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ASSESSMENT OF THE PROGRESS OF THE EGYPTIAN STRATEGY FOR TECHNICAL EDUCATION (TE 2.0)

Assessment Report

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PREFACE

This report provides an assessment of the progress of the Egyptian Strategy for Technical Education (TE 2.0). It has been commissioned by the European Union Delegation in Egypt at the request of the Ministry of Education and Technical Education (MoETE). The report was prepared for the European Training Foundation (ETF) by the PPMI with the collaboration and support of several experts and organisations. The ETF is very grateful to all those who contributed their time, expertise, and efforts to the report.

The assessment team was supervised by Mr. Abdelaziz Jaouani, Senior Human Capital Development Expert at the ETF, with the support of Ms. Sabina Nari and Mr. Pasqualino Mare.

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The development of this report has been led by the PPMI experts, namely Rimantas Dumcius, Omar F. Abozeid, and Sonata Brokeviciute as well as three external experts, including Patrick Werquin, Asmaa Noureldin, and Ahmed Kandil. The report benefited from feedback received from Marieke Vandeweyer from the Organisation for Economic Cooperation and Development (OECD) Centre for Skills.

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ABBREVIATIONS AND ACRONYMS

ATS	Applied Technology Schools
CAPMAS	Central Agency for Public Mobilisation and Statistics
CBE	Competency-Based Education
CEQAT	Centre for the Enhancement of Quality Assurance of Technical Education
CoCs	Centres of Competence
CMC	Les Cités des Métiers et des Compétences
CVT	Continuing Vocational Training
DS	Dual Education and Training System
ECES	Egyptian Centre for Economic Studies
EBRD	European Bank for Reconstruction and Development
EPP	Employment Promotion Project
ESA	Education Sector Analysis
ESP	Education Sector Plan
ETF	European Training Foundation
ETQAAN	Egyptian Technical Quality Assurance and Accreditation Authority
EU	European Union
FEI	Federation of Egyptian Industries
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GDP	Gross Domestic Product
GKI	Global Knowledge Index
HEIs	Higher Education Institutions
IATS	International Applied Technology Schools
ICT	Information and Communications Technology
IL	Intervention logic
INSEAD	Institut Européen d'Administration des Affaires
IVET	Initial Vocational Education and Training

KPIs	Key Performance Indicators
LMI	Labour Market Information
LMIS	Labour Market Information System
M&E	Monitoring and Evaluation
MITU	Misr International Technological University
MoETE	Ministry of Education and Technical Education
MoHESR	Ministry of Higher Education and Scientific Research
MoL	Ministry of Labour
MoLD	Ministry of Local Development
MoPEDIC	Ministry of Planning, Economic Development, and International Cooperation
MoTI	Ministry of Trade and Industry
NAQAAE	National Authority for Quality Assurance and Accreditation of Education
NGOs	Non-governmental Organisations
NQF	National Qualifications Framework
OECD	Organisation for Economic Co-operation and Development
PPPs	Public-Private Partnerships
PVTD	Productivity and Vocational Training Department
QA	Quality Assurance
ROI	Return on Investment
RPL	Recognition of Prior Learning
RUDS	Regional Units for the Dual System
SDS	Sustainable Development Strategy
SIPs	School Improvement Plans
SMEs	Small and Medium-sized Enterprises
SSCs	Sector Skills Councils
TCTI	Technical Support for the Comprehensive Technical Education Initiative
TE	Technical Education

TEREEE	Technical Education in Renewable Energy and Energy Efficiency
TERO	Technical Education Reform Office
TVET	Technical and Vocational Education and Training
TVETA	Technical and Vocational Education Teachers' Academy
TUs	Technological Universities
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
UTTE	Units for Training and Transition to Employment
VET	Vocational Education and Training
VTCs	Vocational Training Centres
WBL	Work-based Learning
WGA	Whole-of-Government Approach

Executive Summary

The aim of this assignment is to assess the progress of the Egyptian Strategy for Technical Education (TE 2.0). The assessment covers the **progress achieved from 2018 to 2024 in all five pillars** of the TE 2.0 Strategy: Pillar 1: Transformed Quality of TE 2.0; Pillar 2: Transformed Relevance of TE 2.0 by Transferring to Competency-Based Education (CBE); Pillar 3: Transformed Teachers through Training & Qualification; Pillar 4: Transformed Schools through Employer Engagement & Work-Based Learning; Pillar 5: Transformed Image of TE through Changing Social Perception.

The assignment confirms a **significant transformation effort with the potential to reform Egypt's TVET sector**. The TE 2.0 Strategy marks a crucial milestone in educational reform and strategic planning in Egypt, reflecting a genuine intention and political will for change. Various stakeholders are engaged with and aware of the Strategy and its planned interventions, which is evident from the solid achievements over the past five years, as detailed in the pillar-specific achievements sections. Therefore, the strategic direction adopted in TE 2.0 Strategy should be maintained and reinforced. To facilitate further progress towards the transformation goals, the assessment provides a set of **key strategic recommendations** for the effective implementation of the TE 2.0 Strategy, building on the accomplishments of the past five years. These overarching recommendations are categorised into short-term, medium-term, and long-term actions.

Key Strategic Recommendations

In the **short term**, the focus of the TE 2.0 Strategy is on enhancing its strategic planning by developing a comprehensive action plan that includes clear timelines, defined roles, and specific responsibilities to ensure the systematic implementation of reforms. Establishing robust governance structures is also critical, with a recommendation to create a standalone pillar dedicated to governance, supported by a Technical Education Advisory Board and five pillar-specific task forces to steer the reform process effectively. Addressing the urgent teacher shortage is crucial, with innovative recruitment solutions such as engaging recent graduates, establishing an endowment fund for hiring, and focusing on continuous capacity development through the Technical and Vocational Education Teachers' Academy (TVETA). Additionally, now it is time to position traditional TE schools at the heart of the transformation efforts, ensuring these schools engage in various forms of Work-Based Learning (WBL) that align with the local economic environment to improve educational outcomes.

In the **medium term**, the focus of the TE 2.0 Strategy is on ensuring the financial sustainability of the TE 2.0 reforms by advocating for increased state budget allocations, diversifying financial mechanisms, and leveraging Public-Private Partnerships. Aligning TE programmes with local economic landscapes and labour market demands is also a priority, requiring frequent labour market studies and the establishment of a nationwide graduate tracking system to monitor employment outcomes. Enhancing the infrastructure of TE schools and accelerating digital transformation through investments in IT infrastructure, digital tools, and modern teaching methods are necessary to improve the overall quality of education and ensure the reforms' long-term success.

In the **long term**, the focus of the TE 2.0 Strategy will advocate for the establishment and operationalisation of the Supreme National Council for Education and Training¹, which would oversee all TVET-related policies and strategies across sectors, ensuring a coordinated approach to vocational training in Egypt. Restructuring TE schools into larger, resource-rich entities is recommended to optimise resources and enhance educational quality by consolidating geographically proximate schools

¹ The legislation for the Supreme National Council for Education and Training has been drafted and is currently under discussion, awaiting ratification by Parliament and the President. A draft Presidential decree was also developed in 2023 as part of the National Dialogue initiative.

under a larger legal entity. This type of restructuring could also be approached from a sectoral perspective, similar to the Centres of Competence model.

Pillar-Specific Recommendations

The key conclusions and recommendations are based on the **findings from each pillar**.

Pillar 1: to enhance the quality of technical education, it is essential to strengthen the capacity of the Centre for the Enhancement of Quality Assurance of Technical Education (CEQAT) and accelerate the operationalisation of the Egyptian Technical Quality Assurance and Accreditation Authority (ETQAAN). These institutions are pivotal in maintaining high-quality standards across TE schools and programmes. Immediate steps should include finalising ETQAAN's organisational structure, recruiting qualified staff, and developing standardised accreditation procedures. A focus on streamlining data collection and enhancing school infrastructure, particularly through public financing and strategic partnerships, is also recommended to support the comprehensive improvement of the TE system.

Pillar 2: ensuring the relevance of technical education in Egypt requires the implementation of a robust incentive system for business/private sector CBE assessors to guarantee rigorous and unbiased assessments. Establishing quality selection criteria for these assessors is crucial to ensure their capability to evaluate students' work effectively. Moreover, it is essential that new curricula incorporate key cross-cutting themes such as digital transformation, greening, and gender equality across all occupations, not just those explicitly linked to these areas. This approach will ensure that TE prepares students for the evolving demands of the modern workforce, including the growing importance of sustainable practices and the digital economy. Embracing digital tools to streamline CBE student assessments and conducting post-implementation curriculum assessments will also help align TE programmes with evolving labour market demands. Comprehensive labour market studies and a nationwide graduate tracking system are recommended to ensure that TE programmes continue to meet the needs of both the domestic and international job markets, while also advancing these critical priorities.

Pillar 3: addressing the challenges in teacher training and qualification is crucial for the success of the TE 2.0 Strategy. Beyond the ongoing teacher shortage, there is a pressing need to enhance both initial and continuous training for TE teachers, particularly in developing advanced technical skills that align with industry standards and evolving technological demands. The quality of teaching is directly linked to the effectiveness of these training programmes, making it essential to provide robust support through the TVETA and other institutions. Furthermore, the issue of low salaries poses a significant challenge to teacher motivation and retention. Low compensation not only affects the attractiveness of the teaching profession but also undermines efforts to recruit and retain highly skilled educators. To address this, the Ministry of Education and Technical Education (MoETE) should explore innovative compensation models, including performance-based incentives and financial support mechanisms, to improve teacher motivation and satisfaction. Ensuring sustainable funding for TVETA and engaging in extensive consultations with teachers to evaluate the effectiveness of training programmes will be crucial for creating a well-supported and motivated teaching workforce capable of delivering high-quality TE.

Pillar 4: to enhance employer engagement in technical education, it is crucial to shift the perception of the business/private sector, encouraging them to view TE as a valuable investment in human resources with a solid return on investment, rather than just a social responsibility. Expanding and improving the Applied Technology Schools model, the Dual System and traditional schools in WBL through multi-partner approaches, involving medium-sized enterprises, will diversify funding sources and reduce the financial burden on individual companies. Additionally, there is a pressing need to reform and enhance the 'Labour System' or scheme, which functions as a form of Recognition of Prior Learning (RPL) or alternative learning. Reforming the Labour System should focus on establishing clear, transparent processes and standards, potentially integrating a stronger component of employer engagement to ensure that the skills and qualifications recognised through this system meet industry needs. By aligning the Labour System with best practices in RPL and involving employers in the validation and assessment

processes, the MoETE can enhance its credibility and effectiveness, ensuring it serves as a legitimate pathway for students to obtain meaningful qualifications. Furthermore, consolidating various WBL models under a unified framework will streamline operations and improve outcomes, while expanding the schools' autonomy and Capital project will increase schools' self-sufficiency and resource use, further enhancing the quality of TE.

Pillar 5: improving the social perception of technical education is vital for attracting more students and stakeholders to the sector. A comprehensive media campaign is recommended to highlight the successes and career opportunities available through TE, leveraging various platforms and involving influencers, industry leaders, and successful graduates. This campaign should be underpinned by robust outcome data, including employment rates and career advancement metrics of TE graduates. Raising the image of TE can also be significantly enhanced through active participation in national, regional, and international skills competitions, which showcase the talents and competences of TE students and graduates. These competitions not only elevate the visibility of TE but also demonstrate its relevance and value in a competitive job market. The achievements and outcomes from these competitions should be systematically tracked and incorporated into broader communications about TE performance. Focusing on creating and promoting 'Role models' within the TE community, including successful alumni and industry leaders who have thrived in their careers through TE, can further inspire and motivate current and prospective students. By integrating these role models into various media, educational campaigns, and public events, TE can be elevated as a credible and appealing route to success. Moreover, aligning educational pathways between technical and higher education will enhance the credibility and attractiveness of TE as a viable and rewarding career option. Regular tracking and reporting of progression rates into higher education will provide additional evidence of the opportunities available through the TE pathway.

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1. Introduction

1.1. Purpose and Scope of the Assessment

The **purpose of this assignment** is to assess the progress of the Egyptian Strategy for Technical Education (TE 2.0) and its implementation. This independent assessment of the state of progress of this strategy has been requested by the Ministry of Education and Technical Education (MoETE) to gain a better understanding of achievements as well as the availability of room for improvement that will need to be addressed in the future. The assessment covers the **progress achieved from 2018 to 2024 in all five pillars of the TE 2.0 Strategy**, namely:

- Pillar 1: Transformed Quality of TE
- Pillar 2: Transformed Relevance of TE by Transferring to Competency-Based Education (CBE)
- Pillar 3: Transformed Teachers through Training & Qualification
- Pillar 4: Transformed Schools through Employer Engagement & Work-Based Learning (WBL)
- Pillar 5: Transformed Image of TE through Changing Social Perception

While all the above five pillars are covered in the assessment, **in-depth analysis is to be conducted in two selected pillars, namely in Pillar 1 and Pillar 4**. The assessment also examines obstacles hindering the strategy's implementation, proposes solutions, and compiles lessons learned to offer guidance for the further development of the strategy and its implementation.

1.2. Methodological Approach

For the purpose of this assessment, a review framework inspired by methodologies regularly used by the Organisation for Economic Co-operation and Development (OECD) in its work on education and skills was adopted. Under the guidance of Prof. Patrick Werquin, who brought extensive experience with OECD methodologies, this comprehensive framework was designed to analyse various aspects of policies and programmes across different countries and sectors. This framework emphasises not only the outcomes and impacts of policies but also the processes and mechanisms underlying their design, implementation, and monitoring. Its aim is to provide evidence-based insights and recommendations that can guide improvements and reforms. The assessment team leveraged their proficiency with similar frameworks developed in multiple previous assignments², ensuring a well-grounded approach for this assignment. The ETF also provided expertise and guidance, such as under the supervision and experience of Mr. Abdelaziz Jaouani, and ETF's notable experience in monitoring and evaluation notably through the Torino Process³ monitoring and evaluation (M&E) activities in ETF partner countries.

Our assessment focused on **several key dimensions**:

- **Contextual Analysis**, grasping the broader economic, social, and political environment in Egypt during the strategy's implementation period, and clarifying the TE 2.0 strategy's objectives and goals. It also involved a stakeholder analysis (both internal and external stakeholders) to understand the

² Using guidance from relevant publications; Pont, B., & Werquin, P. (2004). Look, listen and learn: An international evaluation of adult learning. In P. Descy & M. Tessaring (Eds.), *The foundations of evaluation and impact research: Third report on vocational training research in Europe: background report* (Cedefop Reference series, 58). Office for Official Publications of the European Communities.

³ ETF (2024). *Policy analysis and progress monitoring – Torino Process*. <https://www.etf.europa.eu/en/what-we-do/policy-analysis-and-progress-monitoring-torino-process>

roles and perspectives of various parties involved in the broader Technical and Vocational Education and Training (TVET) system.

- **Policy Design and Implementation Review**, focusing on the formulation process behind the TE 2.0 strategy, the policy instruments and mechanisms used, and the involvement of stakeholders in the decision-making process.
- **Resource Allocation and Utilisation**, assessing how financial and human resources have been allocated and used within TE programmes, along with the availability and capacity of human resources (including teachers, trainers and administrative staff).
- **Access and Equity**, analysing trends in enrolment and participation (considering factors such as gender, socio-economic status, and regional disparities), and assessing efforts to promote equitable access to, and outcomes of TE.
- **Quality of TE Provision**, examining the relevance and quality of TE curricula, training content and the quality assurance (QA) process. In addition, it also involved the effectiveness of teaching and learning practices, including the use of modern teaching methods and technology.
- **Relevance to Labour Market Needs**, looking at the extent to which TE programmes align with the evolving needs of the labour market and industry, and the employability of TE graduates and their integration into the workforce.
- **Monitoring and evaluation**, reviewing the adequacy and quality of data collected for M&E purposes, and the existence and effectiveness of feedback mechanisms for continuous improvement.
- **Policy Impact and Sustainability**, assessing the overall impact of the TE 2.0 strategy on targeted outcomes and objectives, and its long-term sustainability.
- **Recommendations and Lessons Learned**, identifying key lessons learned during the implementation period (2018-2024) and ultimately developing a comprehensive chapter with findings, conclusions, and recommendations for improving the effectiveness and efficiency of the TE 2.0 Strategy going forward.

