

TORINO PROCESS REVIEW OF POLICIES FOR LIFELONG LEARNING:

Internationalisation of Applied Technology Schools (ATS) in Egypt

May 2025

EXECUTIVE SUMMARY

This Policy Review report provides a comprehensive assessment of the Egyptian Ministry of Education and Technical Education's (MoETE) efforts to internationalise and expand the Applied Technology Schools (ATS) model within the broader context of Egypt's evolving labour market and the technical and vocational education and training (TVET) system. Conducted in partnership with the European Training Foundation (ETF), the review critically examines the ATS as a Public-Private Partnership, focusing on its design, quality, sustainability, and potential for internationalisation, with the overarching goal of enhancing lifelong learning opportunities and aligning technical education with national economic priorities and international standards.

The Technical and Vocational Education and Training (TVET) system in Egypt faces numerous significant challenges, as outlined in the 2018 MoETE's Technical Education 2.0 Strategy (T.E 2.0). These include low-quality provision and underdeveloped standards, assessments, quality assurance, and accreditation mechanisms, compounded by an inactive National Qualifications Framework (NQF). The system suffers from a limited number of high-quality TVET institutions and a mismatch between skills supply and labour market demand, primarily due to the absence of effective labour market information systems and insufficient employer engagement. Governance and coordination among stakeholders are weak, hampering coherence and effective monitoring, with curricula being outdated and not aligned with future workforce needs. Additionally, there is a shortage of qualified teaching staff, especially in practical skills, and the financing models for TVET are unsustainable given the high costs and increasing student numbers amid limited financial resources. Public-private partnerships remain relatively limited, and mechanisms to facilitate students' transition to employment or further education are inadequate, despite the establishment of Technological Universities in 2019. Furthermore, societal perceptions of TVET and its graduates are generally negative, affecting enrolment and prestige.

Over the past decade, various reform efforts have been made, including the brief establishment of a dedicated Ministry for TVET in 2015, but none have fully realised the ambitious goals set out in Egypt's 2014 constitution to develop technical and vocational education to meet international standards and labour market needs. Since 2018, the Ministry of Education and Technical Education (MoETE), supported by international partners, has prioritised transforming TVET into an attractive and relevant option through the implementation of the Technical Education 2.0 Reform Strategy. This strategy was reviewed with support from the European Union and the European Training Foundation and expanded in 2024 to include ten reform pillars, focusing on improving quality and governance, relevance through competence-based curricula, teacher training, private sector partnerships, enhancing the system's image, expanding enrolment, fostering research and technological innovation, utilising assets for self-sufficiency, developing digital infrastructure, and promoting industry and technology localisation. Despite these efforts, systemic issues such as recruitment freezes for teachers, limited financial resources, and the need for more sustainable industry linkages continue to pose challenges to realising a modern, effective TVET system in Egypt that meets international standards.

Egypt's diverse economy, marked by rapid growth and structural reforms, demands a highly skilled workforce capable of supporting sectors such as ICT, agriculture, renewable energy, manufacturing,

construction and tourism. However, persistent skills mismatches, high youth unemployment (estimated at 25%), and a significant informal economy challenge the effectiveness of current TVET offerings. The labour market's increasing demand for specialised technical competencies, soft skills, and digital literacy underscores the urgency of reforming and expanding the TVET system to meet these needs.

The country's demographic trends—marked by a large and youthful population—generate substantial pressure on the labour market, with an annual influx of around 800,000 new entrants and a rising trend in labour migration, particularly to Gulf countries and Europe. Remittances from Egyptian migrants are a vital source of foreign currency, emphasising the importance of equipping workers with internationally recognised skills and qualifications to improve their employability abroad.

The ATS model, launched by Egypt's Ministry of Education and Technical Education in 2018, addresses the growing demand for skilled labour by aligning technical education with labour market needs. As a cornerstone of the broader Technical Education 2.0 (T.E. 0) strategy, the ATS modernises Egypt's technical education through industry collaboration, public-private partnerships (PPPs), and a shift toward practical, competency-based learning. Building on Egypt's dual education system from the 1990s, the ATS model emphasises sector-specific curricula tied to economic priorities. While critics caution against overly narrow curricula tailored to specific corporate partners, some schools—particularly those that were supported by USAID—demonstrate cross-sector collaboration and broader sectoral content development.

