Impact Assessment of Rallis Ujjwal Bhavishya Yojana (RUBY) Program

Ankleshwar and Dahej Districts of Gujarat

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Executive Summary

The Rallis Ujjwal Bhavishya Yojana (RUBY) is a Corporate Social Responsibility (CSR) initiative by Rallis India Limited that aims to strengthen foundational learning in Science, Mathematics, and English among students in rural Gujarat. Introduced in 13 schools across two districts, Ankleshwar and Dahej, the program seeks to bridge persistent learning gaps through activity-based learning, phonics-led literacy, and digital numeracy modules. It aligns closely with the National Education Policy (NEP) 2020, which emphasizes experiential, skill-based, and inclusive learning for all children.

This impact assessment, conducted by NuSocia using the OECD-DAC REECIS framework, evaluates the program's performance across six parameters: Relevance, Effectiveness, Efficiency, Impact, Coherence, and Sustainability. The study covered nine schools and engaged a wide range of stakeholders, including students, teachers, principals, parents, and implementation partners, through mixed-methods research combining interviews, focus group discussions, and quantitative surveys.

Findings reveal that RUBY has significantly improved student engagement, conceptual understanding, and classroom participation. Over 96% of students reported enhanced confidence in science through hands-on experiments, while over 70% observed improved reading and comprehension in English. Teachers noted visible progress in communication, pronunciation, and motivation, with girls showing marked gains in confidence and curiosity, breaking traditional barriers in STEM learning.

The program has also fostered teacher innovation, peer learning, and community recognition, transforming classrooms into more dynamic and participatory learning spaces. However, challenges remain in terms of resource limitations, short session durations, teacher workload, and limited parental involvement, which may constrain long-term sustainability.

Overall, the RUBY program demonstrates strong relevance and short-term effectiveness, contributing meaningfully to improved learning outcomes and student confidence in under-resourced contexts. To ensure lasting impact, future cycles should prioritize structured teacher development, localized resource creation, enhanced parental engagement, and integration with district education systems. With these refinements, RUBY holds the potential to evolve into a scalable and sustainable model of rural education transformation, bridging the gap between access and actual learning for India's next generation.

1. Introduction

1.1 Background

Over the past two decades, India has made remarkable strides in expanding access to education, achieving near-universal enrolment at the elementary level and improving school infrastructure across states. According to the Unified District Information System for Education Plus (UDISE+) 2024-25, the Gross Enrolment Ratio (GER) at the upper primary level (Classes 6–8) stands at around 90%, reflecting commendable progress towards universal education. Nationwide initiatives such as Sarva Shiksha Abhiyan (SSA), Samagra Shiksha, and the Right to Education (RTE) Act, 2009 have strengthened school participation, gender parity, and inclusion. However, the Net Enrolment Ratio (NER) remains significantly lower at around 67%[1], implying that many children are either out of school, over-aged for their grade, or face frequent dropouts due to socio-economic pressures.

While access to education has increased, the challenge of learning outcomes remains India's most persistent concern. The Annual Status of Education Report (ASER) 2024 highlights that despite over a decade of sustained enrolment, foundational skills in reading, writing, and arithmetic remain alarmingly weak. Nearly 50% of children in Grade 5 cannot read a Grade 2-level text, and over 45% struggle to perform basic division problems[2]. This means that students are progressing through the system without mastering essential competencies (such as higher-order thinking, creativity, and problem-solving abilities), leading to cumulative learning deficits by the time they reach middle school. Such disparities between schooling and learning have prompted the Government of India and education experts to shift focus from 'schooling for all' to 'learning for all.'

Within this national context, Gujarat presents a compelling case of both progress and paradox. The state has historically invested strongly in education infrastructure and teacher training through programs like Gunotsav and Mission Schools of Excellence, contributing to a relatively high literacy rate of 79.31% (Census 2011)[3]. According to ASER 2023, Gujarat ranks among states with near-universal primary enrolment and improved pupil-teacher ratios. The state's emphasis on public-private partnerships and digital learning initiatives, including Gyankunj and e-content platforms, reflects a proactive approach to integrating technology in classrooms.

Yet, learning outcomes continue to lag behind enrolment metrics. The ASER 2024 data reveal that only 46.3% of Class 5 students in Gujarat can read a Class 2-level text, and just 14.3% can solve a basic division problem (three-digit by one-digit). By Class 8, over 69% of students still cannot perform simple division, and three out of four students fail to read text meant for lower grades. These figures underscore the persistence of foundational learning gaps, particularly in rural and socio-economically disadvantaged regions. Gender-based disparities further compound the issue, with female literacy (around 70.73%)

[1] https://www.pib.gov.in/PressReleasePage.aspx?PRID=2161543

[2] https://www.indiatoday.in/education-today/news/story/only-50-class-5-students-can-read-class-2-text-learning-gap-by-class-3-report-2672907-2025-01-31

[3] https://gujaratindia.gov.in/Home/Demography

trailing behind male literacy (over 85%), limiting equal participation in academic and professional pathways[4].

The Bharuch district, home to the industrial hubs of Ankleshwar and Dahej, mirrors these broader patterns. While the district's overall literacy rate of 81.51% is higher than the state average, rural pockets reveal deep divides[5]. In Dahej and surrounding areas, where many families depend on industrial or agricultural labor, children often face inconsistent school attendance, language barriers, and limited parental support for studies. The migratory nature of industrial work further disrupts educational continuity for many households.