In employing this review framework, the assessment team was **guided by two fundamental principles** to ensure the thoroughness and accuracy of the assessment: a holistic approach and stakeholder consultation and engagement:

- First, a **holistic approach** was imperative, which mandated a comprehensive evaluation of the TE 2.0 strategy by acknowledging the interconnectedness of various pillars rather than considering them in isolation. In line with this approach, we considered that the success of the TE 2.0 strategy typically emerges from the complex interplay among diverse factors, thereby fostering a more refined comprehension of the strategy's overall impact and effectiveness. In addition, we considered other previous or ongoing evaluations and related initiatives to avoid duplicating other initiatives and to ensure a cohesive and integrated assessment. For instance, the assessment team arranged a meeting with the Egypt Impact Lab during the field mission to gather insights and feedback based on their experiences and lessons learned during the ongoing evaluation of three pillars of the TE 2.0 Strategy.
- Second, **stakeholder consultation and engagement**, facilitated by the lead national stakeholder (i.e. the MoETE), was essential throughout the assessment process. This engagement not only enhanced the credibility of the assessment but also ensured its relevance, as it incorporated diverse perspectives and insights, thereby enriching the analysis and recommendations. Paramount importance was attributed to the representativeness of stakeholders directly related to the activities planned and implemented by the MoETE under the different pillars (including government ministries, private sector, non-governmental organisations (NGOs), and the expert community among others). To this end, the central component of our methodology was an expert mission to conduct fact-finding

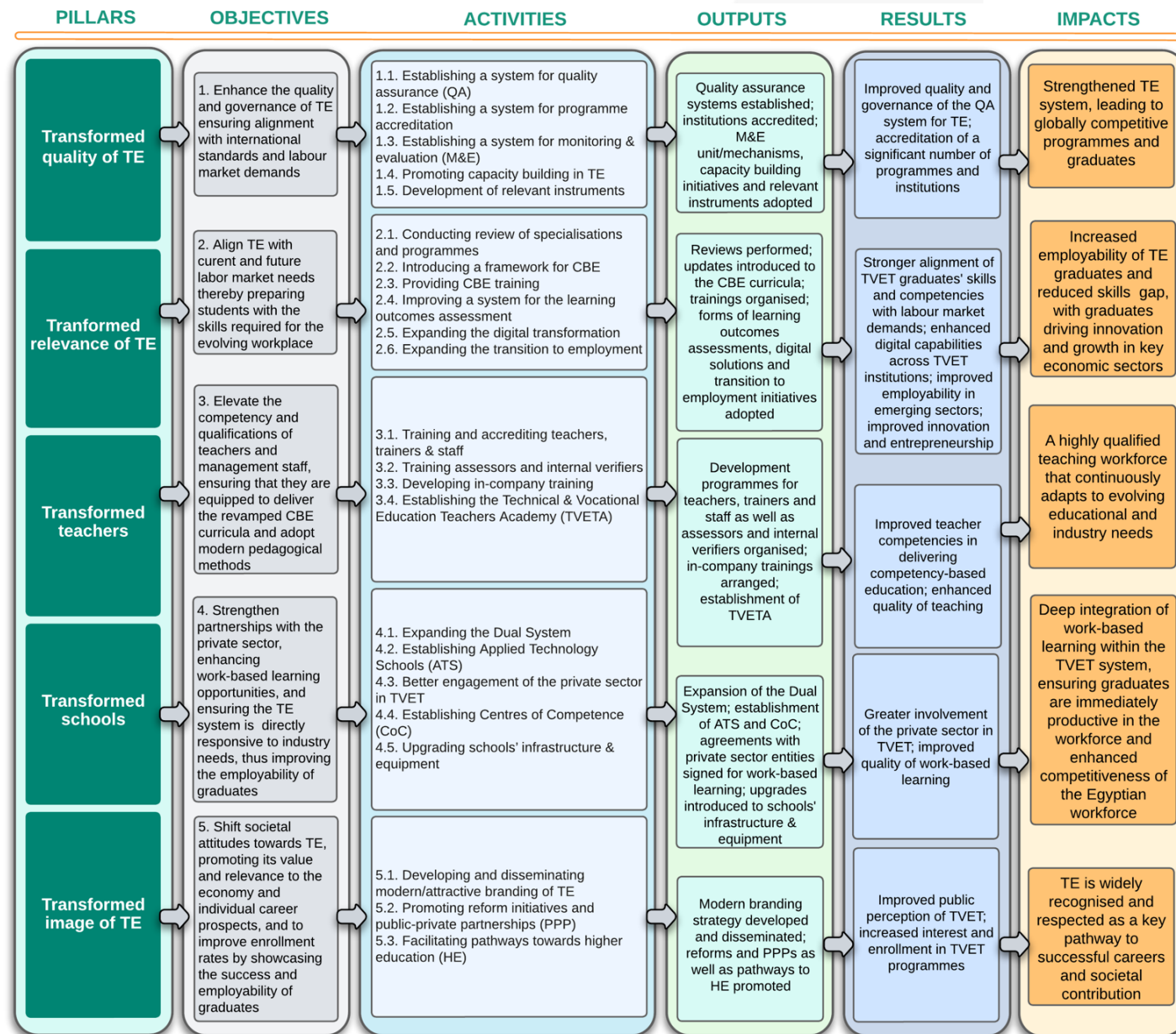
and to discuss potential recommendations from the analytical work conducted by the assessment team, during the process and in the dissemination phase at the end. The assessment team also relied extensively on the active engagement of local experts, to support data collection in Arabic and to contextualise the analysis.

Our methodology consisted of a balanced approach to assessment, **combining formative and summative assessments** to enhance ongoing development and measure ultimate achievements against benchmarks. The summative assessment considered the final outcomes of the strategy, such as the alignment of curricula with labour market demands. It served as a vital benchmark for the Strategy's success and was crucial for reporting to stakeholders such as government entities, educational institutions, and international partners. On the other hand, the formative assessment focused on the learning process and the strategy's implementation. This included assessing the progress of specific initiatives, the development of a new generation of schools, curricula, and the effectiveness of teacher training programmes. As a result, the assessment achieved a dynamic balance between immediate improvement and the fulfilment of its ultimate goals, ensuring a robust framework for assessing progress and outcomes.

Throughout the assignment, our team employed **a mix of quantitative and qualitative research methods** to ensure a thorough and reliable assessment, including desk research and data analysis, stakeholder consultations (i.e. interviews, focus groups, and workshops conducted during a three-week research mission to Egypt and an additional short mission complementing the missing information by sharing and discussing the preliminary outcomes). This was followed by final data analysis and synthesis of the assessment findings, finalisation of the recommendations, and reporting and dissemination.

The implementation of this methodological approach was based on an **Intervention Logic (IL)**, providing a comprehensive rationale behind the TE 2.0 Strategy (Figure 1). Establishing a precise IL at the assignment's outset was crucial for the assessment team, as it facilitated understanding the broader consequences of the intervention. This strategic assessment focused on outputs, results, and impacts to assess how activities and outputs translate into meaningful, sustainable changes, leading to the desired long-term goals for each pillar. This approach was essential for assessing the cause and determining the contribution of activities to intended impacts. The IL below outlines a clear progression from specific TE needs and objectives to activities aimed at achieving immediate, intermediate, and long-term changes within the system. Initially designed based on the TE 2.0 Strategy published in 2019, the IL was updated to reflect the latest 2023 version, particularly its short-term goals (2023-2025). A mix of these two versions of the Strategy has been used as our primary references in developing the IL.

Figure 1. Intervention Logic



The figure below (Figure 2) offers a summary of the data collection activities that took place over the course of the assessment. The assessment team used **preliminary desk research to design stakeholder consultations**, including developing questionnaires and identifying key stakeholders. Preliminary findings helped refine the assessment methodology as needed. Following the exploratory interviews and initial consultations, extensive desk research was conducted, organised around the five pillars of the TE 2.0 Strategy. This analysis served as a foundation for assessing progress, with desk research findings used to validate and support conclusions drawn from other data collection methods. Additional, **unpublished documents and quantitative data were also requested from the MoETE** to support the assessment process.

Figure 2. Data collection activities

Preliminary desk research	Key official documents and statistics.
Exploratory interviews	6 interviews with ETF and MoETE representatives.
Extensive desk research	In both Arabic and English resources.
Master questionnaire	Tailored to stakeholder group, pillar, and discussion topic(s).
Field mission	<p>3-week field mission: Cairo, Alexandria, Port Said, Al-Fayoum.</p> <p>Bilateral meetings, focus groups, workshops reaching 160+ respondents: MoETE reps., reps. of relevant ministries, industry reps., development partners, academic partners, service providers, educators, students, in-company trainers.</p> <p>School (TE, DS, ATS, CoC) and company/factory visits.</p>
Additional consultations	Supplementary consultations to discuss data needs and validate emerging conclusions and recommendations.

Source: Prepared by the assessment team.

Stakeholder consultations were a central part of this assessment, involving a wide range of participants, including government entities, social partners, industry representatives, educators, students, international organisations, and NGOs. The aim was to ensure that the assessment reflected diverse perspectives on the TE 2.0 Strategy, particularly focusing on stakeholders directly involved in the MoETE's activities. The consultations accounted for regional differences, with specific attention to areas such as Greater Cairo, Alexandria, Port Said, and Al-Fayoum. The process included exploratory interviews, a field research mission with focus groups and workshops, and additional consultations for validating preliminary conclusions and recommendations.

The assessment team conducted **6 exploratory interviews** with the representatives of the ETF and the MoETE to better understand the data availability and potential limitations, and to finalise the questionnaires for the field research mission. These discussions were conducted online in both English and Arabic. The findings from these interviews fed into the development of the questionnaires used for the consultations.

As part of our consultation activities, the assessment team organised a **three-week field research mission to collect in-depth feedback** from stakeholders on the ground regarding the implementation of the TE 2.0 Strategy. The field research mission took place in April 2024, during which the team conducted bilateral meetings, focus groups, and a consultation workshop reaching out to more than 166 respondents.

Considering the varied types of stakeholders to be consulted and thematic areas to be covered, the study team developed a **master questionnaire** to enable the interviewer or focus group moderator to

select the thematic area(s) relevant to the respondent(s) and tailor a more concise questionnaire from those thematic areas and topics. This approach enabled us to facilitate a more targeted and less streamlined engagement with stakeholders.

Additional consultations with the MoETE took place in July 2024 to discuss the remaining quantitative data needs and to validate the emerging preliminary conclusions and recommendations. Other bilateral meetings were organised with representatives of international partners and donors.

In this assessment report, the team provided an analysis of the (triangulated) findings structured around five pillars of the TE 2.0 Strategy along with cross-cutting findings. These findings subsequently informed the development of the assessment's conclusions and recommendations. The outcomes of the assessment were presented to key stakeholders during **the Technical Education Strategic Planning Workshop**, organised in the MoETE premises in November 2024.

1.3. Policy Context

1.3.1. Overview of Egypt's TVET Sector

Egypt, with a population exceeding 106 million⁴, is presented with both growth opportunities and challenges. The education and labour sectors, therefore, stand at the forefront of Egypt's national reforms in responding to the growing socioeconomic demands by taking advantage of Egypt's young population (approximately 60% of Egypt's population is under the age of 24⁵).

The education system in Egypt emphasises universal access to education, underpinned by the constitutional right to offer every student a school place. Within this context, Egypt's formal education system consists of primary education (or, in some cases, community education) (6 years) followed by general preparatory education or vocational preparatory education (3 years). Students then make the choice to join either general secondary education '*Thanweya A'ama*' (3 years), which offers a direct path to university education, or technical secondary education (3 or 5 years).⁶⁷ Other TE schemes include the dual education and training schools (3 years), the Applied Technology Schools (ATS) (3 years), and the Productivity and Vocational Training Department (PVT) schools (3 years), which are under the direct supervision of the Ministry of Trade and Industry (MoTI), among others. The MoETE also runs a competence recognition system (labour/workers' system) where dropouts in employment can acquire a TE diploma (equivalent to that of the 3-year TE programme) after paying the required fees and passing the exams over the course of three years.⁸ Another system run by the MoETE is the 'Services' system, which offers TE through afternoon classes and is accessible to students who achieved lower grades than required to join the traditional TE system. Students in this system pay higher fees than other TE students.

Following secondary education, TE graduates move to tertiary/higher education (ISCED 5-8), where they can join Technological Universities (TUs) for two or four years to earn either a professional higher diploma of technology or a professional Bachelor of Technology. Other pathways include the Workers' University (the first two years at ISCED 4 and the last two years at ISCED 5) and the Colleges of Technology and Education (four years), which offer a Bachelor of Technology for TE teachers, among others.⁹

⁴ CAPMAS (2023). *Population clock*. <https://www.capmas.gov.eg/Pages/populationClock.aspx>

⁵ ETF (2022). *Vocational and technical education guiding career development in Egypt*. <https://www.etf.europa.eu/en/news-and-events/news/vocational-and-technical-education-guiding-career-development-egypt>

⁶ UNESCO (2023). *TVET Country Profiles: Egypt*. <https://unevoc.unesco.org/home/Dynamic+TVET+Country+Profiles/country=EGY>

⁷ Recently, the MoETE decided that all 5-year advanced technical education schools (with very few exceptions) should offer the newly updated competency-based 3-year technical education programmes. Afterwards, TE graduates would have the option to proceed to an advanced two-year programme.⁷ This is in line with the MoETE's plan to harmonise the provision of formal TE.

⁸ ETF (2020). *Torino Process (2018–2020): Egypt national report*. https://openspace.etf.europa.eu/sites/default/files/2020-04/TRPreport_2020_Egypt_EN.pdf

⁹ Ibid

Over half of the students in Egypt choose technical secondary education over general secondary education. However, TE enrolment rates vary by region. For example, 60% of students in Upper Egypt (i.e. the Southern governorates) choose technical secondary education. However, in Greater Cairo, it is 35% of students.¹⁰ Such discrepancy is associated with the socioeconomic drivers of TE enrolment in Egypt. For many families living under challenging economic conditions, it is not considered worthwhile to send children to general secondary schools, which tend to delay labour market entry until after the completion of university education. This places considerable financial commitment on parents over extended periods. Additionally, even after earning a university degree, higher education graduates are then faced with high rates of unemployment, overeducation among university graduates, and underpaying jobs. On the other hand, TE graduates can join the labour market much earlier (i.e. after receiving their three-year diplomas), sustain themselves financially, and, in many cases, provide financial support to their families. It is also worth noting that the job market for TE graduates in Egypt has its challenges as well, such as the mismatch between education / skills and available jobs, inadequate salaries, poor working conditions, and the negative social perception of TE graduates compared to university graduates.

Technical education in Egypt **serves around 2.2 million students** enrolled in 3 386 schools administered by the MoETE in 2023/24 (exceeding 2.7 million when students enrolled in the broader TVET sector are included, and vocational education and training provided by other ministries and private TVET providers¹¹). It **employs 118 012 teachers** (2023/24), **and provides the labour market with over 600 000 TE graduates every year** (600 524 in 2023; exceeding 750 000 when considering the whole TVET sector).¹² TE programmes in Egypt are structured around **four overarching tracks: industry** (46% of all students; 1.02 million), **commerce** (39% of all students; around 0.86 million; popular with young women who account for around 63% of students), **agriculture** (11% of all students; 244 619 in 2023/24) and **hotel (hospitality and tourism)** (4% of all students; 72 464 in 2023/24).

TVET provision is, however, decentralised across various ministries, including the Ministry of Labour (MoL) and the MoTI. The MoTI offers formal three-year programmes through its PVTD schools, which award diplomas approved by the MoETE. Meanwhile, the MoL is tasked with balancing the supply and demand of workers, as well as enhancing the employability of the workforce. The ministry monitors labour market trends based on both domestic and international demands. Both ministries run Vocational Training Centres (VTCs) that offer non-formal short-term programmes and issue completion certificates without specifying the skills level attained. These VTCs cater to specific target groups, such as school dropouts and the unemployed, providing training in occupations and professions that can help them secure employment and generate income. The Ministry of Housing also used to operate several VTCs for the building and construction professions, but the majority of these VTCs were handed over to the MoETE in 2021/22. **Private sector providers** also offer both formal and non-formal TVET programmes, and some of them provide qualifications similar to those offered by international TVET providers.

Despite several attempts to reform TE in Egypt, **multiple challenges persist** as highlighted by the interviewed stakeholders, such as:

- **Prioritising quantitative expansion at the detriment of the quality of TE provision.** TE continues to be under pressure (due to the population growth) to expand at a rate higher than the sector's current technical and financial capacities.
- **Turbulent school-to-work transition.** With a high unemployment rate, the prevalence of overeducation among university graduates, and an underdeveloped industrial landscape, TE graduates continue to struggle to find well-paying jobs relevant to their education/skills.
- **Skill mismatches.** One of the main issues negatively impacting TE graduates' employment outcomes is the misalignment/mismatch between their education and the labour market needs.