The governance of the ATS model is rooted in a strategic public-private partnership framework designed to align technical education with labour market needs. Established initially by Ministerial Decree #114 in 2019, the ATS unit oversees the strategic direction, school selection, quality assurance, curriculum development, and financing policies. Following organizational restructuring in 2021, the unit became part of the General Administration reporting to the Central Administration for the Reform of Technical Education, overseeing both ATS and related work-based learning models like Dual System schools and Centres of Competence. Despite these administrative changes, the ATS unit remains the primary body, with limited coordination with other models. The operational management involves close collaboration with private sector entities, which co-manage schools through protocol agreements typically lasting six to ten years. These agreements delineate responsibilities: MoETE provides the buildings, utilities, MoETE teachers, and facilitates bureaucratic processes, while private partners co-manage the school, develop business plans for financial sustainability, upgrade facilities, promote school branding, support workforce training, and cover international accreditation costs. Private companies also participate directly in curriculum development, internships, and employment placement, also often employing specialised teachers and staff, paying for incentives for MoETE teachers, and some partners outsource management to specialised entities, all aimed at ensuring industry-relevant, practical education aligned with labour market demands.

In terms of financing, the ATS and International ATS (IATS) models operate as public-private partnerships, with funding derived from government budgets and contributions from industry partners. This structure aims to attract private investment into public education, strengthening links between education and industry. Funding arrangements vary; some schools are financed on a per-student basis, fostering competition, while others depend on the investment value of the private partner, which may limit student numbers. Most ATS schools currently do not charge student fees, with a few exceptions, such as the WE ATSS, which have received approval to charge nominal fees to cover some costs. Industry partners often provide allowances during on-the-job training, but overall, the costs of operating ATS schools are high, with estimated per-student costs ranging from EGP 35,000 to 50,000 annually, excluding government contributions.

The ATS network expanded from 3 schools in 2018 to 90 schools by April 2025, including 10 International ATSS (IATS) featuring innovation labs, language labs, and sustainability initiatives like solar energy and water reclamation. These IATS aim to foster community ties and achieve ISO certification, though they currently lack full internationalisation strategies. With 14,600 students enrolled (less than 1% of MoETE's total learners), ATS/IATS programmes blend classroom instruction with hands-on industry training, granting graduates dual national and international certifications. IATS further distinguish themselves through Career Development Centres, partnerships with entities like Berlitz for language training, and industry-backed management support.

The model emphasises work-based learning, which is a core feature of the ATS approach, allowing students to gain practical skills through real-life workplace experience with industry partners, although the implementation varies across schools. Furthermore, private sector partners play a vital role in promoting a culture of professionalism, productivity, and quality within the schools, fostering systemic change that emphasises work ethics and efficiency. Quality assurance is fundamental to the ATS model, involving partnerships with international accreditation bodies, internal MoETE units, and external agencies like ETQAAN. Yet, these external bodies are not fully engaged across all ATS schools, highlighting a need to strengthen quality oversight and institutional capacity.

The sustainability of Egypt's Applied Technology Schools (ATS) model faces multifaceted challenges, balancing high initial investments and operational costs—including educational materials, teacher salaries, and international accreditation—against the need to demonstrate long-term financial viability through clear return on investment (ROI). Beyond finances, operational stability requires sustained private sector commitment, which is vulnerable to economic fluctuations and shifting corporate priorities, underscoring the importance of partners with strong labour needs or aligned corporate social responsibility (CSR) goals. Diversifying funding sources is critical, yet income-generating solutions like Vocational Training Centres (VTCs) face legislative barriers, and student fees—currently limited to some ATSS—are politically contentious due to Egypt's constitutional guarantee of free pre-secondary education. Underutilised tax incentives and uneven private sector investment models further complicate sustainability, with some schools prioritising low-cost access over quality, while others operate as high-quality CSR initiatives rather than profitable ventures. Inconsistent quality standards, weak regulation, and operational gaps in accreditation and governance threaten the model's reputation and long-term viability. To secure its future, the ATS must strengthen institutional coordination, enforce rigorous oversight, diversify funding, and integrate more effectively with broader TVET reforms under the TE 2.0 strategy, such as curriculum modernisation, digitalisation, and teacher training. Aligning with other work-based learning initiatives and ensuring cohesive sector-wide implementation will be essential to maintaining the ATS's role in producing skilled graduates and advancing Egypt's technical education system.

