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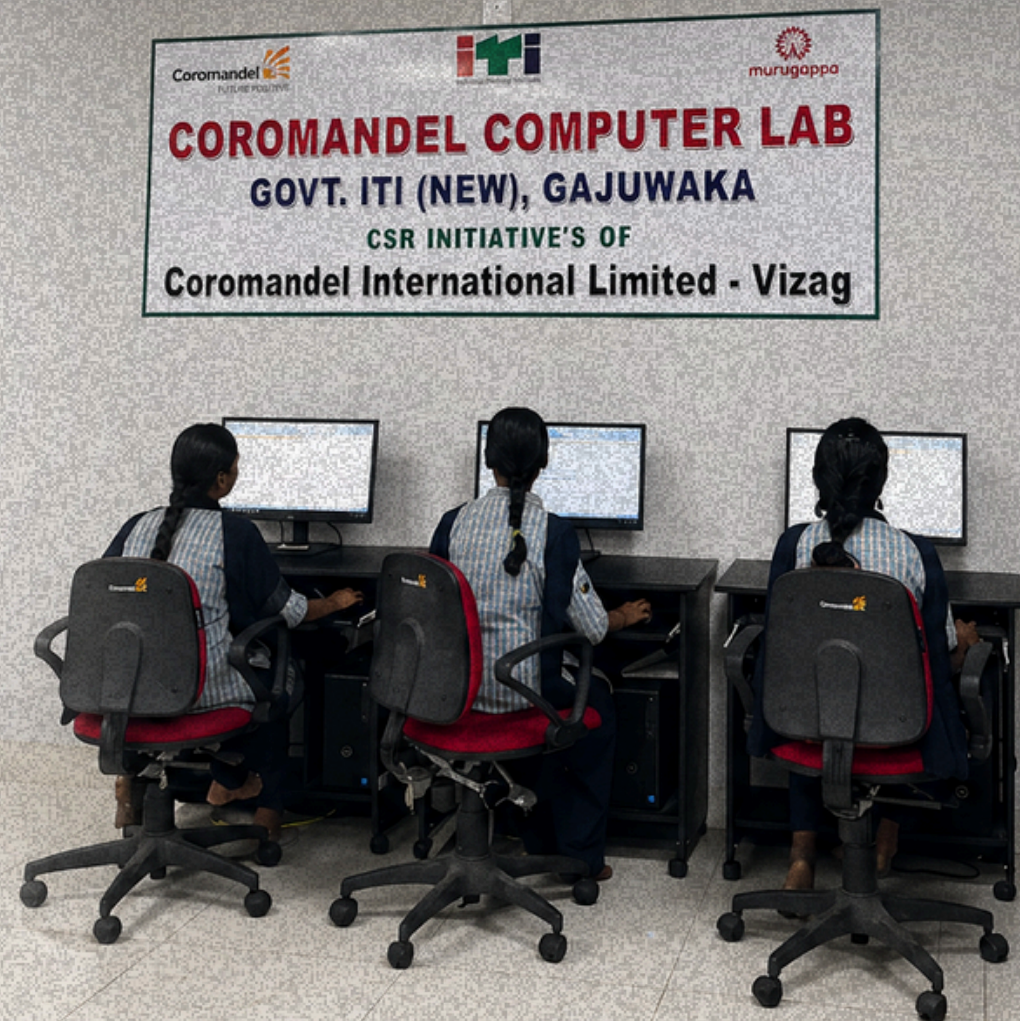


Submitted by



Impact Assessment Report FY 2023-24

DEVELOPMENT OF COMPUTER LAB FOR TRAINEES



C O N T E N T

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Setting the Scene

About this Report

Access to structured digital learning and practical computer training remains a significant challenge for many students enrolled in government vocational institutions, particularly those from economically weaker backgrounds. While IT and digital skills have become essential for employability and higher education pathways, many students continue to face barriers due to inadequate infrastructure, limited access to computers, and training environments that remain largely theory-based rather than practice-oriented.

In many Industrial Training Institutes (ITIs), especially for trades such as Computer Operator and Programming Assistant (COPA), students often rely on outdated systems, shared devices, or minimal computer access, which restricts hands-on learning and reduces confidence in applying digital skills. This gap becomes particularly critical for first-generation learners and students from low-income households, many of whom have little or no exposure to computers outside the institute. As a result, technical learning, certification outcomes, and placement readiness are significantly affected.

The Computer Lab Provision initiative was implemented at Government ITI Pedagantyada, Visakhapatnam, to address these structural gaps by establishing a fully equipped, functional computer lab to support practical IT training. Designed as an integrated skill development intervention, the project includes modern computer systems, licensed software, internet connectivity, air-conditioned infrastructure, furniture, and maintenance support, creating a conducive learning environment for students enrolled in the COPA trade. The initiative also supports short-term employability courses for unemployed youth, expanding its relevance beyond regular ITI students.

By enabling one-student-one-computer practical learning, the program strengthens digital literacy, improves trainer effectiveness, enhances student confidence, and supports job-readiness outcomes. It also contributes to increasing participation among girl students by creating a more accessible and reliable learning environment within the institute.

This Impact Assessment Report evaluates the extent to which the program has improved digital skill acquisition, infrastructure utilisation, employability readiness, and long-term educational aspirations among students. The analysis draws on quantitative survey responses from enrolled and completed students, as well as qualitative insights from trainers, institute management, students, and community stakeholders. The report examines outcomes related to digital literacy, confidence, lab usage, placement readiness, and perceived future opportunities, and identifies key strengths and areas for further strengthening of the intervention.

About Coromandel International Limited and its CSR Interventions

Coromandel International Limited is one of India's leading agri-solutions providers and a part of the Murugappa Group, a well-established business group with a strong legacy of trust and performance. Headquartered in India, the company plays a critical role in supporting the agricultural sector through a wide range of products and services, including fertilisers, crop protection solutions, bio-products, and retail services for farmers. With a strong distribution network and farmer-centric approach, Coromandel is committed to enhancing farm productivity and rural prosperity.

Aligned with its core philosophy of sustainable growth and inclusive development, Coromandel International Limited actively undertakes Corporate Social Responsibility (CSR) initiatives that focus on improving the quality of life in rural and underserved communities. The company's CSR efforts primarily focus on key thematic areas, including health and nutrition, education, sustainable agriculture, water conservation, and community development. Through these initiatives, Coromandel aims to address critical grassroots challenges while contributing to long-term socio-economic development.

A significant aspect of the company's CSR approach is its emphasis on community participation and capacity building. By working closely with local stakeholders, frontline workers, and implementing partners, Coromandel ensures that its interventions are need-based, scalable, and sustainable. Its programs often integrate awareness generation, behaviour change communication, and access to essential services, thereby creating meaningful and measurable impact at the community level.



EXECUTIVE OVERVIEW



Figure 1: Computer lab demonstrating practical training and stakeholder engagement

Project Name

Computer Lab Provision

Implementing Partner

Govt ITI

Thematic

Education

Project Assessment Year

2023-24

Project Location



Visakhapatnam

Andhra Pradesh

Samples

- Survey- 29 Surveys with Students
- 10 KII
- 2 IDI

Alignment with National Programs/Coherence

- Skill India Mission
- Digital India
- National Education Policy (NEP) 2020
- Craftsmen Training Scheme (CTS) – Directorate General of Training (DGT)
- National Skill Qualification Framework (NSQF)

SDG Alignment:

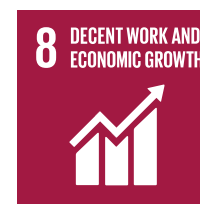


Figure 2: Map of Andhra Pradesh

Performance Snapshot

97%

of the respondents reported that they did not have access to a computer for learning before the lab was set up, highlighting the critical infrastructure gap addressed by the project.