¹⁰ ETF (2022). *Vocational and technical education guiding career development in Egypt*. <https://www.etf.europa.eu/en/news-and-events/news/vocational-and-technical-education-guiding-career-development-egypt>

¹¹ MoETE (2022). *Technical Education 2.0 [presentation by Prof. Mohamed Megahed]*. <https://t.ly/H0jgM>

¹² CAPMAS (2023). *Annual bulletin for pre-university education for the academic year 2022 / 2023*.

- **Limited pathways for TE students towards higher (technical) education.** While TE graduates can join Higher Education Institutions (HEIs), options in terms of relevant technical specialisations are limited, and there are not enough spaces in HEIs to accommodate the current demand for technical higher education.
- **Poor social perception / image of TE in Egypt.** The social perception of TE and TE graduates continues to be one of the key issues that make TE a second choice for many students and families (i.e. many of those joining TE are forced to do so after failing to get the required grades to go into general secondary education). Despite the higher unemployment rate among university graduates in Egypt (especially those from humanities and social sciences), many Egyptian families still prefer higher education over TE, which has been traditionally associated with working under harsh conditions, poor financial returns, and limited career pathways.
- **Underdeveloped governance and decision-making mechanisms.** The TE system continues to suffer from a lack of clarity in roles and responsibilities, insufficient accountability tools and mechanisms, and the absence of the formal involvement of social partners in the decision-making process (e.g. the business/private sector).
- **Unsustainable financing mechanisms.** Besides the limited financial allocation from the state budget to TE, which does not meet the existing needs and reform plans, some newly introduced initiatives heavily rely on financial support from development partners (i.e. international organisations and donors). This donor dependence undermines the sustainability of financing and, consequently, the sustainability of the implemented reforms.

Within this context, the **TE 2.0 Strategy** can improve the quality and relevance of technical education, modernise curricula, build the capacities of teachers and trainers, improve the infrastructure and equipment of TE schools, engage the private sector in TE, and promote work-based learning.

1.3.2. Introduction to the TE 2.0 Strategy

In 2018, Egypt launched the TE 2.0 Strategy for the period 2018-2023 to enhance the quality, relevance, and attractiveness of its TE sector. The strategy aims to create a TE system that complies with international quality standards and addresses labour market demands for a skilled workforce. The strategy is in line with Egypt's Sustainable Development Strategy (SDS): Vision 2030, which targets an unemployment rate of 5% by 2030 through skills development, entrepreneurship, and enhancing school-to-work transition, among other strategies.¹³

The MoETE envisioned such **transformation to be centred around the following set of principles** as presented in Figure 3 below.¹⁴

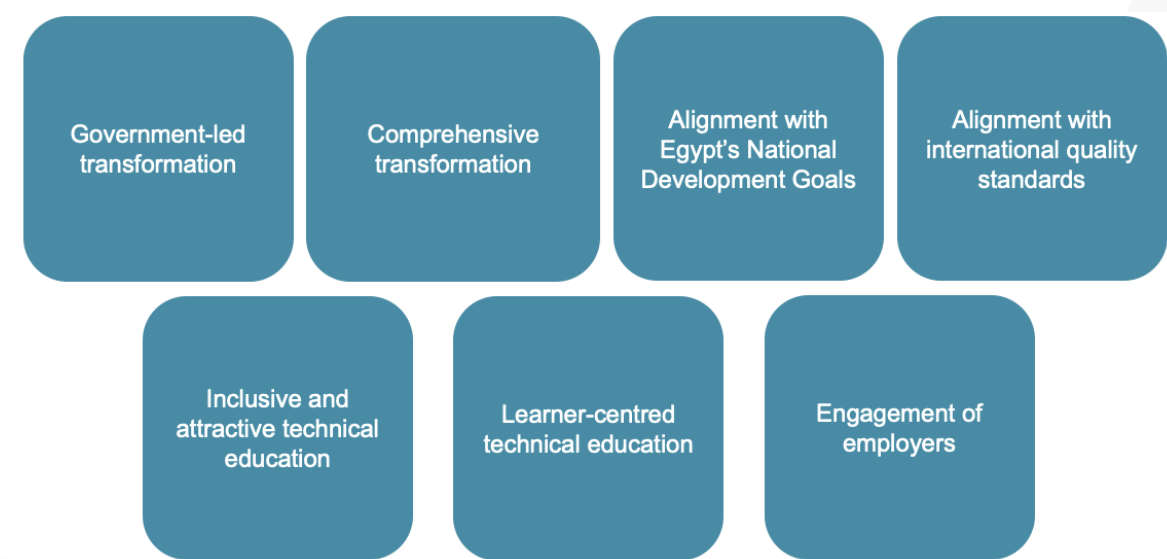
¹³ ETF (2020). *Torino Process (2018–2020): Egypt national report*.

https://openspace.etf.europa.eu/sites/default/files/2020-04/TRPreport_2020_Egypt_EN.pdf

¹⁴ MoETE (2019). *Towards New Technical Education [presentation by Prof. Mohamed Megahed]*.

<https://encc.org.eg/Images/Filelib/4-Towards-New-Technical-Education.pdf>

Figure 3. Transformation principles for the TE 2.0



Source: Prepared by the assessment team based on the TE 2.0 Strategy (MoETE, 2019).

The strategy formulation process was driven by high-level political support and was steered by the MoETE. The process included extensive consultations with various international development partners and donors operating in Egypt, such as the EU (through the ETF and the TVET-Egypt programme), the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), and the United States Agency for International Development (USAID), among others. The Strategy was structured around the following five pillars and their related activities:^{15,16}

- **Transformed quality** of technical education.
- **Transformed relevance** of technical education by transferring to CBE.
- **Transformed teachers** through training and qualifications.
- **Transformed schools** through employer engagement & work-based learning.
- **Transformed image** of technical education through changing social perception.

While the primary emphasis of this assessment is on the achievements projected with short and medium-term priorities (2018-2023) as part of the TE 2.0 Strategy published in 2019¹⁷, the assessment will also consider indicators, achievements, and challenges pertaining to long-term goals. This means that the **revision of the TE 2.0 Strategy for 2024-2029**¹⁸, published in 2023, has also been considered in the analysis.

The overall and pillar-specific assessment results are explored in the subsequent sections. While Section 2 presents the key strategic conclusions and recommendations, including key strategic achievements and areas for improvement, in Section 3 there is an analysis of the importance of each of the five pillars of the strategy, a performance review, identification of opportunities for improvement, and a summary of pillar-specific policy recommendations. Finally, Section 4 contains the concluding remarks.

¹⁵ Ibid

¹⁶ MoETE (2022). *Technical Education 2.0 [presentation by Prof. Mohamed Megahed]*. <https://t.ly/H0jgM>

¹⁷ MoETE (2019). *Technical Education 2.0: Principles, Pillars, Priorities and Planning*.

¹⁸ MoETE (2023). *Technical Education 2.0: Transformation Policy Paper (First Edition)*

2. Key Strategic Conclusions and Recommendations

2.1. Key Strategic Achievements

The assessment of the implementation of the TE 2.0 Strategy confirms an ongoing and significant transformation effort with the potential to reform technical education provision in Egypt and to impact the entire TVET sector. This Strategy represents a crucial milestone in educational reform and strategic planning in Egypt, reflecting a **genuine intention and political will for change**. Various stakeholders are engaged with and aware of the Strategy and its planned interventions, which is evident from the several solid achievements over the past five years, as detailed in the assessment of pillar-specific achievements in Section 3. Therefore, **we recommend that the strategic direction adopted in TE 2.0 (including the initiatives implemented under its five pillars) should be maintained and reinforced rather than changing course and starting anew**. The recommendations provided in sub-section 2.3 are built upon this conclusion.

The reform process has addressed the Initial Vocational Education and Training (IVET) provision under the MoETE (Egypt's largest TVET provider in terms of the number of learners and educational institutions) by covering various elements and consolidating different TE models under a single strategy. While there are areas for further improvement, as discussed in the subsequent section, the breadth of achievements across all pillars indicates a **well-rounded reform initiative**. Moreover, **inter-ministerial communication and collaboration** have shown some improvement, particularly in the MoETE's work with the Ministry of Planning, Economic Development, and International Cooperation (MoPEDIC) to establish Sector Skills Councils (SSCs).

A key accomplishment of this reform effort is the **MoETE's ownership of the initiative**, steering the process rather than merely responding to international development partners' agendas. This ownership, combined with strong involvement from donor and international organisations in strategic planning and implementation, has consolidated technical and financial support around the Strategy's priorities, objectives, and planned interventions. However, further improvement is needed to reduce donor dependence to the extent feasible to ensure the sustainability of the planned reforms.

The Strategy's implementation has been supported by the launch of several **innovative models** such as the ATS, CBE, and Centres of Competence (CoCs). These models introduced novel approaches to TE provision, offering valuable lessons for the broader TVET sector. The models were all made possible through strong partnerships with the business/private sector that have shown increased confidence and trust in collaborating with the MoETE. In addition, the establishment of **new entities** such as the Centre for the Enhancement of Quality Assurance of Technical Education (CEQAT), the Technical and Vocational Education Teachers' Academy (TVETA), the Technical Education Reform Office (TERO), and the Egyptian Technical Quality Assurance and Accreditation Authority (ETQAAN) aligns with the planned interventions and institutionalises the reform process, which is crucial for future scaling and sustainability. These entities address some of the TVET sector's longstanding needs, such as QA, teacher training and qualification, M&E, and accreditation and certification.

There is also a **clear commitment within the MoETE to the Strategy** as the guiding document for reforming TE in Egypt. This commitment remained steadfast, with the MoETE resisting pressure to engage in initiatives outside the Strategy.¹⁹ The assessment also shows **increased business/private sector engagement** in the reform process, particularly in establishing and scaling the ATS model, creating CoCs, expanding the Dual Education and Training System (DS), and participating in CBE curriculum development and student assessment. Meetings with business / private sector representatives affirmed their awareness of and engagement with the ongoing reform process.

These reforms and achievements have **positively impacted the social perception of technical education**, evidenced by the popularity of the ATS and DS models. For instance, as highlighted in the interview programme, one ATS had 225 students selected out of 2 000 applicants, indicating the

¹⁹ El-Ashmawi, A. (2024). *Supplementary Report on the Lessons Learnt from Developing and Implementing the MoETE Technical Education Strategy 2.0*.

increasing demand and perceived value of this new generation of TE schools. As highlighted by several interviewed stakeholders, these students also include many who qualify for general education, but they intentionally chose TE out of belief in its labour market value. Hence, the newly introduced TE schools (i.e. ATS, CoC, and DS schools) should serve as a model for increasing the popularity of other, traditional, TE schools through quality enhancement and the adoption of WBL.

2.2. Key Strategic Areas for Improvement

While significant achievements have been made and concrete steps have been taken towards implementing the TE 2.0 Strategy, our assessment identified several areas that remain challenging in the context of the ongoing reform efforts and may require further improvement.

2.2.1. Strategic planning, development, and implementation

The TE 2.0 Strategy, published in 2019, aimed to address various aspects of TE reform in Egypt, covering the period 2018-2023. It was followed by a more detailed strategy document released in 2023, which covers the period 2024-2029. Although these efforts have established a foundation for the ongoing reforms, **the Strategy still lacks a comprehensive and detailed action plan.** It outlines the vision, principles, and key priorities for transforming TE but lacks detailed implementation plan(s), resource allocation, clear timelines, defined roles and responsibilities, and measurable performance indicators to ensure effective execution and monitoring of the intended reforms.

The Strategy was intentionally formulated with IVET in mind (i.e. covering TVET provision under the MoETE, which has enabled more focused and controlled implementation of the planned reforms under the authority of the MoETE). However, there is a need at this stage for strengthening inter-institutional cooperation with other ministries to support the current reforms under TE 2.0 while also moving towards a more comprehensive reform of the whole TVET sector in Egypt.

2.2.2. Governance structures and mechanisms

Enhancing governance structures and mechanisms is crucial for formulating, steering, and implementing a reform process. Thus, governance should be positioned as a core, transversal goal of the Strategy rather than a subsidiary goal under Pillar 1.²⁰ This entails establishing clear, transparent, and accountable decision-making structures involving all key stakeholders, including the MoETE, other government bodies, business/private sector representatives, teachers, students, development partners, etc. The comprehensive Education Sector Analysis (ESA) of pre-university education in Egypt, conducted by a consulting firm (and the MoETE) in 2021, has also affirmed the need for strengthening governance in TE²¹.

Within this context, **TERO's potential as the central M&E body is yet to be fully exploited.** To maximise its contributions to evidence-based strategic planning and decision-making, TERO, a key institution for TE governance, should be empowered with the necessary resources, authority, and data collection tools to monitor and evaluate the Strategy's implementation effectively, ensuring continuous improvement and alignment with the overarching goals of TE 2.0. In addition, through both technical and financial support, which could be offered by the development partners, TERO should be further supported by developing the capacity of its staff while recruiting new, highly qualified calibre.

2.2.3. Financial allocations

Adequate financial resources are essential to the reform process. Current financial allocations for pre-university education in Egypt are insufficient compared to the intended reforms and the sector's needs. Public/state financing still does not meet the constitutional mandate of 4% of Egypt's Gross Domestic Product (GDP) for pre-university education. Despite increased nominal spending, actual spending, after accounting for inflation, has seen minimal growth. The analysis carried out by the Egyptian Centre for

²⁰ MoETE (2023). *Technical Education 2.0: Transformation Policy Paper (First Edition)*.

²¹ GPE (2021). *Egypt Pre-University ESA 2021*. <https://www.globalpartnership.org/content/education-sector-analysis-egypt-2021>

Economic Studies (ECES) on the government spending on education differentiated between nominal spending, which has indeed increased by 19% between 2021/2022 (EGP 193.7 billion) and 2023/2024 (EGP 229.9 billion), and actual spending, which increased by only 0.3%. Moreover, when looking at public spending on pre-university education as a percentage of GDP, it went from 2.5% in 2021/22 to 1.9% in 2023/24.²² Even with significant contributions from donor/international organisations and the business/private sector to the reform process, almost all the stakeholders interviewed for this assessment highlighted that **the existing financial constraints impact all aspects of the intended reforms under the Strategy.**

In line with this, the appraisal of Egypt's Education Sector Plan (ESP) 2023-2027, commissioned by UNICEF²³, stressed the existing funding gap as a key issue that can '*interfere with meeting objectives and successful resource mobilisation.*' The appraisal suggests a USD 21 billion funding gap impacting pre-university education over the duration of the ESP (2023-2027) and calls for a stronger financial framework with clear strategic prioritisation. Without addressing these financial challenges, the ambitious goals of the TE 2.0 Strategy are unlikely to be fully realised. A comprehensive financial plan and resource maximisation strategy (i.e., optimisation of available resources and mobilising additional ones) based on genuine costing analysis and leveraging Public-Private Partnerships (PPPs) are needed to ensure sustainable funding.

2.2.4. Financial sustainability of reforms

Sustaining and potentially scaling up reforms, such as the ATS, DS, and CoC models, remains a challenge due to the high costs and resource intensity. For example, operating ATS was highlighted by stakeholders as particularly resource-intensive. Industrial partners' ability to sustain operations may be impacted if the expected Return On Investment (ROI) is not realised. It also impacts the MoETE's ability to attract large enterprises to establish new ATS schools since, at a certain point, most, if not all, large business enterprises in Egypt would have been approached. To address these challenges, it is essential to explore innovative financing models and PPPs that can provide more stable and diversified funding sources. In addition, the government could consider offering incentives and support to encourage continued and new investments from the private sector. Ensuring a clear demonstration of the long-term benefits and potential ROI from ATS to the industrial partners can also help maintain their commitment and attract new partners. Although it comes with its challenges, encouraging partnerships between several medium-sized enterprises to support a single school, as in the CoC model, could help scale up the model. Meanwhile, it was highlighted during the interviews with stakeholders that some ATS schools are considering introducing enrolment fees. Indeed, WE ATS has already introduced enrolment fees starting 2023/2024 that range from EGP 6 000 for first-year students to EGP 8 000 for third-year students.

