have been used to analyse and interpret the qualitative data. This was preceded by data preparation during which

the secondary data has been collated, scrutinised, cleaned, edited for missing data and other formatting adjustments required and recoded where necessary. New variables of interest have been created as per research questions.

2.2.1 Qualitative Analysis Methods

Textual data has been analysed using the technique of content analysis. Teacher feedback forms for March 2022 workshop consists of free feedback about the training by participant teachers at the end of the workshop. June 2022 workshop evaluation by participant teachers has six free response questions.

The textual data from the narratives are reviewed and classified under different heads. Similar views are clubbed and put under one thematic head and frequency tables constructed based on that. Observations made during the field visits have also been thematically organised and reported along with photographic visuals of teacher student interactions.

2.2.2 Statistical Analysis Methods

Numerical ordinal and nominal data is first analysed by using exploratory and descriptive techniques to understand data patterns. Descriptive statistics, frequency distributions, cross tabulation, measures of association and data visualisation are reported and presented to highlight major data patterns like impact on learning outcomes or the effectiveness of train the trainer workshops.

Tests of significance are used to analyse whether the impact on student learning outcomes of EFA programme by itself and vis a vis the control group are statistically significant or not? The differences in improvement in grades across categories of socio-economic factors are also tested for statistical significance to judge whether these factors have any influence on the student learning outcomes.

As the data is ordinal Spearman's rank correlation is used to measure association between variables particularly teacher perception and satisfaction about various aspects of the workshops.

Non-parametric tests of significance that are applicable to ordered data – viz. the Kolmogorov-Smirnoff (K-S) test has been used to test the significance of improvement in student grades for a single group of students like treatment group. Kruskal Wallis (K-W) test has been used for comparing the improvements in student grades and testing the significance of differences in improvements across different groups of students. The groups are determined by school type or the categories of socio economic factors like parents' occupation, social group and other factors as listed earlier.

APPENDIX – II

Table 2.1: Variables of Interest

	Variable Name	Categories
1	Type of School	Government; Private; Other Learning Centre
2	Age	Age (in completed years)
3	Sex	Boy; Girl
4	Occupation	Daily Labour; Farmer; Bamboo Worker; Migrant Labour; Shop; Other (Specify)
5	Social Group	SC; ST; OBC; General;
6	Economic Status*	APL; BPL
7	First generation learner	No; Yes
8	Schooling status	Never Attended School; Beginner (First Time attended); Regular
9		

Source: C-DRAṢṬĀ

Table 2.3: EFA Teacher Training Evaluation Survey Questionnaire

Sl No.	*Indicate your level of agreement by rating the following statements in a scale of 0 to 10*
1.	The objectives of the training were clearly explained.
2.	Participation, interactions and questions were encouraged.
3.	Topics covered in the training were relevant to my needs.
4.	Content was well organized and easy to follow.
5.	Materials provided were helpful.
6.	Introductions and concepts were clearly explained and understandable.
7.	Instructional methods and media were used appropriately which made learning easy.
8.	Duration or time allotted for training was sufficient.
9.	I am confident of using the concepts, teaching learning materials (TLM) and methods covered.
10.	The training experience has been useful in my work and teaching more effectively.
11.	Training objectives were met.
12.	The meeting room and facilities were adequate and comfortable.
13.	Face to face training sessions were helpful and effective for understanding concepts and teaching methods.
14.	Participation in online training sessions was difficult due to poor internet connectivity.
15.	The online training sessions were useful.
16.	Video recordings of online classes were very helpful in understanding the concepts and methods taught.
17.	WhatsApp group was very helpful in resolving doubts and queries.
18.	The two books 'Amar Anker Jagat' and 'My Journey in English' have been useful in introducing and explaining foundational concepts in Mathematics and English to the children.

Source: C-DRAṢṬĀ

CHAPTER 3

Impact Assessment: Student Learning Outcomes

3.1 Observations from Field Visit

The field visit was a rich experience spanning four days during which the research team visited ten schools across different locations. The visit covered government schools, private schools as well as other learning centres that were enrolled in the EFA programme and following the EFA curriculum.

This section presents a summary of the experience and observations as reported by the members of the research team.

In general children were very self disciplined and well trained about how to conduct themselves and behave with their peers and teachers. Very strikingly they were also very spontaneous in getting involved in group or individual activities like drawing, singing, dancing, reciting rhymes with action, identifying objects and naming them and responding to any questions asked. The playfulness, liveliness and their enthusiasm with the curriculum was evident.

When asked about which is their favourite book among the two EFA books 'My Journey in English' and 'Aamaar Anker Jagat' they had definite responses which shows they are well

Field Visit by C-DRAṢṬĀ Research Team:
Day 1























Field Visit by C-DRAṢṬĀ Research Team:
Day 2



























Field Visit by C-DRAṢṬĀ Research Team:
Day 3























Field Visit by C-DRAṢṬĀ Research Team:
Day 4



















acquainted with the books. Their emphatic positive responses to whether they like seeing the book during the day and outside class hours also show their fondness for the EFA books. They also had very definite ideas about specific pictures in the books which they like which again show their fondness for the study materials.

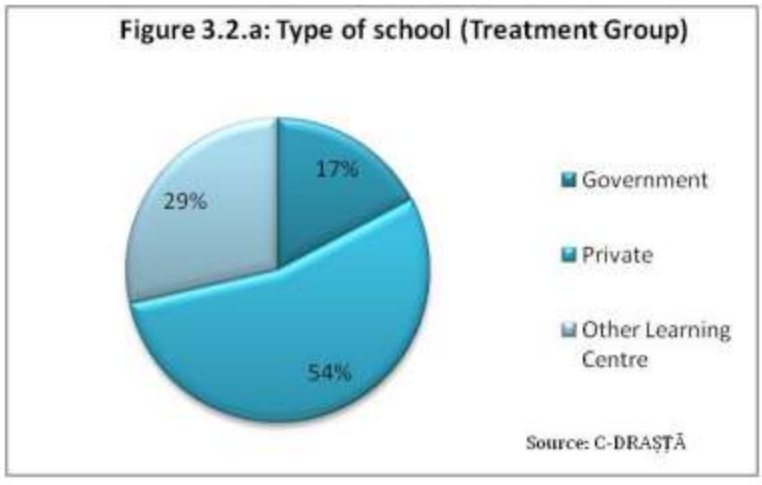
Overall the students were quick in recognizing alphabets, numbers, vowels, words, colours, objects, shapes, animals, flowers, and association between them. They were also good with addition, subtraction and other mathematical operations. The handwriting for both alphabets and numbers in large number of cases was very confident and good. There were instances where students signed their names in three languages Bengali, English and Santhali.

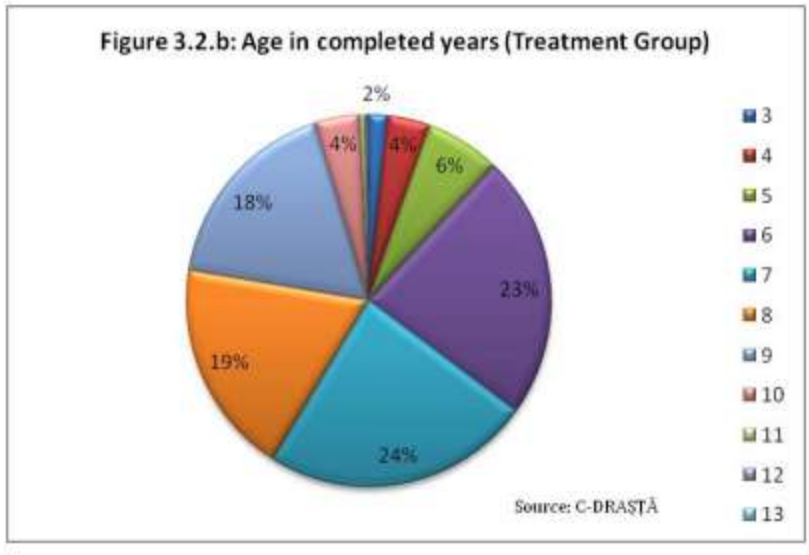
Interaction with the teachers and observation of their demo classroom teaching also revealed their involvement with the EFA curriculum and the love and care they shared for the students which constitutes the underlying principle of the EFA teaching pedagogy.

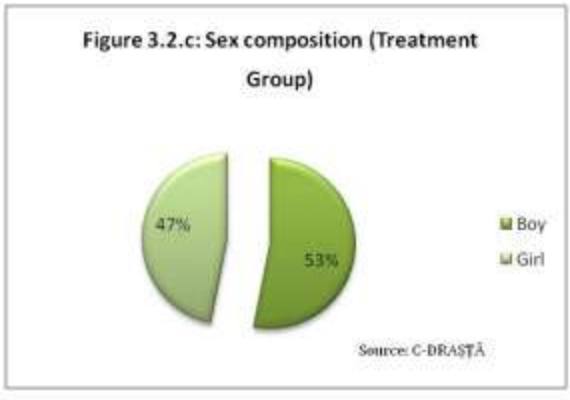
3.2 Socio-economic Profile of Sampled Students

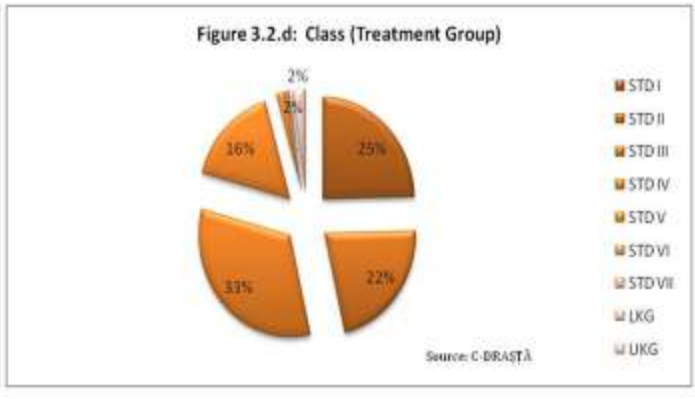
The following figures and charts highlight the socio-economic profile of children from sampled EFA schools constituting the treatment group.

The charts show that there is a moderately equal representation of boys (53%) and girls (47%). More than 95% of the students are from the age bracket of 3 years to 9 years with 80% students studying in Class 1 to 4. Two thirds of the EFA students are first generation learners. The parents of the enrolled children are mostly (80%) farmers or work as daily labour. A little more than 11% parents belong to the 'Other' category consisting of drivers, teachers, mason etc. along with those engaged in shops. Government schools constitute the major category for school type at (54%) followed by other learning centres constituting 29 % of the EFA schools. The social groups are well represented with 21% constituting the general category.

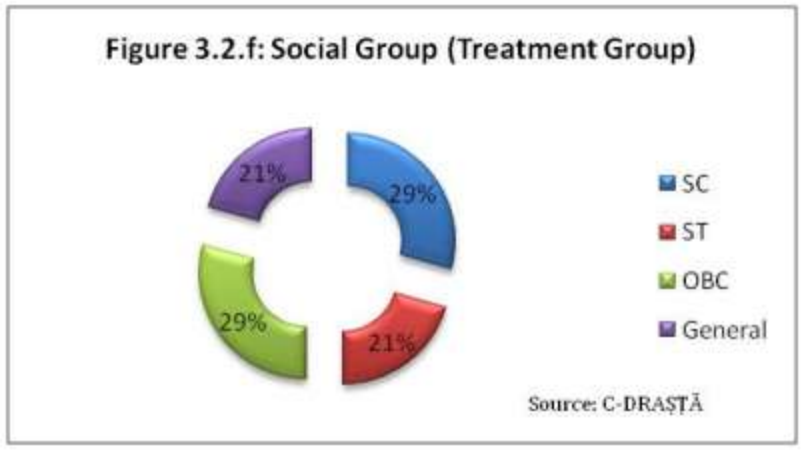

Figure 3.2.a: Type of school (Treatment Group)
17%
29%
54%
Government
Private
Other Learning Centre
Source: C-DRAṢṬĀ

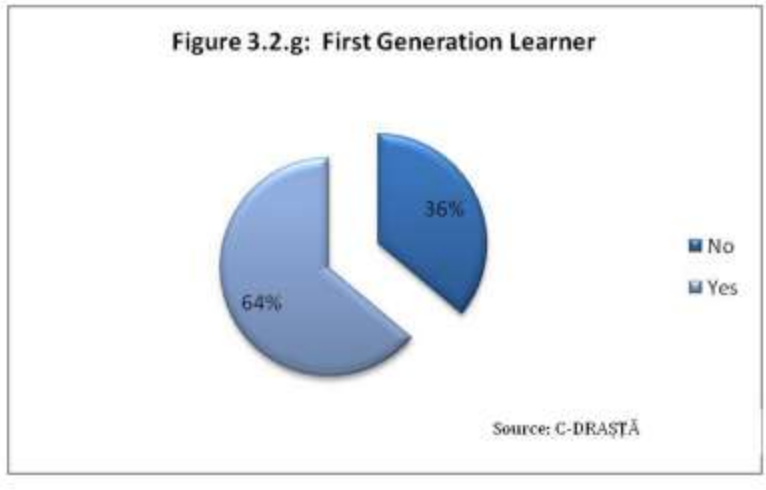

Figure 3.2.b: Age in completed years (Treatment Group)
2%
4%
4%
6%
18%
23%
19%
24%
3
4
5
6
7
8
9
10
11
12
13
Source: C-DRAṢṬĀ


Figure 3.2.c: Sex composition (Treatment Group)
47%
53%
Boy
Girl
Source: C-DRAṢṬĀ


Figure 3.2.d: Class (Treatment Group)
2%
2%
16%
25%
33%
22%
STD I
STD II
STD III
STD IV
STD V
STD VI
STD VII
LKG
UKG
Source: C-DRAṢṬĀ







Sections 3.3 to 3.5 present the major findings of the impact assessment study with respect to Objective 1 outlined in Chapter 1. Specifically it addresses the question - how the EFA intervention has helped to improve literacy and numeracy skills among children. For this both the EFA (treatment) and non-EFA (control) group student skill levels and learning outcomes have been taken into consideration.

3.3 Measuring and Evaluating Impact for Treatment Group

Section 3.3 addresses the following two questions regarding impact assessment of EFA programme on student learning outcomes for students belonging to treatment group:

- How far EFA programme has impacted the literacy and numeracy skills of the students enrolled in the programme (henceforth EFA students*)?
- Is the impact measured in terms of increase in midterm scores of EFA students compared to base line score, significant?

3.3.1 Extent and Pattern of Impact on EFA Student Learning Outcomes

Observations regarding the extent and nature of impact of the EFA programme on the literacy and numeracy skills of the EFA students are reported in this section. The impact on learning outcome is measured in terms of differences in base line and midterm scores of EFA students. The grades are assigned on a four point scale signifying 'very unsatisfactory', 'unsatisfactory', 'satisfactory' and 'very satisfactory' level of skill in literacy and numeracy.

Figure 3.3.1: EFA Student Assessment Grade Scale

Very Unsatisfactory	Unsatisfactory	Satisfactory	Very Satisfactory
1	2	3	4
			

Source: C-DRAṢṬĀ

The findings are reported under three heads. Section 3.3.1A reports the summary measures of student grades which provide a bird's eye view of the extent of improvement. The second part presented in Section 3.3.1B provides visualisations of the improvement in median student grades reported in previous section. Section 3.3.1C details the pattern of improvement in student grades. For each section where necessary the results are reported separately for literacy and numeracy.

3.3.1A: EFA Student Learning Outcomes: Summary Measures

Tables 3.3.1A.a and b and Tables to 3.3.1A.d and e present a comparison of the descriptive statistics – specifically median and mode - of student grades in baseline (BL) assessment vis a vis the midterm (MT) assessment. The measures of central tendency help to provide a summary representation of the status of learning outcomes or skill level pre and post implementation of EFA.

Tables 3.3.1A.c and 3.3.1A.f summarise the information on mode and median of the differences in baseline and midterm grades. This provides a summary representation of the extent of improvement in skill level due to the intervention. It shows the number of grade points by which the students' performance and skills levels improved from their skill status at the time of baseline.

