Program Design Document

TECHNOLOGY INTEGRATION FOR EQUITABLE EDUCATION (TIEE)

2023-2025

Technology Integration for Equitable Education (TIEE)

Program Design Document

IT for Change

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Table of Contents

Abbreviations and Acronyms

Abbreviation	Expansion
Digi-Tech	Digital Technology
DIET	District Institute of Education and Technology
CRC / BRC	Cluster (Block) Resource Person
FOSS	Free and Open Source Software
OER	Open Educational Resources
ICT	Information and Communication Technology
MTs	Master Trainers
STEM	Science, Technology, Engineering and Mathematics
TIEE	Technology Integration for Equitable Education

Introduction

IT for Change (ITfC) is an NGO located in Bengaluru, India, that works for innovative and effective use of information and communication technologies (ICT) to promote socio-economic change. Our Teacher Education programs are pan-India and cover Teachers from various states, including Karnataka, Andhra Pradesh, Telangana, Odisha, Maharashtra, Tamil Nadu, Kerala, Rajasthan and Himachal Pradesh. Our field practice is primarily based out of the southern Indian state of Karnataka. We have also worked with schools in Telangana. We have been working on programs for integrating ICT and education in Government and aided High Schools in Bengaluru South since 2010. We have supported teachers to learn the use of Free and Open Source Software (FOSS) applications to access, create and publish open educational resources (OER) in Mathematics, Science, Kannada and English and other subjects. We have also worked with students on different aspects of digital literacy and digital enabled learning.

During the 2022-2023 academic year, IT for Change initiated the "**Technology Integration for Equitable Education (TIEE)**" program aimed to encourage inclusive learning for students in higher primary schools (HPS) in Bengaluru South-3 block. The project focused on equitale pedagogical approaches to support student learning and empowering teachers to effectively integrate technology in their teaching practices. The TIEE program was designed for three-year endeavour, commencing with a one-year pilot project, followed by two years of program expansion. The pilot phase was implemented in selected HPS schools within Bengaluru South-3 block. In addition to demonstrating technology integration for inclusive education at the school level and building communities of practitioners, the teaching-learning materials from the project, are published on the Karnataka Open Educational Resources (KOER) repository, in English and Kannada, for teachers across Karnataka.

Based on our experience working with high schools and in-service teacher training over the last 14 years, as well as our work in the pilot phase of TIEE, we are aware that there is a general lack of awareness and understanding about 'Equitable Education' among teachers, parents, and the education support system. Oftentimes, it is perceived to be applicable to only children from socio-economically backward households or those with severe physical and/or cognitive disabilities. Children who lag behind in grade-level learning indicators are often excluded under the purview of education and little effort is made to understand their challenges and learning needs which remain unaddressed as a result. In the post-pandemic aftermath, the proportion of such children has risen manifold, and teachers' abilities to address the learning needs of these 'educationally deprived' children need to be strengthened. In its current phase (2023-2024), TIEE aims to make the classroom an effective learning space for all children by integrating digital technology meaningfully to promote equity and inclusion.

Our experience has enabled us to develop a deep understanding of the methods of supporting

teachers to integrate technology effectively into their practice to strengthen students' learning experience. They need to be able to access adequate contextual resources when needed. Though there are several open educational resource repositories, accessing resources, evaluating them and using them appropriately is a skill that needs to be developed through capacity building and peer interactions. Teachers also need to be able to identify the appropriate materials and methods for diverse learner conditions as are found in government schools in urban locations.

The National Education Policy 2020 acknowledges these challenges and envisions transforming India's education system by 2040 (MHRD, 2020). It recommends moving away from siloed, subject-based learning towards a holistic, integrated education. The policy strongly advocates the use of technology in education to enhance teaching, learning and educational access. The Karnataka state education policy also recognizes the potential of educational technology to transform learning (GoK, 2022). However, only a small percentage of schools in Karnataka currently use ICT-enabled education. In 2022, just 4.4% of primary schools and 28.2% of upper primary schools were identified as 'smart schools' with some form of technology access (DISE, 2022). Additionally, many teachers are still not digitally literate or trained in using technology in pedagogically-appropriate ways (Ramdev, 2016).