2.2.5. Alignment of donors' funding and technical support

While since 2018, there have been efforts to reduce duplication and overlap of funding and increased cooperation on technical issues between the development partners (donor/international organisations), there is still room (and a need) for **higher alignment of donor/international organisations' funding and technical support** with the MoETE strategic goals. The TE 2.0 Strategy has indeed enhanced the MoETE's ownership of the reform process. However, several core aspects of the planned reforms, such as teachers' CBE training and ToT, school-to-work transition, career guidance activities, and M&E, are still heavily dependent on the development partners' technical and financial support. For example, as pointed out by the interviewed MoETE officials, there are not enough MoETE staff to follow up on 22 000 career guidance and entrepreneurship teachers in schools, with only one MoETE official currently appointed per governorate. Such reliance on external support can create vulnerabilities in the sustainability of reforms. These reforms can only be sustained through increasing domestic funding (i.e. public / state financing of TE) and building internal capacities. Moreover, establishing stronger PPPs, diversifying TE financing, and leveraging local resources can contribute to sustaining the reforms. The

²² ECES (2023). *Has Spending on Health and Education Declined in the 2023/2024 Budget?* (Official Government Statement). <https://eces.org/wp-content/uploads/2023/08/Views-on-News-695.pdf>

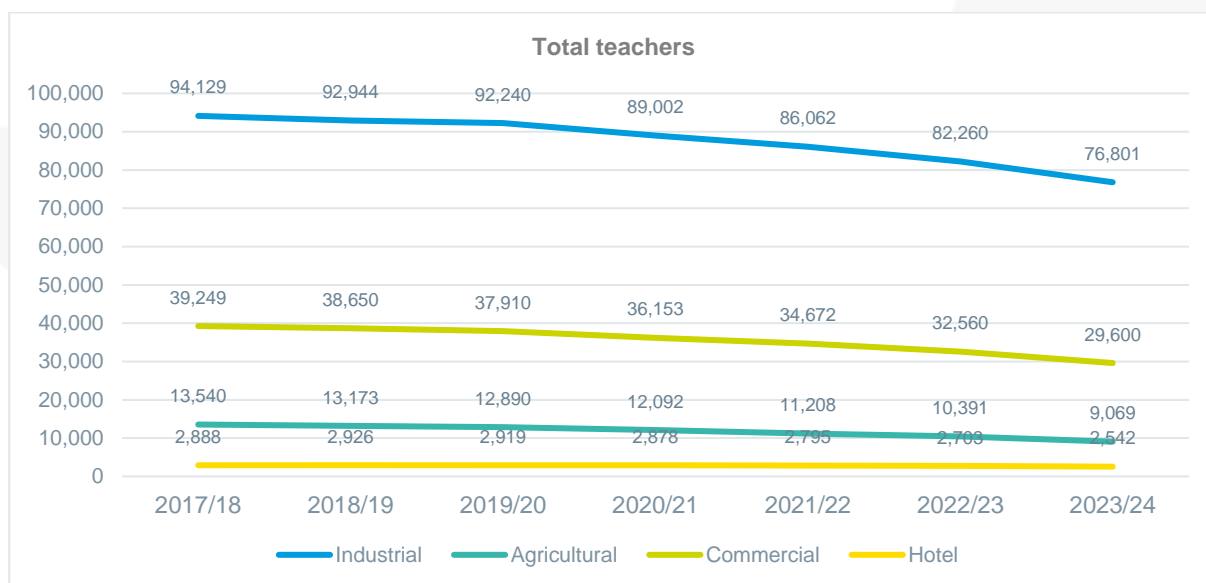
²³ GPE (2022). *Appraisal of the Government of the Arab Republic of Egypt's ESP 2023-2027*. <https://www.globalpartnership.org/content/appraisal-egypts-education-sector-plan-2023-2027>

TE 2.0 reform, therefore, should be systematically planned, financed, and monitored, ensuring a cohesive and unified approach from the central level to each school within the system.

2.2.6. Teacher shortage

Teacher shortage is a significant challenge that is expected to increase, with a large percentage of teachers nearing retirement and restrictions on public employment. Teacher shortage was among the most highlighted issues throughout the meetings with stakeholders operating at the central, local, and school levels. When examining the official statistics from the General Administration of Central Databases at the MoETE over the period 2017/18 to 2023/24, a clear downward trend in the number of teachers emerges.²⁴ Such a decline in numbers applies to the four TE tracks. The total number of teachers (across the four tracks, in both public and private schools) witnessed a 21% decrease (from 149 806 teachers in 2017/18 to 118 012 teachers in 2023/24) (Figure 4)²⁵.

Figure 4. The number of total teachers (public and private schools) per TE track (2017/18 - 2023/24)



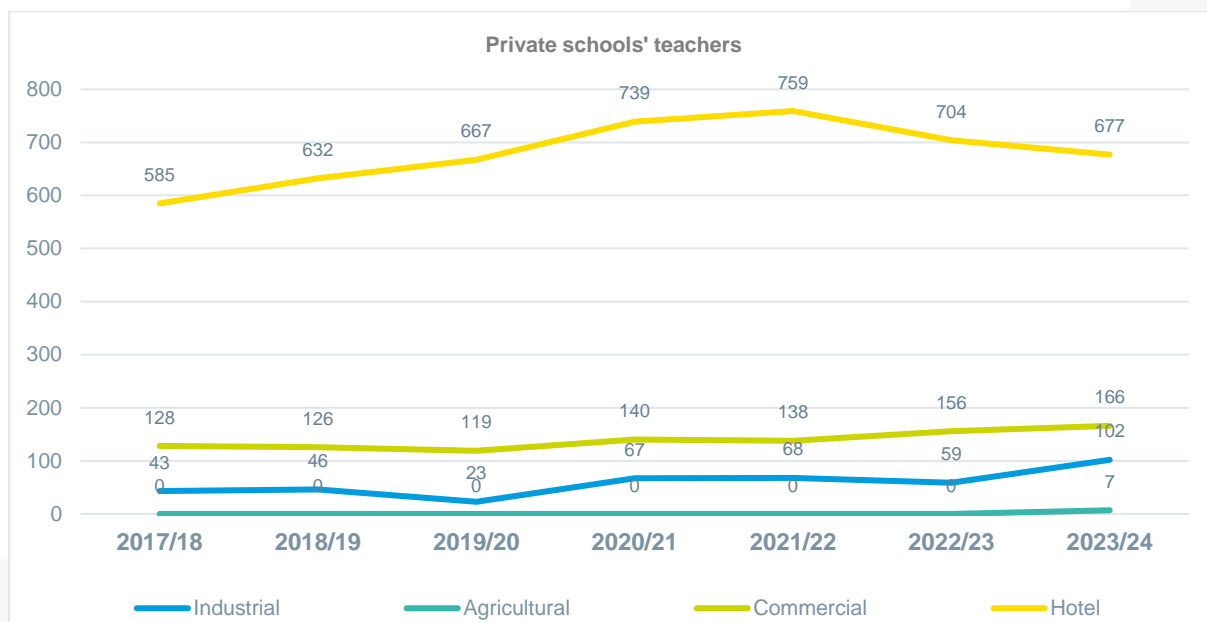
Source: Developed by the assessment team, based on data from the General Administration of Central Databases at the MoETE.

The same period has also witnessed an increase in the number of teachers hired by private TE schools from 756 in 2017/18 to 952 in 2023/2024. However, the number of private school teachers remains a small percentage of total teachers (0.8%) (Figure 5).

²⁴ EMIS (2024). *Statistical yearbook*. https://emis.gov.eg/Site%20Content/book/2023-2024/main_book2023.html

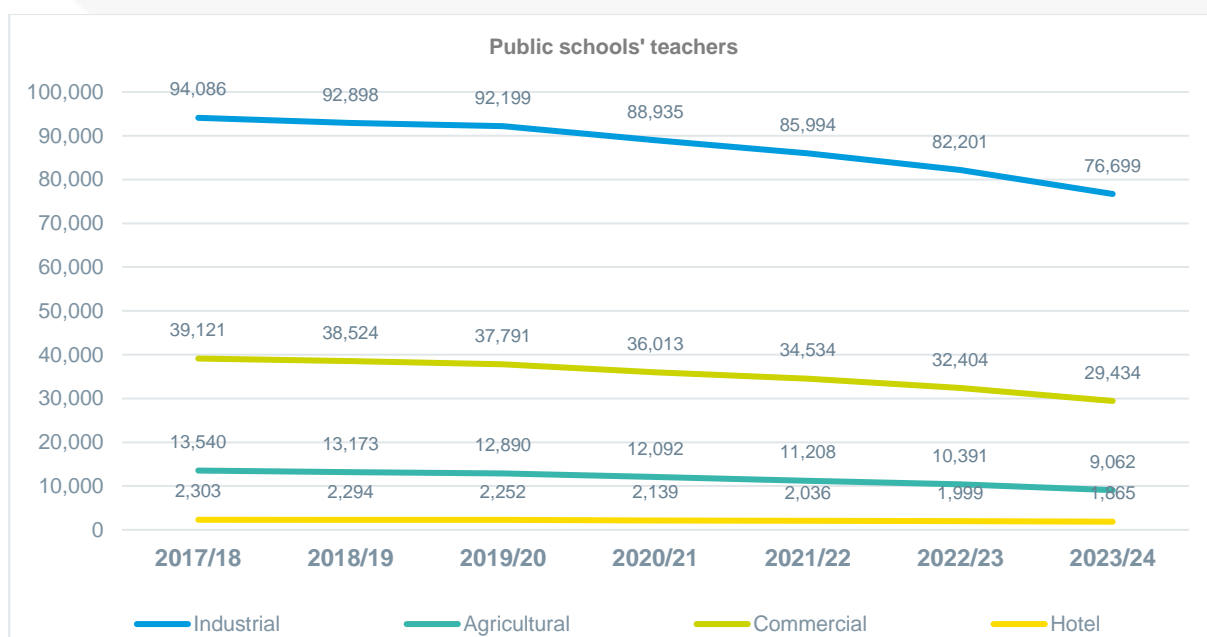
²⁵ Including 2 900 teachers under the DS and 1 537 teachers under the ATS.

Figure 5. The number of private school teachers per TE track (2017/18 - 2023/24)



Source: Developed by the assessment team, based on data from the General Administration of Central Databases at the MoETE.

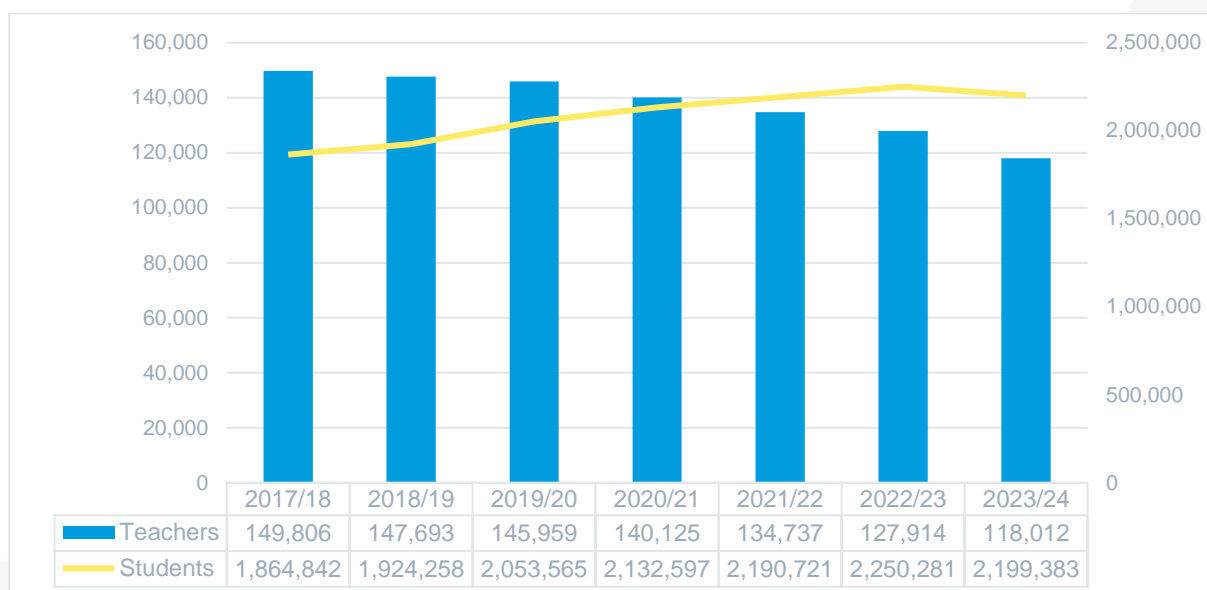
Figure 6. The number of public school teachers per TE track (2017/18 - 2023/24)



Source: Developed by the assessment team, based on data from the General Administration of Central Databases at the MoETE.

These trends become particularly important when considering the increase in the number of admitted TE students over the same period. As illustrated in Figure 7, while the number of students increased by 18% between 2027/18 and 2023/24, the number of teachers decreased by 21% over the sample period.

Figure 7. The trends in the total number of teachers and students (2017/18 - 2023/24)



Source: Developed by the assessment team, based on data from the General Administration of Central Databases at the MoETE.

This results in a higher-than-average ratio of students per teacher at one teacher for 13.29 students in industrial education in 2023/24, 26.97 in agricultural education, 29.10 in commercial education, and 28.51 in hotel education. In addition, the average classroom density in 2023/24 stands at 35.17 in industrial education (35.77 in 2018), 45.48 in agricultural education (42.42 in 2018), 48.68 in commercial education (42.54 in 2018), and 36.49 (36.65 in 2018) in hotel education. Such high student-per-teacher ratios combined with high classroom density tend to challenge the quality of TE provision. It is also worth noting that the ratio of students per teacher varies significantly between different locations (governorates), as seen in the figure below, which calls for taking into account the geographical specificity when addressing teacher shortage.

Figure 8. Average number of students per teacher per governorate in 2022/23

Statement	Agricultural secondary	Hotel Secondary	Commercial Secondary	Industrial Secondary	Statement	Agricultural secondary	Hotel Secondary	Commercial Secondary	Industrial Secondary
Total	26	27	26	13	Total	26	27	26	13
Cairo	53	43	43	11	Beni-Suef	22	12	21	15
Alexandria	37	23	42	14	Fayoum	57	34	37	14
Port Said	24	6	5	9	Menia	42	7	33	14
Sues	37	12	25	11	Asyout	41	13	24	21
Damietta	24	9	14	11	Suhag	23	10	25	9
Dakahlia	14	25	27	8	Qena	26	25	15	21
Sharkia	13	8	17	10	Luxor	27	15	25	17
Kalyubia	57	36	33	17	Aswan	16	13	19	13
Kafir EL-sheikh	13	15	26	11	Red Sea	24	17	22	12
Gharbia	18	31	20	11	ElWdi El Gidid	9	-	10	8
Menoufia	22	11	19	13	Matrouh	30	14	34	15
Behera	22	10	32	17	North Sinai	17	5	10	6
Ismailia	31	13	17	11	South Sinai	19	11	20	7
Giza	38	60	74	23					

Source: CAPMAS (2023) Annual Bulletin for Pre-university Education for the Academic year 2022 / 2023. https://capmas.gov.eg/Pages/Publications.aspx?page_id=5104&Year=23420 (based on data from the General Administration of Central Databases at the MoETE).

Teacher shortage is even expected to significantly increase over the coming years, with a large percentage of teachers being over 55 years old and expected to retire soon, while restrictions on public employment still exist. The impending wave of retirements of many experienced teachers presents a significant challenge, potentially leading to increased class sizes and reduced individual attention for

students. The situation is further complicated by factors such as relatively modest salaries and working conditions that may not fully reflect the critical role of educators in the educational system. According to estimates provided by the MoETE to the assessment team, the ministry currently faces a deficit of 20 109 teachers across the four TE tracks, with this shortfall expected to grow to 26 100 teachers within the next five years. In the DS, there is currently a 35% deficit, which is projected to reach 65% within the same timeframe.

In a similar fashion to teacher shortage, the size of school staff (school administrators, employees, specialists, and workers) has been decreasing between 2017/18 and 2023/24. It went from 25 537 in industrial education in 2017/18 to 19 770 in 2023/24, from 6 087 to 4 157 in agricultural education, from 13 153 to 10 027 in commercial education, and from 1 377 to 1 210 in hotel education.

2.2.7. Capacity building needs of teachers

Interviews with the development partners, TVET experts, and teachers highlighted that many teachers **lack training on state-of-the-art equipment/machinery**, the knowledge of which is essential for aligning TE with international standards and labour market needs. They are also in need of regular pedagogical training. Within this context, TVETA has a critical role to play. There is a need for clear standards for initial teacher education, continuous professional development, and in-company training (i.e. teachers receiving industry-led training inside workplaces on state-of-the-art equipment/machinery and techniques, especially for those involved in WBL models such as the ATS, DS, and CoC).