Based on the tables the following observations are made.

(a) Impact on Literacy

Considering the mode and median grades for baseline and mid-term assessment the positive impact of EFA on literacy is evident and stronger in the context of reading and writing vowels, words and simple sentences. In these cases the values of median and mode show a jump from 1 to 4. For reading and writing small and capital letters in English the median grades for both baseline and midterm grades are at 4. Table 3.3.1A.c reveals that in most cases the students' skills in literacy – both reading and writing have jumped by three grade points.

Table 3.3.1A.a: Descriptive Statistics - Comparison of Representative Grades in READING ability of Treatment Group (TG) Students in Baseline and Midterm Assessment

	READING LEVEL Capital letters BL	READING LEVEL Capital letters MT	READING LEVEL Small Letters BL	READING LEVEL Small Letters MT	READING LEVEL Vowels BL	READING LEVEL Vowels MT	READING LEVEL Words BL	READING LEVEL Words MT	READING LEVEL Simple sentences BL	READING LEVEL Simple sentences MT
Median	4	4	4	4	1	**4**	1	**4**	1	**4**
Mode	4	4	4	4	1	**4**	1	**4**	1	**4**
Mean	3.86	3.86	3.86	3.91	1.01	3.42	1.01	3.28	1.00	2.91

Source: C-DRAṢṬĀ

Table 3.3.1A.b: Descriptive Statistics - Comparison of Representative Grades in WRITING ability of Treatment Group (TG) Students in Baseline and Midterm Assessment

	WRITING LEVEL Capital Letters BL	WRITING LEVEL Capital Letters MT	WRITING LEVEL Small Letters BL	WRITING LEVEL Small Letters MT	WRITING LEVEL Vowels BL	WRITING LEVEL Vowels MT	WRITING LEVEL Words BL	WRITING LEVEL Words MT	WRITING LEVEL Simple Sentences BL	WRITING LEVEL Simple Sentences MT
Median	4	4	4	4	1	**4**	1	**4**	1	**4**
Mode	4	4	4	4	1	**4**	1	**4**	1	**4**
Mean	3.78	3.77	3.78	3.68	1.01	3.16	1.00	3.18	1.00	2.85

Source: C-DRAṢṬĀ

Table 3.3.1A.c: Descriptive Statistics –Difference in Baseline and Midterm AssessmentGradesforTreatment Group (TG) Students: LIteracy

	Difference in Reading Level Capital Letter	Difference in Reading Level Small Letter	Difference in Reading Level Vowel	Difference in Reading Level Word	Difference in Reading Level Sentence	Difference in Writing Level Capital Letter	Difference in Writing Level Small Letter	Difference in Writing Level Vowel	Difference in Writing Level Word	Difference in Writing Level Sentence
Median	0	0	3	3	3	0	0	3	3	3
Mode	0	0	3	3	3	0	0	3	3	3

Source: C-DRAṢṬĀ

(b) Impact on Numeracy

Likewise for numeracy the positive effect of EFA on mid-term grades as compared with base line grades is more marked in case of simple addition, addition with carry, simple subtraction, subtraction with borrowing, multiplication, division and shape recognition i.e. more advanced operations as compared with number recognition. The values of median and modal grades show a jump from 1 to 3 or 4.

Table 3.3.1A.f reveals that students' skills in numeracy have jumped by three grade points in most cases but for the more advanced mathematical operations like division, shape recognition and subtraction with borrowing the jump in grade points has been 2 or 1 for at least half the students.

Table 3.3.1A.d: Descriptive Statistics - Comparison of Representative Grades in Numeracy of Treatment Group (TG) Students in Baseline and Midterm Assessment (PART A)

	Number Recognition (1-9) Ascending and Descending order BL	Number Recognition (1-9) Ascending and Descending order MT	Number Recognition (10-100) Ascending and Descending order BL	Number Recognition (10-100) Ascending and Descending order MT	Simple Addition BL	Simple Addition MT	Addition with Carry BL	Addition with Carry MT	Simple Subtraction BL	Simple Subtraction MT	Subtraction with Borrowing BL	Subtraction with Borrowing MT
Median	4	4	4	4	1	**4**	1	**4**	1	**3**	1	**3**
Mode	4	4	4	4	1	**4**	1	**4**	1	**4**	1	**4**
Mean	3.69	3.77	3.67	3.74	1.00	3.32	1.00	3.12	1.01	2.89	1.00	2.81

Source: C-DRAṢṬĀ

Table 3.3.1A.e: Descriptive Statistics - Comparison of Representative Grades in Numeracy of Treatment Group (TG) Students in Baseline and Midterm Assessment (PART B)

	Multiplication BL	Multiplication MT	Division BL	Division MT	Shapes BL	Shapes MT
Median	1	**4**	1	**2**	1	**3**
Mode	1	**4**	1	1	1	**4**
Mean	1.00	3.14	1.00	2.29	1.01	2.78

Source: C-DRAṢṬĀ

Table 3.3.1A.f: Descriptive Statistics –Difference in Baseline and Midterm Assessment Grades for Treatment Group (TG) Students: Numeracy

	Difference in Number Recognition (1-9)	Difference in Number Recognition (10-100)	Difference in Numeracy - Simple Addition	Difference in Numeracy Addition with Carry	Difference in Numeracy Simple Subtraction	Difference in Numeracy Subtraction with Borrowing	Difference in Numeracy Multiplication	Difference in Numeracy Division	Difference in Numeracy Shapes
Median	0	0	3	3	2	2	3	1	2
Mode	0	0	3	3	3	3	3	0	3

Source: C-DRAṢṬĀ

One point that needs mention in this context is that the criteria or benchmark for BL assessments have been moderate or more relaxed compared to MT assessment. This is particularly true for assessment criteria when assessing basic literacy skills like knowledge of capital and small letters or basic numeracy skills like number recognition and number writing.

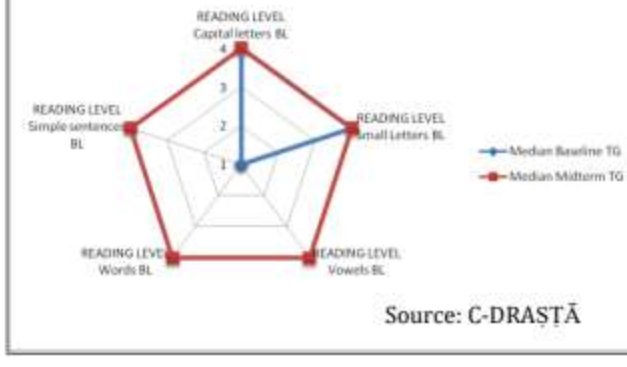
At the time the BL assessment was done the primary objective was to encourage and motivate the children to enrol in the EFA programme in the aftermath of long school closures which led to the relatively lower and more compassionate benchmarks for assessment grades. This may explain the more pronounced improvement in grades for slightly advanced literacy and numeracy skills like reading and writing ability for vowels, word and sentences or addition with carry forward subtraction both simple and with borrowing, division or multiplication as compared to basic knowledge of alphabets and numbers.

3.3.1B: EFA Student Learning Outcomes: Data Visualisation

Figures 3.3.1a to 3.3.1d give a visual representation of the improvement in median grades of treatment group students between baseline and midterm assessment. The radar charts help to summarise the 19 dimensions of grade information into four charts. The four radar charts are plotted for five reading grades, five writing grades, six numeracy grades for basic mathematical operations and three numeracy grades for more advanced mathematical operations.[1]

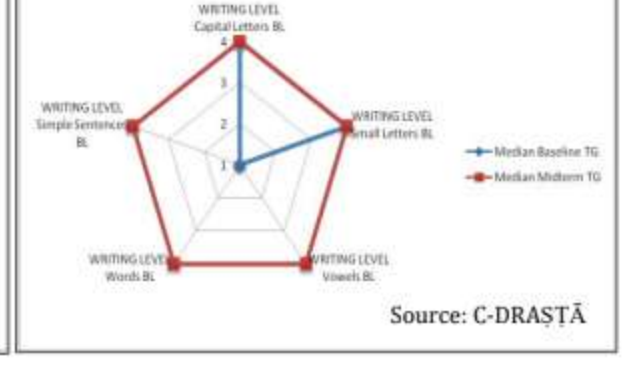
(a) Impact on Literacy

Figure 3.3.1a: Baseline and Midterm Median Grades for Treatment Group: Literacy (Reading)



Source: C-DRAṢṬĀ

Figure 3.3.1b: Baseline and Midterm Median Grades for Treatment Group: Literacy (Writing)



Source: C-DRAṢṬĀ

[1]The rays represent the axes corresponding to different types of grades; the webs or grid lines joining the axes represent the four levels of grades 1, 2, 3 and 4. The blue and red points on the axes represent the median baseline and midterm grades for particular dimensions. A red line joins all the red points denoting midterm grades and a blue line joins all the blue points denoting baseline grades. In case the baseline and midterm grades are equal only the red point denoting midterm grade appears which overlaps the blue point.

(b) Impact on Numeracy

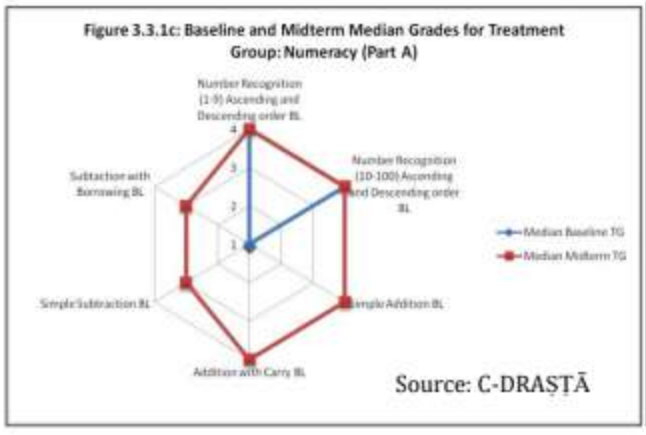


Figure 3.3.1c: Baseline and Midterm Median Grades for Treatment Group: Numeracy (Part A)

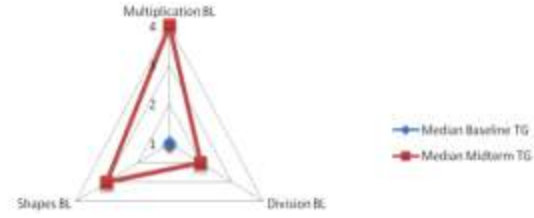


Figure 3.3.1d: Baseline and Midterm Median Grades for Treatment Group: Numeracy (Part B)

The four radar charts gives a quick visual depiction of the extent of improvement in student learning outcomes in literacy and numeracy. In case of mathematics the blue point in the middle indicates that the baseline grades for all dimensions were at 1. In all the four cases the red line joining the midterm median grades lie outside (and in some cases coincide) with the blue line which join the baseline median grades. This indicates that midterm grades were better in most of the dimensions than baseline grades (unless the reported base line grades were themselves high.

3.3.1C: EFA Student Learning Outcomes: Improvement Pattern

To highlight the pattern of improvement the frequency distributions of student grades in BL and MT assessment are displayed in figures 3.3.1C.a to 3.3.1C.b.

(a) Impact on Literacy

The distribution of grades for basic reading and writing skills for capital and small letters are shown in terms of doughnut charts for midterm grades only. These show the percentages of students in treatment group who have scored a particular grade. The figures reveal that more than 93% and above EFA students show high level of ability in these dimensions.

The distribution of remaining three literacy dimensions or grade type i.e. recognising, reading and writing vowels, words and simple sentences, are displayed through clustered column charts for reading and clustered pyramid charts for writing. The first column (or pyramid) in the pairs of columns (or pyramids), that is series one correspond to baseline score; the second

to the midterm scores. The count (frequency) or number of students scoring a particular grade is displayed above the columns or pyramids.

The following patterns in baseline and midterm student grades are observed. For the three more advanced literacy skills, series one corresponding to baseline score is right skewed and series two for midterm scores is left skewed. For the baseline assessment the number of students scoring grade 1 in is close to total number of EFA students in sampled schools for treatment group.

For the midterm assessment there is small number of students, 10% to 25% of EFA students, who scored grade 1. The count of students scoring grades 2, 3 and 4 mostly increase with higher grade, with maximum number of students scoring grade 4. This shows a marked shift in literacy skills with larger percentage of students having a 3 point jump in 4 point grade scale. This is consistent with the earlier observation in section 3.3.1A regarding median and mode of difference in baseline and midterm grades.

(b) Impact on Numeracy

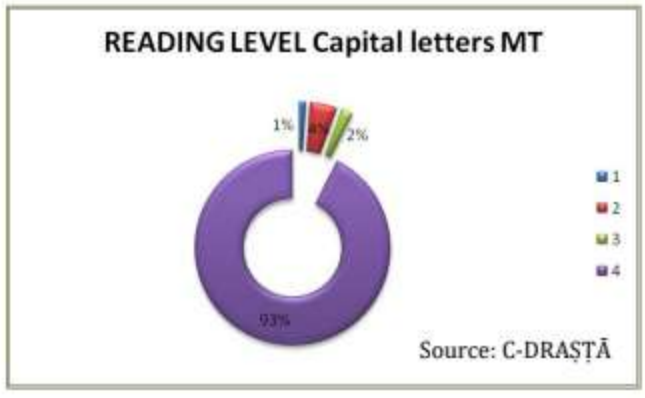
Doughnut charts are used to display the percentage share of students scoring different grade points in midterm assessment for basic numeracy skills of number recognition from 1 to 9 and 10 to 100. More than 83% students scored grade point 4 in these basic numeracy dimensions.

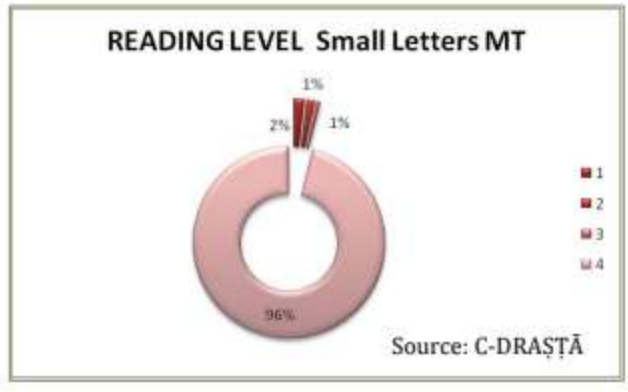
Clustered cylinder charts are used to display the frequency distributions of base line and midterm grades in numeracy. Series one corresponds to baseline scores and series two corresponds to midterm scores.

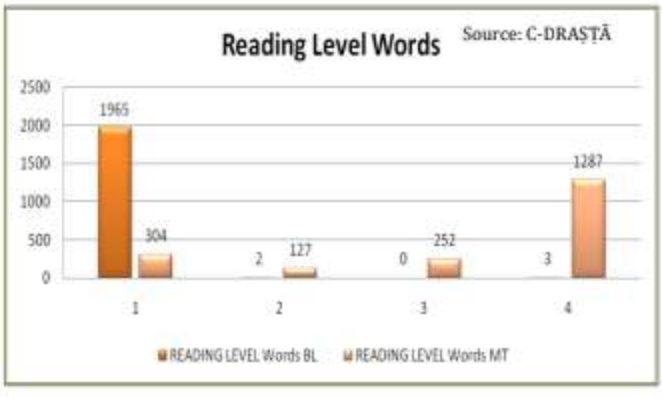
The observed pattern of impact on numeracy is similar to that of literacy. The increase in student count scoring higher grades in midterm is evident. For addition with carry, subtraction with borrow, multiplication, division and shape recognition the number of students increase with increase in grade point scored. The number of EFA students scoring grade point 4 in midterm is the highest for various grade types in numeracy.