90%

of the respondents are now able to independently perform MS Office tasks such as Word, Excel, and PowerPoint, reflecting strong improvement in practical digital skills.

100%

of the respondents reported improvement in programming and application skills, demonstrating enhanced technical competency through regular hands-on learning.

90%

of the respondents completed their course modules on time, indicating stronger academic continuity and improved curriculum delivery.

100%

of the respondents reported feeling better prepared for employment after the training, highlighting improved job-readiness and professional confidence.

83%

of the respondents rated the impact of the computer lab on their future opportunities as very high, reflecting strong long-term value and student satisfaction.



What Worked Well

The establishment of a fully equipped computer lab directly addressed the most critical barrier in the COPA trade—lack of access to practical computer learning—transforming training from theory-heavy instruction to hands-on skill development.

The one-student-one-computer model improved learning quality, enabling students to practice independently, complete assignments on time, and build stronger confidence in using digital tools.

Strong integration with the existing ITI curriculum allowed trainers to deliver theory and practical sessions together, improving teaching effectiveness, module completion, and certification readiness.

The lab also supports the wider institute ecosystem. With most assessments now conducted through Computer-Based Testing (CBT), nearly 2,000 students across multiple trades use the facility annually, making it a critical institutional asset beyond the COPA trade.

High-quality infrastructure, including modern systems, uninterrupted power backup, and a structured learning environment, led to strong satisfaction among students and faculty and improved regular attendance and engagement.



PREFACE



Figure 3: Students engaged in hands-on computer-based training within the lab

Background of the Programme

Need for the Program

- Digital literacy and practical computer skills are essential for employability, higher education, and participation in a technology-driven economy.
- For vocational students, especially in trades such as Computer Operator and Programming Assistant (COPA), hands-on training is critical to building technical skills and workplace readiness.
- Many government ITIs lack functional computer labs, limiting the effectiveness of IT-based vocational training.
- At Government ITI Pedagantyada, Visakhapatnam, students had limited access to quality practical computer education before the intervention.
- Training was largely theory-based, with minimal access to modern computer systems for regular practice.
- A majority of students came from economically disadvantaged backgrounds and were first-generation digital learners with little or no access to computers outside the institute.
- This resulted in a gap between curriculum requirements and actual skill acquisition, affecting student confidence, certification outcomes, and employability.

Intervention: Computer Lab Provision Initiative

- Established to create a fully equipped and structured computer learning environment within the ITI.
- Supported through CSR funding by Coromandel International Limited.
- Focused on strengthening the COPA trade through infrastructure and resource enhancement.
- Provided modern computer systems, licensed software, internet connectivity, air-conditioned infrastructure, furniture, and maintenance support.
- Transformed the learning approach from theory-driven to practical, hands-on training.

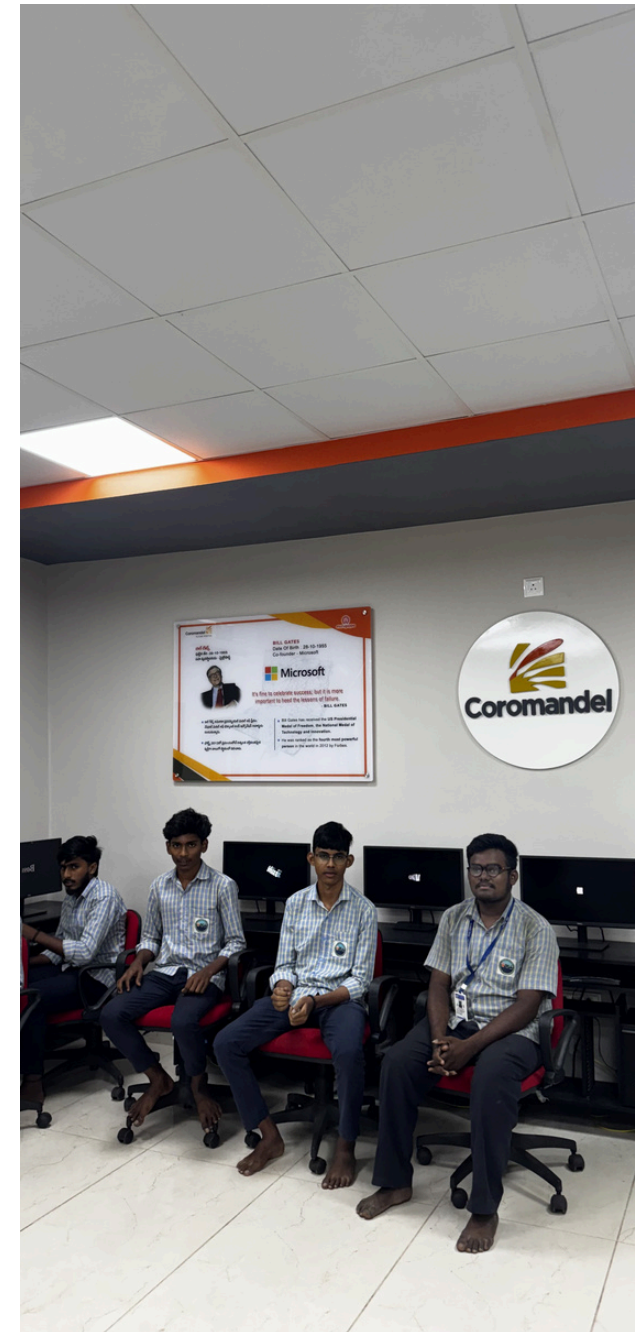


Figure 4: Students engaged in digital learning under the lab intervention

Project Objectives



To establish a fully equipped and functional computer lab at Government ITI Pedagantyaada to enable practical, hands-on learning for students enrolled in the COPA (Computer Operator and Programming Assistant) trade.



To improve digital literacy among students by strengthening both basic and advanced computer competencies, including MS Office, internet usage, typing, and programming fundamentals.



To enhance students' confidence and familiarity with technology by creating regular access to modern computer systems and a structured digital learning environment.



To improve employability readiness by supporting practical skill development, certification outcomes, and exposure to industry-relevant tools and project-based learning.



To strengthen trainer effectiveness by enabling the delivery of practical, application-based teaching alongside theoretical instruction within the existing curriculum.