A meta-analysis of 46 studies found that teacher training along with access to digital devices was four times more impactful than provision of devices alone (Snelling & Fingal, 2020). Thus, teacher education must go beyond technical training to build capacity in designing learner-centered activities using technology. Approaches like TPACK (Technological, Pedagogical and Content Knowledge) help teachers combine their understanding of content, pedagogy and technology for effective teaching (Harris et al., 2009). TIEE, thus, aims to help teachers move from traditional instruction to learner-centered approaches by integrating technology to enable participatory, inclusive and joyful learning experiences for all children.

There is a growing recognition that participatory pedagogies that tap into the local context have deep resonance with children from marginalized communities (Kumar et al., 2021). Storytelling, art, drama and music help children construct their own understanding meaningfully while connecting learning to lived realities (Chakravarthi, 2021). ICT can provide tools to apply these active learning approaches in classrooms. For instance, multimedia storytelling tools allow children to author stories by creatively combining text, audio, images and video based on their experiences (Ohler, 2013). This makes language and literacy learning engaging and contextualized. Simulations in science and mathematics can help learners manipulate variables to test hypotheses and visualize complex concepts. Game-based tools introduce elements of play, competition and rules to motivate learning of math and computational skills (Ke, 2019).

Overall, realizing the potential of educational technology to transform learning requires situating technology integration within participatory and inclusive pedagogies. It calls for teachers developing TPACK confidence along with capacities for inclusive instructional design.

1. Figure: Needs Assessment workshop

Top-down efforts for ICT implementation must be accompanied by ground-up teacher professional development and ongoing collaboration & mentorship within teachers' learning communities. Bringing these dimensions together is at the heart of TIEE's vision to prepare teachers for the digital age while centering equity and quality learning for all children. Effective technology integration can potentially make 'universal quality education of equitable quality' a reality.

This document is meant to serve as a comprehensive resource outlining the key aspects of the TIEE program for the academic year 2023-2025, offering insights into its objectives, methodologies, and progress. The document is structured into several sections, each of which contributes to understanding the program's scope and impact.

The Cognizant Foundation (CF) is the anchor of Cognizant Technology System's Corporate Social Responsibility (CSR) initiatives in India, dedicated to catalysing positive change in the communities it serves. The foundation is committed to enhancing education and skill development, promoting healthcare and well-being, and supporting environmental sustainability. With a strong focus on social and economic empowerment, the CF has a track record of supporting initiatives that empower underserved communities and foster inclusive

growth. Cognizant Foundation's involvement in our program underscores their dedication to creating meaningful and sustainable impact in the areas of education, skill development, and community well-being. Their partnership has been instrumental to our program's success.

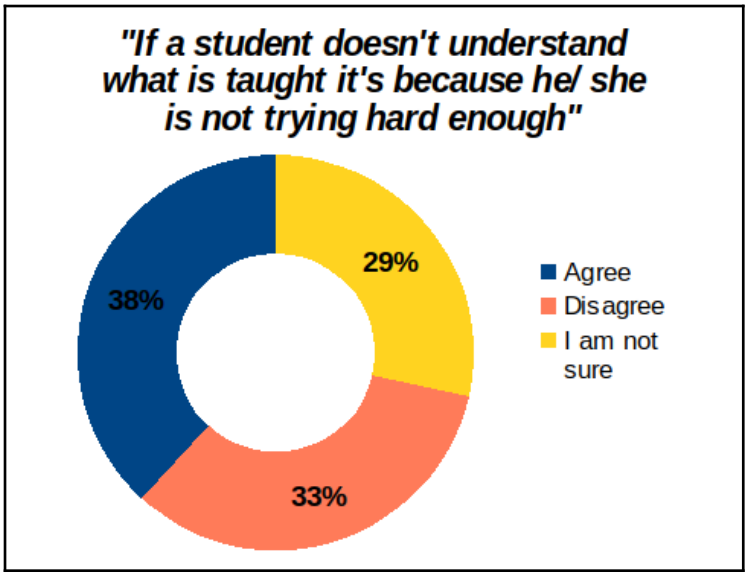
Need Assessment Study

To better implement the TIEE program at the block, cluster, and school levels, and as suggested by the Block Education Officer, a Needs Assessment of teachers was designed and conducted in July through August 2023. This study aimed to get a sense of teachers' beliefs about using ICT in clssroom teaching, and to gather inputs from the teachers and HMs (Headmasters/ Headmistresses) on challenges to teaching of classes 6 to 8 to better design the teacher's workshops and assess the way forward.