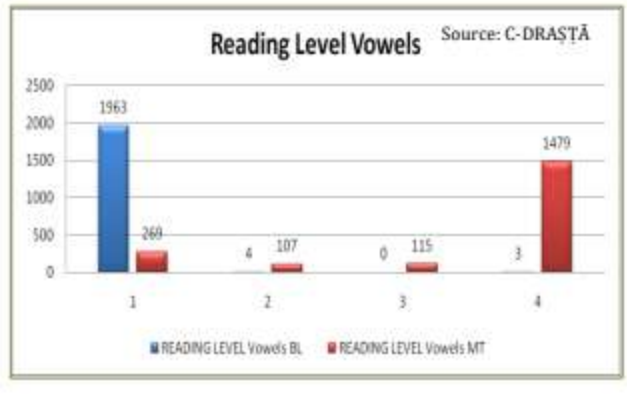
However the improvement in numeracy is less stark than that of literacy. Particularly the count of students scoring grade point 4 for subtraction with borrow, division and shape recognition in midterm assessment are less than 50% of total EFA students. The corresponding student count scoring grade point 4 in midterm assessment for all literacy dimensions is more than 50%.

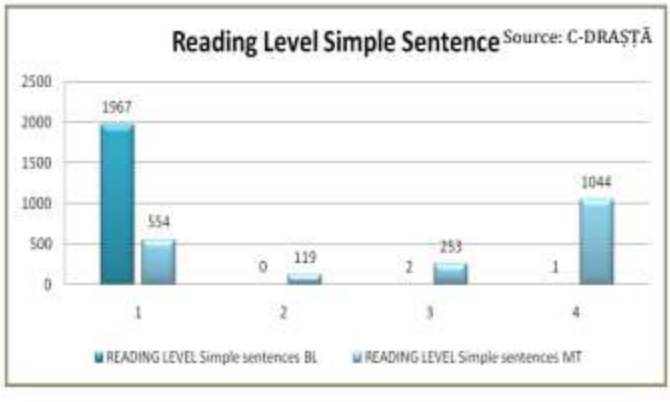
Figure 3.3.1C.a - Panels A to H: Distribution of Student Grades for Literacy: Reading and Writing (Treatment Group)

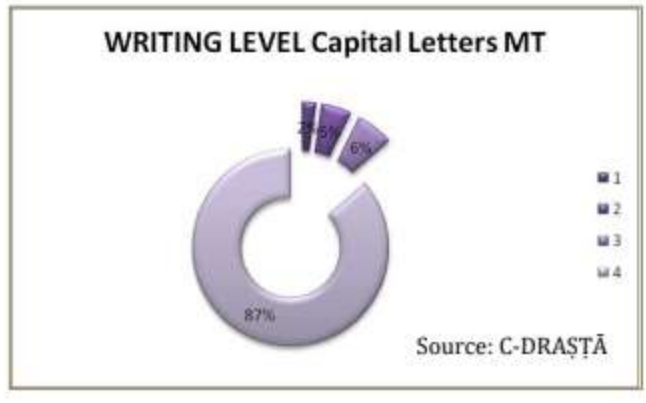


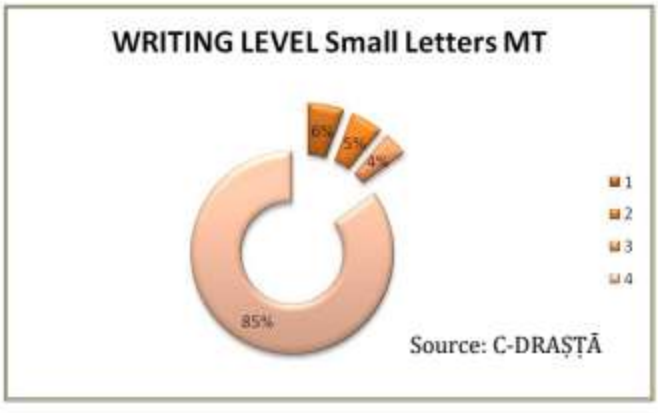












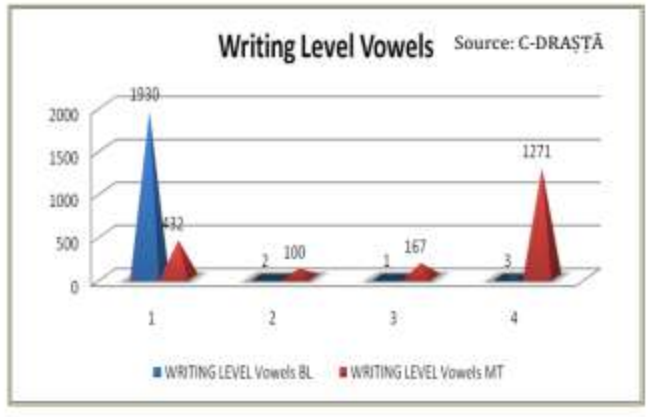
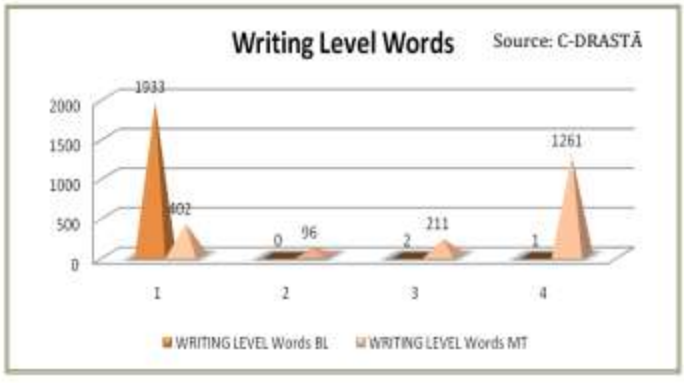


Figure 3.3.1C.a – Panels I and J: Distribution of Student Grades for Literacy: Reading and Writing (Treatment Group)



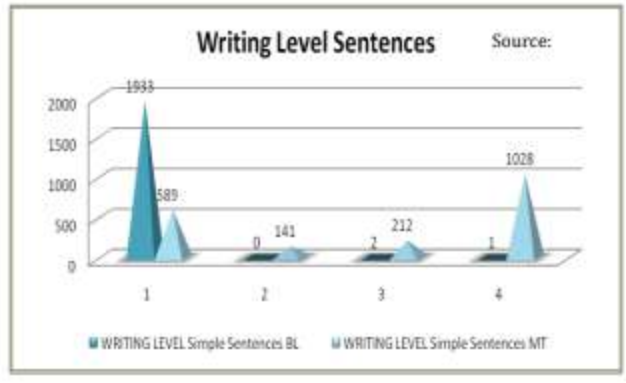
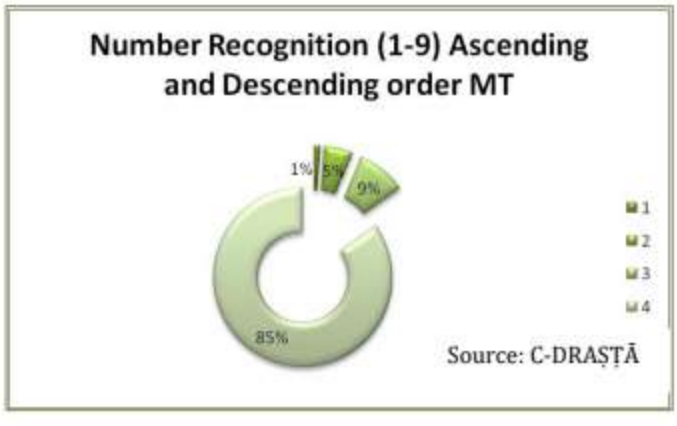
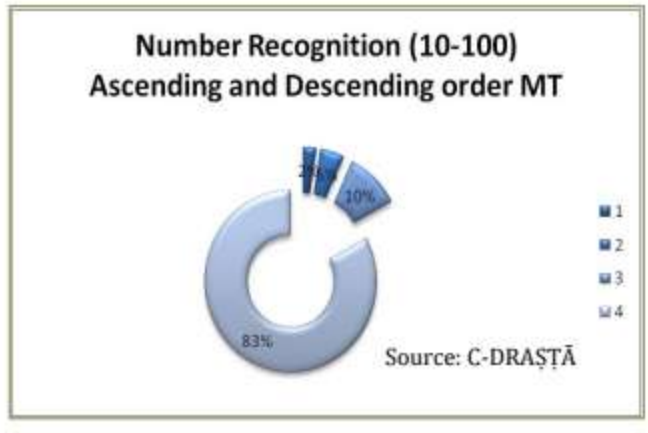
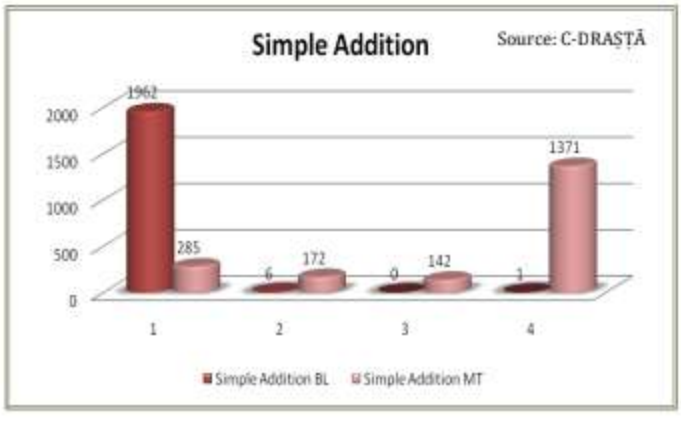


Figure 3.3.1C.b – Panels A to D: Distribution of Student Grades for Numeracy (Treatment Group)







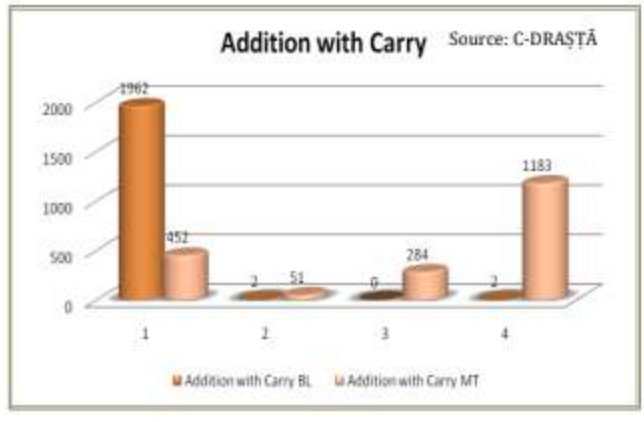
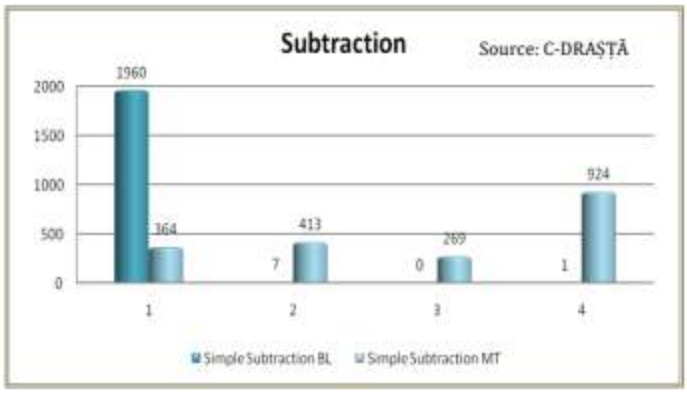
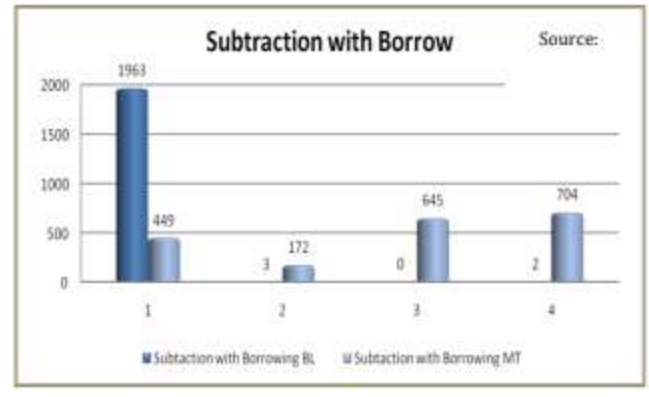
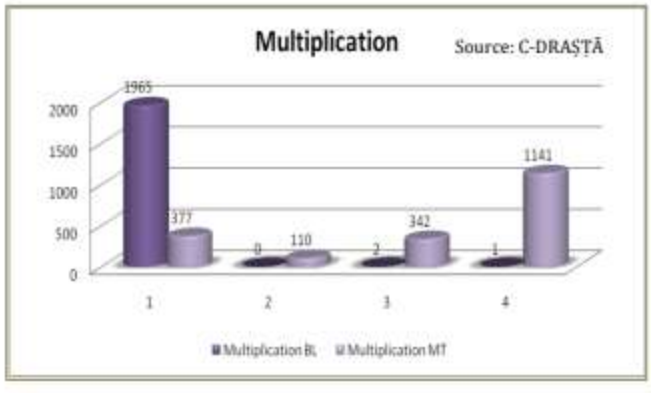
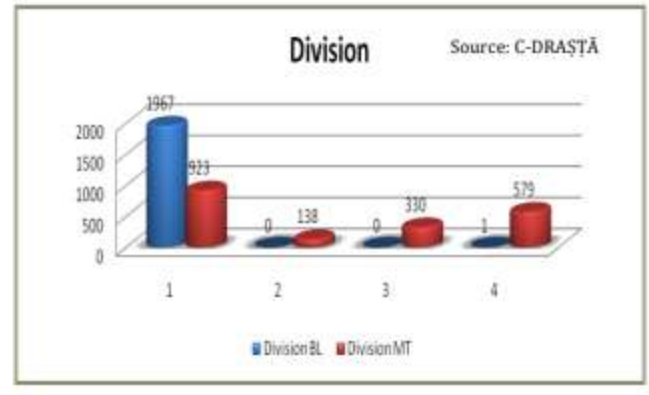


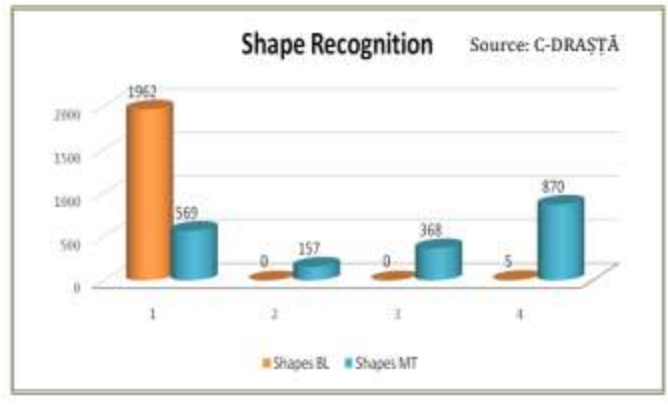
Figure 3.3.1C.b – Panels E to I: Distribution of Student Grades for Numeracy (Treatment Group)











3.3.2 Testing Significance of Impact on EFA Student Learning Outcomes: Kolmogorov-Smirnov Test

This section reports the results of tests of significance regarding whether the improvement in literacy and numeracy skills measured in terms of difference between midterm and baseline grades of EFA students are statistically significant or not. In other words it address the question whether the observed improvement in EFA student grades are just random cases of improvement or may be attributed to EFA curriculum.

The Kolmogorov-Smirnov test of significance[2] for differences in midterm and baseline grades for 10 literacy dimensions and 9 numeracy dimensions reveal the following.

For all the 19 grade types the p-value is zero. Accordingly the null hypothesis[3] that 'there is no difference in student grades in baseline and midterm assessments of EFA students as reflection of their literacy and numeracy skills' is rejected at 5% level of significance.

This provides strong empirical evidence in support of the impact of the intervention on learning outcomes of EFA students as the improvements in grades are statistically significant for all the literacy and numeracy dimensions being measured.

3.4 Comparing Impact: EFA Vs Non-EFA Student (Treatment Vs Control Group)

Section 3.3 reports the extent of improvement in learning outcomes among EFA or treatment group students by comparing the baseline and midterm assessment grades for this group.

This section presents empirical evidence on student learning outcomes for non-EFA or control group students – both baseline and midterm. It also analyses how control group learning outcomes compare with that of treatment group students. Such comparison helps to bring in sharper focus the effectiveness of the EFA intervention.