2.2.8. Infrastructure limitations

Existing schools' infrastructure cannot (fully) support the planned reforms/interventions as highlighted by different stakeholders at central and school levels. This presents significant challenges to the implementation of the new CBE curricula, keeping up with industrial and labour market developments, and the implementation of an effective student assessment process under the CBE methodology. The **insufficient and often outdated facilities and equipment** can hinder the efforts to deliver quality TE that meets international standards and labour market needs. In addition, school staff (administrators and teachers) stressed that the available raw materials are insufficient to carry out the planned training as instructed under the CBE curricula while also strongly impacting the effectiveness of the assessment process.

2.2.9. Excessive bureaucracy and limited school autonomy

Excessive bureaucracy and limited school autonomy affect private sector engagement and resource management. The **limited school autonomy is most evident in relation to resource management** (i.e. schools' ability to manage their budgets and allocate resources according to their specific needs, such as the procurement of equipment and carrying out maintenance work). The inability to quickly adapt resource allocations to meet immediate needs can hamper the schools' ability to ensure smooth and effective educational operations. This was also highlighted within the context of the Capital project (or the Productive Schools model), where schools implement income-generating activities (such as providing training or assistance services to companies or individuals or selling products manufactured by students and teachers, among others). In this model, schools lack sufficient autonomy when it comes to designing and running the project activities and utilising the income generated.

Moreover, schools still lack sufficient autonomy in forging partnerships with local businesses and industries, identifying and facilitating WBL opportunities, and providing continuing training and technical assistance to companies, among others. Within this context, bureaucratic bottlenecks can deter business/private sector partners that might be willing to invest in schools but are discouraged by the lengthy and complex approval processes.

2.2.10. Aligning different TE models

Introducing and operating different technical education WBL-based models, such as the ATS, international ATS, DS, and CoC, is a positive development that represents a novel addition to Egypt's TE sector. However, although these models are perceived as different forms of WBL that offer strong workplace engagement, they tend to **operate as independent brands**, increasing the risk of creating

parallel structures. This risk is further increased by the fact that these models are often supported by different donors with different modes of operation. This fragmentation can also lead to inconsistencies in the quality and outcomes of TE among the different models, as well as inefficiencies in resource allocation and management. To mitigate these risks, developing a coherent and integrated framework that ensures alignment and coordination among these models (in terms of curricula, assessment, and certification/qualification) is crucial.

2.2.11. Linkages between technical and higher education

Despite the positive developments in facilitating pathways to higher education, stronger linkages between technical secondary education and technical higher education, especially the TUs, are still needed. Several interviewed stakeholders highlighted that the specialisations and programmes in TE and the newly established TUs do not fully align. This misalignment creates challenges for students transitioning from secondary to higher TE. As pointed out during the interviews with the Ministry of Higher Education and Scientific Research (MoHESR) officials, the plan was to have 80% of TUs' students come from TE schools and 20% from general secondary schools. However, a much higher percentage of general secondary education graduates have been admitted to TUs. This issue is further compounded by the rapid expansion of Egypt's TE sector and the increasing and diverse range of specialisations and programmes offered. Stakeholders have emphasised the importance of creating a more integrated curriculum development process that accounts for both secondary (technical) and higher education, adequately preparing students for advanced studies by providing them with strong enough foundational skills to be successful in HE.

2.2.12. Labour Market Information

There is a strong need for comprehensive labour market information, tracer studies, and graduate tracking systems. Such tools are essential for aligning educational processes and outcomes with labour market demands and ensuring that TE programmes remain relevant and effective. Currently, the **lack of relevant, detailed, and systematic Labour Market Information (LMI)** hampers the ability of the MoETE to tailor its programmes to the needs of the economy in an evidence-based way. Meanwhile, tracer studies and graduate tracking systems can provide valuable insights into graduates' career trajectories and employment outcomes and help identify gaps in the education-to-work transition and so improve the conception and relevance of the curricula.

2.2.13. Digital transformation

Digital transformation remains an opportunity that is yet to be fully exploited. While several examples of utilisation of digital tools in teaching and learning do exist and have been promoted by the Strategy, the **full potential of digital transformation has not been tapped yet**. Meanwhile, many technical schools still lack the necessary infrastructure, such as reliable internet access and modern computer labs, to fully integrate digital tools into their teaching and administrative processes. Furthermore, the absence of a comprehensive digital transformation plan (which is currently being developed by the GIZ with financial support from KfW) means that there are missed opportunities for improving efficiency, access, and quality in TE. For example, the potential of digital platforms to facilitate continuous professional development for teachers, streamline administrative tasks, and enhance monitoring data collection and analysis for evidence-based decision-making is not fully realised.

2.2.14. Student behaviour and attitude

Despite the very low dropout rate in technical education, assessed at 0.1% in 2021²⁶, there are consistent reports of **students' behavioural issues and indifferent attitudes** towards their education shared by interviewed schools' staff members and business/private sector representatives (i.e., those who offer WBL opportunities to TE students). This represents a topic that is yet to be addressed by the TE 2.0 Strategy. Considering that these behaviours are closely linked to how these students perceive

²⁶ ECSS (2023). *Transformations of the education system over ten years: pivotal inputs and turning points*. <https://marsad.ecss.com.eg/78037/>

TE in general and the value of their education in particular, they can have far-reaching effects on students' educational and employment outcomes.

2.2.15. Private sector support for CBE assessment

The business/private sector support for CBE student assessment could be further enhanced. CBE student assessment requires the participation of assessors coming from the labour market. However, as highlighted by the interviewed schools' staff, **it is becoming challenging to attract them**. This challenge stems from several factors, including the time and financial commitment required from industry professionals to participate in the assessment process. Many potential assessors are deterred by the additional workload and the lack of adequate compensation or incentives for their involvement. In addition, logistical issues, such as scheduling conflicts and the geographical distance between schools and workplaces, can further complicate the participation of assessors. Their limited engagement, in some instances, can impact the effectiveness of CBE, as it relies heavily on practical assessments to ensure students are technically competent and that labour market needs are covered.

2.2.16. Understanding the TE 2.0 Strategy

Another issue that emerged from the field research involving various groups of stakeholders was that **knowledge and understanding of the strategy and its pillars remain limited**, particularly at the school level and at the local/governorate level. This gap in knowledge and understanding can hinder the effective implementation of the TE 2.0 Strategy, as those directly responsible for executing the reforms may not fully grasp the big picture, including the objectives, processes, and expected outcomes of the ongoing transformation endeavour. At the school level, teachers and administrators might lack comprehensive information about the Strategy's intended reforms and how their roles contribute to achieving them. This carries the risk of developing a general sense of disengagement from the broader reform efforts.

2.2.17. Inter-ministerial communication and coordination

Despite the positive developments, **inter-ministerial communication and coordination could be further enhanced**. Effective communication and collaboration between the MoETE and various ministries, such as the MoHESR, MoTI, MoPEDIC, and MoL, is crucial for the successful realisation of the goals set out in the TE 2.0 Strategy. For instance, the alignment of curriculum development and the establishment of CBE across various educational levels requires seamless communication and joint planning between the MoETE and MoHESR. Similarly, the integration of labour market needs into educational planning necessitates close cooperation with the MoTI and MoL. One of the primary issues is the fragmentation of TVET responsibilities across different ministries, which can lead to overlapping initiatives and inefficient use of resources. For example, while the MoETE is primarily responsible for technical secondary education, other ministries also play crucial roles in providing vocational training and supporting school-to-work transitions. As the primary provider of TVET services, with extensive knowledge and expertise, infrastructure, and human resources, the MoETE should take the lead in fostering inter-institutional cooperation and coordination within the TVET sector.

2.2.18. Occupational standards and the National Qualifications Framework

The delay in developing and implementing comprehensive and updated occupational standards and a National Qualifications Framework (NQF) **hinders the visibility and recognition of qualifications and RPL efforts**. The lack of updated and comprehensive occupational standards also makes it challenging to ensure that the knowledge, skills, and competences taught in TE programmes meet the current needs of the labour market. This misalignment can result in graduates not being adequately prepared for the demands of their chosen profession/occupation, reducing their employability and the overall effectiveness of the TE system. Meanwhile, the delay in developing and implementing the Egyptian NQF further complicates the situation by creating barriers to the recognition of qualifications and all prior learning outcomes (including informal and non-formal learning outcomes).

The implementation of occupational standards and the NQF would play pivotal roles in facilitating labour mobility for Egyptian TE graduates by ensuring that graduates possess the competencies required by

employers both domestically and internationally. The NQF standardises qualifications, making it easier for skills and certifications obtained in Egypt to be recognised abroad. This alignment with international standards through the NQF enhances the transparency and comparability of qualifications, thereby simplifying the process for TE graduates to seek employment opportunities overseas.

2.3. Key Policy Recommendations

This section provides a set of overarching recommendations for the effective implementation of the TE 2.0 Strategy and the progress towards the transformation goals, building on the accomplishments of the past five years. The **recommendations are categorised into short-term, medium-term, and long-term actions** based on a practical assessment of their estimated implementation timeframes. It is important to note that while some recommendations are designated as medium- or long-term, the MoETE should work towards starting to plan and implement all recommendations as soon as possible, understanding that some will require more time to be fully realised. These recommendations also incorporate the analysis, insights, and guidance from a report on lessons learned from the development and implementation of the TE 2.0 Strategy, commissioned by GIZ's Technical Support for the Comprehensive Technical Education Initiative (TCTI) project.²⁷ The recommendations outlined below will further inform the new version and update of the TE 2.0 Strategy.

2.3.1. Short-Term Actions

2.3.1.1. Enhancing strategic planning

In the recent five-year period, two editions of the TE 2.0 Strategy were developed, with the latter published in 2023. Between these editions, significant achievements have been made, and solid steps have been taken towards the envisioned transformation. At this stage, the assessment provides recommendations on how to further advance the comprehensiveness of the most recent version of the TE 2.0 Strategy (2023) while building on the key achievements in key breakthrough areas. This entails developing a strategy document that contains the following elements, as presented in the figure below.

Advancing the comprehensiveness of the current Strategy with the addition of these elements is crucial for providing a clear and actionable roadmap for the transformation of TE in Egypt. The updated TE 2.0 Strategy should ensure that all stakeholders have a shared understanding of the intended reforms and planned activities while setting clear expectations and benchmarks for progress. The phased implementation plan will help roll out reforms systematically, allowing for adjustments based on ongoing assessments and feedback.

²⁷ El-Ashmawi, A. (2024). *Supplementary Report on the Lessons Learnt from Developing and Implementing the MoETE Technical Education Strategy 2.0*.

Figure 9. Key suggested elements for the TE 2.0 Strategy update



Source: Developed by the assessment team.

Moreover, a well-defined policy and governance framework will clarify the roles and responsibilities of all involved parties, fostering accountability and collaboration. Comprehensive funding and resource allocation plans will address financial constraints and ensure the sustainability of reform initiatives. Engaging stakeholders through targeted strategies will build much-needed support and incentivise active participation, especially in the private sector, while a robust communication strategy will keep all relevant stakeholders informed and aligned. Conducting regular labour market analyses will ensure that educational outcomes are relevant to economic needs. Finally, an effective M&E framework will enable continuous improvement, and a risk management strategy will help pre-empt and mitigate potential challenges. This comprehensive approach to strategic planning has strong potential to boost the effectiveness and impact of the TE 2.0 Strategy and facilitate its implementation efforts.

2.3.1.2. Establishing robust governance structures and decision-making mechanisms

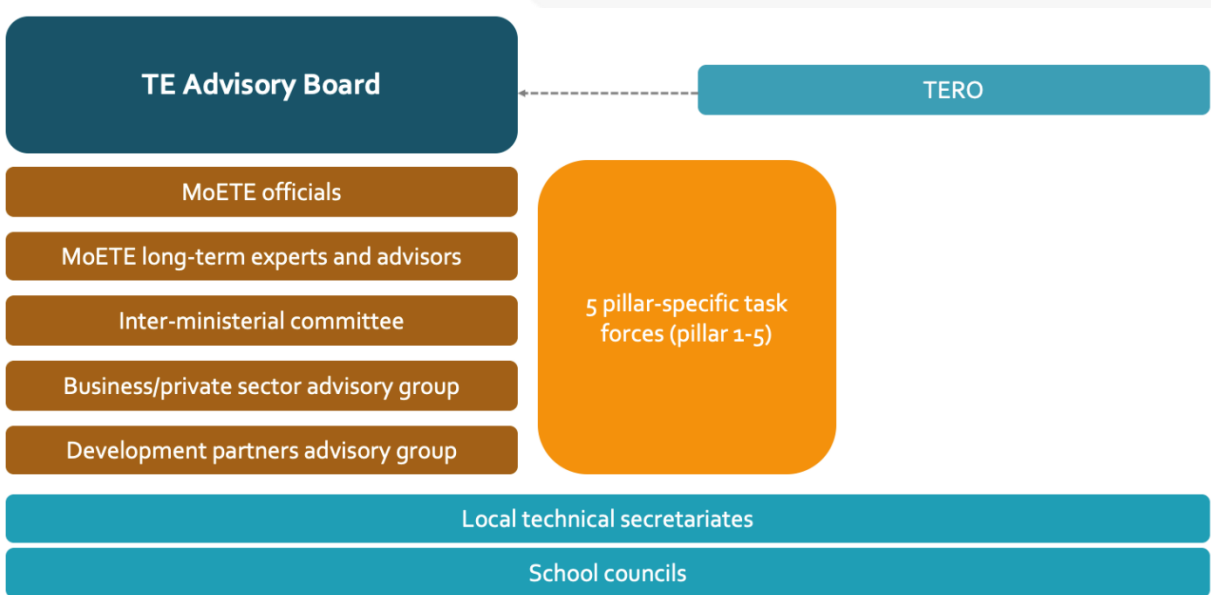
Strategic planning efforts should be embedded within robust governance structures and decision-making mechanisms. Governance, within the context of the TE 2.0 Strategy, should be approached as a central goal of the reform process rather than a subsidiary goal under pillar 1 (as positioned in the 2023 edition of the Strategy). Therefore, the assessment provides a recommendation to add a **standalone (6th) pillar on governance**, aiming to:

- **Steer the reform process** (i.e. strategic planning and strategy implementation): this involves establishing clear leadership roles and creating a structured process for both the planning and implementation phases of the strategy. Effective steering requires a central multi-stakeholder body or committee dedicated to overseeing the reform process, ensuring that all activities align with the strategic objectives, and adjusting plans as needed based on ongoing evaluations and feedback from strategy implementation on the ground. Within this context, TERO (under the supervision of the office of the Deputy Minister for TE Affairs) has a critical role to play in facilitating the strategic planning and implementation processes.
- **Enhance institutional coordination**: to facilitate seamless collaboration among various institutions involved in the TE sector, it is essential to develop formal mechanisms for communication and coordination. This can include regular inter-ministerial meetings, joint task forces, and open communication channels between the relevant parties. Improved coordination will help avoid duplication of efforts, maximise synergies, and ensure all stakeholders work towards common goals. The MoETE should promote and lead this coordination as the primary beneficiary given its role as the main TVET provider with substantial resources and expertise.

- **Delineate and clarify roles and responsibilities:** a clear definition of the roles and responsibilities of each stakeholder is crucial for effective governance. This involves specifying the duties and expectations of government bodies, the MoETE departments, business/private sector partners, development partners, and other relevant parties. Clarifying these roles at the central, regional (governates), and local (schools) levels will help ensure accountability and facilitate the smooth implementation of initiatives.
- **Strengthen policy and regulatory framework:** developing and enforcing a robust policy and regulatory framework is essential for ensuring compliance with the goals of the TE 2.0 Strategy. This includes revising and updating existing laws and regulations to support new and future initiatives. A strong regulatory framework will provide a stable foundation for sustained reform. This might include, for example, provisions to enhance the operational autonomy of schools, reform the Capital project, restructure the labour / workers' system into an RPL system, and regulate incentive packages for business enterprises, among others.
- **Promote stakeholder engagement:** engaging a wide range of stakeholders, including private sector representatives, local communities, students, and teachers is vital for the success of the TE 2.0 Strategy. This can be achieved through regular consultations, feedback mechanisms, and collaborative initiatives. By involving stakeholders in decision-making, the strategy can benefit from diverse perspectives and gain broader support and commitment (i.e. political, financial, and technical).
- **Improve accountability and transparency:** implementing mechanisms to enhance accountability and transparency is critical for building trust and ensuring effective governance. This includes regular reporting on progress, transparent allocation and use of resources, and independent evaluations of the Strategy's impact. Clear and accessible communication about the goals, actions, and outcomes of the reform process will help to build credibility and ensure that all stakeholders are informed and involved.

