

GOOD PRACTICE

What is a good practice?

A good practice is not only a practice that is good, but a practice that has been proven to work well and produce good results, and is therefore recommended as a model. It is a successful experience, which has been tested and validated, in the broad sense, which has been repeated and deserves to be shared so that a greater number of people can adopt it.

Element	Description
Title*	An Outcome-Based Continuous Improvement System Built on ABET Accreditation at Cao Thang Technical College
Name of the VET Provider	Cao Thang Technical College (CTTC), Ho Chi Minh City, Vietnam – a public VET college under the Ministry of Industry and Trade
Thematic domain	☒ Innovation ☒ Digital ☐ Green ☐ Inclusion ☐ Entrepreneurial ☐ Career guidance ☐ Lifelong learning ☒ Creating partnerships/skills ecosystems Main domain: Innovation in quality assurance (an outcome-based continuous improvement system for VET programmes), supported by partnerships with industry (Industry Advisory Boards) and digital management of assessment evidence.
Introduction*	Founded in 1906, Cao Thang Technical College is one of the oldest technical schools in Vietnam. Today it trains more than 11,000 students in 23 programmes and supplies around 3,200 practice-oriented engineers and technicians each year to domestic and FDI companies, mainly in Ho Chi Minh City. Initial situation and challenge Like many VET providers, the college traditionally judged quality by inputs and course pass rates. There was no systematic way to answer three questions: Do graduates actually achieve the competences the programme promises? Where

exactly does the programme fall short? Are changes to curricula based on evidence, or on opinion? Industry feedback existed, but it was informal and rarely led to documented changes.

To address this, the college chose ABET (Accreditation Board for Engineering and Technology, USA) as a strategic benchmark. Within ABET, Criterion 4 – Continuous Improvement – is the “heart” of the system: it links Programme Educational Objectives (PEOs), Student Outcomes (SOs) and the curriculum through regular measurement and documented improvement actions.

Period

Capacity building started in 2011 with the HEEAP programme (Higher Engineering Education Alliance Program; two phases of three years each), was reinforced from 2013 by the three-year VULII programme (Vocational and University Leadership and Innovation Institute) – both led by Arizona State University with USAID support – and continued with BUILD-IT. In 2018, the Electrical–Electronics Engineering Technology and Mechanical Engineering Technology programmes were accredited by ABET. The Automotive Engineering Technology programme started its self-assessment in 2018, followed by Thermal Engineering Technology. The practice is ongoing: by 2024, four programmes are ABET-accredited, and the same continuous improvement principles are applied to all other programmes of the college.

Stakeholders and Partners

Beneficiaries / target groups

- **Students**, who receive a curriculum that is measured and adjusted every year against clear outcomes.
- **Lecturers and programme teams**, who gain a common language (SO, PI, rubric) and use data to improve their own courses.
- **Employers**, who receive graduates whose competences match documented, industry-validated outcomes.

Users of the practice

College leadership, faculty deans, programme ABET committees, the quality assurance unit and lecturers of all programmes – including programmes not seeking international accreditation.

Partners and their involvement

- **Industry Advisory Boards (IAB)** – one per programme, composed of engineers, experts and managers from companies. They review PEOs, SOs, curricula, practical training and equipment needs, guide final projects and take part in student assessment.
 - **Arizona State University and USAID (HEEAP, VULII, BUILD-IT)** – workshops on outcome-based education, assessment and ABET criteria; mentoring of programme teams; upgrading of facilities.
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- **Alumni, final-year students and internship supervisors** – regular surveys feeding the improvement cycle.
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Impact*

On students and graduates

- Employment rate of graduates and employer satisfaction with training quality have been maintained at 100% in recent years; 91% of graduates work in their field of study (last two years).
- **About 60%** of training time is practice-based and 100% of students gain real company experience.

On the institution

- Four programmes ABET-accredited (Mechanical Engineering Technology, Electrical–Electronics Engineering Technology, Thermal Engineering Technology; and Automotive Engineering Technology), and one programme certified under the Japanese KOSEN model.
- The system became the college-wide quality standard: programmes not seeking accreditation follow the same ABET-based processes, which keeps quality consistent across the institution.
- Weak points are now visible and acted on. For example, in its first year of self-assessment, the Automotive programme measured 7 SOs through 16 PIs and found that SOs 1, 3, 5 and 6 were below target; targeted improvement actions were planned and implemented the following year.

On the region and the skills ecosystem

- Industry engagement grew from recruiting to co-creating: scholarships, donated equipment, materials and competition sponsorship from companies have increased by more than 25% per year in recent years.
- Strong attractiveness to learners: in 2026 the college received over 32,000 applications, and all five newly opened programmes (e.g. semiconductor and microchip technology, renewable energy) filled 100% of their places.

Evidence

ABET accreditation decisions; annual SO assessment reports and minutes of improvement meetings; employer, alumni and graduate surveys; college employment statistics.