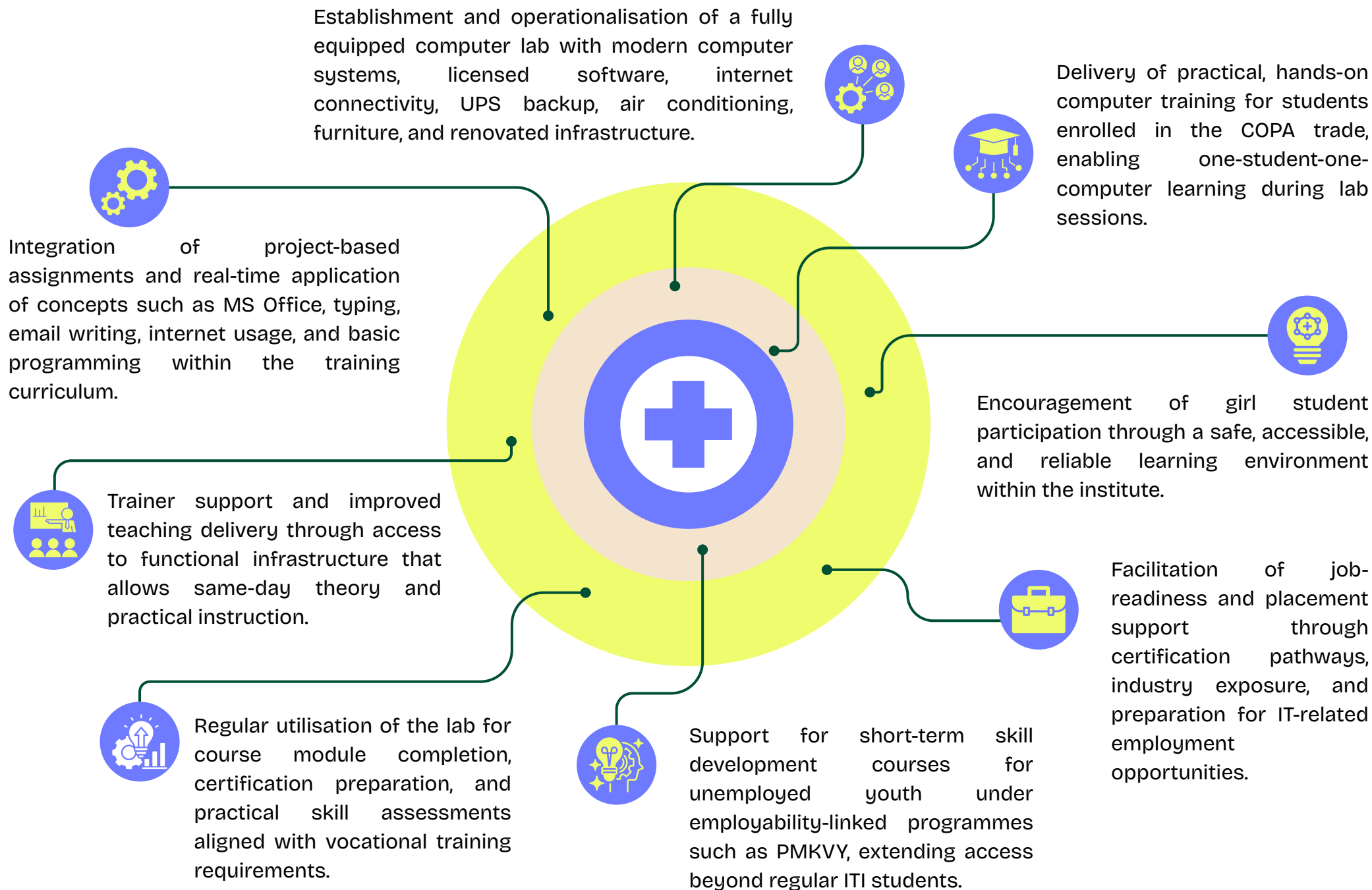


To promote inclusive access to vocational digital education, with particular attention to improving participation and outcomes for girl students and first-generation learners from economically weaker sections.



To support long-term educational and career pathways by creating stronger linkages to placements, internships, and further IT-related education opportunities.

Project Activities



Beneficiary Universe

The Computer Lab Provision initiative primarily benefits students at Government ITI Pedagantyada, Visakhapatnam, with a specific focus on those enrolled in the COPA (Computer Operator and Programming Assistant) trade, where practical computer training is essential to the curriculum. The project addressed the absence of a functional computer lab, which had previously limited hands-on learning and reduced the effectiveness of IT-based vocational training.

The core beneficiaries are COPA students, many of whom come from economically weaker backgrounds and are first-generation digital learners with little or no access to computers outside the institute. The lab has enabled regular practical sessions, improved digital skill development, and strengthened confidence in using technology for education and employment.

Beyond COPA students, the impact extends across the institute. Nearly 2,000 students annually use the lab for Computer-Based Tests (CBT), as most institutional examinations have now shifted to digital formats. Students from other trades also benefit through practical exposure and short-term skill development programmes.

With near-equal participation of male and female students, the initiative also supports inclusive access to digital learning, particularly for female students, while strengthening the ITI's overall capacity as a vocational training institution.