Egypt's education system has benefited significantly from international aid projects throughout the years. This international collaboration provides a strong foundation for expanding and internationalising the TVET system, particularly the ATS model. A primary challenge for the MoETE is to expand the ATS model to meet the increasing demand for highly skilled labour and to foster a critical mass that can drive positive changes within Egypt's TVET ecosystem. The expansion and internationalisation of the ATS model are key objectives explicitly communicated to the ETF during the current review. However, internationalisation remains the weakest aspect of the ATS model, which, while responsive to domestic labour market needs through Public-Private Partnership (PPP) approaches, lacks inherent flexibility to adapt to international demand for skilled labour. To address this, curriculum internationalisation, teaching methods, accreditation processes, and links to global business and labour markets, including intergovernmental agreements on skilled labour mobility, are essential for achieving targets related to international employment and mobility.

Currently, the ATSS are limited in number, compared to the total number of 1,300 technical schools and a small fraction of the overall student body. The MoETE aims to expand the ATS network significantly, with ambitions that likely surpass the initial targets set in the T.E 2.0 Strategy, which envisioned 100 ATSS by 2030. However, this expansion faces challenges, including concerns that existing private sector partners may reconsider their collaborations, necessitating the recruitment of new partners, especially given Egypt's predominantly small and medium-sized enterprise (SME) economy. This economic structure complicates partnerships, as many SMEs may lack the resources or willingness to sponsor schools at the scale currently expected, prompting a need for innovative partnership models. The expansion also raises questions about the optimal student-to-school ratio; currently, ATS schools enrol about 180 students, significantly fewer than the over 700 students in conventional technical secondary schools (TSSs). Deciding whether to transform larger TSSs into smaller ATSS or to establish new schools will impact funding, infrastructure needs, and the capacity of private sector partners to provide work-based learning (WBL) opportunities.

Furthermore, scaling up the ATS model requires a substantial increase in qualified teachers and instructors, with a need for both initial recruitment and ongoing capacity building. The current reliance on private sector partners for hiring teachers, often with better pay and specialised profiles, presents financial and logistical challenges for the MoETE, which may struggle to recruit sufficient staff at scale. This expansion would necessitate increased budgets for teacher training, staff management, and quality assurance systems, including establishing regional branches of the Central ATS unit to oversee the larger network. International development partners are expected to support these efforts, but additional projects and funding will be necessary. The expansion also entails significant human resource needs at the central and regional levels, requiring investments in staff recruitment, training, and advanced monitoring and evaluation systems.

In terms of internationalisation practices, ATSS currently have a solid technical education foundation but exhibit limited exposure to global TVET standards. With the exception of some collaborations, such as with the German-Arab Chamber of Commerce and Industry (AHK), curricula are not aligned with international benchmarks and lack compatibility with the competencies required in potential destination countries. Additionally, not all ATSS cooperate with international quality assurance bodies as per their agreements with MoETE. Despite these challenges, the ATS model holds significant potential for internationalisation, particularly through modern, industry-aligned curricula and training programmes, with the overarching goal of creating quick employment opportunities for graduates in international labour markets.