Innovation and Success Factors*

What is innovative

The practice turns accreditation from a one-off audit into a permanent, data-driven management cycle for VET programmes:

- **PEO & SO review cycle:** PEOs reviewed annually with the faculty and employers during the first two years, then every three years.
 - **Outcomes made measurable:** each SO is broken down into Performance Indicators (PIs). Only a selected set of courses is used for data collection
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(e.g. 36 of 62 courses in the Automotive programme) – enough to be meaningful, small enough to be sustainable.

- **Three families of assessment tools:** exams and assignments for theory courses; rubrics for practical courses (technical score 60%, plus 10% each for operation, time, safety and workplace organisation – only the technical part is used for PI data); and dedicated rubrics for project courses that also capture planning, reporting, presentation and teamwork.
- **“One SO – one owner”:** each member of the programme ABET committee owns one SO, supported by 2–3 lecturers who collect and process the data at the end of each semester and school year.
- **Closing the loop:** results per SO are analysed with the lecturers of related courses, root causes are discussed, and improvement actions are presented to all departments before being implemented in the next school year.
- **Quality culture:** 6S is applied in classrooms and workshops so that students also adopt the habit of continuous improvement.

Critical success factors

- **Visible leadership commitment at all levels** – leaders consistently stress the importance of the work, take part themselves and motivate staff through inspiration rather than pressure.
- **A programme “conductor”** – a respected person who knows the programme well (not necessarily the dean), given autonomy and practical support such as a secretary.
- **Team cohesion** – a team of programme lecturers with a clear work plan, a shared willingness to learn and openness about both the difficulties and the benefits.
- **Support from partners** – training by international partners, engagement of industry in revising PEOs, SOs and curricula, and investment in facilities.
- **Lecturers connected to industry** – 100% of lecturers do periodic company placements, which keeps assessment and rubrics close to real work.

Constraints*

- **Heavy workload of collecting assessment evidence.** Addressed by limiting data to selected courses and PIs, assigning one owner per SO, simplifying the process wherever possible and digitising evidence. Lesson: data quality matters more than quantity.
- **Risk of rework.** Teams sometimes produced large amounts of material that did not meet the criteria. Addressed by reviewing work regularly so that mistakes are corrected early.
- **Evidence, not just data.** Accreditation requires proof – meeting minutes, samples of student work, graded exams. Addressed by building a habit of systematically keeping evidence from the first day.

- **New concepts for lecturers** (SO, PI, rubrics, outcome-based assessment). Addressed through workshops with international partners and by involving lecturers directly in the analysis of their own courses.
- **Writing the Self-Assessment Report in English.** Addressed by following the questions of the ABET template strictly and avoiding unnecessary text, so the report gives evaluators exactly what they need.

Lessons learned *

- **Accreditation is a means, not an end.** “Accreditation is not for the certificate only, but for the real benefits to the stakeholders along the way.”
- **Continuous improvement is the core.** A quality system must show how the programme keeps improving, not only that it meets standards today.
- **Measure less, but better.** A small set of meaningful, high-quality data that leads to action is worth more than large data sets nobody uses.
- **Listen to stakeholders – and let them see the result.** Even critical comments from employers are valuable; when partners see that their feedback leads to change, their engagement grows.
- **People before procedures.** Leadership by example, a trusted programme conductor and a motivated team are what make the process work.
- **Spread the standard.** Once proven in pilot programmes, the same principles can lift quality across the whole institution, whether or not each programme seeks accreditation.

Replicability and/or up-scaling

The practice has already been scaled within the college: from two pilot programmes (2018) to four accredited programmes and to all programmes as a common quality framework. It is relevant for any VET provider that wants an outcome-based quality system, with or without formal international accreditation – ABET criteria can be replaced by national standards or other frameworks (e.g. AUN-QA, EQAVET) since the logic of the cycle is the same.

Conditions for successful replication

- A strategic decision by the institution’s leadership, with resources allocated (staff time, workload credit for the programme team, facilities) for several years.
- Clearly defined, measurable programme outcomes and a curriculum map linking outcomes to courses.
- A functioning industry advisory structure for each programme.
- Initial capacity building for lecturers on outcome-based assessment, ideally with experienced partners or peer institutions.
- A simple, documented procedure and a digital system for keeping evidence.

Adapting to a new context

Start with one or two pilot programmes, keep the number of PIs and assessed courses small, and implement early rather than waiting for a perfect design –

revising the process along the way is itself proof of continuous improvement. At national and regional level, accredited programmes can act as mentors for peer VET institutions, sharing rubrics, templates and procedures.

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URL of the practice

College website: <https://caothang.edu.vn>

ABET accredited programmes search: <https://amspub.abet.org/aps/>

Related resources that have been developed

- BUILD-IT Playbook “The Accreditation” (Arizona State University / USAID, May 2022) – includes the critical success factors and best practices of Cao Thang Technical College.
- Internal toolkit: PEO/SO review procedure, SO–course mapping, PI definitions, assessment rubrics for practical and project courses, SO assessment report templates (available on request).