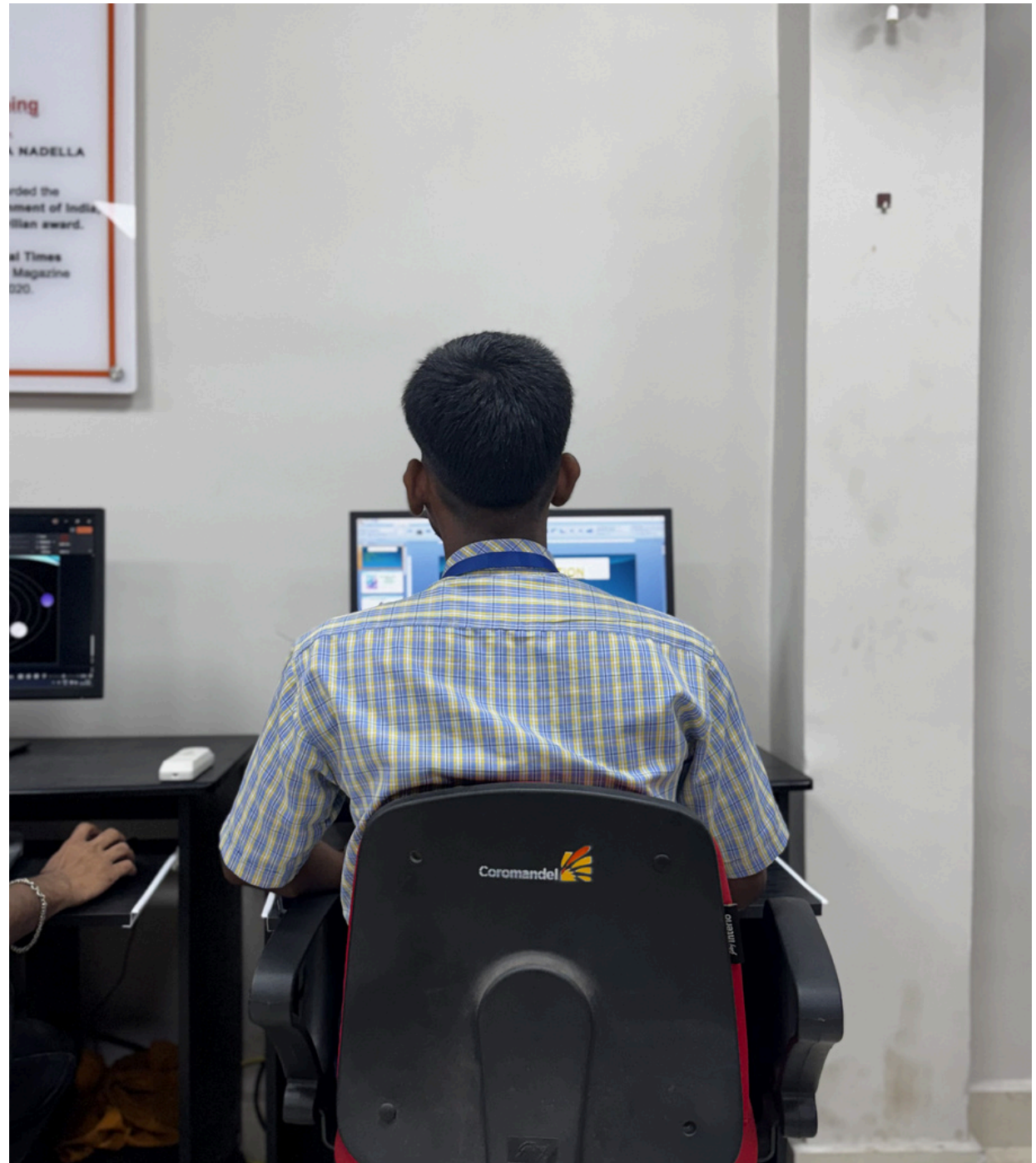


Figure 5: Student engaged in digital learning under the lab intervention

RESEARCH

DESIGN



Figure 6: Student interaction during computer lab training sessions

Chrysalis Methodology

RESEARCH



- Briefing meetings with ITI management to understand program design, objectives, and implementation details.
- Review of project documents, MoUs, activity plans, and previous reports.
- Secondary research on the government and other institutions' data to align the program.
- Contextual analysis of project geographies and beneficiary profiles.

DEVELOPMENT



- Design of beneficiaries' survey tools, assessment formats, and qualitative interview guides.
- Development of tools for teachers, students and trainers.
- Alignment of indicators with SDG goals.

ACTION (DATA COLLECTION)



- Data collection from project beneficiaries.
- Qualitative data collection with beneficiaries and other stakeholders.

DATA ANALYSIS



- Compilation and cleaning of quantitative survey and assessment data
- Analysis of qualitative insights from stakeholders
- Corroboration of primary findings with secondary data and programme records

DATA VISUALISATION & COMMUNICATION



- Preparation of tables, charts, and summaries for key findings

REPORTING



- Preparation of the draft Impact Assessment report.
- Incorporation of feedback from Coromandel and key stakeholders
- Finalisation of the report with findings, SDG alignment, recommendations, and sustainability pathways.

Sampling Approach

This impact assessment adopted a purposive sampling approach to capture perspectives across key stakeholders involved in the implementation and utilisation of the Computer Lab Provision initiative. The study focused on combining student experiences with institutional and implementation-level insights to develop a comprehensive understanding of programme outcomes.

Quantitative data were collected through a WhatsApp survey administered to 29 students, including both currently enrolled students and past beneficiaries who had completed the COPA course. This enabled the assessment to capture both immediate learning outcomes and early employability readiness. The survey covered areas such as prior access to computers, digital skill development, lab utilisation, confidence, infrastructure quality, certification, and future opportunities.

This was complemented by qualitative methods to provide contextual depth. Key Informant Interviews (KIIs) were conducted with 10 students to understand their personal learning journeys, confidence-building, and perceived changes in career aspirations following access to the lab.

In addition, KIIs were conducted with 2 trainers/faculty members to understand improvements in teaching delivery and curriculum implementation, and with 2 institute management representatives, including leadership at Government ITI Pedagantyada, to assess institutional impact, infrastructure utilisation, and the sustainability of the intervention.

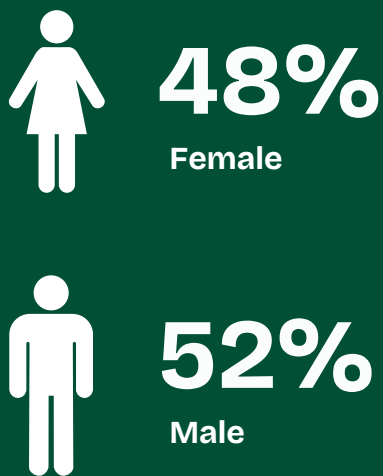
Stakeholders/Cohort	Tools of Study	Proposed Sample Size
Students / Trainees (Primary Beneficiaries)	Survey	Covering 100 % beneficiaries with response rate of 20% .
Students	Key Informant Interview	10 KII's
Trainers / Faculty (IT Instructors)	Key Informant Interview	2 KII's
Institute Management / ITI Principal	Key Informant Interview	1 KII

Respondents' Profile

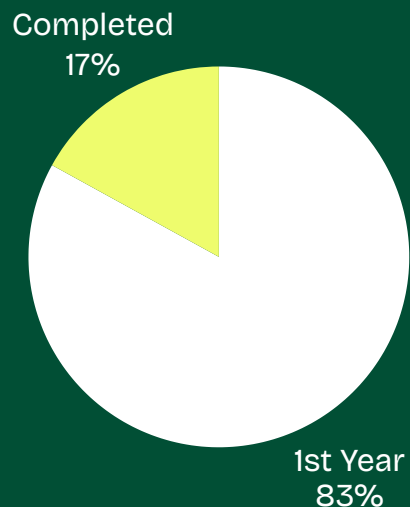
The study was conducted with 29 students from Government ITI Pedagantyada, Visakhapatnam, including both currently enrolled students and past beneficiaries who had completed the COPA course under the Computer Lab Provision initiative.

In terms of gender distribution, 52% of the respondents were male, while 48% were female, indicating near-equal gender representation within the sample. This reflects the programme's inclusive reach and highlights the growing participation of girl students in vocational IT education, particularly in the COPA trade.

• Gender



• Year / Batch



The year and batch distribution shows that the majority of respondents (83%) were students currently in their 1st year, while 17% had already completed the course. This provides a balanced perspective by capturing both ongoing learning experiences and post-completion reflections on employability and confidence outcomes.

Ethical Consideration

The study adhered to strict ethical principles to safeguard participants' rights and dignity.

Informed Consent: Participants were clearly briefed on the study's purpose, process, and expected outcomes. They were free to ask questions and choose whether to participate, ensuring full autonomy. All data collection practices adhered to the principles of the Digital Personal Data Protection (DPDP) Act, 2023, which emphasises lawful, transparent, and purpose-specific handling of personal information.

Confidentiality & Privacy: All participant data was handled with strict confidentiality. Names and photos used in testimonies and case studies were included only after obtaining explicit consent from the individuals featured. These narratives were shared voluntarily to illustrate lived experiences and do not compromise any participant's privacy.

Voluntary Participation: Participation was entirely voluntary. No pressure or incentives were used to influence responses.

Respect & Fair Treatment: Participants were treated with fairness and respect throughout the study. Their well-being was prioritised, and support was provided whenever needed.

STUDY

FINDINGS



Figure 7: Students engaged in computer-based practical training sessions

1. Strengthening Practical Learning through Computer Lab Upgradation and Equal Access

One of the most significant contributions of the Computer Lab Provision initiative has been transforming an existing but inadequate computer lab into a fully functional, effective learning space. While Government ITI Pedagantyada did have a pre-existing computer lab, it had a very limited number of systems, poor maintenance, and insufficient infrastructure, such as power backup and proper seating arrangements. As a result, practical learning was highly restricted, especially for students enrolled in the COPA trade.

Students often had to take slots to attend practical classes because there were not enough computers for everyone, making learning fragmented and heavily dependent on theory rather than regular hands-on practice. Survey findings reflect this gap: 97% of respondents reported not having meaningful access to a computer for learning before the lab was upgraded, while only 3% had adequate access. For most students, the institute remained their only point of digital exposure.

- Did you have access to a computer for learning before this lab was set up?

3% Yes **97%** No

Further, when asked where they primarily accessed computers earlier, 86% reported that access was only through the institute, often through limited shared systems. Only 4% had access at home, while 10% reported no access at all, highlighting dependence on institutional infrastructure and a lack of digital access in students' personal environments.