Focusing interventions in rural locations like Ankleshwar and Dahej is therefore both strategic and necessary. These areas illustrate the intersection of economic growth and educational inequity, where proximity to industrial growth coexists with fragile learning environments. Targeted programs that strengthen foundational learning, teacher capacity, and community engagement can bridge this divide, ensuring that students in rural Gujarat not only attend school but also acquire the skills, confidence, and curiosity essential for lifelong learning.

1.2 Project Details

The Rallis Ujjwal Bhavishya Yojana (RUBY) is a flagship Corporate Social Responsibility (CSR) initiative of Rallis India Limited that aims at strengthening foundational learning and building academic confidence among students in rural Gujarat. Launched in 2021, the program is being implemented across 13 government schools in Ankleshwar and Dahej, regions that represent a sharp contrast between industrial prosperity and persistent educational inequities.

RUBY was conceptualized to address critical learning gaps in Science, Mathematics, and English, subjects that form the foundation for analytical reasoning, problem-solving, and communication skills but remain underdeveloped in rural and under-resourced classrooms. The program follows an integrated, multi-pronged pedagogy through three targeted interventions:

- **Activity-Based Science Learning (BASSE):** Promoting curiosity and conceptual understanding in science through hands-on experiments and experiential learning.
- **Phonics-Based English Literacy (LeapforWord):** Enhancing reading, writing, and comprehension through bilingual, phonetic instruction tailored to local learning contexts.
- **Foundational Numeracy (First-in-Math):** Introducing digital, game-based learning tools that make arithmetic practice engaging and reinforce logical reasoning skills.

[4] https://gujaratindia.gov.in/Home/Demography
[5] https://www.census2011.co.in/census/district/202-bharuch.html

Beyond improving student outcomes, RUBY places strong emphasis on teacher capacity building, community participation, and curricular alignment with the National Education Policy (NEP) 2020. These elements collectively ensure that learning improvements are inclusive, participatory, and sustainable.

As of FY 2025, the program has directly benefited over 3,600 students and empowered numerous teachers across 13 government schools in Ankleshwar and Dahej. By combining experiential pedagogy, mentoring, and stakeholder collaboration, RUBY aspires to build a scalable and sustainable model of rural education transformation, one that not only expands access to education but also ensures meaningful learning for every child.

2. Research Methodology

Following the successful implementation of the Rallis Ujjwal Bhavishya Yojana (RUBY) over three financial years (2021-24), Rallis India Limited commissioned NuSocia, an impact advisory firm, to undertake a comprehensive impact assessment of the program. The purpose of this study is to evaluate the program's effectiveness in enhancing learning outcomes and to derive actionable insights that can inform future program design, replication, and scale-up.

2.1 Objectives

The primary objectives of this impact assessment study were to:

- Evaluate the effectiveness of the program in enhancing students' learning outcomes, Science, Mathematics, and English across selected schools in Ankleshwar and Dahej.
- Assess the influence of the program on students' confidence levels, classroom participation, and overall motivation toward learning.
- Examine the role and contribution of teachers, parents, and community stakeholders in supporting program implementation.

2.2 Research Framework

The assessment followed the OECD-DAC REECIS framework, examining the project across six key parameters: Relevance, Effectiveness, Efficiency, Impact, Coherence, and Sustainability. Each dimension was explored using both quantitative and qualitative indicators to generate a balanced understanding of the program's performance.

Source: OECD DAC: Organization for Economic Co-operation and Development's (OECD) Development Assistance Committee (DAC)

2.3 Sampling

The study covered nine schools across two districts of Gujarat, Ankleshwar and Dahej, benefiting 3,681 children. Within these schools, a representative sample of students, teachers, principals, parents, and implementation team members was selected using purposive sampling for qualitative inquiry and convenience sampling for quantitative research to ensure diversity in geography, school type, and student demographics.

Stakeholders	Qualitative Research (Purposive Sampling)		Quantitative Research (Convenience Sampling)
	Key Informant Interviews	Focus Group Discussions	Quantitative survey*
Students		6	213
Teachers	8		
Principals	5		
Parents		3	
Implementation Team	3		
Rallis Team			
Total	**16**	**9**	**213**

2.4 Data Collection

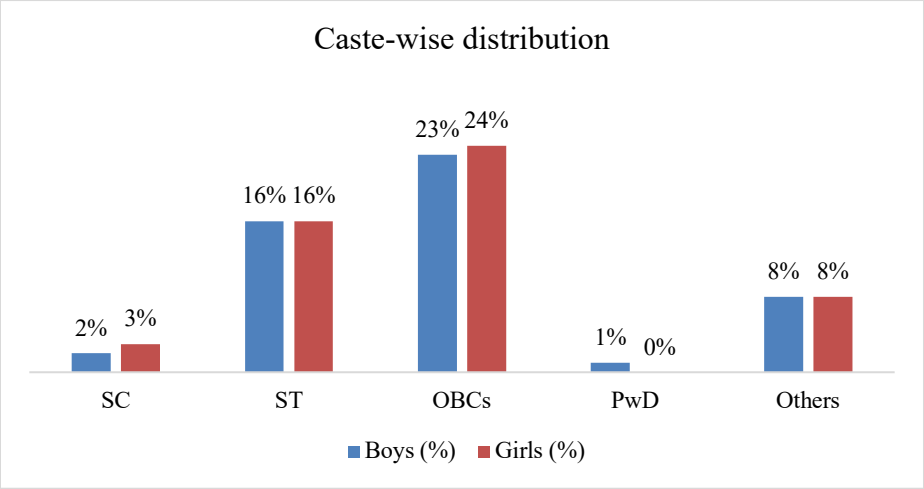
Data collection for this program was carried out using the following methods:

