

Code to Enhance Learning



ANNUAL REPORT

2023 -2024

www.codetoenhancelearning.org

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1. EXECUTIVE SUMMARY

Code to Enhance Learning (CEL), a nonprofit, leverages coding as a tool to build critical thinking, creativity, collaboration, and perseverance in students from grades 4-9. Our initiatives focus on increasing student engagement, implementing a comprehensive curriculum, enhancing teacher facilitation skills, and fostering essential 21st-century skills such as technology awareness, critical thinking, creativity, collaboration and perseverance.

This year, a total of 2,748 students were covered in the student coding program, while 17,117 students were engaged through the teacher coding program. The CS Hackathon saw 10,819 students successfully tackle the unplugged challenge, and the Code on Wheels initiative reached 1,715 students. In total, 1,141 schools were reached. Community stakeholders generously contributed INR 8,41,293 in prize money and donations, reflecting the program's significant impact. Students demonstrated an average growth rate of 17%, while teachers experienced an 11% growth.

Digital access and mentoring have boosted students' literacy and coding skills, enhancing confidence in technology use.

Through collaborations with partners such as Zilla Parishad, District Institutes of Education & Training (DIET), Amazon, and Leadership for Equity, CEL has successfully expanded its impact. Initiatives like the CS Hackathon Utsav and the mobile Code on Wheels lab have empowered students to address real-world challenges through coding.

Overall, the initiative has successfully advanced computer science education in schools, fostering positive change in both students and teachers. Continued efforts are vital to sustaining and expanding these outcomes to benefit more stakeholders across the educational landscape.



2. ABOUT THE CEL

Code to Enhance Learning (CEL), a nonprofit, leverages coding as a tool to build critical thinking, creativity, collaboration, and perseverance in students from grades 4-9.

We offer engaging, affordable, and confidence-building coding programs to students to solve daunting problems using technology. Indirectly, we also create informed and invested parents and communities in the journey of building 21st-century skills in students.

We share a skill-based coding curriculum and place trained facilitators in classrooms.

We've reached over 40,000 students, collaborating with clients and supporters like Zilla Parishad and District Institute of Education & Training in different districts in Maharashtra, Leadership for Equity, Amazon, Teach for India, Riverside School, Firki, Quest Alliance, K7 Computing, UnLtd India, NSRCEL-IIM B, Lend a Hand India, Muskaan Dreams, etc.

3. VISION & MISSION

Vision

Children in India leverage technology to solve contextual problems and thrive in the innovative world.

Mission

Our mission is to empower schools/organizations to bring coding to children.



4. PROBLEM STATEMENT

National Education Policy 2020 (NEP) suggests teaching coding and 21st-century skills to children from grade 6. This is an important priority for schools and government bodies. The ecosystem is currently in a nascent stage in bringing these skill sets to children. There is a lack of infrastructure, curriculum and skilled teachers as per a CSF report. Owing to this, children in the age group of 10-15 years lack engaging opportunities to build 21st-century skills which are crucial to thrive in the current world as per the World Economic Forum Report.



21st century skills important for children to thrive in the innovative world*



Lack of awareness, skills work force & curriculum in India

5. SOLUTION

We leverage coding as a tool to build critical thinking, creativity, collaboration and perseverance in children in grades 4-9 (ages 10-15). We collaborate with government organizations and large-scale NGOs and customize our programs to fit the needs. We co-create pilot programs to showcase proof points and support the organizations in implementing the programs at a large scale.



2.5 times more children from low-income countries ask for access to digital devices*



Coding activities accelerates the executive function in children**



NEP 2020/CBSE suggests teaching coding from grade 6



Computer programming is top 10 emerging skills for job***



6. OPEN SOURCE CURRICULUM

Our pedagogical philosophy of Observe-Brainstorm-Code-Pitch empower children confident to use technology and builds more stakeholder investment. The crux of the curriculum and pedagogy, Observe-Brainstorm-Code-Pitch is children connect with their environment and observe beautiful and not-so-beautiful things. They collaborate with their peer to express things they like/want to change or solve a problem. They code projects on different programming tools and pitch their story of change with different stakeholders in the community.