- Where did you primarily access computers earlier?

86% Institute (limited access) **4%** Home
10% No access

During discussions with the principal and trainers, it was highlighted that this created a major disconnect between curriculum expectations and actual skill development. Students were taught concepts theoretically but had very little opportunity to apply them in real time. Many lacked confidence even in basic computer handling during the early stages. As one trainer shared, "Earlier, we had to explain everything theoretically. Now students learn by doing it themselves."

The upgraded lab changed this significantly. With dedicated systems for each student, uninterrupted power backup, improved infrastructure, and a structured learning environment, students can now practice simultaneously while theory is taught. This one-student-one-computer model has greatly improved comprehension, confidence, and the overall learning experience. Trainers can complete modules more effectively, and students gain a stronger practical understanding rather than just theoretical knowledge.

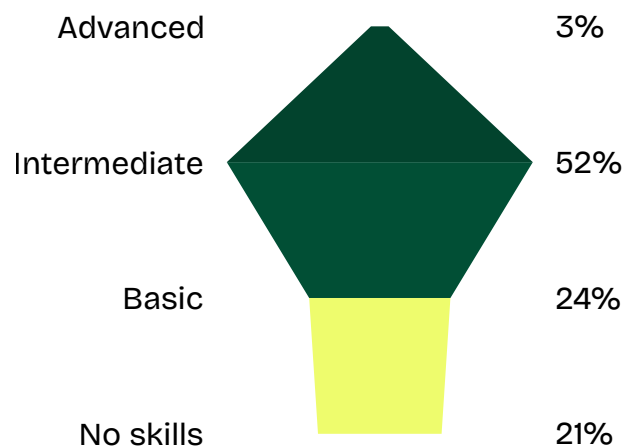
The lab also supports the wider institute ecosystem. With most assessments now conducted through Computer-Based Testing (CBT), nearly 2,000 students across multiple trades use the facility annually, making it a critical institutional asset beyond the COPA trade.

2.Improvement in Digital Literacy and Practical Computer Skills

The establishment of the computer lab has led to a clear improvement in digital literacy and practical computer competency, enabling students to move from limited theoretical understanding to regular hands-on learning. For many students, this was their first opportunity to engage consistently with computers, making the shift both academic and personal.

Before joining the lab, digital readiness was relatively low. 21% of respondents reported having no computer skills, while only 3% considered themselves advanced users. A majority placed themselves at the intermediate or basic level, reflecting partial familiarity but limited practical confidence.

- Before joining the lab, how would you rate your basic computer skills?



- How would you rate your current basic computer skills?

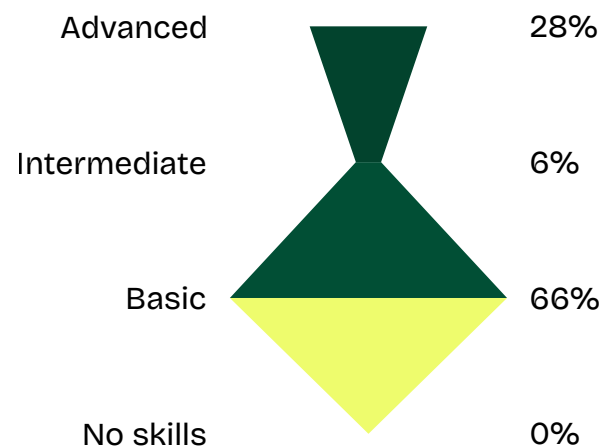
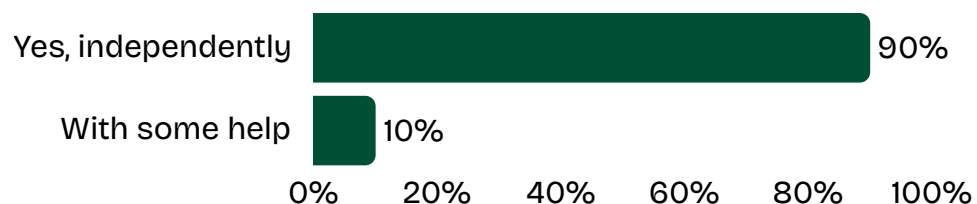


Figure 8: Multimedia tools facilitating interactive learning in the lab

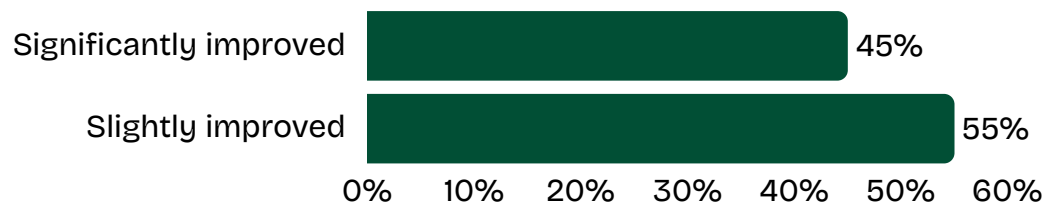
This improvement is strongly reflected in practical application. 90% of respondents reported that they can now independently perform MS Office tasks such as Word, Excel, and PowerPoint, while the remaining 10% reported being able to do so with some support. This is particularly important as these skills form the foundation for both vocational certification and entry-level employment opportunities.

- **Can you now independently perform MS Office tasks (Word, Excel, PowerPoint)?**



Similarly, all respondents reported improvement in programming and application skills, with 45% indicating significant improvement and 55% reporting slight improvement. This suggests that the lab has strengthened not only basic digital literacy but also technical capability aligned with the COPA curriculum.

- **Have your programming or application skills improved after using the lab?**



Discussions with trainers highlighted that earlier, students often memorised concepts without understanding actual application. With the lab in place, they can now practice commands, complete assignments independently, and understand software through direct use. Trainers noted that students are more engaged during sessions because they can immediately apply what is taught. One faculty member shared that students who were initially hesitant to even operate a system are now completing practical tasks and assisting peers.

During the discussion with Students, they reflected similar experiences. Several students mentioned that learning applications such as Excel, PowerPoint, and basic coding gave them confidence they had never experienced before. For many first-generation learners, the ability to independently use a computer was seen as a major personal achievement and a critical step toward employability.

3. Strengthened Learning Confidence and Readiness for Academic Progress

The computer lab has played a critical role in improving not only technical learning outcomes but also students' overall confidence in meeting their course requirements and pursuing future opportunities. Regular access to practical learning has made academic progress more structured, helping students complete modules on time and approach assessments with greater confidence.

A strong majority of respondents (90%) reported being able to complete their course modules on time, indicating that the availability of functional infrastructure has significantly improved curriculum delivery. Prior to the lab, trainers often faced challenges in completing practical components due to limited access to systems, resulting in delays and an incomplete understanding of core concepts. With dedicated systems now available, theory and practical sessions can be conducted together, making learning more efficient and aligned with certification requirements.

- Have you completed your course modules on time?

90% Yes **10%** No

The lab's impact is also clearly visible in students' personal confidence. 62% of respondents reported that their confidence in using computers has significantly increased, while the remaining 38% reported slight improvement. This indicates that every student experienced a positive shift in self-assurance, moving from hesitation and dependency to greater independence in handling digital tasks.

- How has your confidence in using computers changed?