The central governance body overseeing the reform process should ideally be a **Technical Education Advisory Board**. This Board, as depicted in the figure below, will serve as the central entity for strategic oversight and guidance. The MoETE, along with TE development partners, has established a TE Advisory Board that had only one meeting in February 2022, with a second meeting scheduled for November 2024. **This recommendation affirms the ongoing efforts to re-activate and institutionalise this Board**, which will be responsible for steering the overall direction of the reform, making key decisions, and ensuring alignment with the strategic objectives of the TE 2.0 Strategy.

Figure 10. Proposed structure of the Technical Education Advisory Board



Source: Developed by the assessment team.

The Board may include the following stakeholder groups:

- **MoETE officials and advisors:** the Board should be headed by the Minister of Education accompanied by the Deputy Minister for Technical Education Affairs as the head of TERO. It will include representatives of the relevant MoETE departments and units, in addition to the Ministry's long-term experts and advisors. These MoETE officials will bring their knowledge and expertise, providing valuable insights and guidance to steering the reform.
- **Inter-ministerial Committee:** this Committee should facilitate coordination between different government ministries involved in the broader TVET sector. By promoting inter-ministerial communication and collaboration, the committee would help to align policies, resources, and initiatives across various bodies and sectors, ensuring a cohesive approach to future TVET reforms. It should include, but not be exclusive to, the following ministries: MoHESR, MoPEDIC, MoL, and MoTI.
- **Business/private sector advisory group:** engaging the business/private sector is crucial for the success of the TE 2.0 Strategy. This advisory group would ideally include industry and business representatives (i.e. business enterprises, industrial and trade chambers, trade unions, and employer organisations) who can provide input on the relevance and effectiveness of the education and training programmes and potential PPPs opportunities. For example, the group would include representatives of the Federation of Egyptian Industries, the Egyptian Federation of Investors Associations, and the Federation of Chambers of Commerce in Egypt. Their involvement ensures that the reforms are aligned with labour market needs while allowing the Board to mobilise resources through effective collaboration/partnership with the private sector. The business / private sector advisory group would also include representatives of **Sectoral Skills Councils**. These Councils, which, when established and operational, will be composed of industry representatives, experts, and employers from specific sectors, can play a vital role in defining occupational standards, advising on curriculum development, and ensuring that training programmes meet the needs of their respective sectors. Their input would help ensure that the Strategy remains responsive to sector-specific demands.
- **Development partners advisory group:** this group will include representatives from international development organisations and donors active in the TVET sector and their relevant programmes/projects. Their role would be to provide technical and financial support for the reform initiatives. By aligning their contributions with the strategic objectives of the Strategy, development partners can continue to provide a significant boost to the Strategy implementation.

Within this structure, the **TERO** would operate as a technical secretariat, providing support to the Board in M&E and directly reporting to the Deputy Minister for TE. It would play a critical role in tracking the progress of the Strategy implementation, collecting and analysing data, and offering feedback for continuous improvement and evidence-based decision-making. The TERO should ensure that the Strategy's implementation is evidence-based and that adjustments can be made in response to emerging data, challenges, and opportunities.

The **Five pillar-specific Task Forces (Pillars 1-5)**²⁸ will stem from the overall composition of the Board, which would focus on the specific pillars of the TE 2.0 Strategy, addressing key areas such as quality, relevance, teacher development, private sector engagement, and the image of TE. Each task force should work on overseeing and steering the implementation of the relevant pillar-specific initiatives and planned activities.

In addition to the Board's permanent members, **Counselling Members** (e.g. representatives of independent institutions such as ETQAAN and NAQAAE, TE-related ongoing projects by other development partners, additional MoETE officials, business/private sector representatives, and policymakers, among others). When needed, these Counselling Members would join on an ad-hoc basis.

At the governorate/local level, the **Local Technical Secretariates** will play a pivotal role in localising the TE 2.0 Strategy. Their primary responsibility would be to ensure that the Board's strategic directives

²⁸ The Board itself acts as the task force for the proposed 6th pillar.

and initiatives are effectively implemented within their respective regions. They should also act as a bridge between the central TE Advisory Board and schools, facilitating the flow of information, resources, and feedback in both directions. A similar approach has already been implemented within the scope of the DS, where a Technical Amana (technical secretariate) operates in each governorate, comprising the public and business/private sector representatives and reporting to the Central Amana.

At the individual school level, **School Councils** could be established to bring together school administrators, teachers, students, parents, and representatives from the local community and industry. These councils would ensure that every school has a voice in the implementation of the Strategy and that the unique needs of each school are addressed. They would also ensure that governance mechanisms function in both directions, disseminating information and implementation measures from the TE Advisory Board to the School level while bringing needs, data, and lessons learned from on-the-ground implementation to the Board. This bi-directional flow of information would enhance the adaptability and responsiveness of the Strategy, allowing for real-time adjustments of plans and real improvements on the ground. Moreover, establishing School Councils would foster a sense of ownership and accountability among different stakeholders. Such a school council would also require a higher level of school autonomy granted to schools. Increased autonomy would entail higher flexibility in managing budgets, allocating resources, engaging directly with local businesses notably for WBL opportunities, offering Continuing Vocational Training (CVT) services, and utilising school technical resources and infrastructure.

While establishing these School Councils may be challenging to roll out on a large scale in the short term, **starting with experimental pilots in selected schools** may be more feasible. The pilot School Councils could be linked to the accreditation process, where schools accredited by ETQAAN would be rewarded with greater administrative, financial, and operational autonomy and allowed to establish School Councils. This provides a strong incentive for schools to enhance the quality of their TE provision, achieve accreditation, and gain higher authority and responsibility for managing their operations. Subsidiarity is a key aspect of such a governance model, allowing progressive **delegation of the decision-making to the lowest level possible** to ensure higher efficiency, effectiveness, and relevance. If successful, this initiative could be scaled up and institutionalised across all TE schools in Egypt.

2.3.1.3. Positioning TE schools at the heart of the transformation endeavour

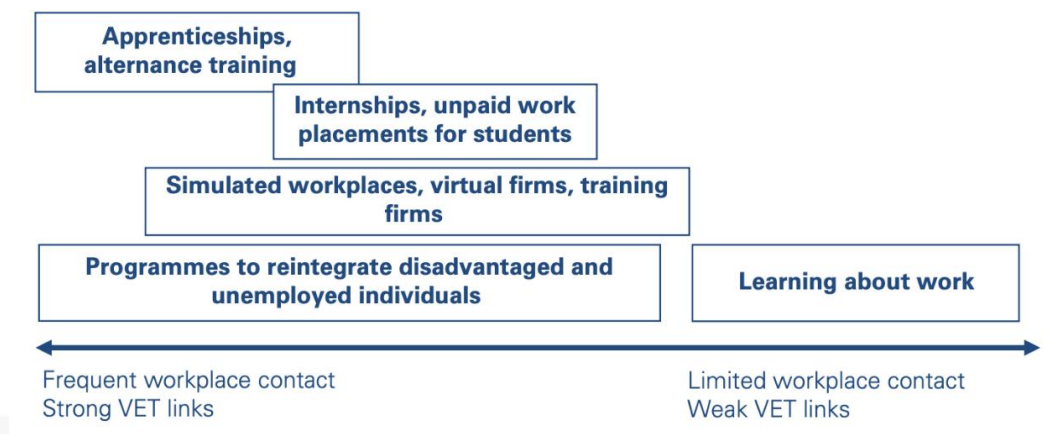
Traditional TE schools, which encompass the majority of schools and students, **should be central to the reform process** alongside the ATS, DS, and CoC models. While these models offer extensive WBL experiences, the bulk of Egypt's TE students are enrolled in traditional, school-based, TE. Focusing reform efforts on these schools ensures that improvements in quality, relevance, and outcomes reach the largest segment of the student population.

In this context, it is important that these **different models**, such as ATS, DS, and CoC, are consolidated and promoted under a common umbrella which should be positioned as the MoETE's vision for how IVET should be provided. This umbrella could be the WBL approach. Traditional TE schools should engage their students in various forms of WBL depending on their economic environment, ranging from limited workplace contact to extensive engagement, as seen in the ATS and DS models. While the economic and industrial landscape in Egypt cannot, at this stage, offer extensive workplace contact opportunities (e.g. apprenticeship) to all enrolled TE students, this should not deter TE schools from implementing a feasible WBL approach that aligns with the local economic and industrial landscape. Even opportunities that offer limited workplace contact, such as organising site visits to factories or inviting industry professionals to schools, would bring immense value to the educational process. In addition, WBL can also contribute to addressing teacher shortage by sharing TE responsibilities between both the public and business/private sectors. In relation to this, the ETF WBL handbook offers a typology of WBL according to the scope of the workplace contact (Figure 9).²⁹

²⁹ ETF (2018). *Work-based learning: A handbook for policy makers and social partners in ETF partner countries*. https://www.etf.europa.eu/sites/default/files/2018-09/Work-based%20learning_Handbook.pdf

Within this context, ETQAAN has a critical role to play in the accreditation of the schools that provide WBL-intensive programmes, setting quality standards for business / private sector entities working with WBL schools, and setting selection criteria for business/private sector CBE assessors.

Figure 11. Typology of WBL



Source: ETF (2018).

2.3.1.4. Addressing teacher shortage and capacity development needs

Addressing the teacher shortage is critical, as it could hinder reform efforts. This issue is closely tied to public financing and employment laws. Innovative solutions are needed to **address the shortage with minimal resources**, such as advocating for graduates of education colleges to fulfil public service requirements in schools instead of military service, enabling retired teachers to be contracted for temporary employment, or having senior education students participate in on-the-job training as temporary teachers. Another viable solution is to attract industry professionals to take on teaching roles. This could include engaging experienced practitioners as guest teachers for specialised workshops and demonstrations. This approach not only helps address the teacher shortage but also ensures that students benefit from up-to-date industry knowledge and real-world experience. Additionally, and similar to what has been implemented under the Education for Life initiative³⁰, an **endowment fund** could be created with financial contributions from TE development partners and the business / private sector. The interest generated from the fund could be used, among other things, to hire additional teachers.

Moreover, TVETA has a critical role to play in responding to the capacity development needs of TE teachers through continuous professional development, training, and certification. This includes, for example, training in CBE teaching and assessment approaches, enhancing teachers' language skills, and strengthening soft skills training in TVETA training programmes.

2.3.1.5. Enhancing the business/private sector participation

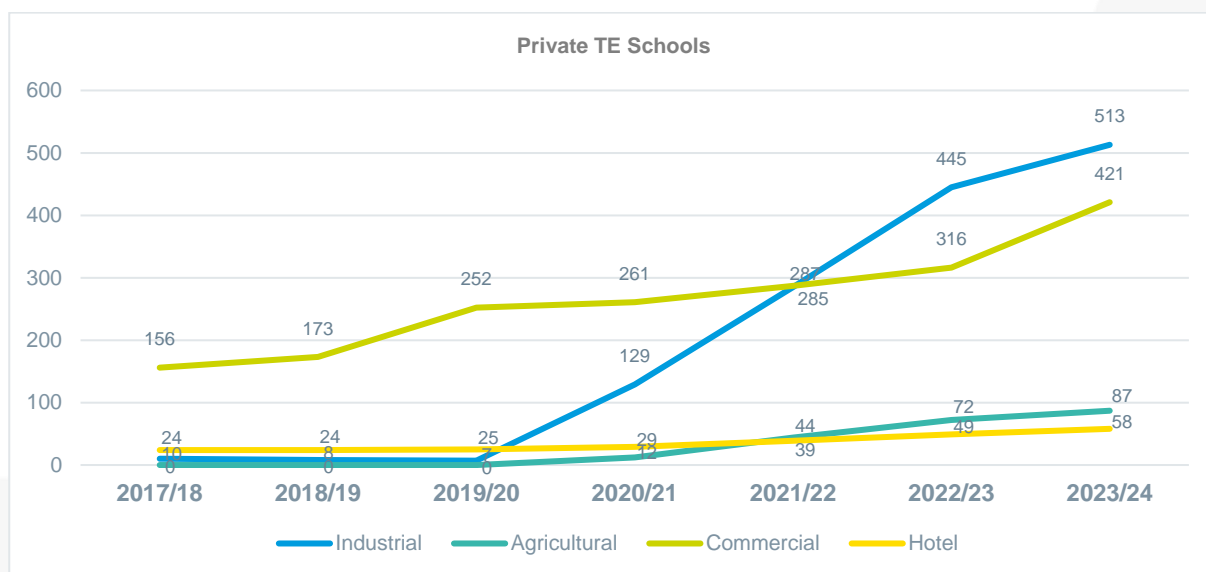
Business / private sector engagement should include not only large enterprises but also medium-sized ones. **Adopting a multi-partner approach** that offers collective financing and technical support is particularly important for the sustainability and scalability of the ATS model. Medium-sized and small enterprises can also support a broader range of traditional TE schools in offering WBL opportunities without significant investments, as required by the ATS model. Adopting a sectoral approach can also unify multiple enterprises within a specific sector around a common goal, as is the case in the CoC model.

When examining the available data on private TE providers, it is evident that there has been a significant increase in the number of newly established private TE schools, rising from 190 in 2017/18 to 1 079 in 2023/24 (Figure 10). However, considering the overall size of the TE sector in Egypt, additional efforts are required to **better incentivise private investment in TE**. In relation to this, ETQAAN has a critical

³⁰ NI Capital (2023). *Education for Life fund*. <https://nicapital.com.eg/lines-of-business/asset-management/>

role to play in ensuring the quality of private TE provision and that private TE schools meet the same quality standards as public ones.

Figure 12. Number of private TE schools per TE track between 2017/18 and 2023/24



Source: Developed by the assessment team, based on data from the General Administration of Central Databases at the MoETE.

Within this context, incentive packages should be offered to encourage private investment in TE. For example, the MoETE introduced a new scheme in 2022 by which it offers plots of land on the basis of a 25-year build-operate-transfer (BOT) agreement to encourage establishing fee-charging profit-making TE schools. Additional incentives could also include honorary recognition, state-regulated benefits, lending facilities, tax breaks, and technical support. Increased private investment in TE can support the MoETE in expanding access to high-quality TE with minimal resources.

A critical area for improvement is the **simplification of administrative procedures** for business/private sector engagement in work-based learning, which remains challenging for smaller enterprises. Streamlining these procedures would significantly lower barriers to business/private sector participation.

2.3.1.6. Reforming the labour/workers' system

Several stakeholders interviewed at both central and local levels pointed out the labour/workers' system's lack of effectiveness. Some even suggested closing the system altogether, arguing that it is non-reformable, and that the system has created the conditions for bending the rules. It is often viewed as an alternative route to obtaining a technical diploma qualification, with insufficient control over students' education and no obligation to attend classes.³¹ It was also highlighted by the interviewed schools' staff and teachers that some students under the CBE system consider transferring to the labour/workers' system because it requires less attendance, allowing them to work external jobs while obtaining their diplomas.

It is recommended that the **labour/workers' system be replaced with a simplified, more effective, and transparent Recognition of Prior Learning (RPL) system** that does not require those seeking recognition/validation of their non-formal and informal learning to attend exams over a three-year period. RPL is a process to make learning outcomes visible if they are consistent with clearly identified objectives (e.g. a qualification, credits toward a qualification, exemption for access to formal studies, certificate of labour market competences) so that these competences and learning outcomes may be used by the individual. Therefore, RPL is, first and foremost, an assessment process of all learning outcomes, however acquired (i.e. formally, non-formally and informally). Since formal learning outcomes are usually already recognised, RPL takes its strength from adding non-formal and informal learning outcomes to the picture. It is not free, but it is much less costly than several years of studies in formal education and training. RPL is less costly for the learners in terms of both direct cost (tuition fee) and

³¹ The system served 305,863 learners in 2023/2024.

indirect cost (opportunity cost and forgone earning). Moreover, it is also less costly for the government, with the option to reach a highly qualified labour force in the medium term.