- **Desk Research:** Existing materials, including annual project reports, assessment studies, and documents shared by implementation partners, were reviewed. This was complemented by additional secondary information gathered from credible online sources.
- **Key Informant Interviews (KIIs):** Structured in-depth interviews guided by open-ended questions were conducted with students, teachers, parents, and implementation teams to gain a nuanced understanding of the project's design, effectiveness, and implementation challenges.
- **Focus Group Discussions (FGDs):** Beneficiaries were selected using convenience sampling to participate in discussions. These sessions focused on exploring their experiences, perceptions of project objectives, and the overall impact on their lives.

3. Findings

The Rallis Ujjwal Bhavishya Yojana (RUBY) program's core objective was to enhance the academic abilities, conceptual grasp, and learning enthusiasm among students in the Ankleshwar and Dahej districts of Gujarat. It focuses on foundational learning in Science, Math, and English through activity-based and phonics-led approaches. The quantitative data gathered over the project tenure reveal substantive shifts in student learning metrics, indicating widespread gains across the 13 schools involved (5 in Ankleshwar and 8 in Dahej).

The project benefited 3,681 students, 49% of whom were boys and 51% were girls. The students mainly belong to underprivileged sections of society where parents are engaged in farming or work as laborers and employees in the nearby GIDC industrial area. In most cases, mothers handle household responsibilities such as cooking, childcare, cattle care, and sometimes help in the fields. The young people mostly work in chemical and pharmaceutical factories in the industrial area.



Graph 1: Caste wise Bifurcation

The project targeted students from Standard 1st to 12th, with a major focus on early and middle education. Many children in our school are from families with poor economic conditions, and their parents are unable to focus on their studies. Therefore, children often find it difficult to learn subjects like English and Science because the language is new, they lack practice, and there is no reading–writing environment at home. There is also a shortage of teachers and a heavy administrative workload. Hence, it was necessary to join programs that motivate students to learn and maintain the quality of education.

"*The school caters to children from financially poor and migrant families, where both parents often work as factory laborers or daily wage earners. Children lacked strong academic foundations, especially in English, Science, and Math. Many students were not even confident with the alphabet earlier. Limited resources, lack of experiment books, and poor exposure in these subjects made it difficult to bring improvement without additional intervention.*"

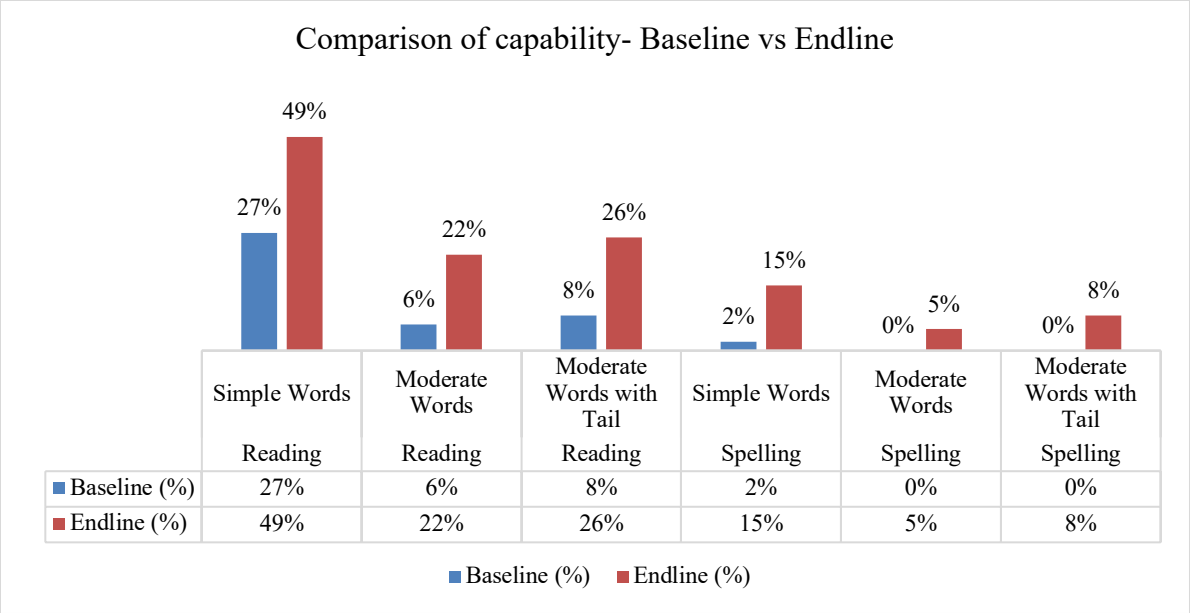
3.1 Enhanced Learning Outcomes and Conceptual Understanding

Analysis of the student survey undertaken by Rallis shows that out of 3,681 students across 13 schools, 42.6% participated in Math, 31.8% in English, and 25.6% in science. A distinct feature of Project RUBY's success lies in its multi-pronged approach, which integrates activity-based science education (BASSE), phonics-based English literacy (LeapforWord), and digital math practice (First in Math). This comprehensive methodology effectively addressed prevalent challenges such as students' fear of English, limited exposure to scientific inquiry, and foundational numeracy difficulties.