Figure 9: Interaction with the trainer during the field visit

Discussions with trainers revealed that confidence-building has been one of the most visible outcomes of the intervention. Students who initially lacked basic familiarity with computers are now able to work independently, participate actively in practical sessions, and engage more confidently during classroom discussions. Faculty also noted that students are more willing to explore new applications and ask technical questions, reflecting stronger ownership of their learning process.

Communication skills have also improved significantly as part of this process. 66% of respondents reported significant improvement in communication skills, including typing and email writing, while the remaining 34% reported slight improvement. This is particularly important because many students come from non-English-speaking and first-generation learner backgrounds, where professional communication often becomes a major barrier to employment.

- **Has your communication (typing, email writing, etc.) improved?**

66% Yes, significantly **34%** Slightly

Student interviews further reinforced this transformation. Many shared that before the lab, computers felt intimidating and unfamiliar, whereas now they feel capable of using them for assignments, communication, and future employment. For completed students, this confidence was closely linked to placement readiness and a stronger belief that they could pursue IT-related jobs or further education.

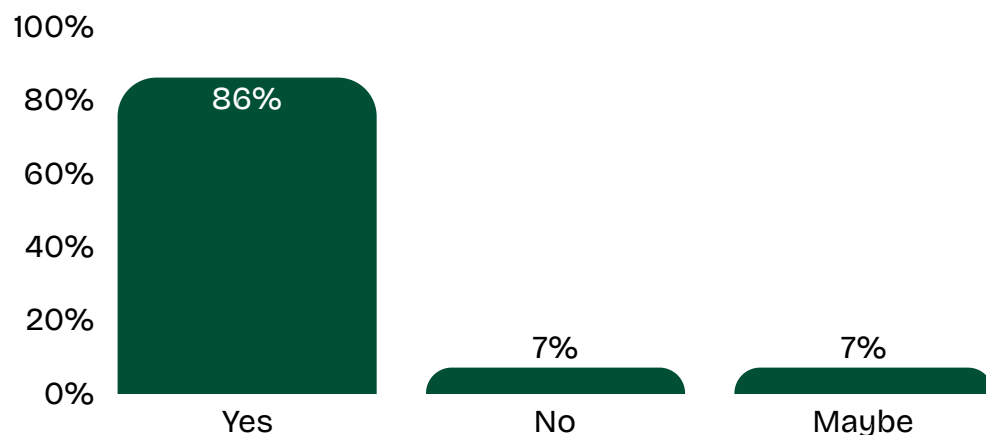


Figure 10: FGD with the students during the field visit

4. Enhancing Employability Pathways and Career Aspirations

One of the most significant long-term outcomes of the Computer Lab Provision initiative is its contribution to improving students' employability readiness and future career aspirations. By providing regular practical exposure and strengthening digital confidence, the program has helped students move beyond basic course completion toward clearer professional and educational ambitions. A strong majority of respondents (86%) expressed interest in pursuing further education in IT or related fields, while only a small proportion reported no interest or uncertainty. This indicates that access to practical learning has not only improved current academic engagement but has also expanded students' aspirations toward higher education and specialised technical careers. For many students, the lab provided their first real exposure to IT as a viable long-term pathway rather than just a vocational subject.

- **Are you interested in pursuing further education in IT or related fields?**



The sense of employment readiness is even more pronounced. 100% of respondents reported feeling better prepared for employment after this training, highlighting the program's strong role in building job readiness. Students are now more familiar with workplace-relevant tools such as MS Office, email, typing, and basic software applications—skills essential for entry-level IT and administrative roles.

This increased confidence has also influenced students' professional readiness. When asked about attending job interviews for IT-related roles, 31% reported feeling very confident, while 69% reported feeling somewhat confident. While most students are still in the early stages of their learning journey, these findings indicate a clear improvement in career preparedness and self-belief.

- **How confident are you in attending job interviews for IT-related roles?**

31% Very confident

69% Somewhat confident

Discussions with trainers highlighted that students are now more confident in preparing resumes, handling digital communication, and understanding workplace expectations. Faculty noted that, earlier, students were hesitant even in formal email writing or in online application processes, whereas now they are better equipped to handle these independently. One trainer shared that students are increasingly approaching placement opportunities with seriousness because they feel technically capable and professionally prepared.

Student interviews also reflected this aspirational shift. Several students mentioned that before the lab, they viewed the course mainly as a certificate programme, but now they see possibilities in office administration, data entry, IT support roles, and even further studies in computer applications. For students who completed the lab, the experience created greater confidence in attending interviews and applying for jobs.

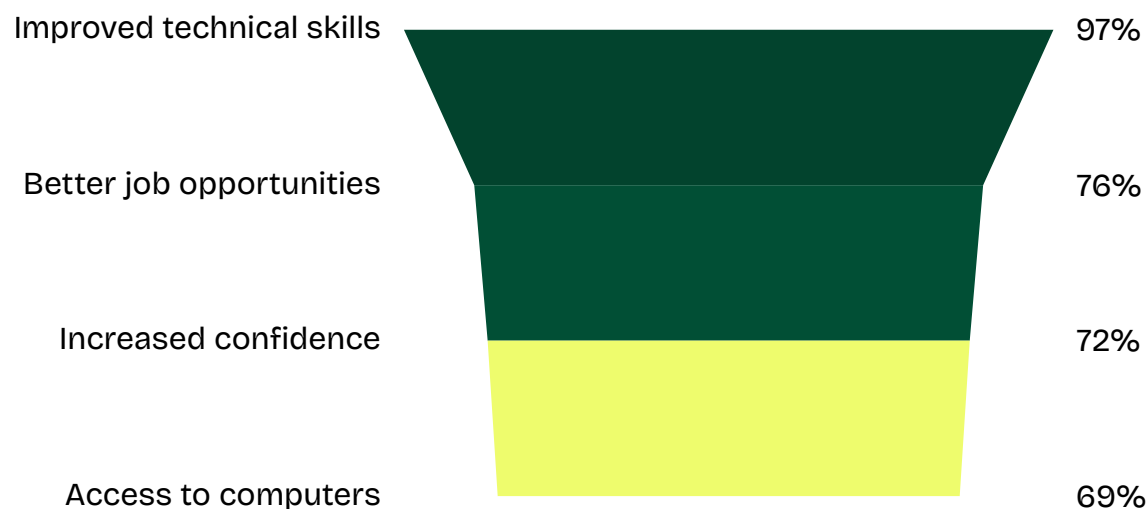
5. Perceived Value and Long-Term Impact of the Computer Lab

The strongest indicator of the program's success is how students perceive the computer lab's value in shaping their learning journey and future opportunities. The findings show that the lab is viewed not merely as an infrastructure addition but as a transformative space that has influenced skills, confidence, and long-term career direction.

When asked about the biggest benefits of the computer lab, responses reflected multiple layers of impact. As this was a multi-select question, students identified several overlapping benefits rather than a single outcome. The most widely reported benefit was improved technical skills (97%), highlighting that the lab has significantly strengthened practical learning and digital competency. This was followed by better job opportunities (76%), showing that students directly connect computer access with employability and future career prospects.

In addition, 72% of respondents identified increased confidence as a major benefit, reflecting the personal transformation that comes with independent computer use and improved academic performance. 69% highlighted access to computers itself as a key benefit, reinforcing the fact that for many students, the lab was their first and only reliable opportunity to engage with digital tools.

• What has been the biggest benefit of the computer lab for you?