The review explores international best practices for internationalising TVET, emphasising strategies such as enhancing teacher development through innovative methods like Collaborative Online International Learning (COIL), which fosters cross-border curriculum co-design and cultural exchange. It highlights the importance of international partnerships, such as those funded by Erasmus+ which facilitate cross-country collaboration in teacher training and industry-aligned skills development. The analysis underscores the role of accreditation frameworks, like the European Qualifications Framework (EQF), in ensuring global standards and facilitating labour mobility, as exemplified by Morocco's successful alignment and bilateral agreements that improve migrant employment outcomes. A comparative analysis of labour mobility schemes from countries like South Africa, India, the Philippines, Estonia, and Poland reveals common strategies—such as establishing National Qualifications Frameworks, forming bilateral agreements, and sector-specific training—to enhance recognition of qualifications and facilitate legal migration. Pre-departure training, digital credentialing, and innovative technology play crucial roles in improving migrant preparedness and the portability of qualifications. Lessons for Egypt include finalising its NQF, expanding bilateral labour agreements, leveraging training levies, and adopting digital credential systems to modernise its TVET sector. A centralised, strategic approach akin to models in South Africa or the Philippines is recommended to unify efforts across ministries, align skills development with labour migration

objectives, and effectively tap into global labour markets, thereby reducing youth unemployment and boosting economic gains.

The review provides several key recommendations, covering the development of a strategic framework for the ATS model including its expansion and internal capacity development, supporting the sustainability of the model, internationalisation of ATSs, and alignment with the labour market needs. The following is a summary of the key recommendations categorised under specific themes:

Developing the ATS Model's strategic outlook

- To expand the model and ensure its long-term sustainability, the Ministry must articulate its vision for the ATS model into a clear and operational strategy addressing systemic challenges while leveraging opportunities for growth and resilience.
- A well-thought and communicated ATS strategy should be closely aligned with the national TE strategy and wider economic development aspirations. This will help the MoETE build support for the model's expansion and sustainability among the high-level decision makers, the private sector and international development partners.
- The ATS strategy will be informed by a clear vision, mission and set of objectives all framed within a number of guiding principles upon which the ATS model was developed.
- The ATS strategy must have clear Key performance indicators (KPIs), monitor mechanisms and an implementable action plan.

Improving ATS governance structures

- Establishing an ATS Board to include the private sector and other stakeholders.
- Improve monitoring and evaluating the work of the ATS and the links with TERO.
- Consolidating various WBL models (ATS, DS, CoC) under a unified framework will streamline operations and improve outcomes, while expanding the schools' autonomy and income-generating project will increase schools' self-sufficiency and resource use, further enhancing the quality.
- Develop a comprehensive quality assurance framework that could ensure better synergies between internal and external partners. The framework could be designed to make the ATS model more time-, effort- and cost-effective.
- Develop clear guidelines on how ATSs could become "lighthouses", "knowledge hubs" or "resource centres" for regular TSS schools.

ATS management development

- The addition of more staff within the ATS Unit and perhaps establishing regional units to manage the hundreds of ATS.
- Introduce indicators for both ATS and the rest of the system to track ATS delivery against a set of basic expectations and needs. Reactivate the Task Forces that were responsible for each pillar of the strategy to discuss and approve the indicators.
- Capacity Building: The ATS current and new staff will require capacity building intervention to better manage the expansion. A detailed Training Needs Assessment (TNA) will be required, and actual training may include, management skills, M&E, quality assurance, assessment methodologies, ICT skills and exposure to international best practice.
- Negotiation with international development partners the funding of capacity building and the funding of long-term development consultants to support the ATS expansion and internationalisation plans.

Financing and sustainability of the ATS model

- As part of the diversification of finding sources, the ATS unit is advised to develop a clear policy/strategy for introducing school fees and income-generating activities to ensure sustainability. This could include guidelines for the industry partners on best practices, the role of MoETE, use of the revenues, financial management etc.
- Conduct a comprehensive cost analysis for ATSs to include the costs spent by the MoETE and by the industry partners. The aim is to understand the real cost so that future partners are aware of the investment needed to sponsor an ATS and to effectively plan the desired expansion of the model.
- To support the ATS expansion and sustainability plans the government should introduce procedures to ensure inter-ministerial coordination to secure additional and alternative funding sources. This is not a task for the MoETE on its own, it must be government policy. The ATS should be lobbying for this especially for this with the newly established National Council for Education, Research and Innovation which includes in its members several advocates of the ATS model.
- Explore long-term funding from international development partners willing to support the ATS model especially after the development of a clear and comprehensive ATS strategy as recommended earlier.