The key findings highlighted major difficulties faced in terms of content, pedagogy, resources, classroom management and skills. Most teachers have over 20 years of experience and teach multiple subjects, indicating the need for customised training suited to experience levels and subjects taught. While basic ICT infrastructure exists in schools, lack of ICT-based teaching-learning materials (TLMs) hinders its use. A majority of teachers struggle with inadequate resources and struggle to ensure comprehension, retention and engagement. Disconnects are seen between beliefs towards teaching-learning and ICT and actual classroom practices. To address these challenges, the TPD program should adopt an experiential methodology focused on peer learning, teacher collaborations, hands-on activities and reshaping beliefs aligned to principles of Universal Design for Learning (UDL).

Graphic 1: Teacher's beliefs about teaching and learning based on UDL principles.

(Source: Needs Assessment Study TIEE, IT for Change)

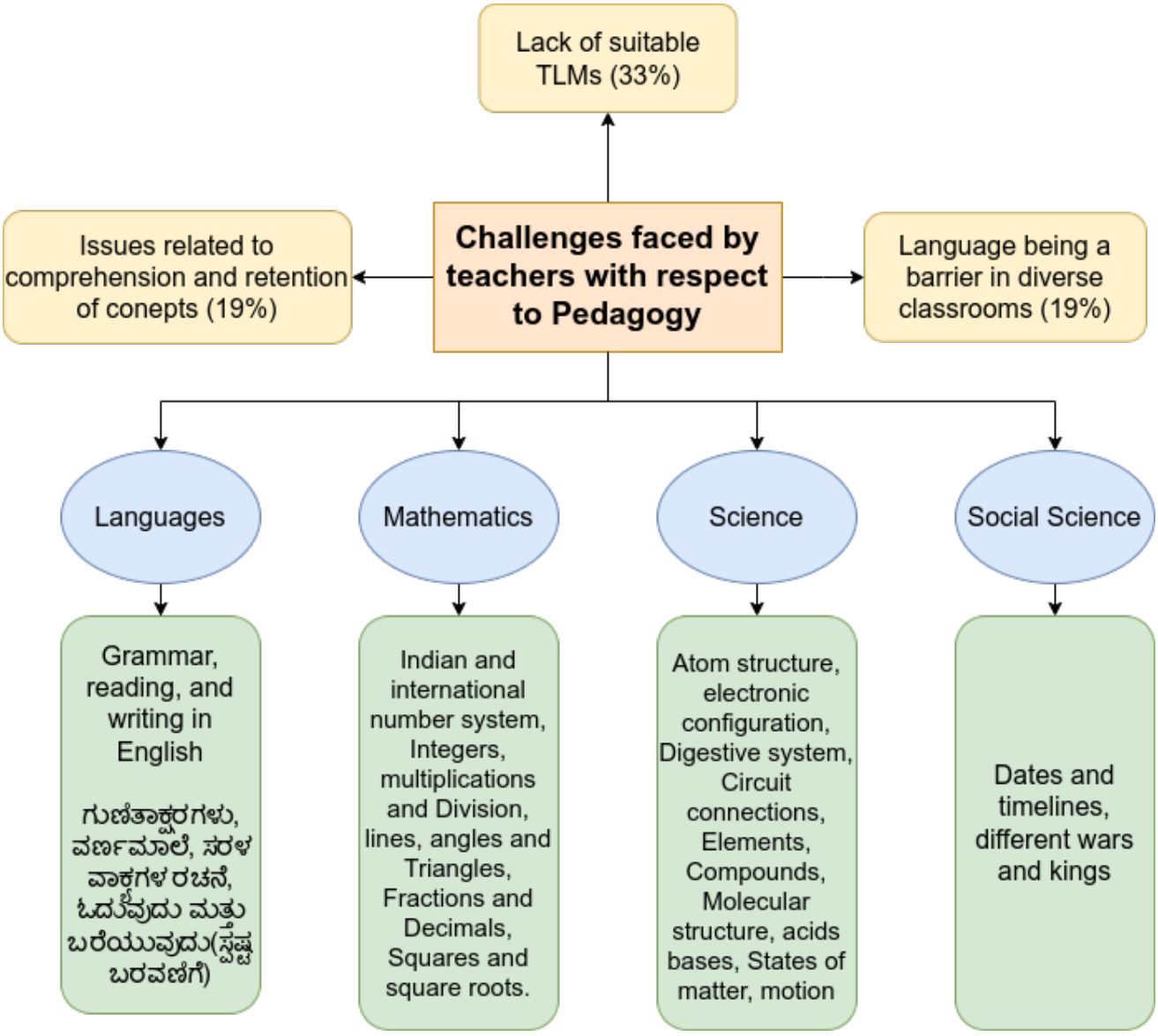


It was also noted that providing basic digital literacy training customised for each school's ICT infrastructure is crucial. Creating how-to videos on classroom gadgets can build capacity.