5  Sractch Jr.

75  Scratch

6  CS Fundamentals

35  thinkable
Mobile App Development

15  Pocket Code

10  ARDUINO

50  Web Development

62,866 K 
YOUTUBE VIEWS



7. PROGRAMS

1. CEL Student Coding Program

It is a well-crafted program designed for students. The goal is to empower them to use coding as a medium of self-expression and problem-solving. The Expert Facilitator of CEL works directly with students to create amazing learning experiences for children.

2. CEL Teacher Coding Program

It is a well-crafted program designed for teachers. The goal is to empower them to facilitate coding sessions for children in grades 4-9. They get access to researched curricula and engaging pedagogies and are trained to deliver them effectively and efficiently. It saves time and energy spent on making and conducting assessments.

3) Computer Science (CS) Hackathon Utsav

CS Hackathon Utsav is a collaborative coding event for students to learn and showcase their coding talent by solving contextual problems.

This event is a great platform that engages the students to exhibit their coding prowess by addressing and solving community issues at scale.

Moreover, it allows distinguished stakeholders to come together to celebrate the learning of students and get a perspective on 21st-century skills in the classroom.



4) Code on Wheels

Code on Wheels is a mobile computer science lab with Alexa, 3D printers, laptops, television, etc. that travels to semi-urban, rural, and tribal areas conducting 2-day workshops to spread awareness about 21st-century skills using computer science and coding.

On the first day, students learn to work on a computer and code to make animated stories about their community. On the second day, in a closing ceremony, they share the project in front of the gram panchayat, the school management committee, parents, and other stakeholders.



CEL Student Coding Program



CEL Teacher Coding Program



CS Hackathon



Code on wheels

Different Programs in Promoting Computer Science & Coding

It is essential for traditional teaching methods to include technological education. This will help students who don't have computer access to learn the concepts like Virtual Reality, 3D Printing, and Alexa.

Dr. Ibrahim Nadaf, Principal,
District Institute of Education and Training (DIET), Solapur



8. IMPACT



2748

CEL Student Coding Program



17117

CEL Teacher Coding Program



10819

CS Hackathon Utsav



1715

Code On Wheels



1141

Schools



841293

Funds Contributed



11 %

Average Teacher Growth



17 %

Average Student Growth



This year, a total of 2,748 students were covered in the student coding program, while 17,117 students were engaged through teacher coding program. The CS Hackathon saw 10,819 students successfully tackle the unplugged challenge, and the Code on Wheels initiative reached 1,715 students. In total, 1,141 schools were reached. Community stakeholders generously contributed INR 8,41,293 in prize money and donations, reflecting the program's significant impact. Students demonstrated an average growth rate of 17%, while teachers experienced an 11% growth.