[2]As data is ordinal a one-sample non-parametric test of significance is conducted

[3] Alternative hypothesis is 'there is a difference in student grades in baseline and midterm assessments of EFA students as reflection of their literacy and numeracy skills'

3.4.1 Comparing Midterm Grades of EFA and Non-EFA Students

Overall Comparison:

Tables 3.4.1.a to 3.4.1.d present summary measures of learning outcomes of EFA and non-EFA students. The midterm median grades of EFA and non-EFA students are reported along with baseline grades of both the groups.

Table 3.4.1.a : Descriptive Statistics - Comparison of Representative Grades in READING ability of Treatment Group (TG) Control Group (CG) Students in Baseline and Midterm Assessment

	READING LEVEL Capital letters Baseline	READING LEVEL Capital letters Midterm	READING LEVEL Small Letters Baseline	READING LEVEL Small Letters Midterm	READING LEVEL Vowels Baseline	READING LEVEL Vowels Midterm	READING LEVEL Words Baseline	READING LEVEL Words Midterm	READING LEVEL Simple sentences Baseline	READING LEVEL Simple sentences Midterm
Median Grade CG	4.0	4.0	4.0	4.0	1.0	2.0	1.0	1.0	1.0	1.0
Median GradeTG	4.0	4.0	4.0	4.0	1.0	4.0	1.0	4.0	1.0	4.0

Source: C-DRAṢṬĀ

Table 3.4.1.b: Descriptive Statistics - Comparison of Representative Grades in WRITING ability of Treatment (TG) and Control Group (CG) Students in Baseline and Midterm Assessment

	WRITING LEVEL Capital Letters Baseline	WRITING LEVEL Capital Letters Midterm	WRITING LEVEL Small Letters Baseline	WRITING LEVEL Small Letters Midterm	WRITING LEVEL Vowels Baseline	WRITING LEVEL Vowels Midterm	WRITING LEVEL Words Baseline	WRITING LEVEL Words Midterm	WRITING LEVEL Simple Sentences Baseline	WRITING LEVEL Simple Sentences Midterm
Median Grade CG	4.0	4.0	4.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
Median Grade TG	4.0	4.0	4.0	4.0	1.0	4.0	1.0	4.0	1.0	4.0

Source: C-DRAṢṬĀ

Table 3. 4.1.c: Descriptive Statistics - Comparison of Representative Grades in Numeracy of Treatment Group (TG) and Control Group (CG) Students in Baseline and Midterm Assessment (PART A)

	Number Recognition (1-9) Ascending and Descending order Baseline	Number Recognition (1-9) Ascending and Descending order Midterm	Number Recognition (10-100) Ascending and Descending order Baseline	Number Recognition (10-100) Ascending and Descending order Midterm	Simple Addition Baseline	Simple Addition Midterm	Addition with Carry Baseline	Addition with Carry Midterm	Simple Subtraction Baseline	Simple Subtraction Midterm	Subtraction with Borrowing Baseline	Subtraction with Borrowing Midterm
Median Grade CG	4.0	4.0	4.0	4.0	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0
Median Grade TG	4.0	4.0	4.0	4.0	1.0	4.0	1.0	4.0	1.0	3.0	1.0	3.0

Source: C-DRAṢṬĀ

Table 3.4.1.d: Descriptive Statistics - Comparison of Representative Grades in Numeracy of Treatment Group (TG) and Control Group (CG) Students in Baseline and Midterm Assessment (PART B)

	Multiplication Baseline	Multiplication Midterm	Division Baseline	Division Midterm	Shapes Baseline	Shapes Midterm
Median Grade CG	1.0	2.0	1.0	1.0	1.0	1.0
Median Grade TG	1.0	4.0	1.0	2.0	1.0	3.0

Source: C-DRAṢṬĀ

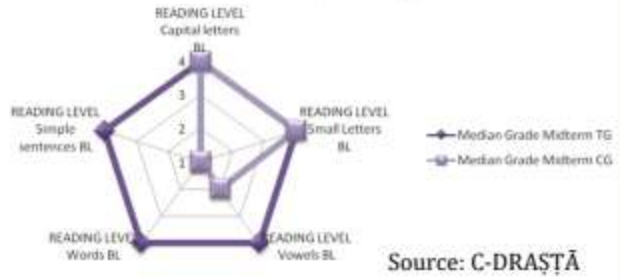
The median grades for control group are reported in the first row of the tables above. It is observed that midterm median grades among control group students (for dimensions other than letter or number reading, writing, recognition) mostly vary between 1 and 2 with median grade point 2 appearing only in few instances. Grade point 2 is observed for basic numeracy skills like addition and subtraction while for literacy and the more advanced numeracy skills grades continue to remain unchanged from baseline grade at 1.

Comparison of median midterm grades of control group students with corresponding grades for treatment group reported in the second rows of the tables shows that treatment group grades are consistently higher by 1 to 3 grade points.

Figures 3.4.1.a to 3.4.1.h give a visual depiction of the status of student skills in literacy and numeracy based on Tables 3.4.1.a to d. The first four radar charts display a comparison of the midterm median grades for treatment and control groups i.e. EFA and non-EFA students. Radar charts 3.4.1.e to h present a comparison of the baseline and midterm grades of the control group students.

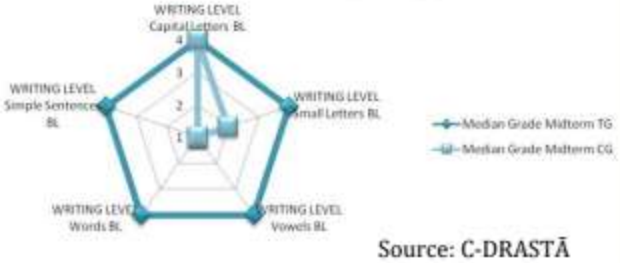
The darker points and lines joining the points in the radar charts above correspond to treatment group median grades. The rays or axes correspond to the various literacy and numeracy skill dimensions. In all the four figures the darker median grade points and boundary lines for treatment group students lie outside or in some cases coincide with the lighter points and boundary lines corresponding to control group.

Figure 3.4.1.a: Midterm Median Grades for Treatment and Control Groups: Literacy (Reading)



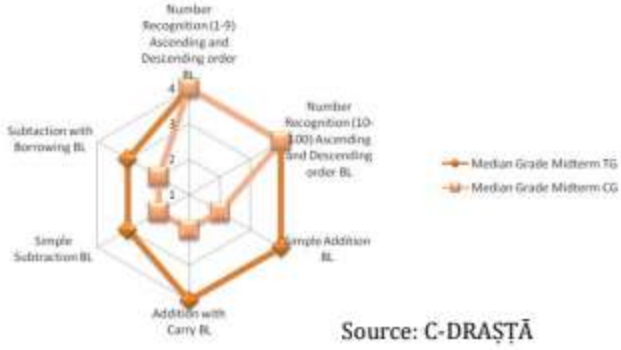
Source: C-DRAṢṬĀ

Figure 3.4.1.b: Midterm Median Grades for Treatment and Control Groups: Literacy (Writing)



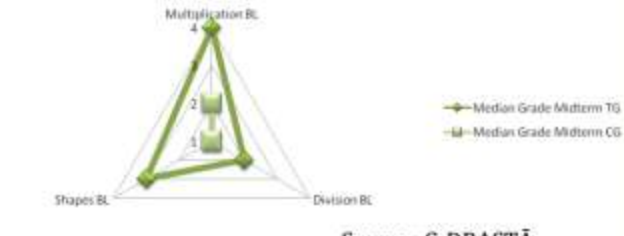
Source: C-DRASTĀ

Figure 3.4.1.c: Midterm Median Grades for Treatment and Control Groups: Numeracy (Part A)



Source: C-DRAṢṬĀ

Figure 3.4.1.d: Midterm Median Grades for Treatment and Control Groups: Numeracy (Part B)

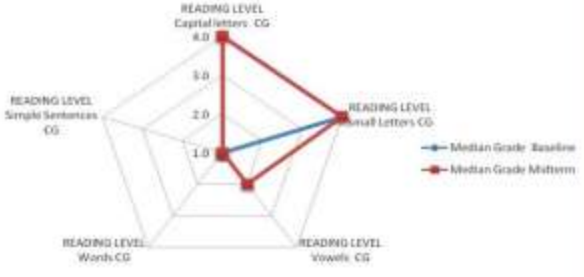


Source: C-DRAṢṬĀ

Thus the radar charts highlight the better literacy and numeracy skill status of EFA students compared with non-EFA students at the time of midterm assessment.[4]

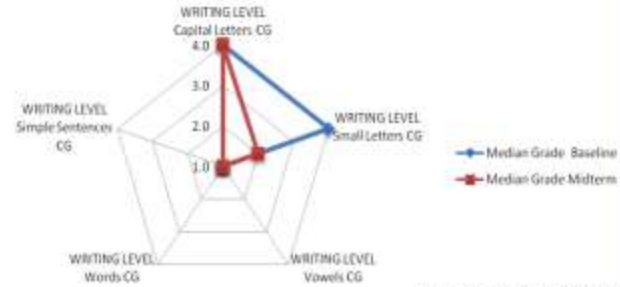
The radar charts in Figures 3.4.1.e to f show that there has been little or no improvement in student learning outcomes between baseline and midterm assessment of non-EFA students. Figure 3.4.1.e shows an increase in grade from 1 to 2 for some of the basic numeracy skills like addition and subtraction.

Figure 3.4.1.e: Baseline and Midterm Median Grades for Control Group: Literacy (Reading)



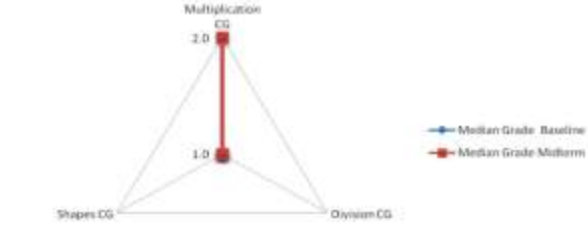
Source: C-DRAṢṬĀ

Figure 3.4.1.f: Baseline and Midterm Median Grades for Control Group: Literacy (Writing)



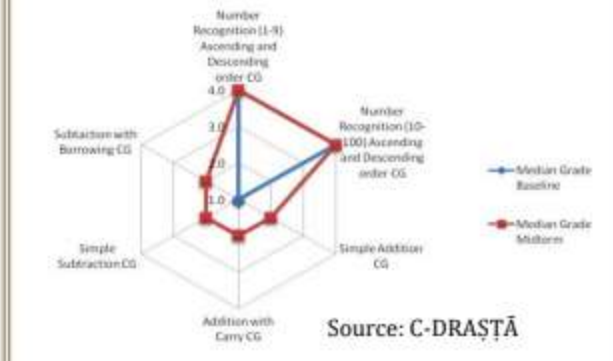
Source: C-DRAṢṬĀ

Figure 3.4.1.g: Baseline and Midterm Median Grades for Control Group: Numeracy (Part B)



Source: C-DRAṢṬĀ

Figure 3.4.1.h: Baseline and Midterm Median Grades for Control Group: Numeracy (Part A)



Source: C-DRAṢṬĀ

Comparison across Standard and School Type:

Tables 3.4.1.e and 3.4.1.f below present a comparison of the midterm grades for numeracy and literacy of students from EFA (Treatment) and Non-EFA (Control) schools respectively across standard and school type, an area of concern for the authors of EFA programme.

[4]For some of the dimensions the lighter and darker points coincide. This is so in case of basic literacy and numeracy skills in letter and number recognition, reading and writing. The baseline and midterm grades for these dimensions are both 4. Refer to discussion in section 3.3.1A

Table 3.4.1.e: Median Midterm Grades by School Type and Standard (Treatment Group)

Standard	School Type	READING LEVEL Capital letters MT	READING LEVEL Small Letters MT	READING LEVEL Vowels MT	READING LEVEL Words MT	READING LEVEL Simple sentences MT	WRITING LEVEL Capital Letters MT	WRITING LEVEL Small Letters MT	WRITING LEVEL Vowels MT	WRITING LEVEL Words MT	WRITING LEVEL Simple Sentences MT	Number Recognition (1-9) Ascending and Descending order MT	Number Recognition (10-100) Ascending and Descending order MT	Simple Addition MT	Addition with Carry MT	Simple Subtraction MT	Subtraction with Borrowing MT	Multiplication MT	Division MT	Shapes MT
STD I	Government	4	4	4	3	1	4	4	1	1	1	4	4	2	1	2	1	4	1	1
STD I	Private	4	4	4	4	4	4	4	4	4	3	4	4	4	4	4	4	4	2	3
STD I	Other Learning Centre	4	4	1	2	1	4	4	1	2	1	4	4	3	1	2	1	1	1	2
STD I	Total	4	4	4	4	2	4	4	3	3	1	4	4	4	4	3	3	3	1	2
STD II	Government	4	4	4	3	3	4	4	3	3	2	4	4	3	3	3	3	4	1	1
STD II	Private	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	4
STD II	Other Learning Centre	4	4	4	4	2	4	4	3	3	2	4	4	4	4	2	2	2	1	2
STD II	Total	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	4	2	4
STD III	Government	4	4	4	3	1	4	4	1	2	1	4	4	3	3	3	3	4	1	2
STD III	Private	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
STD III	Other Learning Centre	4	4	4	4	4	4	4	4	4	4	4	4	4	4	2	3	3	1	4
STD III	Total	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	4	3	4
STD IV	Government	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	4	3	3
STD IV	Private	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
STD IV	Other Learning Centre	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	2	4
STD IV	Total	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	4	3	4

Source: C-DRAṢṬĀ

Table 3.4.1.f: Median Midterm Grades by School Type and Standard (Control Group)

Standard	School Type	READING LEVEL Capital letters MT	READING LEVEL Small Letters MT	READING LEVEL Vowels MT	READING LEVEL Words MT	READING LEVEL Simple sentences MT	WRITING LEVEL Capital Letters MT	WRITING LEVEL Small Letters MT	WRITING LEVEL Vowels MT	WRITING LEVEL Words MT	WRITING LEVEL Simple Sentences MT	Number Recognition (1-9) Ascending and Descending order MT	Number Recognition (10-100) Ascending and Descending order MT	Simple Addition MT	Addition with Carry MT	Simple Subtraction MT	Subtraction with Borrowing MT	Multiplication MT	Division MT	Shapes MT
STD I	Government	4.0	4.0	2.0	2.0	1.0	4.0	4.0	2.0	2.0	1.0	4.0	4.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
STD I	Private	2.0	2.0	1.0	1.0	1.0	2.0	2.0	1.0	1.0	1.0	4.0	4.0	4.0	4.0	2.0	1.0	3.0	1.0	1.0
STD I	Other Learning Centre	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	4.0	4.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
STD I	Total	2.0	2.0	1.0	1.0	1.0	2.0	2.0	1.0	1.0	1.0	4.0	4.0	2.0	2.0	2.0	1.0	2.5	1.0	1.0
STD II	Government	4.0	4.0	1.0	2.0	1.0	2.0	4.0	1.0	2.0	1.0	4.0	4.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0
STD II	Private	4.0	4.0	2.0	3.0	2.0	4.0	4.0	2.0	3.0	2.0	4.0	4.0	4.0	3.0	2.0	2.0	2.0	1.0	1.0
STD II	Other Learning Centre	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
STD II	Total	4.0	4.0	2.0	2.0	1.0	4.0	4.0	2.0	2.0	1.0	4.0	4.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0
STD III	Government	4.0	4.0	2.0	2.0	1.0	4.0	4.0	2.0	2.0	1.0	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0	1.0
STD III	Private	4.0	4.0	3.0	3.0	4.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	3.0	3.0	2.0	2.0	2.0	1.0	2.0
STD III	Other Learning Centre	2.0	2.0	1.0	1.5	1.0	1.5	1.5	1.0	1.5	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0
STD III	Total	4.0	4.0	2.0	3.0	1.0	3.0	3.0	2.0	3.0	1.0	4.0	4.0	3.0	3.0	2.0	2.0	2.0	1.0	1.0
STD IV	Government	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0
STD IV	Private	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0
STD IV	Other Learning Centre	1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0
STD IV	Total	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0

Source: C-DRAṢṬĀ

Tables are colour coded to help in such comparison. There is some evidence of some improvement in midterm grades across standards up to standard III for treatment group.