Subject and topic-specific guidance through workshops is needed to address content challenges highlighted in Math, Science, Social Science and Languages. Training in student-centric, multilingual pedagogies and balanced assessment practices beyond traditional exams can equip teachers with inclusive & equitable teaching strategies. Building digital literacy for integrating multimedia resources and ICT tools into teaching is pivotal. Science simulations and activities can provide hands-on alternatives. Allowing teachers to identify unique needs for tailored support is also recommended. The TPD program should emphasise UDL principles like growth mindsets, balanced error correction and collaborative learning. Fostering teacher collaborations, peer learning and exchanges can facilitate continuous improvement. Providing self-learning resources directed at students can relieve the teaching burden.

Graphic 2: Challenges faced by teachers with respect to Pedagogy

(Source: Needs Assessment Study TIEE, IT for Change)



Objectives

The TIEE project aims to make the classroom an effective learning space for all children by integrating digital technology meaningfully, to promote equity and inclusion, by[1]

1. supporting teachers integrate digital technologies through demonstration and hands-on support,
2. strengthening teachers' abilities use diverse pedagogies and multi-level materials to address students academic needs,
3. providing opportunities for continuous professional development (CPD) of teachers, including through peer learning in Communities of Practice (CoPs), and
4. supporting schools in integrating technologies for school administration and development.

Scope of the TIEE Program

The approaches are aimed at enhancing the 'academic support system' in order to create an inclusive education environment by using a variety of digital methods. This will include engaging with subject teachers from various government schools from different clusters in Bengaluru (South 3 block) and in Mysuru. At the block level, the focus will be on enhancing teacher capacity on using classroom teaching resources (shared through teachers' community groups) and a series of workshops. Based on the department's inputs, IT for Change will shortlist schools and clusters for the regular student activities.

Phase – II (Academic year 2023-2025)

Research indicates that for technology to transform learning, devices and connectivity must be accompanied by continuous teacher professional development situated within supportive pedagogies. TIEE aims to provide such comprehensive, sustained capacity building for teachers to meaningfully leverage ICTs within participatory, constructivist approaches that center inclusion and equity.

The Needs Assessment Study highlighted the challenges faced by teachers, as well as the support requested in order to make quality education more equitable. It was noted that there is a need for teachers and teacher educators to become familiar with the Universal Design for

1. Some of the aspects identified are beyond what a program of the nature of TIEE can envisage. Some require large investments on the part of the public system, such as provision of adequate physical and academic infrastructure, filling teacher vacancies and even providing one teacher per grade/section in the school apart from administrative support. Others are long-term processes such as facilitating parental/community engagement and support for the school. The program design document focuses on items that are within the 'circle of influence' of a civil society organisation, working closely with the government system.

Learning (UDL) principles as well as related concepts, and practices so that they can move from 'only some children can and will learn' to 'all children can and must learn' mode of thinking.

Teachers also require adequate horizontal networking spaces for regular and guided peer interaction. There is a need for teachers' CPD that supports autonomous explorations and sharing, rather than only through top-down administrative directives. Additionally, there is a need for schools to automate/digitize the basic administrative tasks for better operational efficiency and to free up the bandwidth of teachers to focus more on teaching-related activities. Academic support persons (CRPs / BRPs / DIET faculty) also need to be made familiar with concepts and practices relating to equitable education including UDL principles, and digital technologies to access resources so that they can provide support to teachers in using and integrating technology in their classrooms for equitable education.

Keeping this in mind, in its second phase (2023-25), the "Technology Integration for Equitable Education (TIEE)" program aims to work in middle schools (grades 6-8) by:

1. demonstrating processes of making the classroom an equitable learning space for all children, including through the meaningful integration of digital technologies
2. creating multi-level digital learning modules on select subjects for addressing children with different learning abilities and aptitudes,
3. capacity building of teachers and teacher educators to support equitable teaching-learning processes through appropriate integration of digital technologies, and
4. supporting the teachers in accessing and using Open Educational Resources (OER) for their Continuous Professional Development (CPD), for use in equitable teaching-learning as well as enabling students to access digital technologies for learning.