In the Science Intervention Program implemented by BASSE, the curriculum was designed to be fun, relaxed, and skill-oriented to enhance children's learning through experience. Each phase included ten sessions of two hours each, with ten experiments per session—ensuring that every student had the opportunity to explore, question, and learn by doing. This hands-on structure emphasized the value of experimentation, nurturing curiosity and scientific thinking. According to the survey, over 96% of students reported improved skills in conducting science experiments, underscoring the program's success in deepening conceptual understanding through experiential learning.

"In the Ruby Project, Science is taught well through new experiments. Abhay Sir came twice in three months and taught by conducting experiments, which made learning easier and more interesting."— A student from Kumar School, Kosamdi (Boys)

Similarly, the LeapforWord English Literacy Program (ELP) was introduced to bridge the wide gap in reading and comprehension skills among students studying in regional-language government schools—a gap that often restricts their access to higher education. The ELP was organized into four progressive levels: Elementary Reading, Advanced Reading, Elementary Comprehension, and Advanced Comprehension. To track learning outcomes, baseline and endline assessments were conducted during the program. In addition, surprise tests, spelling competitions, word-power activities, and class-wise exams ensured continuous evaluation and helped identify students who needed additional support. Monthly review meetings with teachers facilitated regular feedback and instructional improvement, while curriculum-aligned textbooks were provided at every level. Before the intervention, the average English score among students in Ankleshwar (Grades 4–6) was 20%, which increased to 34% in the endline assessment. There was also notable progress in reading ability across all categories—particularly in Moderate Words with Tail, which saw an 18% improvement, and Simple Words, where scores rose from 27% to 49%.



Graph 2: Capability comparison- baseline vs endline

The student survey also revealed that over 71% of students reported improved reading, speaking, and comprehension abilities following the intervention. Furthermore, more than 81% of students expressed an increased interest in Science and English, reflecting the program's effectiveness in making these subjects more engaging and approachable.

A facilitator captured the transformative impact of the program on both motivation and skill development, stating, "*Students have gained a range of skills, including phonemic awareness, spelling, reading fluency, and comprehension. For instance, once they understood the sounds of 'oo,' they were able to identify and read multiple new words independently. This shows their ability to transfer learning to new contexts. In higher grades, comprehension and spoken English also strengthened, as evidenced by the English skits performed by students.*"

The Foundational Numeracy and Math (FIM) Project was launched to address the substantial learning gaps in mathematics that emerged after prolonged school closures during the COVID-19 pandemic. The project aimed to measure and remediate individual losses in math proficiency while ensuring that teachers were not burdened with additional workloads.

The program emphasized speed, accuracy, mental math, and core numeracy skills, with a particular focus on mastering the four operations—addition, subtraction, multiplication, and division—across whole numbers, fractions, decimals, and integers. According to the assessments, the average baseline score among students was 25.9%, which increased to over 30% in the endline survey, indicating measurable progress in foundational numeracy.

"Earlier, children had difficulties and lacked interest, but now interest levels have risen considerably. Students enjoy Maths through plays and have shown 100% improvement compared to earlier struggles."— Principal, Kumar Shala Dahej

Despite considerable progress, the assessment findings also highlight persistent challenges. More than 50% of students reported resource constraints—including a limited number of experiment books and insufficient session durations (typically 35 to 45 minutes)—as key factors restricting deeper engagement and participation. One teacher also observed:
"The session is for 45 minutes every day, but this is not enough. I personally feel that the time allocated is insufficient. However, I understand that other teachers get only 35 minutes and still need to complete their syllabus as well."

Furthermore, while students' immediate post-program outcomes are encouraging, principals and educators emphasized the need for continuous monitoring and reinforcement to sustain learning gains—especially in communities with limited exposure to English and digital learning environments outside school.

Digital Infrastructure Support

Rallis India has provided digital classroom infrastructure to selected schools in Ankleshwar and Dahej as part of its CSR initiatives. While this support was not part of the RUBY program's core academic interventions in Science, Mathematics, and English, it forms an important part of Rallis' overall contribution to improving the learning environment in Gujarat.

Rallis had previously installed digital classrooms in three schools in Dahej: the Primary Boys School, Primary Girls School, and P J Cheda Janata Vidyalaya. Teachers noted that this early support introduced them to technology-enabled teaching at a time when such resources were limited. In the years that followed, the Government of Gujarat implemented a statewide digitalisation drive, equipping all government schools with digital infrastructure. Consequently, the digital classrooms currently in use in these schools are primarily government-provided, while Rallis offered the initial digital upgrade. At P J Cheda Janata Vidyalaya, Rallis had provided one digital classroom in earlier years. This facility was later lost in a fire that destroyed parts of the school building. A new school building has since been constructed next to the burned structure, and while it now has digital classrooms in every room, these were contributed by other CSR organisations. Overall, Rallis' digital support played a foundational role, though subsequent digitalisation has largely been driven by government and other CSR donors.