In table 3.4.1.e corresponding to treatment group this is mostly observed for some literacy grade variables – a) Reading Level - Words and Simple Sentences and b) Writing Level - Vowels, Words and Simple Sentences along with few of the numeracy grades for addition, subtraction, multiplication and division.

Private schools have done the best with median midterm grade 4 for all standards for most dimensions followed by government schools showing midterm median grades improving as standard increases although in some dimensions. For Other Learning Centres the median grades increase across standards but overall performance is relatively weaker.

For control group schools a similar pattern in midterm median grades across standards is observed for most of the dimensions. The performance of Other Learning Centres is weaker compared to other two school types.

3.4.2 Comparing Improvement in Skill Levels of EFA and Non-EFA Students

For comparing the improvement in skill levels between baseline and midterm a difference-in -grade variable is created corresponding to each of the 19 literacy and numeracy dimensions. The differences in grades are computed for each EFA and non-EFA student from the treatment and control groups respectively. Tables 3.4.2.a and b report the median and modal value of these difference-in-grade variables for the various literacy and numeracy dimensions.

Table 3.4.2.a: Descriptive Statistics –Difference in Baseline and Midterm Assessment Grades for Treatment Group (TG) and Control Group* (CG) Students: Literacy

	Difference in Reading Level Capital Letter	Difference in Reading Level Small Letter	Difference in Reading Level Vowel	Difference in Reading Level Word	Difference in Reading Level Sentence	Difference in Writing Level Capital Letter	Difference in Writing Level Small Letter	Difference in Writing Level Vowel	Difference in Writing Level Word	Difference in Writing Level Sentence
Median (TG)	0	0	3	3	3	0	0	3	3	3
Mode (TG)	0	0	3	3	3	0	0	3	3	3

*Median and Mode (CG) for differences in grades of control group students for reading and writing are all zero.

Source: C-DRAṢṬĀ

Table 3.4.2.b: Descriptive Statistics –Difference in Baseline and Midterm Assessment Grades for Treatment Group (TG) and Control Group* (CG) Students: Numeracy

	Difference in Number Recognition (1-9)	Difference in Number Recognition (10-100)	Difference in Numeracy - Simple Addition	Difference in Numeracy Addition with Carry	Difference in Numeracy Simple Subtraction	Difference in Numeracy Subtraction with Borrowing	Difference in Numeracy Multiplication	Difference in Numeracy Division	Difference in Numeracy Shapes
Median (TG)	0	0	3	3	2	2	3	1	2
Mode (TG)	0	0	3	3	3	3	3	0	3
Median (CG)	0	0	1	1	1	1	1	0	0

*Mode (CG) for differences in grades of control group students for numeracy are all zero except for simple addition.

Source: C-DRAṢṬĀ

The median of differences in midterm and baseline grade for control group is zero for literacy which means midterm and baseline grades are the same for all the non-EFA students. There

has been a jump in grade by one point in case of the simpler mathematical operations like addition and subtraction. This is very different from the scenario for treatment group students where median difference in grade is 3 for most of literacy dimensions. For numeracy median difference in grade is 3 in three dimensions 2 in three dimensions and 1 in case of division. The modal grades are 3 for most of numeracy dimensions.

3.4.3 Testing Significance of Difference in Improvement in Skill Levels for EFA and Non-EFA Students: Kruskal-Wallis Test

The extent and pattern of improvement in grades of EFA students have been presented in section 3.3. Details of the baseline and midterm grades of non-EFA students are presented in Sections 3.4.1 and 3.4.2.

Comparison of difference in grades for EFA and non-EFA students show encouraging results as improvement is greater in case of EFA students compared with non-EFA students. To test whether this gap in improvement in grades is statistically significant or not a two independent sample non-parametric test of significance, the Kruskal-Wallis test is computed.

For all the 17 grade types other than number recognition 1to 9 and 10 to 100, the p-value is zero[5]. Accordingly the null hypothesis that 'there is no difference in student grade improvement for EFA and non-EFA students' as reflection of their enhancement in literacy and numeracy skills is rejected at 5% level of significance.

The results of this test corroborate that the improvement in grades of EFA or treatment group students is significantly larger than that of control group students. There is difference between EFA and non-EFA curriculum in terms of their effectiveness and impact on learning outcomes. The difference in improvement in learning outcomes between EFA and non-EFA students is not a matter of chance.

[5] p-value is 0.045 and 0.734 for number recognition 1to 9 and 10 to 100

3.5 Identifying Factors Conducive to Impact

This section addresses the following two questions.

- How do the difference in midterm and baseline scores of EFA students compare across different types of school? Is the difference significant? Are there any school type effects?
- How do the difference in midterm and baseline scores of EFA students compare across categories of socio-economic factors such as gender, parents' occupation and whether the participant is a first generation learner? Are the differences significant? Are there any category level effects for socio-economic factors on learning outcomes of EFA students?

3.5.1 School Type Effects

Table 3.5.1.a presents a comparison of median of differences in midterm and baseline grades across categories of school type for various literacy and numeracy dimensions.

The data reported reveal the following:
Private School (PS) category among treatment schools have shown the maximum improvement in grades compared with Government Schools(GS) and Other Learning Centres (OLC).

OLCs have higher larger improvements in grades in four literacy and three numeracy dimensions compared with GS. It is lower for two numeracy dimensions compared with GS. For the remaining dimensions they are equal.

Shape recognition and reading and writing sentences are areas where GS have shown weaker improvement. GS have a zero median difference in grades in 10 dimensions, PS in 6 dimensions and OLCs in 7 dimensions.

Table 3.5.1.a: Median Improvement in Student Learning Outcomes across Categories of Socio-Economic Factors: Treatment Group (PART A)				
Median Difference in Midterm and Baseline Student Grades for EFA Students				
		School Type		
Grade Type	**Median Difference in Grade for Treatment Group**	**Government**	**Private**	**Other Learning Centre**
Literacy: Reading				
Difference in Reading Level Capital Letter	**0.0**	0.0	0.0	0.0
Difference in Reading Level Small Letter	**0.0**	0.0	0.0	0.0
Difference in Reading Level Vowel	**3.0**	3.0	3.0	3.0
Difference in Reading Level Word	**3.0**	2.5	3.0	3.0
Difference in Reading Level Sentence	**3.0**	0.0	3.0	2.0
Literacy: Writing				
Difference in Writing Level Capital Letter	**0.0**	0.0	0.0	0.0
Difference in Writing Level Small Letter	**0.0**	0.0	0.0	0.0
Difference in Writing Level Vowel	**3.0**	2.0	3.0	2.0
Difference in Writing Level Word	**3.0**	2.0	3.0	2.0
Difference in Writing Level Sentence	**3.0**	0.0	3.0	2.0
Numeracy				
Difference in Number Recognition (1-9)	**0.0**	0.0	0.0	0.0
Difference in Number Recognition (10-100)	**0.0**	0.0	0.0	0.0
Difference in Numeracy - Simple Addition	**3.0**	2.0	3.0	3.0
Difference in Numeracy Addition with Carry	**3.0**	2.0	3.0	3.0
Difference in Numeracy Simple Subtraction	**2.0**	2.0	3.0	1.0
Difference in Numeracy Subtraction with Borrowing	**2.0**	2.0	2.0	2.0
Difference in Numeracy Multiplication	**3.0**	3.0	3.0	1.0
Difference in Numeracy Division	**1.0**	0.0	2.0	0.0
Difference in Numeracy Shapes	**2.0**	0.0	3.0	2.0
Source: C-DRAṢṬĀ				

3.5.2 Other Socio-economic Factors Affecting Effectiveness of EFA Programme

The observations regarding the conduciveness or otherwise of socio-economic factors extraneous to the EFA programme are based on Tables 3.5.1.b and 3.5.1.c. The tables report the median of differences in student midterm and base line grades for each category of the various socio economic factors considered along with the median of differences for the entire treatment group.

(a) Gender

Median differences in student grades for various literacy and numeracy dimensions reveal that: No difference is observed between the median of differences in grades for the categories male and female

(b) Parent's Occupation

The 'Other(Teacher, Mason, Driver, Army, Police)' category of Parent's Occupation consisting of some formal sector employees has larger median differences in grades compared to other categories of occupation. This is more evident in numeracy. For literacy the median improvement in grades for sentence reading and writing sentences is weaker among Daily Labour and Migrant Labour categories.

(c) Social Group

Median improvement in grades is larger for students from General category compared to SC, ST and OBC. Among these three groups median improvement in grade for students form ST category is smaller compared to SC and OBC. This is particularly evident for more advanced literacy skills like reading sentences and for numeracy skills like shapes recognition, division and subtraction with borrowing.

(d) First Generation Learner

Median improvement in grades is smaller for students who are first generation learners compared to those whose parents have attended school. This is particularly evident for more advanced literacy skills like reading sentences and for numeracy skills like shapes recognition, division and subtraction with borrowing.

Table 3.5.1.b: Median Improvement in Student Learning Outcomes across Categories of Socio-Economic Factors:Treatment Group (PART B)

Median Difference in Midterm and Baseline Student Grades for EFA Students

		Gender		Parent's Occupation					
Grade Type	Median Difference in Grade for Treatment Group	Boy	Girl	Daily Labour	Farmer	Bamboo Worker	Migrant Labour	Shop	Other (Teacher, Mason, Driver, Army, Police)
Literacy: Reading									
Difference in Reading Level Capital Letter	**0.0**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Difference in Reading Level Small Letter	**0.0**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Difference in Reading Level Vowel	**3.0**	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Difference in Reading Level Word	**3.0**	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Difference in Reading Level Sentence	**3.0**	3.0	3.0	2.0	3.0	3.0	2.5	3.0	3.0
Literacy: Writing									
Difference in Writing Level Capital Letter	**0.0**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Difference in Writing Level Small Letter	**0.0**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Difference in Writing Level Vowel	**3.0**	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Difference in Writing Level Word	**3.0**	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Difference in Writing Level Sentence	**3.0**	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Numeracy									
Difference in Number Recognition (1-9)	**0.0**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Difference in Number Recognition (10-100)	**0.0**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Difference in Numeracy - Simple Addition	**3.0**	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Difference in Numeracy Addition with Carry	**3.0**	3.0	3.0	3.0	3.0	2.0	3.0	2.0	3.0
Difference in Numeracy Simple Subtraction	**2.0**	2.0	2.0	2.0	3.0	1.0	2.0	2.0	3.0
Difference in Numeracy Subtraction with Borrowing	**2.0**	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0
Difference in Numeracy Multiplication	**3.0**	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0
Difference in Numeracy Division	**1.0**	1.0	1.0	0.0	2.0	0.0	0.5	1.0	2.0
Difference in Numeracy Shapes	**2.0**	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0

Source: C-DRAṢṬĀ

Table 3.5.1.c: Median Improvement in Student Learning Outcomes across Categories of Socio-Economic Factors:Treatment Group (PART C)							
Median Difference in Midterm and Baseline Student Grades for EFA Students							
		Social Group				First Generation	
Grade Type	Median Difference in Grade for Treatment	SC	ST	OBC	General	No	Yes
Literacy: Reading							
Difference in Reading Level Capital Letter	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Difference in Reading Level Small Letter	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Difference in Reading Level Vowel	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Difference in Reading Level Word	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Difference in Reading Level Sentence	3.0	3.0	2.0	3.0	3.0	3.0	2.0
Literacy: Writing							
Difference in Writing Level Capital Letter	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Difference in Writing Level Small Letter	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Difference in Writing Level Vowel	3.0	3.0	2.0	3.0	3.0	3.0	3.0
Difference in Writing Level Word	3.0	3.0	2.0	3.0	3.0	3.0	3.0
Difference in Writing Level Sentence	3.0	2.0	2.0	3.0	3.0	3.0	3.0
Numeracy							
Difference in Number Recognition (1-9)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Difference in Number Recognition (10-100)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Difference in Numeracy - Simple Addition	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Difference in Numeracy Addition with Carry	3.0	3.0	2.0	3.0	3.0	3.0	3.0
Difference in Numeracy Simple Subtraction	2.0	2.0	1.0	3.0	3.0	3.0	2.0
Difference in Numeracy Subtraction with Borrowing	2.0	2.0	1.0	2.0	3.0	2.0	2.0
Difference in Numeracy Multiplication	3.0	2.0	2.0	3.0	3.0	3.0	3.0
Difference in Numeracy Division	1.0	1.0	0.0	2.0	2.0	2.0	0.0
Difference in Numeracy Shapes	2.0	3.0	1.0	2.0	3.0	3.0	2.0
Source: C-DRAṢṬĀ							

3.5.3 Tests of Significance

The results reported in this section are based on summary presented in Table 3.5.3.a in Appendix III. Test of significance– the Kruskal-Wallis test are conducted for all the five factors to check whether the socio-economic factors have a significant influence on the impact of EFA intervention on learning outcomes.

The following observations are made:

(a) School Type

School type has a significant influence on the impact of EFA intervention on learning outcomes. The observed differences in improvements in student grades across school types - government, private and other learning centres is significant.

(b) Gender

Gender does not have a significant influence on the impact of EFA intervention on learning outcomes and improvements in them.

(c) Parent's Occupation

Parent's Occupation has a significant influence on the impact of EFA intervention on learning outcomes. The observed differences in improvement in student grades across occupation types - Daily Labour, Farmer, Bamboo Worker, Migrant Labour, Shop, Other (Teacher, Mason, Driver, Army, Police) is significant.

(d) Social Group

Social Group has a significant influence on the impact of EFA intervention on learning outcomes. The observed differences in improvements in student grades across social groups - SC, ST, OBC and General are significant.

(e) First Generation Learner

Whether the child is a First Generation Learner or not has a significant influence on the impact of EFA intervention on learning outcomes. The observed differences or improvements in student grades for first generation learner and children whose parents attended school is significant.

(f) Standard

Test of significance reveal that class or standard of students has a significant influence on the impact of EFA intervention on student learning outcomes across grades.

Appendix - III

Table 3.5.3.a: Hypothesis Testing Summary

Factor Name	Categories	Null Hypothesis	Test of significance	p-value	Decision (5% level of significance)
Type of School	Government, Private and Other Learning centre	There is no significant difference between the categories of the factor Type of School in terms of their effect on improvement in grades or learning outcome. (Median or overall distribution??)	Kruskal-Wallis Test	p-values are all zero except for Number Recognition 1 to 9 for which p is positive but less than 0.05 and Number Recognition 10 to 100 (p>0.05)	Reject the Null Hypothesis for all grade types or dimensions of literacy and numeracy except Number Recognition 10 to 100.
Gender	Male, Female	There is no significant difference between the different categories of the factor Gender in terms of improvement in grades or learning outcome.	Kruskal-Wallis Test	p-values are all larger than 0.05 except for for Subtraction with Borrowing and Multiplication p is than 0.05	Retain the Null Hypothesis for all grade types or dimensions of literacy and numeracy except Subtraction with Borrowing and Multiplication
Occupation	Daily Labour, Farmer, Bamboo Worker, Migrant Labour, Shop, Other (Teacher, Mason, Driver, Army, Police)	There is no significant difference between the different categories of the factor Occupation in terms of improvement in grades or learning outcome.	Kruskal-Wallis Test	p-values are all zero or smaller than 0.05 except for Reading Capital and Small Letter and Shapes recognition.	Reject the Null Hypothesis for all grade types or dimensions of literacy and numeracy except for Reading Capital and Small Letter and Shapes recognition.
First Generation Learner	Yes, No	There is no significant difference between the different categories of the factor First Generation Learner in terms of improvement in grades or learning outcome.	Kruskal-Wallis Test	p-values are all zero or smaller than 0.05 except for Reading Small Letter, Writing Sentences, and Number recognition 10 to 100	Reject the Null Hypothesis for all grade types or dimensions of literacy and numeracy except for Reading Small Letter, Writing Sentences, and Number recognition 10 to 100.
Social Group	SC, ST, OBC, General	There is no significant difference between the different categories of the factor Social Group in terms of improvement in grades or learning outcome.	Kruskal-Wallis Test	p-values are all zero	Reject the Null Hypothesis for all grade types or dimensions of literacy and numeracy.