Based on the department's inputs, IT for Change has selected 8 clusters for teachers' programs and 4 schools for regular student intervention activities in Bengaluru.

Program Design

TIEE plans to adopt the following key strategies in our interventions with students, teachers, schools, and the overall education system:

1. Students
    - Designing and developing subject specific methodologies for digitally enabled learning
    - Working with students on building their digital literacy skills and skills for learning using different tools and resources

- Using digital tools to encourage self-expression and independent learning
- Providing for hands-on and immersive learning experiences using digital tools.

2. Teachers
   - Capacity building for teachers for inclusive pedagogies and technology integration in teaching-learning
   - Awareness, sensitization and capacity building of teachers for adopting equitable education practices
   - Capacity building for teachers – focused on digital literacy for teachers
   - Supporting the continuous professional development of teachers through communities of practice (COPs)
3. Schools/ HMs/ Principals
   - Facilitating the setting up of digital infrastructure in schools along with educational resources
   - Demonstrating school-level integration of technologies for an equitable learning environment
4. Parents and the School Community
   - Encouraging their active involvement in supporting their children's learning through shared digital resources.
   - Encouraging community support in providing access to digital resources and infrastructure for students.
5. Cluster Resource Persons (CRPs) / Block Resource Persons (BRPs) / Education Coordinators (ECOs)
   - Block level workshops for BRPs and CRPs
6. District Institute for Education and Training (DIET) faculty
   - Workshop for DIET faculty
7. The broader education ecosystem
   - Adding on to the free and open digital ecosystem –through platforms, resources, and professional networks
   - Teacher capacity building models scaled through workshops and COPs
   - Research and documentation of effective models of technology integration.
   - Writing papers, academic articles and articles for mainstream media to inform the

discourse on school education and teacher education.

- Participating in the educational policy and programmatic design processes of the department

Timeline

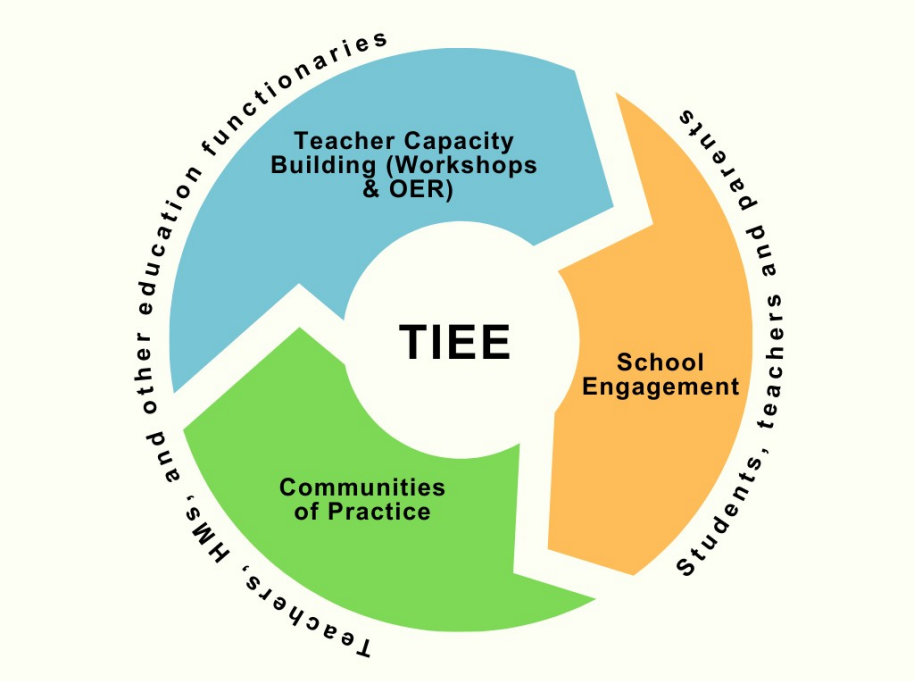
Please refer Annexure for detailed timeline

Implementation Methodology

The TIEE program aims to facilitate the meaningful integration of technology within inclusive, participatory pedagogies in schools. The implementation methodology provides comprehensive, sustained support to teachers and schools to enable this transition.

Graphic 3: TIEE Implementation Methodology.