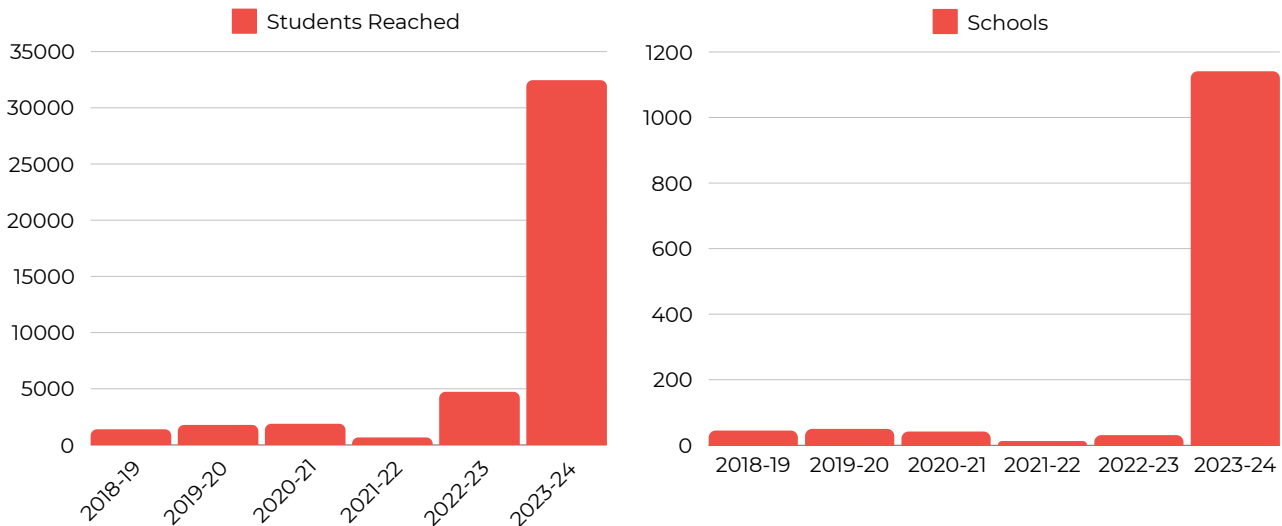


9. HIGHLIGHTS

1. CEL Journey with Students & Schools

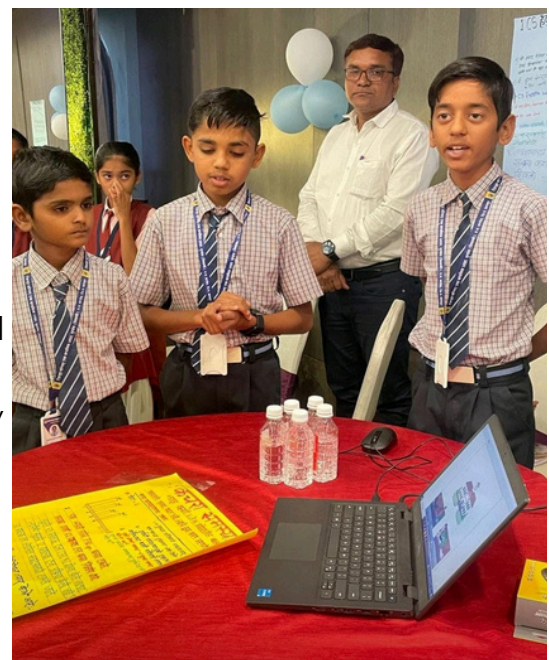
CEL has demonstrated significant growth in both student reach and school partnerships over the years. In 2018-19, the organization reached 1,396 students across 45 schools. By 2019-20, student outreach increased to 1,783, with 50 schools participating. Despite the challenges of the pandemic, CEL maintained its impact, engaging 1,886 students in 42 schools in 2020-21.

However, outreach dropped to 669 students across 13 schools in 2021-22 due to disruptions caused by COVID-19. CEL rebounded strongly in 2022-23, reaching 4,730 students across 31 schools. The most significant growth occurred in 2023-24, with CEL impacting 32,459 students across 1,141 schools, reflecting the organization’s expanding footprint and strengthened capacity to deliver its programs at scale.



2. Continued Partnership with Leadership For Equity

We are excited to deepen our partnership with Leadership For Equity (LFE), a dedicated non-profit in Pune committed to creating transformative educational opportunities. Together, we aim to nurture 21st-century skills in students across Maharashtra's government schools, providing them with invaluable exposure to computer science and coding. Through our partnership with LFE, we’re able to foster a culture of digital literacy and innovation and equip them with skills critical for the future. By integrating computer science and coding into the curriculum, we aim to inspire students to think creatively, solve real-world problems, and develop a passion for technology.





3. Partnership with Lead A Hand India

CEL partnered with Lend A Hand India to train facilitators in using portable Prime Books for integrating technology in vocational classrooms, fostering 21st-century skills and enhancing learning outcomes. At CEL, our mission is to ensure all children thrive in today's innovative world, regardless of their background, through collaborative efforts with like-minded organizations and individuals in India.

4. Partnership with Muskaan Dreams

CEL entered into a collaboration with Muskaan Dreams, a non-profit in Lucknow, to build 21st-century skills in children in government schools in Uttar Pradesh by giving them exposure to computer science and coding. This opportunity enabled CEL to offer our skills and learning in a different setting and help us learn to scale our programs to help children to thrive in the innovative world.



5. Team Capacity Building

In Lonavala, teams from Gujarat and Maharashtra converged for a dynamic training session, merging learning with enjoyment. Our agenda featured a mix of plugged and unplugged coding activities, alongside a focus on honing 21st-century skills.