CHAPTER 4

Impact Assessment: Curriculum and Pedagogy

4.1 EFA Teacher Training Programme: Key Features

One of the key features of EFA is its teacher training system which was envisaged as a means of empowering the "vast grassroots teachers' network rooted in the community" based on the principle of "train the trainer". The teacher training programme is modelled with the objective of making it a "comprehensive, agile, effective and accountable" training system.

The major features of the teacher training programme involving mentor teachers, anchor teachers and cluster teachers as implemented by Nanritam are as follows (Nanritam, 2022):

- **Train the trainers**: 3 days residential teaching workshops for anchor teachers in every two months in Nanritam campus.
- **Sustain the training**: One Filix teacher assigned as mentor for each 20 anchor teachers.
- **Proliferate the training**: Anchor teachers train other teachers in their clusters on day to day basis.
- **Enrich the training**: Weekly Online chapter by chapter training sessions with Filix teachers for cluster teachers (including anchors) - guided by the Filix mentor Teachers.

- **Continuous support**: Dedicated website support with e-books and instruction videos.
- **Monitoring and help**: Filix mentor teachers and dedicated EFA off line support teacher will visit schools regularly to support smooth execution at school level.

The other key component of the EFA program and which is also a critical for the teacher training system is the content and transfer of knowledge. As an immediate solution to the requirement for teaching learning materials along with the instructional methods - the EFA program leveraged and adapted Filix School's well researched and established pedagogy and curriculum to provide a solution for foundational literacy and numeracy for pre-primary and primary students.

4.2 EFA Teacher Feedback: March and June 2022

In this section we present the results of content analysis of the descriptive information obtained from the feedback of participant teachers of the EFA workshops at the end of the workshop.

Table 4.1.1 presents the major feedback and comments of the participant teacher for the teacher training workshop held in March 2022. This workshop was attended by 49 teachers.

Tables 4.1.2 to 4.1.6 present the content analysis of the 46 teacher responses to six questions regarding their satisfaction with the training workshop held in June 2022.

The figures in the column show the counts or number of teachers who mention specific phrases, make remarks or comments in their feedback. The comments have been thematically arranged to cover aspects such as overall satisfaction with organization, hospitality and content of workshop, teacher learning outcomes, student learning outcomes, desired goals of teaching pedagogy, classroom management, techniques of teaching specific topics etc.

Table 4.1.1: EFA Teacher Training Workshop: March 2022
Training Evaluation Feedback by Participant Teacher

	Overall Satisfaction with Organisation, Hospitality and Content of Workshop	Count
1	Thank you for your initiative	30
2	Attending workshop in pollution free environment is very refreshing	15
3	Very comfortable and good services and hospitality	18
4	Grateful, benefitted and proud to participate	28
5	Got trained in teaching pedagogy that is easy and simple to implement	19
6	Have been inspired by the training programme	13
7	A very noble objective and intervention	5
8	Impressed by their work (EFA programme)	8
9	Want to attend this kind of training further - both on site and online.	36
10	Very innovative and wonderful teacher training workshop	22
11	The teacher training pedagogy for knowledge transfer to teachers is unique, successful and effective	39
12	Attending the training has been a wonderful experience	26
13	There was an atmosphere of mutual respect for each other	4
14	A well designed teaching pedagogy and the trainers were very affectionate in their approach and treated participants with care	14
15	Life time experience	2
	Participant Teacher Takeaways and Receptivity	
16	Learnt about teaching pedagogy that will help in holistic development of child and dispel the fear of studies	8
17	Techniques of teaching a foreign language	13
18	Will try to bring about holistic development of students and equip them with knowledge and skills	19
19	Teaching math through logic and fun filled practical activities methods that children will enjoy	12
20	Will try to bring about holistic development of child and equip them with knowledge by implementing techniques learnt in teacher training workshop.	17
21	To be an effective teacher one has to love and care for the students	11
22	Learnt about teaching-learning techniques that children will find joyful	4
23	Activity based learning	22
24	Teaching-learning techniques that children will find interesting and attractive	11
25	Learnt about how to interact with students and treat them	4
26	Learnt a lot about various dimensions of teaching	9
27	The two EFA Books 'Amar anker Jagat' and 'My Journey in English' have been very helpful for teaching	15

Source: C-DRAṢṬĀ

Table 4.1.2: EFA Teacher Training Workshop: June 2022
Training Evaluation Feedback by Participant Teacher

	Q1. What did you learn as a teacher in EFA programme?	Count*
	I. Satisfaction with workshop	
1	Innovative technique of teaching	4
	II. Knowledge transfer to teachers	
	Teaching children English and Mathematics: Desired learning outcomes or goals of teaching pedagogy	
2	a) Not forcing children to learn b) Making learning easy, fun, attractive and interesting for them c) Help children in overcoming uneasiness and anxiety about learning English	12
3	Immediate evaluation of students regarding the concepts being taught	3
	Teaching children English and Mathematics: Features of teaching pedagogy or teaching techniques for achieving above goals	
4	Teaching without using text books	10
5	Activity based teaching - a) demonstrating and involving children in activities related to the subject b) involving children in singing, reciting poems and dancing with action c) children are involved in speaking and listening	13
6	Teaching through a) story telling b) gameplays c) drawing d) handicrafts e) use of logic and proof f) use of technology (videos, powerpoint presentatios etc.)	21
7	a) Using TLMs b) Using familiar objects of every day use from our immediate surroundings as teaching aid for demonstrating concepts	5
8	a) Use of Entry Ticket (given to students as they arrive at the door, follow the instructions and complete them immediately) b) Creating an exhibition out of student work and assignments e.g. displaying mathematics exercises done by children on walls of classroom c) Using action poems (putting in some action inolving body movement with the poem)	8
9	a) Preparing and sharing lesson plan b) Applying the concept of learning experience	4
	Teacher student relationship, classroom environment and overall student development: Desirable outcomes or goals and techniques of achieving the goals	
10	a) Safe classrooms where students feel welcome, comfortable and free to be themselves b) Role of a teacher in student's life as second parent to their pupils c) Teaching children with empathy, love and care d) Understanding psychology, personality, needs and mindset of the children e) Ways to converse with pupils and talk to them to understand their needs	5
11	a) How a teacher should introduce herself / himself to student, greet and treat and interact with students b) How students should greet, treat and behave with their teachers c) How a teacher should build good relations among students	10
12	Need and techniques of creating awareness among children about new developments, current affairs and general knowledge about society, culture, environment in which the live.	5
13	a) Ways to improve student interest, concentration and attention to the lessons being taught in class b) Ways to generate and improve creativity skills among students	2
	Techniques of introducing and teaching specific concepts	
14	Numbers	11
15	a) Addition b) Subtraction and repeated subtraction c) Addition and subtraction using finger	7
16	a) Fraction b) Factor c) Multilple d) LCM e) HCF	46
17	a) Vowels and Consonants b) Prepositions and their use c) Use of Yes and No d) Speaking and Conversing in English	12

**Count or Frequency corresponds to the number of teachers who in their feedback have mentioned one or more of the phrases or statements recorded in a cell.*

Source: C-DRAṢṬĀ

Table 4.1.3: EFA Teacher Training Workshop: June 2022
Training Evaluation Feedback by Participant Teacher

	Q2. What are the student learning outcomes from EFA programme?	Count*
	Student Learning Outcomes	
1	a) Recognising and using vowels b) Use of yes and no c) Use of one, few and Mmany d) Use of this and that; these and those e) Use of large and small; tall and short; beside, before, after f) Use of articles g) Missing letters and words h) Hidden words and combine words i) Objects lying close and far away j) LIght and heavy objects k) Rhyming words l) Action rhymes m) Reciting rhymes and group reading n) Speaking in English and English conversation o) Self-introduction and welcoming in English	**47**
2	a) Number recognition 1 to 10 b) Ascending and descending numbers c) Number match d) Circle the lesser number e) Counting objects and adding f) Place value and face value g) Addition, Subtraction, Division h) Subtract using new method i) Fraction, factor, multiple, LCM, HCF j) Standing and sleeping line	**55**
3	a) How to participate in group activities b) Came to know about learning by participating in group and individual activity c) Learning through drawing pictures of objects from nature, participating in story telling activies, game plays, debate, quiz etc. d) Speaking in English and English conversation e) Learning with ease through fun activities and overcoming fear of studying	**20**
4	a) Recognising and naming objects b) Recognising and ordering objects from small to large c) Wall art with words	**4**
	Other	
5	a) Getting familiar with TLM based teaching as opposed to orthodox methods b) How to improve concentration and memory c) Practicing personal hygiene d) Self disciplining e) How to increase self-confidence f) How to conduct oneself in class, greet and behave with tecahers and give them due respect g) Class constitution h) Familiarity with time out i) Teaching techniques taught can be effectively used in classroom.	**14**

**Count or Frequency corresponds to the number of teachers who in their feedback have mentioned one or more of the phrases or statements recorded in a cell.*

Source: C-DRAṢṬĀ

	Table 4.1.4: EFA Teacher Training Workshop: June 2022 Training Evaluation Feedback by Participant Teacher	Count*
	Q3. Which teaching techniques that you have learnt during EFA teacher training workshop have you been able to implement while taking class in your school?	
	Teaching methods used for teaching specific topics in class	
1	a) Recognising and using vowels b) Use of yes and no c) Use of one, few and Mmany d) Use of this and that; these and those e) Use of large and small; tall and short; beside, before, after f) Use of articles g) Missing letters and words h) Hidden words and combine words i) Objects lying close and far away j) LIght and heavy objects k) Rhyming words l) Action rhymes m) Reciting rhymes and group reading n) Speaking in English and English conversation o) Self-introduction and welcoming in English	37
2	a) Number recognition 1 to 10 b) Ascending and descending numbers c) Number match d) Circle the lesser number e) Counting objects and adding f) Place value and face value g) Addition, Subtraction, Division h) Subtract using new method i) Fraction, factor, multiple, LCM, HCF j) Standing and sleeping line	37
	Techniques for class management and holistic development of students	
3	a) How to participate in group activities b) Came to know about learning by participating in group and individual activity c) Learning through drawing pictures of objects from nature, participating in story telling activies, game plays, debate, quiz etc. d) Speaking in English and English conversation e) Learning with ease through fun activities and overcoming fear of studying	15
4	a) Recognising and naming objects b) Recognising and ordering objects from small to large c) Wall art with words	5
5	a) Getting familiar with TLM based teaching as opposed to orthodox methods b) How to improve concentration and memory c) Practicing personal hygiene d) Self disciplining e) How to increase self-confidence f) How to conduct oneself in class, greet and behave with tecahers and give them due respect g) Class constitution h) Familiarity with time out i) Teaching techniques taught can be effectively used in classroom.	25
	**Count or Frequency corresponds to the number of teachers who in their feedback have mentioned one or more of the phrases or statements recorded in a cell.*	

Source: C-DRAṢṬĀ

	Table 4.1.5: EFA Teacher Training Workshop: June 2022 Training Evaluation Feedback by Participant Teacher	Count*
	Q4. Specify the topics or your areas of interest that you would like to know about and get trained in at the EFA teacher training workshops.	
	Teaching pedagogy: Techniques of introducing and teaching specific topics	
1	a) Recognising and using vowels b) Use of yes and no c) Use of one, few and Mmany d) Use of this and that; these and those e) Use of large and small; tall and short; beside, before, after f) Use of articles g) Missing letters and words h) Hidden words and combine words i) Objects lying close and far away j) LIght and heavy objects k) Rhyming words l) Action rhymes m) Reciting rhymes and group reading n) Speaking in English and English conversation o) Self-introduction and welcoming in English	4
2	a) Number recognition 1 to 10 b) Ascending and descending numbers c) Number match d) Circle the lesser number e) Counting objects and adding f) Place value and face value g) Addition, Subtraction, Division h) Subtract using new method i) Fraction, factor, multiple, LCM, HCF j) Standing and sleeping line	3
	Techniques for class management and holistic development of students	
3	a) How to participate in group activities b) Came to know about learning by participating in group and individual activity c) Learning through drawing pictures of objects from nature, participating in story telling activies, game plays, debate, quiz etc. d) Speaking in English and English conversation e) Learning with ease through fun activities and overcoming fear of studying	23
4	a) Recognising and naming objects b) Recognising and ordering objects from small to large c) Wall art with words	2
5	a) Getting familiar with TLM based teaching as opposed to orthodox methods b) How to improve concentration and memory c) Practicing personal hygiene d) Self disciplining e) How to increase self-confidence f) How to conduct oneself in class, greet and behave with tecahers and give them due respect g) Class constitution h) Familiarity with time out i) Teaching techniques taught can be effectively used in classroom.	24
	**Count or Frequency corresponds to the number of teachers who in their feedback have mentioned one or more of the phrases or statements recorded in a cell.*	

Source: C-DRAṢṬĀ

	Table 4.1.6: EFA Teacher Training Workshop: June 2022 Training Evaluation Feedback by Participant Teacher	Count*	
	Q5. Please share your feedback regarding Learning Festival and mention a few subjects which you particularly liked. In your feedback comment on Quality of content and participant reaction and receptivity.	**Quality**	**Reaction**
	Subjects and Activities		
i	a) Number recognition 1 to 10 b) Ascending and descending numbers c) Number match d) Circle the lesser number e) Counting objects and adding f) Place value and face value g) Addition, Subtraction, Division h) Subtract using new method i) Fraction, factor, multiple, LCM, HCF j) Standing and sleeping line	1	1
ii	a) How to participate in group activities b) Came to know about learning by participating in group and individual activity c) Learning through drawing pictures of objects from nature, participating in story telling activies, game plays, debate, quiz etc. d) Speaking in English and English conversation e) Learning with ease through fun activities and overcoming fear of studying	16	9
iii	a) Recognising and naming objects b) Recognising and ordering objects from small to large c) Wall art with words	1	0
iv	a) Getting familiar with TLM based teaching as opposed to orthodox methods b) How to improve concentration and memory c) Practicing personal hygiene d) Self disciplining e) How to increase self-confidence f) How to conduct oneself in class, greet and behave with tecahers and give them due respect g) Class constitution h) Familiarity with time out i) Teaching techniques taught can be effectively used in classroom.	42	47

**Count or Frequency corresponds to the number of teachers who in their feedback have mentioned one or more of the phrases or statements recorded in a cell.*

Source: C-DRAṢṬĀ

4.3 EFA Teacher Training Evaluation: September 2022

A sample of 35 participant teachers in the EFA teacher training programme consisting mostly of anchor teachers and a few cluster teachers as recommended by Nanritam have been interviewed telephonically after circulating the questionnaire over email and WhatsApp.

Questions pertaining to eighteen aspects of the training programme have been asked which may be broadly classified under the three heads:

(i) Programme Overview covering the objective and duration of the training programme among others,

(ii) Programme Features consisting of questions on content, structure, presentation and design (involving online and offline training sessions, WhatsApp groups for problem solving, video recordings of online classes)

(iii) Programme Outcome and Impact including questions on confidence about using TLMs as taught in class, the effectiveness of training experience post training etc. The set of questions covered aspects which were highlighted in past feedback by teachers regarding training workshops attended by them along with the various other features of teacher training programme.

For each of the eighteen aspects identified the participant teachers have been asked to rate the aspect in terms of usefulness, relevance, effectiveness, helpfulness, clarity and other attainment and satisfaction parameters in a scale of 0 to 10 with step size 0.5.

The major findings that follow from an exploratory and descriptive analysis of data are summarized in sub-sections 4.3.1 and 4.3.2.