The long-term significance of the intervention becomes even clearer when students were asked whether they would have had access to a similar facility if the lab had not been available. A striking 93% of respondents said no, indicating that without this intervention, most students would have had no alternative means of accessing comparable digital infrastructure. This strongly validates the necessity of the project and its role in reducing educational inequality for students from low-income and first-generation learner backgrounds.

- **If the computer lab was not available, do you think you would have received access to similar facility somewhere else?**

7% Yes **93%** No

Discussions with students further highlighted that the lab created a sense of opportunity that extended beyond the classroom. Many shared that having access to modern systems made them feel that they were learning skills relevant to the real world, not just completing a course. For girl students especially, the availability of a safe and accessible computer lab within the institute increased both participation and confidence in pursuing technology-related careers.

Faculty also noted that the presence of the lab changed how students viewed vocational education itself. Rather than seeing COPA as a basic certification course, students began to connect it with practical career pathways and long-term professional growth. The principal emphasised that the lab has improved not only student outcomes but also the institute's credibility as a place for serious technical learning.



Figure 11: Interaction with the students during Field Visit

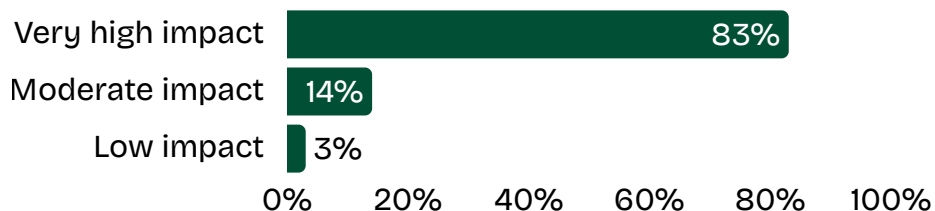
6.High User Satisfaction and Strong Institutional Acceptance of the Computer Lab

The Computer Lab Provision initiative has received strong positive feedback from students, trainers, and institute management, reflecting high satisfaction with both the quality of the infrastructure and its overall contribution to learning outcomes. The lab is widely seen not only as a facility upgrade but also as a transformative intervention that has improved the credibility and effectiveness of vocational training within the institute.

Students expressed high satisfaction with the quality of the lab environment, particularly the availability of dedicated systems, comfortable seating, air-conditioned classrooms, uninterrupted power backup, and an overall structured learning atmosphere. For many, this was their first experience of learning in a professional digital environment, which significantly improved motivation and engagement during practical sessions. Trainers also noted that better infrastructure fostered a more disciplined, focused classroom environment, improving both attendance and active participation.

This satisfaction is strongly reflected in students' perception of long-term impact. 83% of respondents rated the impact of the computer lab on their future opportunities as very high, while 14% reported moderate impact. Only a very small proportion indicated low impact, showing broad recognition of the lab's value in shaping academic and career outcomes. Students associated this impact with stronger technical skills, better job readiness, and greater confidence in pursuing IT-related roles or further education.

- **Overall, how would you rate the impact of this computer lab on your future opportunities?**



During discussions with faculty members, they highlighted that the lab has significantly improved teaching effectiveness. Earlier, trainers had to rely heavily on theoretical explanations due to a lack of systems, which limited student understanding and practical exposure. With the lab in place, instructors can conduct live demonstrations, practical assignments, and immediate applications of concepts, making learning more effective and engaging. This has also helped improve timely course completion and certification readiness.

The institute leadership also emphasised the broader institutional value of the intervention. Since most examinations are now conducted through Computer Based Testing (CBT), the lab supports not only COPA students but nearly 2,000 students across multiple trades annually. This has strengthened the ITI's infrastructure capacity and improved its ability to deliver modern vocational education aligned with industry expectations.

Student interviews further reinforced this satisfaction, with many describing the lab as the most important part of their course experience. Several students shared that the presence of a well-maintained computer lab made them feel more confident about their future and gave them a stronger sense of belonging within the institute. For teachers and administrators, the lab has become a symbol of institutional progress and long-term educational improvement.

STUDY

FRAMEWORKS

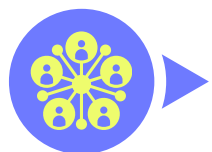


Figure 12: Students engaged in guided digital learning sessions

Alignment with OECD-DAC Framework

The overall impact assessment findings can be mapped according to the criteria of the OECD-DAC framework: REECIS (Relevance, Effectiveness, Efficiency, Coherence, Impact, and Sustainability) as:

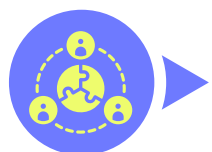
Relevance



The program is highly relevant to the needs of students enrolled in vocational IT education, particularly in the COPA trade, where practical computer learning is essential for curriculum completion and employability. Prior to the intervention, 97% of respondents reported not having access to a computer for learning, highlighting a significant infrastructure gap.

The absence of a functional lab created a disconnect between theory-based teaching and practical skill development, especially for first-generation learners from economically weaker backgrounds. By establishing a fully equipped computer lab within the institute, the project directly addressed a foundational barrier to digital learning and job-readiness, making the intervention highly need-based and contextually relevant.

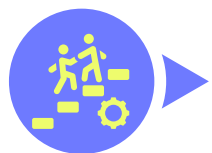
Effectiveness



The project demonstrates strong effectiveness in improving digital literacy and practical computer competency. Before the lab, 21% of students reported having no computer skills, while after regular access, no students remained in that category, and 28% identified themselves as advanced users.

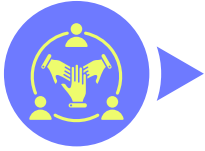
Further, 90% of respondents reported being able to independently perform MS Office tasks, and all students reported improvement in programming and application skills. These outcomes are reinforced by trainer feedback, which highlighted a clear shift from theory-heavy instruction to hands-on, application-based learning, improving both student understanding and engagement.

Efficiency



The intervention reflects efficient utilisation of resources by creating a shared institutional asset that supports both direct learning and broader operational needs. While the primary beneficiaries are COPA students, the lab also serves nearly 2,000 students annually across multiple trades for Computer-Based Testing (CBT), significantly increasing institutional value.

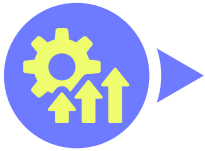
The one-student-one-computer model improves learning efficiency, reduces dependency on shared or external systems, and ensures the timely completion of practical modules. The integration of the lab within existing institutional schedules and infrastructure also enhances operational efficiency without requiring parallel delivery systems.



Coherence

The program aligns closely with national priorities in skill development, digital literacy, and vocational education, as reflected in initiatives such as Skill India, Digital India, and the National Education Policy (NEP) 2020. It supports the broader objective of strengthening employability-oriented education within government institutions.

By improving infrastructure for practical learning and CBT readiness, the intervention complements ITIs' institutional mandate and strengthens alignment with industry expectations for digital competency and workplace readiness.



Impact

The project has generated a significant impact across educational, personal, and professional dimensions. Students reported strong improvements in technical skills, confidence, and future aspirations. 62% reported a significant increase in confidence using computers, while 100% stated they feel better prepared for employment after the training.

A majority also expressed aspirations for long-term progression, with 86% interested in pursuing further education in IT or related fields. Students associated the lab not only with improved learning outcomes but also with stronger career confidence, better communication skills, and access to opportunities they previously considered out of reach.