Additional Support

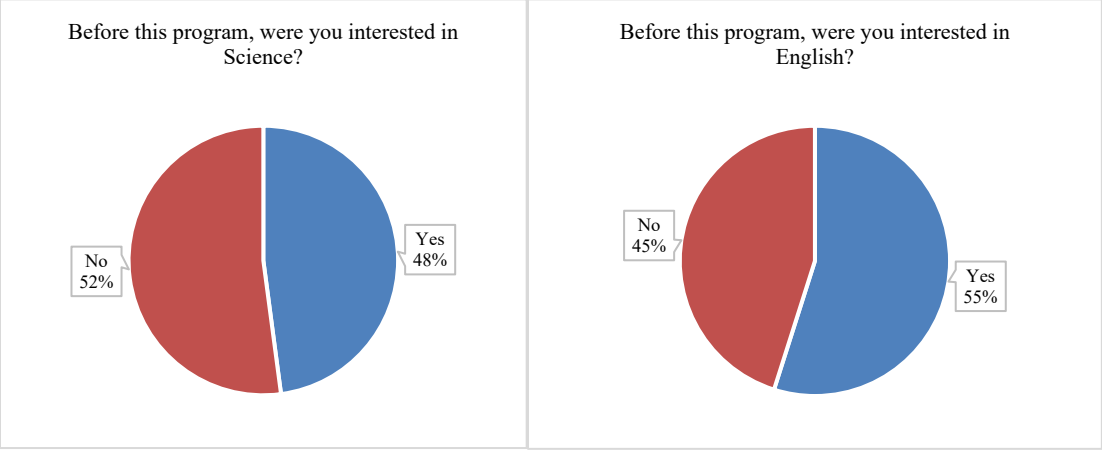
In addition to academic and digital infrastructure interventions, Rallis India has extended targeted support to address institution-specific needs that fall outside the scope of the RUBY program but play a critical role in ensuring educational continuity and student well-being.

At PJ Chedda College, Rallis supported the introduction of the science stream by facilitating the engagement of two subject teachers, a gap that the institution was previously unable to address through its own resources. During teacher interactions, faculty members highlighted that the science stream could be initiated only because of the availability of these Rallis-supported teachers, underscoring the role of this intervention in expanding academic pathways for students.

Similarly, Rallis has provided sustained assistance to Shaishav Divyang Children's School, Ankleshwar, by supplying physiotherapy equipment and appointing a dedicated physiotherapist who visits the school daily from 2:00 PM to 4:00 PM. The timing of these sessions was aligned with parents' availability, enabling their presence during therapy when required. School staff and parents reported visible improvements among children receiving regular physiotherapy. In one case highlighted during field discussions, a child with cerebral palsy, who was previously unable to walk, had begun walking independently following consistent therapy sessions. This support has significantly enhanced mobility, independence, and overall quality of life for students, positioning physiotherapy as a critical enabler in their developmental journey.

3.2 Increased Student Confidence and Interest in Learning

Beyond measurable academic gains, the RUBY program's transformative impact is most vividly reflected in the heightened confidence and sustained interest students demonstrate in all three subjects, Math, Science, and English. This is essential for nurturing lifelong learners and future achievers. The quantitative data show that more than 90% of students reported increased confidence in applying their newly acquired skills through exhibitions, assignments, and group projects, while 76% can express their ideas in proper English without any hesitation. It also shows a striking 81.7% of students expressing "much more interest" in Science and English following their participation in the RUBY program, compared to around only 46% of students before the intervention. Both boys and girls showed increased enthusiasm, **with a slightly higher increase among girls**, evidencing the program's success in breaking down previous gendered barriers to engagement.



A teacher from Primary School Kosamdi highlighted: *"At the beginning, students' interest in English was very low, and many lacked confidence. Over time, however, their interest has grown, and I have seen a visible change, especially among girls, who started showing more confidence and enthusiasm for learning."*

Picture 1: Student FGD in Kosamdi Girls school

Over 96% of students continued to maintain active involvement with the program content beyond formal sessions, participating in group studies and peer-learning sessions, signaling genuine motivation rather than transient enthusiasm. Qualitative data exposes a positive feedback loop between increased interest and the program's innovative pedagogies, which actively foster participation and confidence building. Students vividly recount how the program transformed their attitudes toward learning and self-expression:

"I can clearly explain my thoughts to others, conduct experiments, and speak English confidently both inside and outside school. Our English Ma'am teaches through group discussions and quiz competitions, which makes learning enjoyable and easier to remember. We know what we are learning in this program will be very useful in our next classes, and later in life and jobs as well."- A student at Primary School Kosamdi (Boys).

Teachers and administrative staff at schools also attest to how confidence facilitates deeper learning engagement:

"Students' confidence can be easily assessed by the way they give answers independently. Many students were initially reluctant to attend classes, but they are now regular because they enjoy the interactive sessions and group activities."- A teacher at Primary School, Sarangpur.

"Earlier, children had difficulties and lacked interest, but now interest levels have risen considerably. They have become more interested in practical learning and demonstrate greater curiosity during experiments and exhibitions. In English, students who earlier could not read the alphabet are now more confident, with progress visible in phonics learning and pronunciation."

The program's inclusive approach has fostered increased participation and confidence among girls, a key success in rural and traditional settings where female engagement in STEM-related subjects often faces cultural and social barriers.

"Girls have shown higher attendance and enthusiasm. They were shy at first but soon began leading group activities and presentations. In science exhibitions, girls often top the competitions in our schools. This shift has encouraged a more gender-equal learning environment."

This empowerment through education marks a critical step toward long-term socio-economic upliftment and gender equity, as confidence and skills in Science and English are foundational for future study and employability.