This approach, supported by ongoing work with the National Authority for Quality Assurance and Accreditation of Education (NAQAEE) to finalise the Egyptian NQF, allows the MoETE to act as the awarding body, using existing VTCs (e.g. those under the MoL and the MoTI), ATS, CoCs, and other well-equipped TE schools as assessment centres. This would leverage existing infrastructure and resources, reducing costs and implementation time. It could be the case that there would be little (or no) need to build infrastructure since existing facilities could be used when they are not used by regular learners (e.g. on evenings and weekends). This approach would also enhance the credibility and acceptance of qualifications awarded after an RPL process, as they would be awarded by a recognised national body. This RPL system would also streamline the validation process, making it more accessible and efficient for workers. Within this context, close M&E of the system and setting minimum criteria for both the assessors and assessment centres are crucial steps to ensure the transparency, effectiveness, and credibility of the system.

A **small-scale pilot is, therefore, recommended**, touching on all the stages of a coherent RPL system: communication, sourcing, guidance, initial interview, registration, eligibility, preparation of final assessment, final assessment, certification, and ceremony.

2.3.1.7. Developing the capacity of newly introduced structures

The newly introduced structures (i.e., CEQAT, TERO, TVETA, and ETQAAN) are the cornerstones of the Strategy. **Enhancing the technical and human capacities** of these structures is essential to fulfil their roles effectively, with technical and financial support from donors and international organisations. This support can provide necessary resources for training, capacity building, technical guidance, and infrastructure development.

2.3.1.8. Enhancing downstream communication

Efforts should be made to **disseminate knowledge and awareness about the TE 2.0 Strategy** at the school level, especially among teachers. This would ensure that school staff are fully informed and engaged with the vision, objectives, and reform initiatives of the TE 2.0 Strategy, fostering a higher sense of ownership and commitment at the local and school levels. Enhancing downstream communication can be achieved by establishing clear channels of communication that offer regular updates about the reform process. Within this context, TVETA, through its regional branches, has an important role to play in raising awareness about the ongoing and planned reforms. In addition, leveraging digital tools and platforms can improve the reach and effectiveness of communication efforts. Moreover, incorporating feedback mechanisms into these communication strategies is crucial as they would ensure that the Strategy evolves in response to on-the-ground realities.

2.3.2. Medium-Term Actions

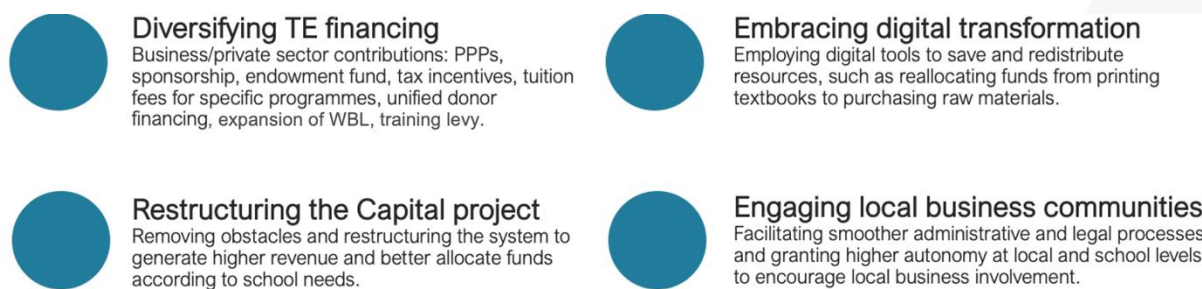
2.3.2.1. Ensuring the financial sustainability of the planned reforms

The primary source of financing for education in Egypt is and should always be through public funding to ensure that education remains accessible and equitable for all students, regardless of socioeconomic background. Historically, public financing for pre-university education in Egypt has been insufficient relative to the system's needs and the planned reforms. This shortfall has hindered the MoETE's ability to implement necessary changes, such as modernising curricula, improving infrastructure, enhancing teacher training, and expanding access to high-quality TE. Despite efforts to reform and transform TE in Egypt, limited financial resources constrain the progress and effectiveness of TE reform initiatives, including the TE 2.0 Strategy. Therefore, there is a need to advocate for increased financial allocations for TE from the state budget while also **implementing diversified financial** mechanisms to achieve optimal utilisation of available resources and mobilise new ones.

While higher financial allocations are not entirely within the MoETE's control, especially given the current economic situation, inflation, and currency devaluation, it is recommended that the MoETE explores additional, alternative, and innovative approaches for better resource mobilisation and utilisation to

enhance the financial sustainability of the introduced reforms. Examples of these approaches include but are not exclusive to, those highlighted in Figure 13.

Figure 13. Suggested approaches to enhance the financial sustainability of the introduced reforms



Source: Developed by the assessment team.

Meanwhile, increasing TE-related financial allocations through public funding can also include money coming from private entities (e.g. business enterprises) but collected and allocated by the government. An example of this is the implementation of tailored levy schemes. By setting levy rates based on the size, revenue, and sector of enterprises, a fair and proportionate contribution can be ensured, reflecting the varying capacities of businesses. This approach not only incentivises participation but also ensures that the financial burden is distributed equitably across different types of enterprises. The MoL used to implement a similar scheme aimed at enhancing and expanding its network of VTCs. Thus, inter-ministerial communication and coordination (between the MoETE and MoL) is needed to assess the feasibility, maximise the benefit, and expand the scope of such a levy scheme.

2.3.2.2. Improving the alignment of TE programmes and specialisations

There is a need to **better align the distribution of TE programmes and specialisations** in different governorates **with the local economic landscape and job market**. This alignment will ensure that students acquire competences and qualifications that match the demands of their local labour markets. This would enhance the employability of TE graduates while contributing to the local economic development efforts. To achieve this, **LMI and studies must be conducted** with emphasis on the local context (e.g. through collaboration with the Ministry of Local Development (MoLD)). Such studies will provide valuable insights into each governorate's specific needs and opportunities.

In this context, the MoETE should coordinate with relevant ministries (e.g. MoL, MoPEDIC, and MoLD) to conduct frequent **labour market studies** as part of a National Labour Market Information System (LMIS) and establish a nationwide digitalised graduate tracking system. This system will help monitor employment outcomes and adjust educational programmes accordingly. Moreover, institutionalising the Units for Training and Transition to Employment (UTTE) and strengthening collaboration with the MoL is crucial. These units should facilitate the school-to-work transition and ensure that TE programmes align with current labour market needs.

There is also a need to **better align TE specialisations with those available in TUs** to ease the transition to higher technical/technological education. This alignment will create clearer pathways for students to advance their TE and career prospects. Additionally, this alignment should accommodate TE graduates who wish to return to education after gaining work experience by creating flexible learning pathways and part-time study options at TUs.

2.3.3. Long-Term Actions

2.3.3.1. Advocating for the activation of the Supreme National Council for Education and Training

In terms of skills development and the future of the TVET sector in Egypt (both IVET and CVT), the Government of Egypt should exert efforts towards a comprehensive national TVET strategy (within the scope of a Lifelong Learning vision). The Egyptian TVET sector serves over 2.7 million learners (when accounting for the students receiving formal and non-formal TVET offered by different ministries and private TVET providers). However, the sector is characterised by a fragmented governance structure

with multiple ministries and public entities involved, leading to inconsistencies and inefficiencies. In relation to this, there have been several attempts over the years to establish overarching governance structures to steer education and training provision in Egypt (including TVET) and consolidate and align the efforts exerted by various ministries, institutions, and social partners.

One of the recent initiatives is the **Supreme National Council for Education and Training**, for which legislation has been drafted and is currently under discussion, awaiting ratification by Parliament and the President.³² The Supreme Council will include various ministries, institutions, and social partners concerned with education and training provision at all stages of education and will be headed by the Prime Minister. The Supreme Council is expected to steer education and training policies and ensure educational outcomes are aligned with the demands of the local and international job markets.³³ Within this context, the MoETE has an important role to play in advocating for the establishment and operationalisation of the Supreme Council and to champion the process towards realising this goal.

The planned Supreme Council would allow Egypt to **align TVET provision** across the relevant public and private bodies. Within this context, the Whole-of-Government Approach (WGA), as applied in the EU³⁴, offers a robust framework for inter-institutional collaboration, ensuring that all government bodies work towards a unified goal. Adopting WGA for Egypt's TVET sector would facilitate a coordinated effort across various ministries and stakeholders to develop and implement a comprehensive national TVET strategy. Applying WGA in this context would entail:

- **Developing and implementing a comprehensive strategy** that includes continuous education pathways, upskilling and reskilling programmes, and recognition of prior learning. It should also align with Egypt's Vision 2030 and be flexible in adapting to emerging industry and labour market needs. The formulation of the strategy should follow a National Foresight Exercise that engages a wide range of stakeholders, including ministries, industry, academia, civil society, and local authorities, to develop a shared vision and identify key objectives and policy priorities.
- **Strengthening TVETA** to provide not only teacher training under the MoETE but also continuous professional development for TVET trainers across the country.
- **Transitioning to CBE** across all TVET institutions to ensure that knowledge, skills, and competences taught are relevant to current and future market needs across the country.
- **Conducting regular labour market analyses** to identify emerging skills and competencies required by priority industries and revising TVET CBE curricula accordingly, which can be applied to all TVET providers.
- **Finalising and operationalising the Egyptian NQF** and implementing occupational standards to facilitate RPL and continuous education pathways.
- **Implementing a robust M&E system** to track the effectiveness of TVET programmes across the country and their alignment with the set objectives.

Moreover, beyond harmonising the various components of TVET, the Supreme Council has the potential to serve as a crucial mechanism for creating coherence across Egypt's entire education system. This includes fostering stronger connections between initial education and TVET, building bridges between general education and TVET pathways, and ensuring a smooth progression between TVET and higher education.

2.3.3.2. Restructuring TE schools in Egypt

The MoETE should consider and analyse the feasibility of **restructuring TE schools in Egypt** to ensure better allocation and utilisation of available resources while enhancing the overall quality of TE provision.

³² A draft Presidential decree was also developed in 2023 as part of the National Dialogue initiative.

³³ Egypt Today (2023). *Egypt's National Dialogue releases draft law on Supreme National Council for Education and Training*. <https://www.egypttoday.com/Article/1/124706/Egypt%E2%80%99s-National-Dialogue-releases-draft-law-on-Supreme-National-Council>

³⁴ European Commission (2024). *New governance structures for the whole of government approach: mutual learning exercise on the whole-of-government approach: fifth thematic report*. <https://data.europa.eu/doi/10.2777/477520>

This restructuring would involve consolidating several TE schools with geographical proximity (e.g. within the same district) under a larger legal entity (i.e., a larger TE school). This consolidation would optimise human and technical resources, allowing for more professionalised school management. It would also provide greater financial and administrative autonomy to these larger educational institutions, enabling better communication and collaboration with relevant stakeholders, including the business / private sector (especially the local business community) and development partners.

The proposed structure includes a large school with an advanced TVET training hub, equipped with state-of-the-art machinery and equipment, and multiple satellite locations (smaller schools) with basic equipment and tools. Students would attend theoretical classes and receive basic technical training at the satellite schools while also going to the central (large) school (training hub) for training on advanced machinery and equipment. The benefits of such a structure include:

- **Resource optimisation:** by consolidating schools, resources such as specialised teachers, advanced machinery, and administrative staff can be shared more efficiently across multiple locations. This would reduce redundancy and ensure that all students have access to high-quality training and equipment.
- **Improved quality of education and training:** centralising advanced training facilities in a larger hub ensures that students receive practical experience on state-of-the-art equipment, which is essential for their skills development and employability. This also allows for more specialised and focused training programmes.
- **Professionalised management:** larger educational entities can select more qualified and experienced management staff from a larger pool, leading to better governance and more effective implementation of the TE 2.0 Strategy.
- **Financial and administrative autonomy:** with greater autonomy, these larger schools can make quicker and more effective decisions regarding budgeting, resource allocation, and PPPs. This should be Coupled with a strong quality assurance system.
- **Enhanced stakeholder engagement:** larger schools with more resources and autonomy can engage more effectively with local businesses and development partners. This can lead to more WBL opportunities for students and increased support from the private sector.

Restructuring TE schools into larger, resource-rich entities with satellite locations has a strong potential for enhancing the quality and relevance of TE in Egypt. A potential starting point for this restructuring could be existing multi-disciplinary schools like ATS, DS, or well-equipped traditional schools. This restructuring can also be approached from a sectoral perspective, similar to the CoC model. However, such an initiative requires careful analysis using a **highly participatory approach** to comprehensively and realistically assess its feasibility and impact. There is also a need to ensure equitable access to these schools by all students (e.g., geographical accessibility).

This approach has been successfully implemented, notably in Lithuania and Morocco, with the aim of consolidating smaller, under-resourced schools into larger entities to better pool resources and expertise. These models offer valuable insights that can inform the restructuring of TE schools in Egypt.

Case Study 1: Optimisation of Technical Education in Lithuania

This approach has been successfully implemented in Lithuania where the VET system has undergone significant restructuring over the past two decades, aimed at improving the quality, efficiency, and relevance of TE. The Lithuanian model thus offers valuable insights that can inform the restructuring of TE schools in Egypt. The **key stages and outcomes of this process** in Lithuania are as follows:

- **Establishment of Regional VTC (2000 onwards):** Lithuania began its optimisation journey by establishing a regional VTC. These centres consolidated smaller, often under-resourced institutions into larger entities with better facilities and more diverse programmes. For example, the Panevėžys region saw the creation of a single, competitive vocational training centre, which emerged from the merger of several smaller institutions. This consolidation allowed for the pooling of resources, such as advanced machinery and skilled instructors, which were previously spread thin across multiple

locations. The regional centres have since become hubs of excellence, offering students access to high-quality education and training that are aligned with local industry needs.^{35,36}

- **Reorganisation into Public Vocational Training Institutions (2010):** in 2010, Lithuania undertook a major reform by reorganising its vocational education institutions into public vocational training entities. This shift was aimed at improving governance, increasing accountability, and ensuring that the institutions were better aligned with national educational objectives and labour market demands. A key element of this reorganisation was the transformation of state-run vocational schools into self-governing public institutions, which allowed for greater involvement of social partners, including employers and municipal representatives, in the management and administration of these institutions. For example, the Kaunas Food Industry and Trade Training Centre transitioned into a public entity, gaining enhanced autonomy that enabled it to better respond to the evolving needs of the food industry. This change empowered the Centre to update its curricula to meet industry standards and to invest in state-of-the-art equipment, which was critical for providing students with the skills needed in a modern food production environment. Moreover, this reorganisation facilitated the decentralisation of decision-making processes, enabling the institutions to tailor their programmes more closely to regional labour market requirements. The reform also fostered stronger partnerships with local businesses, which contributed to more relevant and practical training experiences for students.³⁷
- **Development of Sectoral Practical Training Centres (2010-2012):** a cornerstone of Lithuania's VET reform was the establishment of sectoral practical training centres. These centres were designed to provide specialised, hands-on training in key industries, equipped with the latest technology and machinery.^{38,39}
- **Integration of Labour Market and Educational Systems:** one of the key reforms in Lithuania was the integration of the Labour Market Training Centres with the vocational education institutions under the Ministry of Education, Science, and Sport. This integration streamlined the vocational training system by eliminating redundancies and creating a unified framework that was more efficient and responsive to labour market needs.⁴⁰
- **Mass Transformation into Public Entities (2017):** following the adoption of the Public Management Law in 2017, Lithuania undertook a large-scale transformation of its vocational training institutions into public entities. This transformation provided these institutions with greater financial and administrative autonomy, allowing them to make more agile decisions regarding curriculum updates, partnerships with businesses, and resource allocation. A notable example of this transformation is the Alytus Vocational Education Centre, which, after becoming a public entity, was able to establish strong partnerships with local businesses and development partners, significantly enhancing its WBL opportunities for students. These collaborations led to the creation of industry-integrated curricula, on-site training, internships, and dual education programmes that provided students with hands-on experience in real work environments. The partnerships also facilitated job placements, with many graduates securing employment directly from their internships. Supported by development partners, these initiatives ensured that students received practical, industry-aligned

³⁵ Ministry of Education, Science and Sports (2022). *Initiatives and programmes for the development of the MVG system, opportunities for involvement of sectoral professional committees*: Agnė Kudarauskiene, Deputy Minister of the Ministry of Internal Affairs and Communications of the Republic of Lithuania.

³⁶ CEDEFOP ReferNET Lithuania (2010). *A bridge to the future European policy for vocational education and training - 2002-10*. National policy report – Lithuania.

³⁷ Ibid.

³⁸ Ministry of Education, Science and Sports (2023). *Vocational education and training in Lithuania: achievements, challenges and future plans*: Joana Vilimienė, Vocational Education Division. Lifelong Learning Department at the Ministry of Education, Science and Sport of the Republic of Lithuania.