(Source: IT for Change)



1. Teacher Professional Development Workshops

   Intensive capacity building workshops will be organized at block and cluster levels for teachers across subjects like Languages (English, Kannada and Hindi), Mathematics, Science and Social Sciences. The workshops will have the following key objectives:

   i. Exploring diverse digital tools and resources to build TPACK (Technological, Pedagogical and Content Knowledge)

   ii. Appreciating the heterogeneous learning needs in classrooms; imagining possibilities of integrating technology thoughtfully within inclusive pedagogies

iii. Learning to design and implement multimodal, multi-level resources and flexible teaching strategies to address diverse learner needs

iv. Developing shared understanding regarding equity and inclusion principles and practices like the UDL framework, multi-lingual instructions etc.

v. Enabling reflection on current teaching beliefs and practices; identifying areas for improvement

vi. Fostering peer learning communities for sharing ideas, experiences and resources on an ongoing basis

vii. The workshops will include subject-specific examples (based on teachers' suggestions), and activities tailored to curriculum concepts in Languages, Mathematics, and Sciences. The aim is to support teachers in translating the understandings around technology-integrated inclusive education into practice within their respective subject areas and topics.

viii. In addition to school teachers, the HMs, block and cluster level academic resource persons like BRPs (Block Resource Persons) and CRPs (Cluster Resource Persons) will also be involved. Building their capacity is crucial so that they can effectively guide and support schools in implementing technology-enabled inclusive education.

2. Sustained School-level Engagement

While periodic workshops help initiate awareness and understanding, meaningful translation of technology-integrated inclusive education into classroom practices requires sustained engagement with schools. Hence, the program implementation will emphasize ongoing collaboration with selected focus schools across blocks, through the following approaches:

i. Assisting teachers in collaborative lesson planning, co-teaching specific concepts, curating/developing contextual digital resources and designing assessments

ii. Supporting students in using digital tools for self-paced and collaborative learning through integrated digital literacy sessions*

iii. Strengthening school leadership capabilities for evolving a shared vision and plan, making optimal use of existing ICT infrastructure, and fostering teacher professional communities.

iv. Providing multi-lingual story-based audio and audiovisual resources created by ITfC as supplementary learning materials across subjects. The narrative format, local contexts and multilingualism can help in making classroom teaching-learning

more engaging, relatable and participatory for all learners.

v. By working closely with schools over an extended duration, the aim is to move beyond superficial input-based interactions to an embedded approach where schools feel empowered to continue the change process themselves.

3. Strengthening School Leadership

School leadership plays a key role in enabling improvements. Workshops for Head Teachers/ HMs will focus on pedagogical leadership approaches based on evolving a shared vision, teacher development, and optimal use of digital infrastructure. Ways to use technology for in-school communication, teacher collaborations and reducing administrative workload will also be discussed. The aim is to strengthen their capacities for school development and technology integration based on participatory processes.

4. Strengthening Public Digital Infrastructure in Schools

Lack of adequate digital infrastructure including hardware, connectivity and electrical supply is a systemic challenge in many government schools. As part of CSR partnerships, ITfC will support the setting up and maintenance of computer labs in interested schools, while also building capacities of teachers and students to leverage the infrastructure optimally for educational purposes. In addition, extensive use of FOSS (Free and Open Source Software) tools and Open Educational Resources (OER) will be promoted to enable easy access to digital resources without licensing constraints.

5. Fostering Communities of Practice

To sustain professional development and continued improvements in integrating technology in inclusive ways, it is crucial to nurture horizontal teacher communities at local levels. ITfC will facilitate the formation of Communities of Practice (CoPs), anchored around a shared purpose and interest regarding technology-enabled inclusive education.

i. The CoPs will enable teachers across schools to collaboratively engage in learning and sharing activities. CoPs can help in shifting professional development from a top-down, workshop-based approach to embedded, teacher-driven processes within local ecosystems.

ii. Diverse mediums like social media platforms, messaging apps, along with periodic in-person meetings will be leveraged to enable continuous collaboration, and knowledge sharing within the CoPs.

6. Parent Engagement

Parent engagement is vital for improving learning outcomes and fostering shared accountability between schools and communities. Current parent engagement tends to be ritualistic in the urban context, where parents are unable to collaborate with teachers to strengthen the school. TIEE aims to conduct parent-teacher meetings in collaboration with select schools. These interactive meetings will share student progress, discuss academic programs, and obtain feedback. Direct communication channels like IVRS messaging will be leveraged to notify parents. Meetings will be conducted in local languages to maximize reach. The aim is two-fold - to keep parents informed about school activities, while also increasing their involvement in their child's education. Overall, the focus on parents as partners will strengthen home-school linkages.