6. Tanushree and Akshara with their projects

Tanushree and Akshara, grade 7 students of Zilla Parishad School, Hiware Bazar, Ahmednagar have coded an animation about “Parts of Tree”. They learned about the “Parts of Tree” in the science subject. They got a chance to present the project with a poster to Mrs. Shobha Pawar, Grade 7 Teacher, and Mr. Jadhav, the Principal.

The activity of making projects allows students to connect with the subject and their community and deepens engagement and understanding. Also, it allows visitors in the classroom to gain insights about the learning of students related to coding and 21st-century skills.



7. Teachers in Nagpur recognized

The zilla parishad teachers in Nagpur Mr. Manik Ramteke, Ms. Rupali Farkade, Ms. Meghana Tiwaskar, Ms. Asha Meshram, and Mr. Gurudas Dighore, were celebrated by the principal, Dr. Harshlata Burade, District Institute of Education & Training, Nagpur for their Computer Science Teacher Excellence Program Module 1 achievements on December 8th, 2023.

The recognition of the hard work and learning of teachers especially in government schools with fewer resources motivates teachers to keep learning and teaching in better ways. The teachers received certificates from the DIET Principal as an appreciation and were honored with flowers in the DIET, Nagpur office.



“I wanted to become a Data-Engineer. After participating in this program and the CS Hackathon Utsav, my knowledge increased.”

Anshu Dhole, Grade 6,
Zilla Parishad School Thugaon Nipani, Nagpur

8. Mr. Deol visiting the CS labs in Nagpur

Mr. Ranjit Singh Deol, Principal Secretary of Maharashtra's Education Department, visited the Zilla Parishad Primary School Gumgaon No. 2 in Nagpur. The visits of the senior government officials in the computer science labs build the motivation of the students and teachers. Also, it gives ground reality to the official and helps in the investment of the official in the initiative.



Mr. Deol observed and reviewed the student's project and praised the students for their work and also congratulated the teachers and LFE-CEL team for their collaborative work.



9. Zilla Parishad School, Shindephal at CS Hackathon Utsav

The students of Zilla Parishad Primary School Shindephal, Chhatrapati Sambhaji Nagar, won the CS Hackathon Utsav. They created a gadget to help farmers in villages where there is not enough electricity or motor pump problems.

They used devices like Arduino Uno and Bluetooth to make it. Farmers can use their phones to control their motor pumps from far away by using this device. This makes things safer and saves water and electricity too.

10. Exciting Launch of Code on Wheels Program

We are thrilled to announce the initiation of the Code on Wheels program in Ahmednagar, designed to reach 100 schools! This innovative initiative aims to bring technology and coding education directly to students in rural areas, aligning perfectly with the National Education Policy (NEP) 2020.



10. TESTIMONIALS

I enjoy creating animations, applications, and various games using Scratch. I aspire to develop an offline app in the future, which students can use to complete their studies without internet access, thereby aiding their education."

Ms. Shubhangi Mhaske | Grade 7 Student |
Palaskhede ZP School | Ahmednagar



Learning to code is like gaining a superpower! When we understand coding, we can innovate in a tech-driven world. It's like learning a secret language that makes us superheroes in the digital world!"

Iqra English School,
Ahmedabad



I take great joy in reaching the district-level event after overcoming challenges at school. Competitions like Hackathon undoubtedly help students learn skills of the 21st century and also impart technological knowledge, which is very beneficial."

Mr. Suhas Gulve | Teacher |
Wangi ZP School No.2 | Solapur



"I am very happy to receive a lab as a reward. The parents in the village and the School Management Committee also appreciated my efforts.

Ms. Bhimabai Girwale | Teacher - ZP
School Bagdi | Chhatrapati Sambhaji
Nagar

“I believe that providing rural students with computer science and coding education can brighten their future.

Mr. Raju Talekar | Police Patil, Padalne, Akola | Ahmednagar District



The CEL team has been a powerhouse of implementation for the Amazon Future Engineer Project. As a trusted partner of LFE, the CEL team has created avenues for over 20,000 students across 9 districts in Maharashtra to get access to CS Education. Dedication to making CS education accessible to government school teachers and students is commendable.