Advancing the ATS's internationalisation policy

- The internationalisation of the curriculum could be achieved through the inclusion of global case studies, projects, and collaborations in the curriculum. In addition, teaching foreign languages should be an essential element of an internationalised curriculum.
- Develop intercultural competences: Intercultural learning should be integrated into the curriculum. ATSs should teach students about different cultures, communication styles, and global perspectives.
- Focus on integrating globally relevant skills and competencies in curricula and by fast-tracking the completion of the national Qualification Framework and align it with the European Qualification Framework to facilitate labour mobility.
- Capitalising on online resources and learning, including provide online learning from foreign institutions and TVET schools could be explored and agreed. This should be done in connection with investments in modern technology and infrastructure including investment in high-speed internet, digital learning platforms, and well-equipped laboratories through the KfW Digitisation fund about to start.
- Develop a comprehensive plan to ensure that all ATSs comply with the requirements to acquire international accreditation/certification. This may include that the ATS Unit establishes a shortlist of approved international awarding bodies and negotiates reasonable fees, so that all ATS industry partners can select from this list.
- ATS teachers should be encouraged and supported to become involved in international exchange programmes to gain experience of teaching methods in a TVET school environment where work-based learning is practiced. This should be carried out in a relevant European country, or a country in another target region such as the Gulf Cooperation Council countries.
- Options for teacher exchange programmes should be explored and advantage taken of the available opportunities. In addition, consideration should be given to the employment of international teachers from abroad, perhaps on a temporary exchange basis to widen the experience of domestic teaching staff. This could be done through international development partners schemes like ERASMUS and other programmes.
- MoETE should pursue international accreditation by having an overarching agreement or deal with a limited number of repeatable internationally recognised bodies in relevant technical

fields to be used by all ATSs. This will be more cost-effective and guarantees that all ATSs find the right international partner from the start. This can significantly enhance the credibility and recognition of the schools and their graduates.

- Develop a systemic plan to encourage partnerships with counterpart international TVET institutions and industry stakeholders to promote knowledge exchange and mobility programmes. This could include initiatives like the EU ERASMUS+ scheme and the ETF Network of Excellence.
- Provide information and resources on working abroad: MoETE or MoL should develop country-specific guides with information about specific countries that are potential job markets for graduates. The Guides should include information on in-demand sectors and specific roles; clear and up-to-date guidance on the necessary legal requirements; information to help graduates plan their finances; insights into foreign cultures, workplace norms, and communication styles. The ATS should establish strong links and MoUs with centres like the Egyptian German Centre for Jobs, Migration and Reintegration and work on establishing similar centres for other countries.
- Student exchange programmes: Students should be involved in international exchange programmes to gain experience of working in an international environment, or in an environment in another relevant country targeted by the ATS programme such as Germany or UAE. It could also be done on a partnership basis with other TVET schools abroad. In addition, ATSs could facilitate internships for periods of work experience for their students in international companies or organisations either in Egypt or abroad.
- Participation in WorldSkills: MoETE and the ATS unit should be a frequent participant in all possible World skills competitions at national, regional and international events. This will support elevating the reputation of Egypt's TVET graduates and students as potential workers on the international labour market.

In conclusion, Egypt's TVET reform trajectory, exemplified through the ATS expansion and internationalization, presents significant potential to elevate the quality, relevance, and recognition of technical education. Strategic policy actions focusing on sustainable financing, private sector partnerships, international accreditation, and comprehensive stakeholder engagement are imperative to realize these objectives. By aligning TVET reforms with Egypt's economic development and labour market demands, the country can foster a resilient, skilled workforce that supports sustainable growth, regional competitiveness, and social inclusion.