Despite the overwhelmingly positive narrative, some barriers persist that dampen the full realization of confidence and interest gains. For instance, around 25% of students firmly believe insufficient experiment materials and teaching aids limited the frequency and variety of engaging activities, especially for larger classes. And, while students express confidence, parental support remains limited due to socio-economic constraints, potentially restricting encouragement outside school hours.

3.3 Teacher and Community Engagement as Catalysts of Change

The success and sustainability of the RUBY program in improving educational outcomes in Ankleshwar and Dahej districts directly depend on the active involvement and commitment of teachers alongside varying degrees of community and parental support.

Teachers and administrative staff emerged as key agents in driving new pedagogical innovation and student motivation, and played a crucial role in orchestrating the intervention within schools. Their consistent efforts facilitated the timely identification of learning gaps and tailored teaching methods. Over 92% of students identified teachers and school administrators as major sources of support in their learning journey. Moreover, student responses highlight regular teacher assessments and feedback sessions, with 67% confirming monthly progress reviews and around 14% weekly evaluations. Additionally, the enrollment data across the 13 schools presents healthy student-teacher ratios, averaging around 21 to 39 students per teacher, which is conducive to personalized attention and classroom engagement.

The school staff expressed that they had adopted interactive methodologies, replacing rote learning with approaches that made core subjects more tangible and enjoyable.
"I told them how important English is. I told them that they need to be able to read what is written on railway stations or banks, and it even helps them in filling out forms that are only in English. That actually motivated them. The program has inspired students to aspire for careers like scientist, engineer, sarpanch, and teacher. By building confidence in Science, English, and Math, it has broadened their outlook for higher studies and future opportunities."

Despite the success, a high administrative workload emerged as a persistent challenge among teachers, which sometimes constrained their ability to dedicate extra time to RUBY activities. Another barrier is the limited role of parents and the broader community, which requires further impact. Due to socio-economic realities, most parents are engaged in low-paying jobs with limited formal education, limiting their involvement in children's academic work or homework support.

"Teachers have contributed by balancing extra sessions with curriculum load, though this has increased their workload. But there is no support from parents. Since many of them are uneducated, they are unable to help their children with studies or homework. They show moral support during program exhibitions but cannot consistently engage due to long working hours."- A Principal at Kanya Shala, Dahej.

In most cases, parents themselves confirmed this. In group discussions, several admitted they lacked the skills to assist children academically but recognized the program's importance. Mobilization efforts through community meetings and exhibitions were met with varying attendance. While some parents from stable economic backgrounds regularly participated, many from poorer families could not due to time and resource constraints.

"This program is very important for children. It helps boost confidence in Mathematics and enables students to understand complex subjects like Science, Technology, and Computer Science. Children do not engage much in academic work at home due to our busy schedules, but we try to motivate them when possible."

To enhance teacher capacity, the RUBY program's design incorporated external agency support by recruiting community teachers and facilitating academic resource provision, training, and monitoring systems for effective program delivery. Teacher capacity building included annual training sessions, certification tests, and monthly review meetings. While teachers expressed motivation and enhanced skills, many noted the need for ongoing training and resources to maintain program quality beyond the donor-supported timeline.

3.4 Sustainability Challenges and Resource Constraints

Sustaining the positive educational outcomes and momentum generated by the RUBY program in the long run is a critical challenge. While the program has made commendable strides in boosting foundational learning in Math, Science, and English among rural students, the data and stakeholder feedback reveal ongoing sustainability barriers related to resources, time allocation, teacher capacity, and community engagement that could affect lasting impact.

Although RUBY achieved impressive enrollment and participation rates, with over **3,600** students reached and strong engagement levels, certain systemic stress points were also identified. Classroom session durations remain limited, with most teachers allocating only 35 to 45 minutes daily for RUBY activities, posing constraints on depth and individualized attention.

Resource availability also emerges as a concern: the survey reveals gaps in experiment kits, English language materials, and digital resources that limit rich experiential learning for all students, especially as class sizes fluctuate. Despite high rates of progress monitoring (monthly or weekly), teacher feedback identifies workload pressures, as many juggle regular curriculum demands alongside RUBY interventions. The dropout rate remains low overall but is notably influenced by socio-economic factors such as family migration and poverty, underscoring the need for sustained community support mechanisms.
Educators also expressed concern about the continuity of skill-building efforts after the conclusion of donor funding and programmatic timelines. Continuous capacity building and availability of teaching aids were highlighted as priorities to grow local ownership and embed RUBY practices within standard classroom activities:

"Teachers are increasingly confident and have gained skills but they still need continued training and resources to sustain the intervention independently. Post-training support in terms of teaching aids and follow-up is required as teachers may struggle to maintain the intervention's innovative pedagogies effectively."- A principal at Kumar Shala Dahej.

Parental involvement, a vital component of sustainability, presented a mixed picture. While many parents demonstrated interest in and appreciation for the program, socio-economic realities frequently impeded active participation. Nevertheless, more than 98% of students expressed that they are aware of their parents' encouragement towards their new skills. This suggests that even small increases in family involvement could amplify long-term outcomes.

Community engagement also appears constrained by resource limitations and logistical challenges. School administrators expressed a desire for stronger partnerships with local organizations to enlist volunteers or mentors who can reinforce learning outside school hours.