Saiprasad Sale
Director, Leadership for Equity

Hackathons and similar technical education guide children and motivate them with rewards. It's great to see our children take on challenges with pride and succeed.

Dr. Ramchandra Korde, Principal, District Institute of Education and Training (DIET), Satara

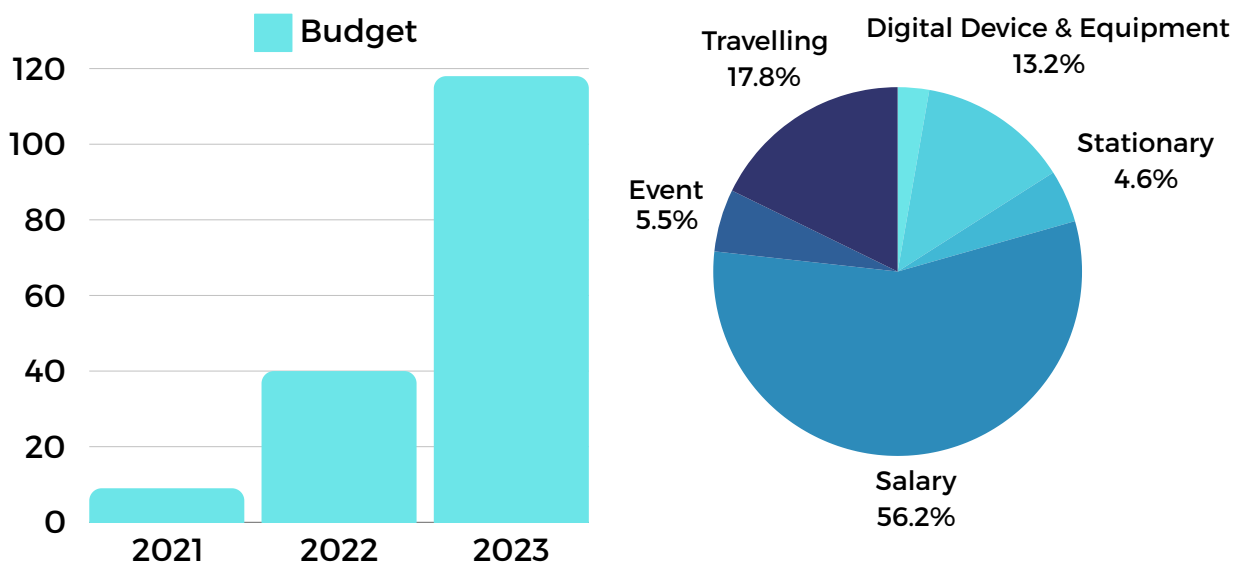


CEL has empowered our teachers and students to create impressive projects using Scratch and Physical Computing, greatly enhancing their logical thinking and problem-solving skills. Their dedication and professionalism have had a profound impact on our students' education and future success.

Manisha Avhale (IAS), CEO, Zilla Parishad, Solapur

12. FINANCIALS

In the fiscal year 2023-24, CEL operated with a budget of ₹1.18 crore, marking a substantial increase from the ₹40 lakh budget in 2022. The largest portion of the budget was allocated to salaries, totaling ₹66,10,195, reflecting a significant investment in human resources to drive operations and impact. Travel expenses amounted to ₹20,91,329, supporting operational mobility and outreach efforts. Investments in digital devices and equipment totaled ₹15,57,006, emphasizing CEL’s commitment to integrating technology into its programs.