7. Empowering Academic Resource Persons

   Block and cluster level academic resource persons like BRPs, CRPs etc. provide critical academic support to schools. Workshops will be organized to build their capacities in using digital tools for academic monitoring, knowledge sharing within teacher communities, and accessing teaching-learning resources. Hands-on training will be provided on using FOSS tools to create and disseminate contextual digital resources. Overall, the aim is to empower them to effectively guide schools in technology-integrated approaches.

8. Feedback and Documentation

   Gathering regular feedback from teachers, schools and resource persons will be key to periodically track program inputs, activities and outputs across clusters. Course corrections will be carried out based on emerging insights. The insights emerging will be systematically documented to inform policy and program of the education system.

9. Addressing Key Challenges

   Successful translation of the understandings around technology integration within inclusive pedagogies into sustainable classroom practices involves addressing certain contextual challenges:

   i. Teacher motivation levels for experimenting with new methods are often hindered by systemic issues like lack of academic support, multigrade teaching pressures, inadequate training and monitoring. The program aims to respect teacher agency, build capacity and foster peer collaboration so that change is driven from within rather than imposed externally.

   ii. School teachers have heavy workloads and tight timetables often leaving little room for professional development or designing new lesson plans. By aligning training

schedules with non-teaching times, minimizing classroom time for new practices and exploring ways of offloading some administrative tasks from teachers, the program will address the time constraint barrier.

iii. Digital infrastructure limitations will be tackled not just through lab set-ups but also by promoting cost-effective innovations like use of existing digital infrastructure in schools, use of portable projectors etc. Extensive use of FOSS tools should further help circumvent infrastructure barriers.

iv. Language diversity in the classrooms poses unique challenges for adoption of digital content which is often available only in English. The program will proactively incorporate multi-lingual digital resources in local languages tailored to state-specific textbooks and curricula.

v. Sustaining change often proves difficult once external support concludes. The focus on building professional communities of practice, strengthening school leadership capabilities and ensuring buy-in from critical institutional actors will promote self-driven continuance of positive changes.

10. Volunteers

As part of their involvement, Cognizant Foundation (CF) also plans to provide volunteers with diverse expertise to actively contribute to the project's implementation, ensuring a collaborative approach towards achieving its educational objectives. The opportunities for volunteers will include:

i. Support in the conducting digital literacy classes for students in identified schools.

ii. Support in the conducting workshops for teachers / Cluster Resource Persons.

iii. Development of stories for the Language Lab (audio books) – this will include accessing relevant stories from storyweaver.org and creating audio versions of the story in different languages (English, Kannada, Hindi, Tamil, Telugu, Urdu).

iv. Support in conducting the workshops/sessions on skill building for student-teachers

This comprehensive approach aims to support effective translation of TIEE's vision into impactful school-level practices to further the goals of equitable quality education and lifelong learning opportunities for all children.

Risks and Possible Mitigation Strategies

Implementing the TIEE program in government schools involves certain risks that need to be planned for.

1. Teacher availability: Schools often face teacher shortages, with many teachers handling multiple subjects. It might be difficult for teachers to take out time for these activities.
2. Permissions: Formal approvals from education department officials at state, district and block levels will be needed for conducting workshops and school interventions. Bureaucratic delays may pose challenges.
3. Communication: Top-down communication about the program from district/block/cluster authorities to schools will be critical for acceptance and participation.
4. Timing: Conducting workshops only on weekends or holidays may limit teacher participation. But scheduling programs on working days will require approvals and adjustment of school timetables.
5. Infrastructure: Many schools have constraints like small classrooms, power outages, lack of projectors etc. which may hamper technology integration.
6. Sustainability: The changes may not sustain after the program concludes without continued structured support.

Careful planning and mitigation strategies will be needed to address these risks for smooth program implementation. Some possible mitigation strategies will be as follows:

1. Permissions will be sought well in advance at all levels to avoid delays. The program's alignment with National and State Education Policy goals will be highlighted for gaining approvals.
2. Orientation sessions will be organized for officials, if necessary, to build support. Regular communication with department will be maintained.
3. Schools will be informed in advance regarding the expectations and engagement to clarify goals, and address concerns.
4. Teacher availability will be ensured through timetable adjustments with school heads. Optional weekend workshops will also be considered. Workarounds like smaller group workshops will be looked at.
5. School heads will be involved in infrastructure planning. Low cost innovations like portable projectors, mobile devices and tablets can be explored, as well as encouraging the use of already existing digital infrastructure.
6. Both online and offline alternatives for resources will be shared with stakeholders wherever possible.