4. Analysis

The impact of the Rallis Ujjwal Bhavishya Yojana (RUBY) has been analyzed using the OECD-DAC REECIS framework, covering six dimensions: Relevance, Effectiveness, Efficiency, Impact, Coherence, and Sustainability. The assessment integrates qualitative insights from stakeholders and quantitative indicators from school data.

Relevance

The RUBY program demonstrates high relevance in addressing the foundational learning crisis prevalent in rural Gujarat. The selected intervention areas, Science, Mathematics, and English, correspond directly to subjects where government and independent surveys, such as ASER, have shown persistent learning deficits. The program's activity-based and phonics-led pedagogical approach is well aligned with the National Education Policy (NEP) 2020, which emphasizes experiential, skill-oriented learning. Furthermore, the target group, students from Classes 4 to 8 in low-income, rural households, represents a segment often excluded from quality learning interventions, reinforcing the project's social relevance. The integration of teacher training and community involvement ensures that the program not only addresses student needs but also builds local capacity. Overall, RUBY effectively bridges systemic educational gaps through a context-specific design rooted in real classroom challenges, making it a well-targeted and responsive CSR initiative.

Effectiveness

Evidence from the field suggests that the program has been effective in enhancing learning outcomes and student engagement. Over 96% of surveyed students reported improved understanding of scientific concepts through hands-on experiments, while 71% reported progress in reading and comprehension skills. Teachers corroborated these findings, noting significant improvement in participation, pronunciation, and conceptual clarity. The use of interactive methods such as experiments, games, and peer learning has successfully reduced students' fear of English and Science. Additionally, the program's emphasis on teacher mentoring and monthly assessments has contributed to steady academic progress. However, the short duration of sessions (35–45 minutes) and heavy teacher workload have somewhat constrained deeper engagement. While the program has achieved immediate learning gains, the absence of standardized pre- and post-assessments limits precise measurement of academic improvement. Nevertheless, qualitative and anecdotal evidence collectively indicate that RUBY has achieved its short-term learning and confidence-building objectives to a high degree.

Efficiency

In terms of efficiency, the program demonstrates effective use of available resources within existing school structures. The integration of external trainers and digital tools (such as First in Math) optimized delivery without significantly increasing the administrative burden. Teachers managed to balance the additional RUBY activities with their regular curriculum despite limited resources and time constraints. The student–teacher ratios across schools (ranging from 21 to 39 students per teacher) were conducive to participatory learning. However, efficiency is somewhat challenged by the scarcity of teaching aids, experiment kits, and digital access in some schools, which limits full utilization of the program design.

Moreover, scheduling constraints, particularly in multi-grade classrooms, occasionally reduced instructional time. On the administrative side, coordination between implementation partners and schools was smooth, reflecting good governance and reporting mechanisms. Targeted improvements in resource distribution and digital infrastructure could substantially enhance both operational efficiency and scalability in future cycles.

Impact

The overall impact of RUBY extends beyond improved academic performance. The program has notably enhanced student confidence, communication skills, and interest in learning, particularly among girls. Teachers reported greater classroom participation and reduced absenteeism. Students expressed enthusiasm for practical learning, with many articulating aspirations for higher education and technical careers. The program's success in shifting perceptions of Science and English from "difficult subjects" to "interesting and achievable" marks a critical behavioral impact. Teachers themselves benefited from exposure to innovative pedagogies, adopting more interactive and student-centered teaching methods. While broader community-level impact remains modest, parent testimonies indicate increased awareness of education's value. However, the long-term academic and socio-economic impact cannot yet be quantified due to the program's short implementation cycle. Overall, RUBY demonstrates substantial positive influence on learner mindsets, teaching culture, and school environments.

Coherence

The program exhibits strong internal and external coherence. Internally, the three pedagogical components, BASSE, LeapforWord, and First-in-Math, complement each other effectively, creating a cohesive framework for holistic learning. The program's design is consistent with the stated objectives of improving conceptual understanding, communication, and numeracy skills. Externally, RUBY aligns well with the NEP 2020 vision of foundational literacy and numeracy and with the CSR mandate of Rallis India Limited to promote rural education. Partnerships with experienced implementation agencies further reinforce coherence, ensuring methodological consistency and quality assurance. Coordination among teachers, principals, and partner organizations was generally smooth, although occasional overlap in scheduling and workload pressures suggests scope for improved synchronization. Overall, the program demonstrates clear strategic alignment across objectives, stakeholders, and implementation processes.

Sustainability

Sustainability remains both the most critical and most challenging dimension for RUBY. While the program has built momentum in improving student learning and motivation, its long-term continuity is uncertain without ongoing support. Teachers expressed willingness to continue experiential teaching methods but cited lack of materials, refresher training, and time as key barriers. Parental involvement remains low, largely due to socio-economic constraints and limited academic literacy. As a result, reinforcement of learning at home is minimal. The absence of a clear exit or transition plan to institutionalize the program within school systems also poses a risk. Nonetheless, the foundation for sustainability exists: teacher capacity has improved, community awareness has grown, and school administrators recognize the program's value. Strengthening linkages with government education departments and developing low-

cost teaching aids could help embed RUBY practices within the regular curriculum, ensuring lasting benefits beyond CSR support.

5. Recommendations

Based on the findings and analysis of the RUBY program's implementation across Ankleshwar and Dahej districts, the following recommendations are proposed to enhance its effectiveness, scalability, and sustainability in future cycles.