Note: The amount is in lakh

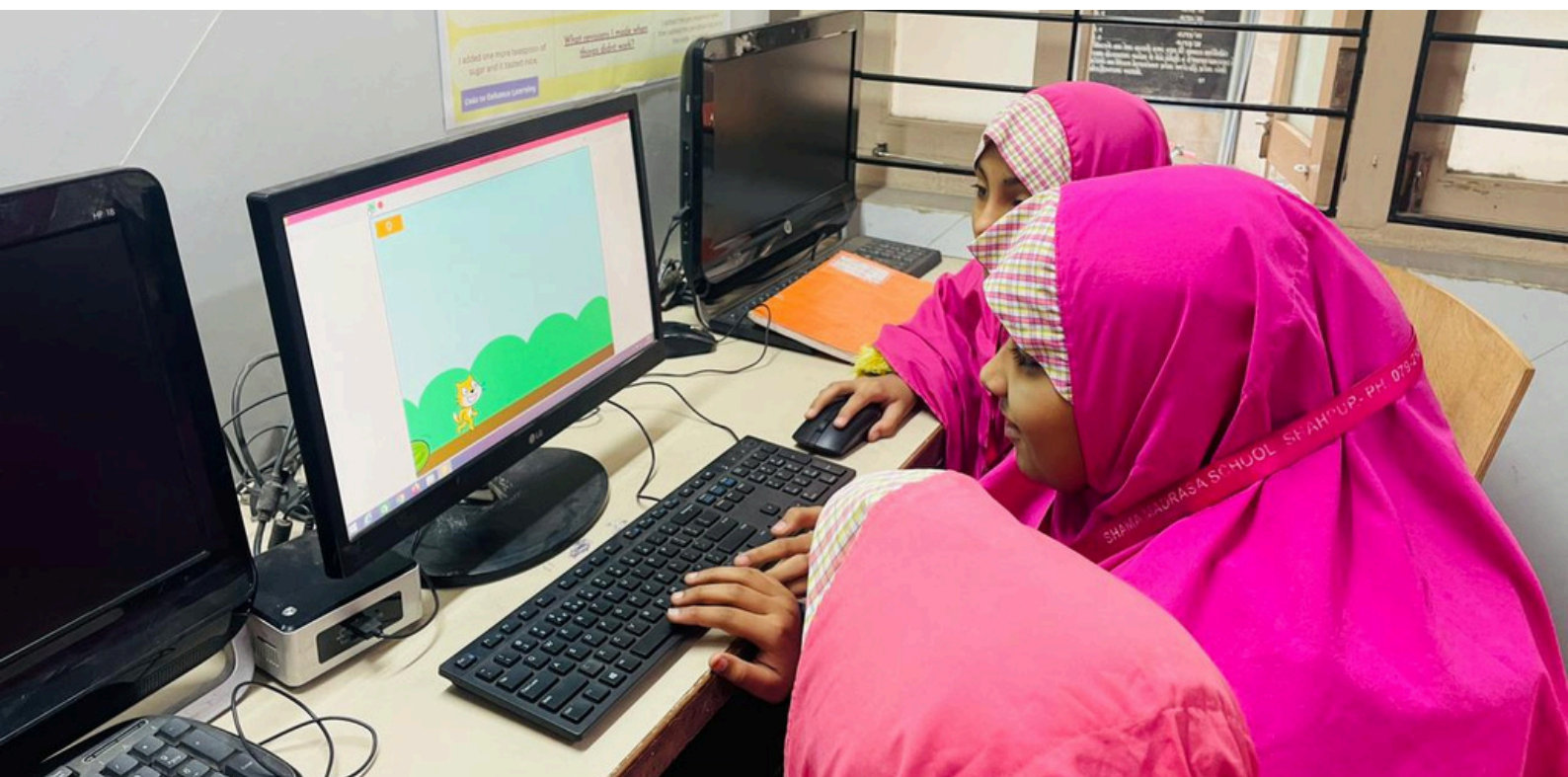
Event-related expenses were ₹6,45,950, facilitating community engagement and program outreach, while stationery costs amounted to ₹5,43,072 to ensure smooth administrative functioning. HR, finance, and admin expenses stood at ₹3,23,940, ensuring effective financial management and operational support. The nearly threefold increase in the budget from the previous year reflects CEL’s strategic focus on scaling operations, investing in human resources and technology, and enhancing service delivery to better serve students, educators, and communities across regions.



13. COLLABORATORS & SUPPORTERS

The challenge of making 21st-century skills accessible to children in India is a mammoth task. We strongly believe that it requires an array of individuals and organizations to work in tandem to ensure that children can thrive in this current innovative world.

We are grateful to all our collaborators and supporters for supporting the initiative of using computer science and coding to build 21st-century skills in children.



Code to Enhance Learning



Join us in making India not only digital literates but Digital Change Makers

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