With robust mitigation strategies to tackle the contextual challenges, the risks involved can be minimized for effective on-ground implementation of the program. The learnings will provide insights for enhancing the model further.

Expected Program Outcomes

The TIEE program aims to build the capacity of the educational ecosystem to meaningfully integrate technology into inclusive pedagogical practices focused on quality learning for all children. The expected outcomes across different stakeholders are:

1. Teachers:
    i. Improved TPACK skills to use digital tools in various stages of teaching-learning like planning, instruction, assessment etc.
    ii. Enhanced skills in curating, adapting and creating multimodal, leveled resources to address diverse learner needs
    iii. Exposure to learner-centered technology-enabled pedagogies based on storytelling, simulations, games, etc.
    iv. Increased participation in professional communities to share ideas and resources on technology integration
    v. Positive attitudinal shift regarding potentials of thoughtfully integrating technology within inclusive and equitable classroom practices.
2. School Leadership:
    i. Strengthened skills in evolving a shared vision and technology-integrated school improvement plans through participatory processes
    ii. Increased awareness on optimal utilization of existing digital infrastructure
    iii. Improved technological and pedagogical support to teachers for continuous professional development
    iv. Increased involvement of parents and community in school activities and child's learning
3. Academic Resource Persons:
    i. Enhanced awareness of the possibillities to curate and create contextual digital teaching-learning resources
    ii. Increased participation in online communities of practice for sharing of educational resources
    iii. Better coordination between schools, teachers and block-level teacher training ecosystems on technology integration
4. Students:
    i. Enhanced engagement levels through interactive, joyful and participatory learning

experiences

ii. Increased self-paced learning through appropriate and appealing digital learning resources

iii. Improved learning processes across languages, mathematics, and science

The holistic, ecosystem-focused approach can lead to interlinked outcomes across stakeholders, sustaining meaningful technology integration in schools within supportive pedagogical frameworks focused on inclusion and equity in the longer term.

Conclusion

Education systems must increasingly leverage technology meaningfully to expand access, equity, efficiency and quality in learning. However, mere provision of devices and connectivity is not sufficient. Teachers need continuous capacity building and academic support to transition towards technology-enabled inclusive pedagogies focused on students constructing their own understanding. Sustained school-level engagement, strengthening infrastructural support, fostering peer collaborations for horizontal knowledge sharing, and addressing contextual challenges are vital accompanying interventions.

The TIEE program aims to provide this comprehensive, nuanced support to government school ecosystems in Bengaluru & Mysuru for integrating technology and inclusive education. The implementation methodology focuses on building teacher and school leader capabilities, providing in-depth mentoring support to schools, empowering academic resource persons, engaging parents as partners and nurturing professional communities of practice. Monitoring, evaluation and documentation will provide feedback loops to strengthen the approach further. Managing risks through context-appropriate mitigation strategies will be crucial.

Ultimately, the program aspires to act as an exemplar for how to meaningfully leverage technology for improving teaching-learning processes towards the vision of equitable, quality education and lifelong learning opportunities for all children. With its sharp focus on inclusion, localized contextualization and sustainability, TIEE represents a model adoption framework that can be extended across diverse resource-constrained environments through appropriate customizations. The insights generated can inform policymaking and practitioner communities on how to optimally harness technology for education in impactful and ethical ways.

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Annexure – Timeline for the project

Activity	July – Dec 2023	Jan – June 2024	June – Dec 24	Jan – June 25
Planning and Design				
Need Assessment	X	Done	Done	Done
Identification of Schools & Clusters	X	Done	Done	Done
Program Design	X	Done	Done	Done
Content Development				
No of Modules Developed	3	4	4	4
No of OERs created	100	150	250	300
Intensive School Work				
No of Schools	2	2	2	2
No of Students (direct intervention)	70	70	70	70
Capacity Building Workshops				
Workshops for Teachers	6	12	20	25
Workshops for HMs		2	3	4
Workshops for CRP/BRP	1	2	3	4
Teachers Trained	175	250	425	550
CRP/BRP Trained	15	30	30	30
Indirect				
No of Schools	30	35	40	45
No of Students	8750	12500	21250	27500

Note: Taken from the metrics which is a part of the proposal.