Strengthening Learning Continuity and Depth

While the program has significantly improved conceptual understanding, session durations and follow-up mechanisms remain limited. To deepen learning impact, schools can adopt a modular extension model where key topics in Science, Math, and English are revisited through short revision cycles and peer-learning groups. Incorporating weekly remedial hours for slower learners and using blended learning tools can help sustain learning gains. Regular pre- and post-assessments can be institutionalized to measure progress more accurately and guide customized support. Additionally, establishing a student mentorship system, where older students assist younger ones in activities, can reinforce learning retention while fostering leadership and collaboration. This will ensure that improvements achieved through RUBY are not episodic but continuous and embedded within the academic calendar.

Enhancing Teacher Capacity and Support Systems

Teachers are central to the program's success, but face time and workload constraints. To maintain quality delivery, continuous professional development can be built into the program framework. This includes refresher training, exposure visits, and pedagogical resource groups at the district level to share best practices. Providing teachers with digital and low-cost teaching aids, as well as ready-to-use activity kits, will reduce preparation burden and improve classroom efficiency. Introducing teacher recognition or incentive schemes within CSR budgets will further motivate participation. Importantly, coordination with government education departments to align RUBY teacher training with official in-service modules will foster ownership and institutionalization. Regular feedback loops, such as monthly reflection meetings, can also be established to keep teachers engaged, supported, and continuously learning.

Addressing Resource Constraints and Infrastructure Gaps

Limited availability of experiment kits, English learning materials, and digital access continues to be a recurring challenge. Future iterations of the program may focus on resource optimization and localized material development, encouraging collaboration with local industries, NGOs, and educational start-ups to co-create low-cost, community-sourced learning materials that are contextually relevant. Establishing a shared resource bank among participating schools can enable equitable access to learning aids and equipment.

Beyond material resources, there is value in building the capacities of implementing partners and school teams by providing them with information on relevant education sector schemes, including those related

to school infrastructure development, teacher training, salary support, and the establishment of science and language laboratories. This awareness can help institutions leverage existing government and CSR initiatives to strengthen their own capabilities.

Networking and collaboration can also play a pivotal role in enhancing efficiency and scalability. Creating linkages between schools, district education offices, NGOs, and local community groups can facilitate knowledge exchange, collective resource mobilization, and mentorship support. Periodic audits of material use and maintenance can help ensure longevity, while a focus on resource reusability, teacher-led innovations, and community participation can reduce dependency on external funding over time.

Deepening Parental and Community Engagement

Parental involvement remains one of the weaker links, largely due to socio-economic and educational barriers. Strengthening this dimension calls for innovative, low-burden engagement approaches. Schools can organize community learning fairs and student-led exhibitions on weekends or local holidays to maximize attendance. Short orientation sessions for parents, focused on simple at-home learning support techniques, can be held quarterly. Partnerships with local self-help groups, panchayats, and youth clubs may help mobilize parents for school activities. Parental recognition initiatives, such as 'Supportive Parent of the Month', can encourage greater participation, while engaging community volunteers and local youth as learning ambassadors can create a broader ecosystem of shared responsibility. As networks and collaborations strengthen across communities, these efforts can gradually evolve the program from a donor-driven model into a community-supported and institutionally sustained movement.

Building Long-Term Sustainability and Institutional Integration

For long-term impact, RUBY must transition from a project-based initiative to an integrated part of the school system. Developing a sustainability roadmap with clear exit strategies is crucial. This could include gradually transferring operational responsibility to schools, forming school-based RUBY clubs, and embedding key activities into existing timetables. Continuous teacher training, local resource creation, and stakeholder alignment can be institutionalized rather than externally driven. Partnering with District Education Offices and DIETs can help mainstream the pedagogy into official programs. Moreover, periodic impact reviews and learning workshops involving school leaders, Rallis representatives, and community stakeholders will help refine and sustain efforts. Embedding sustainability principles from the start will ensure that the positive outcomes achieved so far are not only maintained but expanded over time.

Conclusion

The Rallis Ujjwal Bhavishya Yojana (RUBY) represents a significant and contextually relevant CSR intervention aimed at improving foundational learning in rural Gujarat. Through its integrated focus on Science, Mathematics, and English, the program has effectively introduced experiential and phonics-based learning methods that have rekindled students' interest and confidence in education. The assessment reveals that RUBY has succeeded in transforming classroom dynamics, making learning more participatory, activity-driven, and inclusive. Students, particularly girls, have shown notable improvement in both engagement and self-expression, signaling positive shifts not just in academic ability but also in mindset and aspiration.

At the institutional level, the program has enhanced teacher motivation and introduced innovative pedagogical practices that align well with the objectives of the National Education Policy (NEP) 2020. The collaboration between Rallis India, implementation partners, and schools demonstrates the potential of CSR-led initiatives to complement public education systems in bridging learning gaps.

However, challenges persist, especially regarding limited resources, short session durations, heavy teacher workloads, and minimal parental involvement. Addressing these issues through continuous reinforcement, capacity building, localized resource generation, and stronger community engagement will be crucial for sustaining long-term impact.

Going forward, the sustainability of RUBY will depend on its integration into the existing school ecosystem and alignment with local education governance structures. With strategic support, the program holds strong potential to evolve into a scalable, replicable model of rural education improvement, one that not only strengthens foundational learning but also empowers students with the curiosity, confidence, and skills to pursue brighter futures.