4.3.1 Satisfaction with Training Workshop Features

This section summarises the participant teacher feedback regarding the various features and components of the EFA Teacher Training Programme. The frequency distributions are represented by clustered column charts arranged thematically in Figures 4.3.1.a to Figure 4.3.1.h. These give a visual depiction of the pattern of participant teacher satisfaction levels.

(a) Content and Structure

The distribution of teacher feedback in Figure 4.3.1.a regarding relevance of topics covered, organization of content of training, helpfulness of TLMs are all skewed to the left.

Most of teachers have given a rating between 8 and 10. Near about 50%, i.e. 16 out of 33 teachers who responded have given the highest rating of 10 to relevance of topics covered in the training programme. Another 14 teachers have given a rating of 9 and 8.

For organisation of content of training rating of 10 and 9 have been given by 26 teachers equally split over the two ratings. For helpfulness of TLMs the most popular ratings are 10 and 8 with 13 teachers and 9 teachers giving these rating feedbacks.

(b) Presentation and Instructional Methods

Figure 4.3.1.b displays the ratings given by teachers for clarity in explanation of concepts introduced and use of media and instructional method. The ratings for both dimensions vary between 7 and 10. Notably 14 and 9 teachers have given a rating of 9 and 10 to clarity in explanation of concepts introduced. About 10% of teachers have given a rating of 7.

Regarding appropriate use of media and instructional methods the top three rating categories are 8, 7 and 10 with approximately equal number of teachers assigning these rates. 10 teachers have assigned a rate of 10 whereas 8 teachers each have assigned rate of 7 and 10.

(c) Workshop Design: Offline and Online Classes

A key aspect of the teacher training system of EFA is it innovative design and content. The focus is on ensuring outreach, accessibility of the lessons and trainer teachers for problem solving, and leveraging group synergy.

This is achieved through both on campus and online teacher training classes, circulation of video recordings of the live classes, formation of whatsapp group for problem solving and two books on English and Mathematics 'My Journey in English' and 'Amar Anker Jagat'. Figures 4.3.1.c and d display the participant teachers' feedback on the above aspects.

The helpfulness of offline class has much greater acceptability than online classes. Considering the blue pyramids, 17 out of 33 teachers have assigned a rating of 10 to helpfulness on campus training programme; 7 more teachers have assigned a rating of 8 or 9.

In comparison with blue pyramids the red pyramids are of uniform height much less skewed to the left. While only 6 teachers have assigned a rate of 10 to the helpfulness of online classes, 22 teachers have assigned a rate of 7 to 10. Thus while not as useful as offline interactions the usefulness of offline classes is evident.

d) Workshop Design: Digital Platforms and Books

In Figure 3.4.1.d we observe that the modal rating category is 10 for all the three dimensions helpfulness of video recordings, helpfulness of WhatsApp groups and helpfulness of the English and Mathematics books.

The helpfulness of the two books designed by Nanritam for foundational literacy and numeracy is one of the strongest features of the EFA teacher training programme as an aid for teaching more effectively in class. 22 teachers have assigned a rate of10 to the books and another 10 teachers have assigned 8 or 9 with 7 teachers assigning 9. So 88% teachers have assigned rates of 9 or 10.

The helpfulness of WhatsApp group is also evident with 15 teachers giving the highest rating of 10 and another 11 giving a rating of 8 or 9. 66% teachers have rated the helpfulness of WhatsApp group with 8 and above. The helpfulness of video recordings of online classes is evident with 23 out of 33 teachers assigning rates of 8 and above; but unlike the other two dimensions only 11 teachers have assigned a rate of 10 to this.

(e) Infrastructure and Internet

Participant teacher feedback on the quality of infrastructure is positive. The blue columns corresponding to comfort of meeting room and facilities reveal that the modal rating category is 10 with 15 teachers assigning that rate. Another 12 teachers have assigned rates of 7, 8 and 9.

In case of internet connectivity high ratings coincide with more severe internet connectivity problems. The green columns in Figure 4.3.1.f reveal that the modal rating category is 8 followed by 7. The question was placed in the context of online classes. The responses reveal that the internet connectivity has been moderately poor. 24 teachers have given a rating of 5 to 8 for extent of poor internet connectivity.

Figure 4.3.1.a: EFA Teacher Training Evaluation: Programme Features - Content and Structure

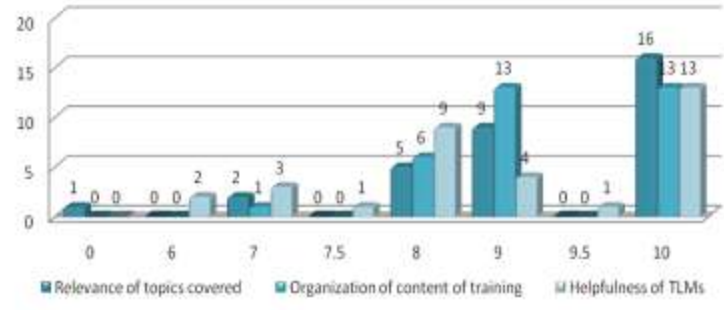


Figure 4.3.1.b: EFA Teacher Training Evaluation: Programme Features - Presentation and Instructional Methods

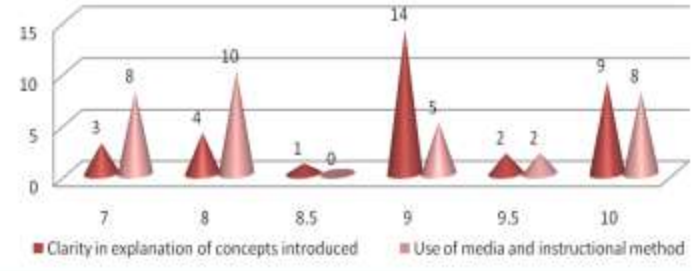


Figure 4.3.1.c: EFA Teacher Training Evaluation: Programme Features - Design

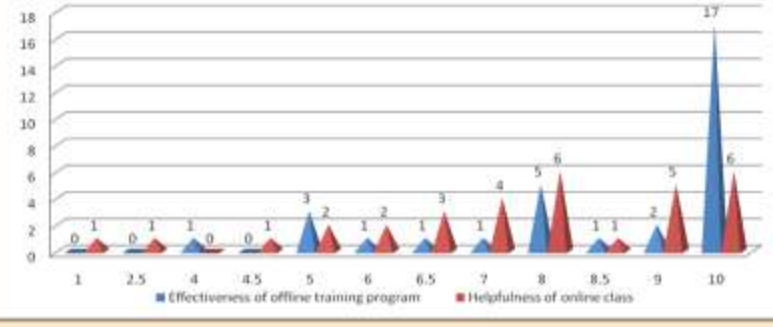
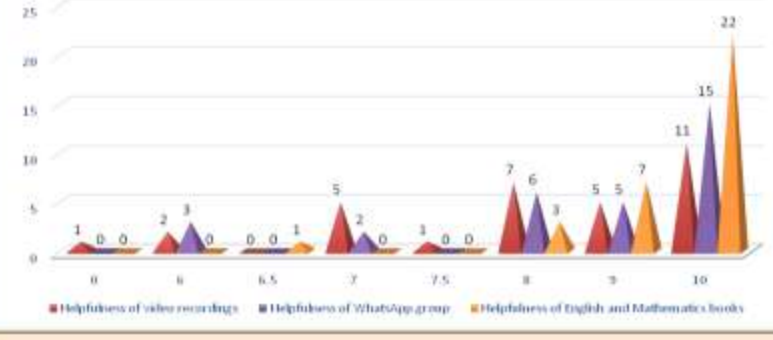


Figure 4.3.1.d: EFA Teacher Training Evaluation: Programme Features - Design



Source: C-DRAṢṬĀ

Figure 4.3.1.e: EFA Teacher Training Evaluation: Programme Features - Infrastructure and Internet

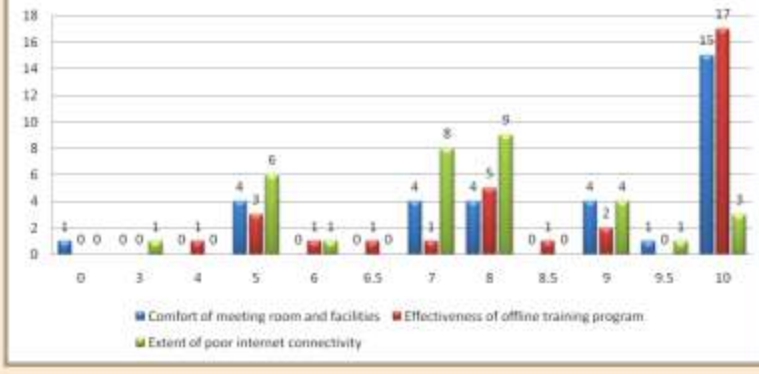


Figure 4.3.1.f.: EFA Teacher Training Evaluation: Overview and Overall Satisfaction

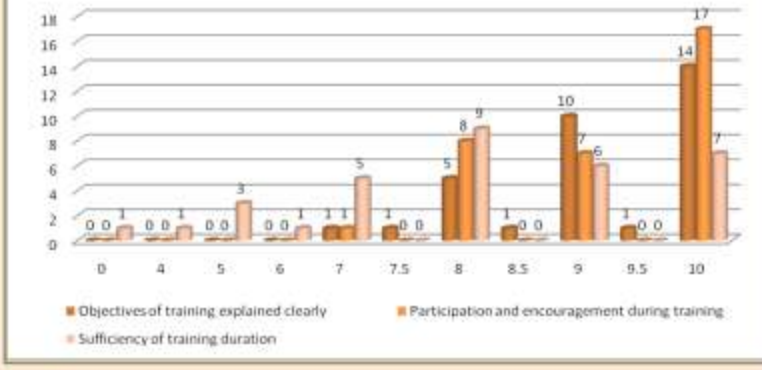


Figure 4.3.1.g: EFA Teacher Training Evaluation: Programme Outcome and Impact

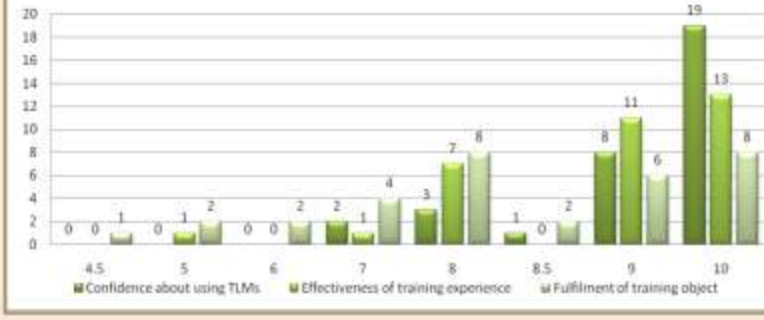
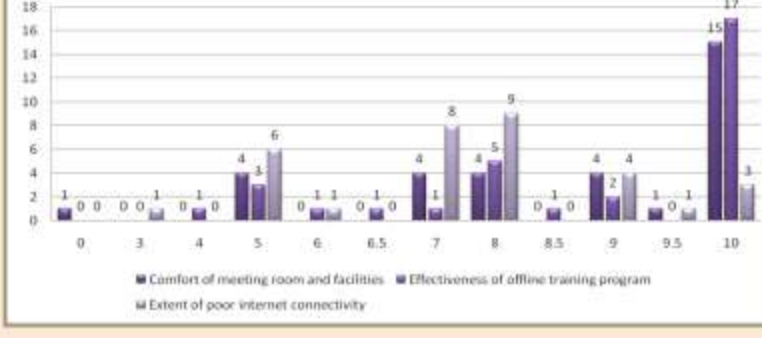


Figure 4.3.1.h: EFA Teacher Training Evaluation: Programme Features - Infrastructure and Internet



Source: C-DRAṢṬĀ

4.3.2 Training Workshop Impact

(f) Overall Satisfaction

Other than sufficiency of training duration the other criteria like objectives of training explained clearly and participation and encouragement by trainers have been mostly given ratings of 8 and above. There is common demand for more face to face training sessions with 11 teachers giving a rating of 7 and less for sufficiency of duration and just 7 teachers have given a rating of 10.

The response is positive for clarity in explanation regarding purpose of workshop and encouragement for active participation provided by the trainers with 31 and 32 teachers assigning a rate of 8 to 9. Specifically 17 teachers assigning a rate of 10 to participation and encouragement during training is a reflection of the workshops being well-received.

(g) Takeaway for Participant Teachers

Figure 4.3.1.g highlights the impact of the teacher training workshops in instilling confidence in teachers regarding use of TLMs and their perceived effectiveness of the training experience. A little less than 60% i.e. 19 teachers have given a rating of 10 to confidence regarding use of TLMs.

The feedback regarding the effectiveness of training experience in terms of post training implementation of techniques and tools taught in training programme and teaching more effectively in class is positive. 24 teachers have given a rating of 9 and 10 to satisfaction levels with training experience. However there is more expectation from the teacher training workshops as 58% of teachers have given a rating of 8 and less to fulfilment of training objective.

This is weaker positive than the responses to other dimensions. However such expectation is aligned with the finding of moderate levels of satisfaction with duration of the training programme. So non-fulfilment of expectation regarding objective and duration of training coupled with high levels of satisfaction regarding the various components and contents of the workshop signals demand for more such training.

4.3.3 Training Evaluation: At a Glance

The previous two sections presented the pattern of teacher satisfaction with the teacher training workshop. This section reports the descriptive statistics. Tables 4.3.3.a to 4.4.3.e present the median (middle-value of a sorted or ordered list of numbers) and modal rating (most frequently occurring number) for the various aspects of the teacher training programme by participant teachers. The radar charts in Figures 4.3.3.ato e present a visual summary of satisfaction levels of participant teachers based on the Tables 4.3.3.a to 4.4.3.e. These show that the most commonly given rating varies from 8 to 10 for most of the dimensions.

Table 4.3.3.a: EFA Teacher Training Evaluation: Programme Features - Content, Structure and Presentation

	Median*	Mode**
Relevance of topics covered	9.0	10.0
Organization of content of training	9.0	9.0
Helpfulness of TLMs	9.0	10.0
Clarity in explanation of concepts introduced	9.0	9.0
Use of media and instructional method	8.0	8.0

Figures in cells are based on rating by participants in a scale of 0 to 10 with step size 0.5. Median and mode are the most representative values of a set of observations or measures of central tendency for ordinal data.
**Median: Value lying at the midpoint of a frequency distribution **Mode: The most frequently occurring value*

Source: C-DRAṢṬĀ

Table 4.3.3.b: EFA Teacher Training Evaluation: Programme Features – Design

	Median*	Mode**
Effectiveness of offline training program	10.0	10.0
Helpfulness of online class	8.0	8.0
Helpfulness of video recordings	8.5	10.0
Helpfulness of WhatsApp group	9.0	10.0
Helpfulness of English and Mathematics books	10.0	10.0

Figures in cells are based on rating by participants in a scale of 0 to 10 with step size 0.5. Median and mode are the most representative values of a set of observations or measures of central tendency for ordinal data.
**Median: Value lying at the midpoint of a frequency distribution **Mode: The most frequently occurring value*

Source: C-DRAṢṬĀ

Table 4.3.3.c: EFA Teacher Training Evaluation: Infrastructure and Internet

	Median	Mode
Comfort of meeting room and facilities	9.0	10.0
Extent of poor internet connectivity	8.0	8.0
Helpfulness of online class	8.0	8.0

Figures in cells are based on rating by participants in a scale of 0 to 10 with step size 0.5. Median and mode are the most representative values of a set of observations or measures of central tendency for ordinal data.
**Median: Value lying at the midpoint of a frequency distribution*
***Mode: The most frequently occurring value*

Source: C-DRAṢṬĀ

Table 4.3.3.d : EFA Teacher Training Evaluation: Overview and Overall Satisfaction

	Median*	Mode**
Objectives of training explained clearly	9.0	10.0
Participation and encouragement during training	10.0	10.0
Sufficiency of training duration	8.0	8.0

Figures in cells are based on rating by participants in a scale of 0 to 10 with step size 0.5. Median and mode are the most representative values of a set of observations or measures of central tendency for ordinal data.
**Median: Value lying at the midpoint of a frequency distribution **Mode: The most frequently occurring value*

Source: C-DRAṢṬĀ

Table 4.3.3.e: EFA Teacher Training Evaluation: Perceived Programme Outcome and Impact

	Median	Mode
Confidence about using TLMs	10.0	10.0
Effectiveness of training experience	9.0	10.0
Fulfilment of training objective	8.0	8.0

Figures in cells are based on rating by participants in a scale of 0 to 10 with step size 0.5. Median and mode are the most representative values of a set of observations or measures of central tendency for ordinal data
**Median: Value lying at the midpoint of a frequency distribution*
***Mode: The most frequently occurring value*

Source: C-DRAṢṬĀ

The modal value of rates assigned is at least as large as the median value for all the 18 dimensions considered. This indicates that the distribution of ratings for the various aspects of teacher training evaluation is mostly left skewed. Table 4.3.3.c and corresponding Figure 4.3.3.c show the modal rate for both extent of poor internet connectivity and helpfulness of online class as 8. This is interesting as this makes the need and value addition of online classes obvious.