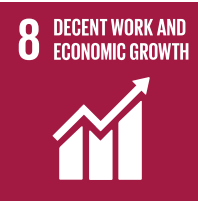


Sustainability

The sustainability of the intervention is supported by its integration within the institutional structure of Government ITI Pedagantyada. The lab is now a core part of curriculum delivery, examination systems, and skill development programmes, ensuring continued utilisation beyond the initial project period.

High user satisfaction further strengthens sustainability, with 83% of respondents rating the computer lab's impact on future opportunities as very high. Continued usage by students across multiple trades, along with institutional ownership and trainer dependence on the facility, indicates strong long-term relevance. Sustained maintenance and periodic technology upgrades will be important to preserve the lab's effectiveness and long-term impact.

Alignment with Sustainable Development Goals

SDG Goal	Relevant Sub-Targets	Project Alignment
 4 QUALITY EDUCATION	4.3 Ensure equal access to affordable and quality technical, vocational, and tertiary education 4.4 Increase the number of youth with relevant skills for employment	Strengthened vocational education through the provision of practical digital learning infrastructure for COPA students, addressing earlier gaps in computer access and enabling hands-on skill development that enhances employability.
 8 DECENT WORK AND ECONOMIC GROWTH	8.5 Achieve full and productive employment and decent work for all 8.6 Reduce the proportion of youth not in employment, education, or training	Improved job-readiness by strengthening technical skills, communication, and confidence, while fostering greater interest in further IT education and enabling clearer career pathways and long-term employability outcomes.
 5 GENDER EQUALITY	5.1 End all forms of discrimination against women and girls 5.b Enhance the use of enabling technology to promote women's empowerment	Promoted equitable access to digital learning through balanced participation of male and female students, with a safe and reliable computer lab environment, enhancing confidence and participation among women pursuing vocational IT education.
 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	9.1 Develop quality, reliable, sustainable infrastructure 9.c Increase access to information and communication technology	Strengthened institutional infrastructure for long-term vocational learning through the establishment of a modern computer lab with dedicated systems, power backup, internet connectivity, and CBT readiness, supporting both regular training and large-scale computer-based assessments while enhancing overall institutional capacity and digital preparedness.

Alignment with National Programmes and Policies

National Programme / Policy	Objective	Relevant Focus Area	Programme Alignment (Computer Lab Provision Initiative)
Skill India Mission	Enhance employability through vocational training and industry-relevant skill development	Technical education, employability, workforce readiness	Strengthened vocational training by enabling practical computer education for COPA students, supporting the development of industry-relevant digital skills and contributing to the goal of creating job-ready youth.
Digital India	Improve digital access and promote digital literacy across institutions and communities	Digital inclusion, ICT access, technology-enabled learning	By establishing a fully equipped computer lab for students with limited prior access, the program directly contributes to digital inclusion. With 97% of students lacking prior computer access, the intervention bridges the digital divide and improves practical digital literacy.
National Education Policy (NEP) 2020	Promote holistic, skill-based, and multidisciplinary education with stronger vocational integration	Vocational education, experiential learning, employability skills	The lab enables practical, application-based learning within the COPA curriculum, moving beyond theory-based teaching. Improved module completion, certification readiness, and stronger technical confidence reflect alignment with NEP's emphasis on experiential and skill-based education.

National Programme / Policy	Objective	Relevant Focus Area	Programme Alignment (Computer Lab Provision Initiative)
Craftsmen Training Scheme (CTS) – DGT	Strengthen ITI-based vocational education and improve trade-specific competency	ITI curriculum delivery, practical learning, certification	As COPA is delivered under the ITI/CTS framework, the project directly supports curriculum completion through one-student-one-computer practical training. The lab improves trainer effectiveness and ensures stronger readiness for CBT assessments and trade certification.
National Skill Qualification Framework (NSQF)	Standardise skill-based education and improve pathways between education and employment	Competency-based learning, certification, career progression	The intervention improves competency-based learning by enabling students to independently perform digital tasks such as MS Office, coding basics, and communication exercises. This strengthens certification outcomes and supports progression into employment or further IT education.



RECOMMENDATION

Figure 13: Students engaged in guided digital learning sessions



The implementing team can consider introducing a Digital Interactive Teaching Panel for Demonstration-Based Learning

- The Computer Lab Provision initiative has significantly improved practical learning outcomes; however, teaching effectiveness can be further strengthened by installing a digital interactive teaching panel (smart panel) in the lab. This would enable trainers to conduct live demonstrations, visually explain software processes, and guide students step by step during practical sessions.



Figure 14: Structured training session enhancing digital competencies

CONCLUSION



Figure 15: Students engaged in individual computer-based learning sessions



What Changed

The Computer Lab Provision initiative has enabled a significant shift from limited, theory-based computer education to a structured and practical digital learning environment at Government ITI Pedagantyada. By establishing a fully equipped computer lab with modern systems, improved infrastructure, and reliable access, the program has transformed how students learn, practice, and prepare for future opportunities.

The findings indicate strong improvements in digital literacy and practical computer competency, with students reporting greater confidence in using computers, greater independence in executing MS Office tasks, and a better understanding of programming and application-based learning. These improvements have strengthened both academic progress and certification readiness by allowing trainers to integrate theory and practical learning within the same teaching cycle.

Beyond technical skills, the program has contributed to improved confidence, communication abilities, and stronger career aspirations. Students now feel better prepared for employment, more confident in attending interviews, and more motivated to pursue higher education in IT and related fields. Collectively, the intervention has moved beyond infrastructure creation to enabling confidence, employability, and long-term educational progression.

Why It Matters

The program addresses a critical gap in vocational education, where the absence of functional digital infrastructure often limits the effectiveness of IT-based training, particularly in government institutions serving economically weaker communities. For many students, especially first-generation learners, the institute is their only access point to computers and practical digital learning.

By creating reliable access to technology within the ITI, the intervention ensures that students are not excluded from opportunities due to infrastructure limitations. It strengthens both individual learning outcomes and the institutional capacity of the ITI, while supporting nearly 2,000 students annually through Computer-Based Testing (CBT) and practical training across multiple trades.

Importantly, the program demonstrates how infrastructure investment in vocational education can directly contribute to employability, confidence, and social mobility. The high satisfaction levels and strong student perception of future impact reflect the relevance and effectiveness of the intervention.

What Remains to Be Addressed

While the project has created a strong foundational impact, there remain opportunities to further strengthen learning outcomes and long-term employability. The addition of a digital interactive teaching panel would significantly improve trainer effectiveness by enabling real-time demonstrations and collective practical instruction during lab sessions.

There is also scope to strengthen formal industry linkages and placement pathways, enabling students to transition more effectively from training to employment. Structured partnerships with local companies, internships, and placement drives can help convert improved skills into measurable career outcomes.

Periodic technology upgrades and ongoing maintenance will also be important to ensure the lab remains aligned with evolving industry expectations and continues to serve students effectively over time.

Strategic Way Forward

Going forward, the Computer Lab Provision initiative has the potential to evolve into a strong model for digital vocational education within government ITIs. Strengthening the lab with advanced teaching tools such as smart panels, expanding placement partnerships, and integrating more industry-relevant learning modules can further enhance outcomes and institutional impact.

Continued investment in infrastructure, trainer support, and employability pathways will ensure that the lab remains a high-value learning asset for both current and future students.

With strong institutional ownership from Government ITI Pedagantya and sustained support from Coromandel International Limited, the project presents a scalable and replicable framework to strengthen digital literacy, vocational learning, and youth employability within public skill development systems.

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*Thank
You*