The radar charts give a summary visualization of the participant teacher feedback about the teacher training workshops. The spikes or rays represent the axes corresponding to the various dimensions of the workshops all starting from the same point. The central point corresponds zero while the webs correspond to the rates 1 to 10 of rating scale 0 to 10. The red points representing median values either lie outside or coincide with the blue points along the axes. This shows that median values are at least as large as modal values. Also all red points and redlines joining them lie equidistant from the centre at levels corresponding to ratings of 8 to 10.

4.3.4 Measures of Association

Measures of association track the pattern of any of co-movements in variables. Computations of the Spearman correlation which is commonly used for ordinal data reveal the following:

Preference for offline and online classes are mostly independent decisions.

Poor internet connectivity is a major factor that adversely influences the usefulness of online classes.

Generally high ratings rating given to confidence about use of TLMs, are associated with high rating given to effectiveness of training experience and participant clarity and understanding of objective of training.

Figure 4.3.3.a: EFA Teacher Training Evaluation: Programme Features - Content, Structure and Presentation

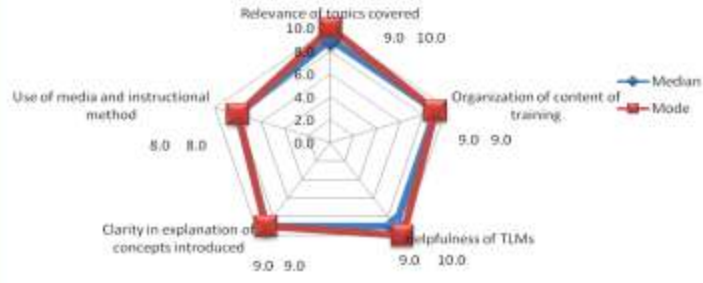


Figure 4.3.3.b: EFA Teacher Training Evaluation: Programme Features - Design

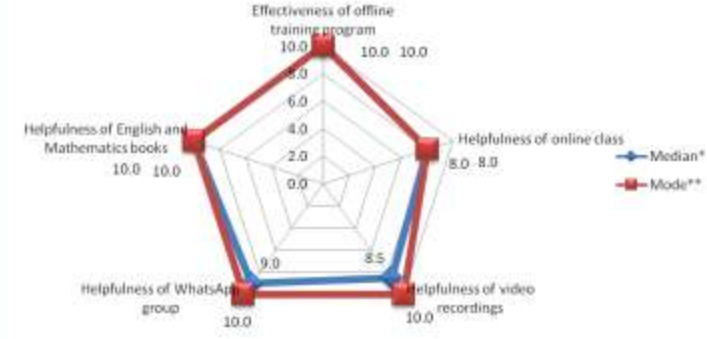
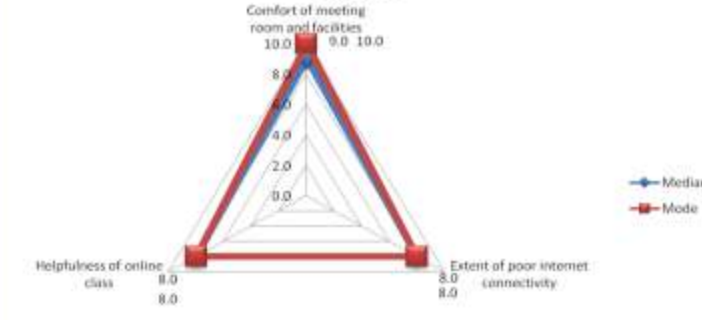


Figure 4.3.3.c : EFA Teacher Training Evaluation: Infrastructure and Internet



Source: C-DRAṢṬĀ

Figure 4.3.3.d: EFA Teacher Training Evaluation: Overview and Overall Satisfaction

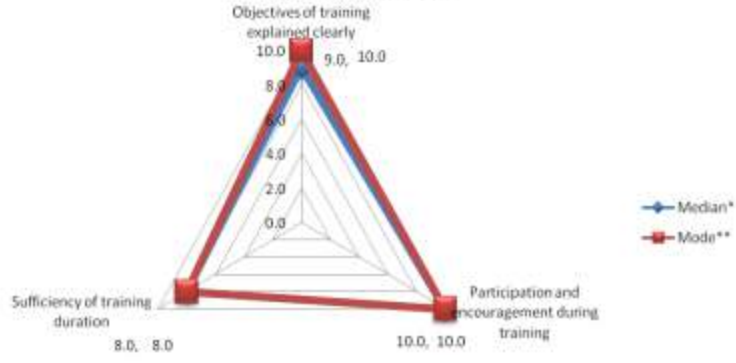
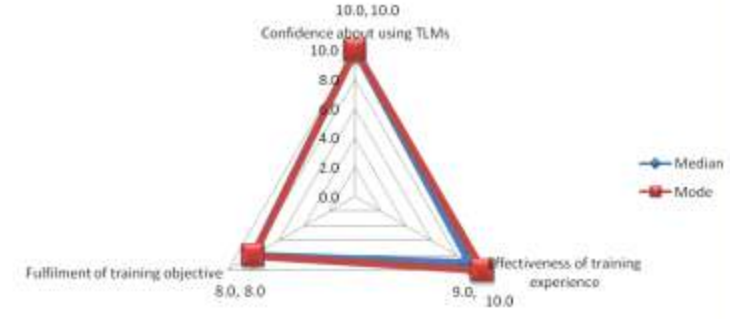


Figure 3.3.e: EFA Teacher Training Evaluation: Perceived Programme Outcome and Impact



Source: C-DRAṢṬĀ

4.4 Evaluation of EFA Book Content

In order to carry forward EFA, Nanritam and Filix School of Education has adapted their existing body of knowledge to prepare and publish two books titled 'My Journey in English' and 'Aamaar Anker Jagat' (My Journey in Math). The books have been used to train the participant teachers during EFA Teacher Training Workshops. These have been also distributed among the students from schools which enrolled in the EFA programme. The books have been central to the EFA curriculum and pedagogy adopted by the EFA-trained teachers when transferring knowledge to the children - the final beneficiaries of the programme.

This section presents expert feedback based on their detailed review of the content of the two EFA books mentioned above. The experts have been invited based on their vast experience as educators, their specialised domain knowledge in the area of primary and pre-primary education in general, subject knowledge and in view of their knowledge specific to the EFA programme. Both the experts are well acquainted with the different aspects and features of the EFA programme and the complementarities that exist between the two books and overall EFA pedagogy.

A checklist of 49 criteria for book content evaluation has been initially shortlisted after extensive review of research literature in this context. This checklist has been shared with the experts. The experts have been requested to evaluate the books in terms of these criteria and then record their feedback in a response sheet using the following five point rating scale:

5 = Exemplary; 4 = Promising; 3 = Adequate; 2 = Inadequate; 1 = Very Inadequate;
NA = Not Appliacable; R = No Opinion

Tables 4.4.a to 4.4.d present the expert feedback and rating for the two books 'My Journey in English'and 'My Jouney in Math'.

The rating assigned for most of the dimensions are 4 and above. For 'My Journey in Math', 25 dimensions have been assigned a rating of 5 and 13 dimensions have been rated with a 4.

For 'My Journey in English'22 and 33 dimensions have been assigned a rating of 5 by the two experts; whereas 17 and 15 dimensions have been assigned a rating of 4.

There are few instances of rating of 3 being assigned to some dimensions – 2 in case of 'My Journey in Math' and 6 in case of 'My Journey in English' which are mostly related to exercises involving students bringing real objects to class to illustrate some points of learning in case of mathmatics and engaging them in oral communication in case of English.

	Table 4.4.a: Book Content Evaluation Report **Items of Evaluation**	**Lena Gaerkman***	**Lena Gaerkman**	**Hilda Peacock****
		My Journey in Math	**My Journey in English**	**My Journey in English**
	A. Appearance, Layout and Design			
A.1	The outside cover is informative and attractive.	4	4	4
A.2	The font size and type used in the book are appropriate.	5	5	5
A.3	The paper used for the textbooks is of good quality	R	R	4
A.4	Binding is strong and durable.	R	R	5
A.5	Printing used is good.	R	R	5
A.6	The titles and sub-heading titles are written clearly and appropriately.	5	5	5
A.7	Size of book is appropriate	R	R	5
A.8	There is a variety of design to achieve impact.	5	5	5
A.9	There is consistency in the use of headings, icons, labels etc.	5	5	5
A.10	The book has a complete and detailed table of contents.	5	5	5
A.11	The book is organized logically and effectively.	4	5	5
A.12	The book is free of mistakes	4	4	3
A.13	The book has sufficient number of pictures to make the situation more life-like.	5	5	5
A.14	The visuals are well produced, varied and attractive	5	5	4
A.15	The digital version of the book makes it easily accessible for both students and teachers.	R	R	NA
	*****Ms. Lena Gaerkman: Curricular Advisor and Tutor for Teacher and Students, Finland) ******Ms. Hilda Peacock (Former Principal, La Martiniere for Girls, Kolkata for thirteen years; currently Director at GEMS Akademia International School. She is recipient of several awards including National Award for Teachers and Outstanding Teacher Award from University of Pennsylvania) **Source: C-DRAṢṬĀ**			

	Table 4.4.b: Book Content Evaluation Report Items of Evaluation	Lena Gaerkman	Lena Gaerkman	Hilda Peacock
		My Journey in Math	My Journey in English	My Journey in English
	B. Objectives, Learning-Teaching Content and Outcomes			
B.1	The book objectives are related to the target group learners' needs and interests	3	5	5
B.2	The book objectives are specified explicitly in the book.	4	5	5
B.3	The objectives are measurable	5	5	5
B.4	The teaching methods used in the book are the latest in the field.	4	4	5
B.5	The teaching methods used in the book are such that it can be easily adapted to teaching through storytelling, drawing, gameplays etc.	4	4	4
B.6	The teaching methods used in the book are student-centred.	5	4	5
B.6	The teaching methods used in the book are student-centred.	5	4	5
B.7	The activities allow students to talk more than teachers.	4	3	4
B.8	The activities used allow various activities that may be implemented in class	5	4	4
B.9	The activities used enable the learners to use or apply English / Mathematics outside the classroom situation.	5	4	4
B.10	The book provides the opportunity for teachers to use familiar objects of everyday use from our immediate surroundings as teaching aid for demonstrating concepts and ideas.	5	5	4

Source: C-DRAṢṬĀ

	Table 4.4.b (contd): Book Content Evaluation Report Items of Evaluation	Lena Gaerkman	Lena Gaerkman	Hilda Peacock
		My Journey in Math	My Journey in English	My Journey in English
B.11	Students are encouraged to bring real objects in class to illustrate some points of learning.	3	3	4
B.12	The book content is presented in a manner that makes learning easy, fun, attractive and interesting for the learners	4	5	5
B.13	The book content is presented in a manner that help children in overcoming uneasiness and anxiety about learning English / Mathematics	4	4	5
B.14	The textbook helps teachers cater for mixed- ability students and classes of different sizes.	4	5	5
B.15	The language in the textbook is natural and real	4	5	5
B.16	The lessons are effectively and clearly organized around specific topics	5	5	5
B.17	The lessons have clear instructions for teachers that explain how every exercise or activity can be done.	5	4	5
B.18	The exercises and activities incorporate individual pair and group work.	4	3	5
B.19	The book's exercises and activities can be modified or supplemented easily.	5	5	5
B.20	The content, structure and presentation of the lessons may be expected to generate the following levels of learning outcomes (Bloom's Taxonomy) at the end of the lessons:			
	Knowledge (Recall/Recognise facts)	5	5	4
	Understand (Explain / Interpret)	5	5	4
	Apply (Use / Determine)	5	5	4
	Analyse (Breakdown / Classify)	5	4	4
	Evaluate (Judge / Compare)	5	4	4
	Create (Design / Develop)	5	3	4

Source: C-DRAṢṬĀ

Table 4.4.c: Book Content Evaluation Report Items of Evaluation		Lena Gaerkman	Hilda Peacock
		My Journey in English	My Journey in English
	C-I Literacy Skills (My Journey in English)		
C-I.1	The textbook has appropriate listening tasks with well-defined goals.	R	5
C-I.2	Activities are developed to encourage student-student and student-teacher oral communication.	3	5
C-I.3	The Length of the reading texts is appropriate.	5	5
C-I.4	The textbook uses authentic (real world) reading material at an appropriate level.	4	5
C-I.5	The textbook leads students from simple controlled writing activities to guided writing activities.	4	5
C-I.6	Writing activities are suitable in terms of length, degree of accuracy, and amount of guidance.	4	5
C-I.7	The load (number of new words in each lesson) is appropriate for the learners' level and need.	5	5
C-I.8	There is a good distribution (simple to complex) of words across the whole book.	4	5
C-I.9	Words are contextualized.	4	5
C-I.10	The topical nature of the vocabulary exercises is often meaningful to the students.	4	5
	Source: C-DRAṢṬĀ		

Table 4.4.d: Book Content Evaluation Report Items of Evaluation		Lena Gaerkman
		My Journey in Math
	C-II Numeracy Skills (Aamaar Anker Jagat)	
C-II.1	There is an appropriate balance of skill development, conceptual understanding and mathematics processes.	5
C-II.2	Mathematical ideas are connected and interwoven across strands instead of studied in isolation.	5
C-II.3	Contextual problems engage students and where appropriate give rise to mathematics ideas.	4
C-II.4	The lessons are well organized, thoughtfully sequenced and are easy for students to follow and understand.	5
C-II.5	The book is conducive to enhancing the mathematics learning environment	5
	Source: C-DRAṢṬĀ	

CHAPTER 5

Best Practices and Way Ahead

5.1 Best Practices

The Impact Assessment Study of Nanritam's Education for ALL (EFA) has helped to identify some of the key features of the programme that have been instrumental in realisation of outcomes aligned with the EFA goal of universal foundational literacy and numeracy for children aged 3 to 8 years.

Based on the feedback of the direct and indirect stakeholders and investigating the possible relationships between observed outcomes and activities undertaken the following aspects of the programme may be referred to as Best Practices.

- ✓ The two EFA Books 'My Journey in English' and 'Aamaar Anker Jagat' ('My Journey in Math') have been very useful facilitators for both teachers and students.
- ✓ The 'Train the Trainer' modules have been effective vehicles of first stage knowledge transfer and creating the essential resource for the final stage knowledge transfer to the primary stakeholders.
- ✓ Continuous monitoring at every stage of the knowledge transfer process

5.2 Way Ahead

As EFA enters the second phase of its intervention both in terms of dimension and depth, fine tuning of the assessment process to capture the improvement in learning outcomes will help to enrich the programme.

Specifically the marking and grading systems need to be simultaneously maintained for student assessment as the former will help to capture more precisely the improvement in student learning outcomes.

Along with this the examination process may be reviewed in terms of designing of activities and questions to address and capture more specific dimensions of literacy and numeracy skills and learning outcomes.

The mid-term impact assessment study is expected to add to the EFA programme by identifying the key change makers and factors that have been critical to its effectiveness and thus initiate the development of a framework for evaluation as a continuous process that is embedded in the EFA programme.

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