³⁹ Ministry of Education, Science and Sports (2022). *Initiatives and programmes for the development of the MVG system, opportunities for involvement of sectoral professional committees*: Agnė Kudarauskiene, Deputy Minister of the Ministry of Internal Affairs and Communications of the Republic of Lithuania.

⁴⁰ Ibid.

training, making them highly employable and better prepared to meet the demands of the local labour market.⁴¹

- **Expansion and Strengthening of VET Networks (2018-2022):** The final phase of Lithuania's VET reform involved the expansion and strengthening of the state vocational training institutions' network. This phase focused on consolidating smaller institutions into larger, more competitive centres that could offer a wider range of programmes and more advanced training facilities. For example, the Vilnius region saw the creation of a major engineering and technology hub through the merger of several institutions. The consolidation also allowed these centres to offer more comprehensive support services to students, such as career counselling and job placement assistance, further improving their employment prospects.⁴²

The outcomes of these reforms in Lithuania have been substantial. The consolidation and optimisation of VTC have led to the creation of institutions that are not only more economically viable but also more capable of delivering high-quality education that is closely aligned with labour market needs. The sectoral practical training centres, in particular, have become benchmarks for excellence, providing students with the skills necessary to thrive in specific industries.

Case study 2: Morocco's Les Cités des Métiers et des Compétences (CMC)

Morocco's '*Cités des Métiers et des Compétences – Cities of Professions and Competences*' (CMC) initiative represents a transformative approach to vocational training that aligns with national and regional economic needs. This initiative is a cornerstone of Morocco's New Roadmap for the Development of Vocational Training. The CMC model includes 12 multi-sectoral, multifunctional, and regionally integrated training centres across the country. These centres serve as hubs for advanced vocational training and are supported by satellite locations (8 Vocational Training Institutes).

Key features of the CMC Model:

- **Multi-sectoral and multifunctional training centres:** the CMCs are designed as comprehensive vocational training hubs that serve multiple sectors and functions. These centres provide training across a wide range of industries. The model is also characterised by its flexibility and responsiveness to the evolving needs of the job market.
- **Governance and autonomy:** the CMCs operate under a governance model that allows for significant flexibility and responsiveness. CMCs are managed by public limited companies that are subsidiaries of the Office of Vocational Training and Employment Promotion. Their boards of directors include representatives from the state, the region, and the business/private sector, ensuring that the training provided is closely aligned with the needs of employers and local communities.
- **Integration into regional ecosystems:** each CMC is strategically integrated into its regional ecosystem, meaning that the training provided is closely aligned with the specific economic and industrial needs of the region. This integration ensures that the skills being developed are directly relevant to local employers, which in turn enhances the employability of graduates and contributes to regional economic growth.
- **Modern and interactive teaching methods:** the CMCs employ a competency-based approach to education. The 'Learning by Doing' philosophy is central to the CMC model, with training scenarios that mimic real-life work environments. This approach is supported by advanced application platforms and the use of Design Thinking methodologies, which foster creativity and problem-solving skills among trainees.
- **Soft skills development:** a distinctive feature of the CMC model is its strong focus on soft skills. Up to 30% of the training programmes at CMCs are dedicated to developing transversal skills such as

⁴¹ CEDEFOP ReferNET Lithuania (2010). *A bridge to the future European policy for vocational education and training - 2002-10*. National policy report – Lithuania.

⁴² Ministry of Education, Science and Sports (2022). *Initiatives and programmes for the development of the MVG system, opportunities for involvement of sectoral professional committees*: Agnė Kudarauskiene, Deputy Minister of the Ministry of Internal Affairs and Communications of the Republic of Lithuania.

critical thinking, adaptability, and creativity. This focus on soft skills is intended to enhance both the personal and professional development of trainees.

- **Scale and reach:** the CMC initiative includes the establishment of 12 CMCs across Morocco, along with 8 Vocational Training Institutes attached to these hubs. Collectively, these facilities provide training across 13 business sectors, including four new sectors that were previously not part of the national vocational training offer. The CMCs offer 34 000 educational places, with an initial budget of MAD 3.6 billion (equivalent to approximately EUR 350 million).

3. Assessment Results by pillar

3.1. Pillar 1: Transformed Quality of Technical Education

3.1.1. Importance of Transforming the Quality of Technical Education

Transforming the quality of technical education in Egypt is essential to address longstanding issues within the TE sector that have hindered its effectiveness and relevance. Improving quality is fundamental to aligning Egypt's TE system with international standards. This alignment ensures that graduates possess the competences to compete in local and global labour markets. Indeed, Egypt's labour market is evolving, with increasing demand for high-skilled labour, particularly in emerging sectors such as information technology, renewable energy, and advanced manufacturing. The gap between the skills taught in technical schools and those required by industry has been a significant barrier to employment for TE graduates. By improving the quality of TVET, technical schools can better align their curricula with industry needs, ensuring that graduates are job-ready. Within this context, the TE 2.0 Strategy acknowledges the importance of aligning TE with international standards to enhance the employability of graduates not only within Egypt but also in the global labour market. Meeting international standards through accreditation and other means is a critical component of the TE 2.0 Strategy, which aims to enhance the global competitiveness of Egypt's TE graduates.

Addressing the quality of TE also helps rectify the socio-economic disparities within Egypt. TE has traditionally been perceived as a less desirable path compared to general education, partly due to its association with poor quality and limited career prospects. By raising the standards of technical education, the Strategy aims to enhance its attractiveness and social perception, making it a viable and respected alternative to general education. This shift is crucial for increasing enrolment in TE programmes and ensuring that a broader segment of the population benefits from quality education and training.

The transformation of quality in TE also supports Egypt's wider economic development goals. A skilled and competent workforce is vital for driving economic growth and competitiveness. Moreover, the quality transformation in TE is integral to the sustainability and scalability of the reforms under the TE 2.0 Strategy. Establishing a culture of continuous improvement and QA within technical schools ensures that the reforms are not only implemented effectively but also sustained over the long term.

Establishing the CEQAT and the ETQAAN are critical steps toward achieving the planned reforms and enhancing the quality of TE provision. While ETQAAN, which is an independent QA agency, is tasked with accrediting TE schools and programmes across the country, CEQAT, a part of the MoETE, provides support for schools under the ministry to apply for external accreditation by ETQAAN.

3.1.2. Overview of Performance

Since the introduction of the TE 2.0 Strategy, **several achievements and critical milestones have been reached**, reflecting, first and foremost, an ongoing transformation process. The improvement in the quality of TE over the past five years is evident in **Egypt's rise in the TVET sectoral index** of the United Nations Development Programme (UNDP's) Global Knowledge Index (GKI), from being ranked at 113 in 2017, to 81 in 2022, and all the way up to 43 in 2024.⁴³

The **CEQAT** was established to improve QA practices in the MoETE's technical schools. Since its inception, 27 coordinators have been appointed across various governorates, each overseeing five staff members. Each governorate has an office with its own infrastructure and technical support provided by the development partners. CEQAT began working with schools to assess their readiness for accreditation by categorising them into A, B, and C based on adherence to quality standards.⁴⁴ To date,

⁴³ Knowledge Project (2024). *Global Knowledge Index (2024)*. <https://www.knowledge4all.com/country-profile?CountryId=1>

⁴⁴ The accreditation readiness tool includes a self-assessment report completed by the school's QA team. This report examines the management system in place, the school's infrastructure, and the quality of teaching and learning.

250 schools have been deemed ready for accreditation through School Improvement Plans (SIPs), and 43 multipliers and 52 auditors have been trained. In 2023, a Digital Quality Management System for Technical Schools was introduced, and 114 QA officers received essential digital skills training to carry out QA management and reporting activities through the digital platform.

In addition, many teachers and supervisors have been trained in QA principles, and schools seeking accreditation can request the necessary equipment.

Moreover, the law establishing the **ETQAAN**, a national independent QA body, has been enacted with support from various stakeholders. In June 2024, the Egyptian Prime Minister appointed ETQAAN's board of directors.⁴⁵

To monitor the implementation of the TE 2.0 Strategy, the **TERO** was established within the MoETE structure in 2022 (while it started operating in 2023), with ongoing efforts to finalise its structure and operational plan. TERO has also developed a set of indicators to monitor and assess the progress made in implementing the Strategy.

The Government of Egypt approved a EUR 41 million debt swap agreement with the German Government (through KfW). The agreement includes a digital transformation fund aimed at developing and strengthening **digital infrastructure and content**.⁴⁶ Efforts towards digitalising the CBE student achievements file documenting tasks accomplished in a school year are ongoing. The TE online platform studio has recorded 14 lessons and final reviews to address teacher shortages.⁴⁷ During the COVID-19 pandemic, the Edmodo LMS was used to train teachers in developing and implementing educational programmes.

Since the implementation of the TE 2.0 Strategy, there has been a **significant expansion in Egypt's TE sector**⁴⁸ between the academic years 2017/18 and 2023/24. The number of students enrolled in technical secondary education increased by 18%, rising from 1 864 842 to 2 199 383. This includes 51 867 DS students in 2023/24 from 20 890 in 2017/18, and 11 932 ATS students in 2023/24 from only 363 in 2018/19. It also includes 305 863 students registered under the labour/workers' system and 460 234 registered under the Services system.

This growth is accompanied by a substantial increase in the number of TE schools, which surged by 49.4%, from 2 266 schools to 3 386. The number of classrooms in these schools also expanded by 12.5%, growing from 48 093 to 54 089. These developments reflect the ongoing efforts to enhance the accessibility and capacity of TE in Egypt.

3.1.3. Opportunities for Improvement

3.1.3.1. Quality culture

Efforts are underway to enhance the quality of TE, primarily through CEQAT. Despite them, the **culture and awareness of quality improvement** have not yet been widely disseminated at the school level based on the discussions carried out by the assessment team with the TE schools' staff during the field research mission. This lack of widespread quality culture could lead to disparities in educational standards. Fostering stronger communication between schools and CEQAT can help embed QA practices and culture more deeply, making quality improvement an integral part of daily school operations. In addition, while auditing and collecting quality-related data (e.g., using quality standard gap analysis to assess schools' readiness for accreditation against the set of quality standards), **comprehensive improvement plans** to meet these standards are still lacking on a larger scale.

3.1.3.2. Technical and human capacities

⁴⁵ LinkedIn (2023). *The Prime Minister announces ETQAAN Board*. https://www.linkedin.com/posts/gizegypt_the-prime-minister-announces-etqaan-board-activity-7206946253815877633-B1eu?utm_source=share&utm_medium=member_desktop

⁴⁶ Ministry of International Cooperation (2023). *News*. <https://moic.gov.eg/news/80>

⁴⁷ MoETE (2023). *Technical Gallery*. <https://tech.moe.gov.eg/tech/gallery/357>

⁴⁸ Based on TE enrolment data by the General Administration of Central Databases at the MoETE: https://www.capmas.gov.eg/Pages/IndicatorsPage.aspx?page_id=6142&ind_id=1082

Limited human resources, both within CEQAT and among internal auditors, can hinder the effective dissemination of quality culture and actions in schools and the MoETE's ability to enhance TE quality. CEQAT, despite its importance, lacks adequate support, which was highlighted by one of the leading development partners working directly with CEQAT, along with the need for adequate organisational structure and qualified staff. For example, the replacement of the CEQAT Director has not yet been appointed, and the local human resource capacity is not fully developed.

The shortage of qualified personnel (i.e. the limited number of quality officials in governorates) means that many schools may not receive the necessary support and guidance to implement quality enhancements, which was stressed by the respondents in the schools visited during the field research mission. This lack of support and guidance affects the consistency of standards application. Strengthening the human resource base would ensure more frequent and thorough audits, better school support, and more uniform implementation of quality improvements. Donors and international organisations (i.e., development partners) are already providing significant financial and technical support to CEQAT, TERO, TVETA, and, more recently, ETQAAN. However, such support remains insufficient to fully address existing needs.

3.1.3.3. School infrastructure

Quality issues are also strongly tied to **financial constraints** (i.e. in terms of financing TE). As interviews with TVET experts revealed, introducing a QA system requires adequate infrastructure and financial sustainability. Limited funding impacts schools' ability to secure necessary resources for comprehensive quality improvement measures, leading to outdated equipment and insufficient facilities, which could impact the learning environment. This impact is more pronounced under the CBE approach, which requires modern equipment that matches the curricula and sufficient raw materials for students' training and assessment, as well as an adequate and consistent budget for the maintenance of equipment and facilities. Greater **investment in the school infrastructure**, including internet connectivity and CBE-related equipment and training tools, is needed, according to several schools visited during the field research mission.

Concerning school infrastructure, in some instances, there is an **unbalanced distribution of equipment and training tools** among schools, leading to deficits in some locations, as highlighted by some schools visited during the field research mission. A comprehensive needs assessment is required to identify gaps and allocate resources more effectively. Revising regulations governing the reallocation of equipment and tools may also be necessary (e.g. transferring them from one school to another), as the current process was assessed by the local MoETE officials and representatives of schools visited as complex and involves multiple administrative bodies (e.g. central administration at the MoETE, the Educational Buildings Authority, and other bodies). Interviewed school representatives also pointed out that the budget allocation per school remains inadequate to fulfil schools' needs (in terms of updating and maintaining school infrastructure, among other things), in addition to the lengthy bureaucratic process required to request new equipment or the maintenance of existing ones.

In addition, there is often a **gap between the equipment available in school workshops and the modern equipment used in industry**, affecting the relevance and quality of training, as highlighted by some of the interviewed teachers. This discrepancy can vary by school, location, and specialisation, leading to a skills mismatch (e.g. students might be trained on outdated machinery / equipment that does not reflect current industry standards). While WBL aims to address this issue by enabling students to receive training on state-of-the-art equipment/machinery in workplaces, there is a need for broader and more effective promotion of WBL in TE schools.

While some progress has been made in **digital transformation**, there is a need for further advancements. Many schools lack the necessary infrastructure, such as reliable internet access and modern computer labs, limiting their ability to fully use existing digital tools and platforms.

3.1.3.4. Monitoring and evaluation

In terms of M&E, the **TERO's structure remains unfinished** and does not yet fully meet the operational requirements to fulfil its duties. The absence of a comprehensive action plan accompanying the Strategy, with specific Key Performance Indicators (KPIs) and clear targets, poses an additional challenge for the TERO's operations, especially considering that the TERO is currently understaffed as

pointed out by the interviewed MoETE officials. While data collection from different TE tracks is underway and feeding into the TERO dashboard, no follow-up or evaluation studies have been conducted yet. Meanwhile, inconsistencies in data reporting from different departments persist as highlighted by the interviewed MoETE officials.

3.1.4. Summary of Policy Recommendations

3.1.4.1. Enhancing CEQAT's human and technical capacities

The **human and technical capacities of CEQAT staff** would benefit from continuous enhancement. Development partners can play a crucial role in training and building the capacity of CEQAT executives, auditors, and multipliers. By leveraging international expertise and resources, development partners can help CEQAT adopt best practices in QA and accreditation readiness. Such contributions by the development partners should be sustained and further expanded by the MoETE to address the needs of the whole TE sector. Moreover, to ensure the effective **dissemination of a quality culture, concepts, and improvement needs** at local school level, CEQAT may establish and train a network of quality ambassadors within schools (i.e. teachers who are well-informed on quality issues). These ambassadors could advocate for, support quality enhancement initiatives, and facilitate the spread of a quality culture.

The aim of the 2023 revised Strategy is to qualify 90 CEQAT staff and regional teams by 2025 and 30 internal auditors by 2026. It also aims to register 500 schools on CEQAT's digital system by 2025 and provide technical support to 500 schools by 2026. These targets, when compared to the current progress, are only achievable within the set timeframe if adequate human, technical and financial support is offered to CEQAT.

3.1.4.2. Accelerating the operationalisation of ETQAAN

There is an urgent need to **accelerate and support the functioning of ETQAAN** as an independent authority for QA and accreditation of TE schools and programmes. ETQAAN, when fully operational, will enable maintaining high-quality standards in TE provision. Immediate steps should include finalising ETQAAN's organisational structure, recruiting qualified staff, and developing standardised accreditation procedures. The Prime Minister's recent approval of ETQAAN's board of directors is a significant milestone towards this goal. Collaboration between ETQAAN and CEQAT is essential to ensure a cohesive approach to QA, providing schools with clear guidelines and support for continuous improvement.

The 2023 revision of the Strategy envisions the accreditation of 65% of TE schools and 50% of TE programmes by ETQAAN by 2035. These ambitious targets can only be achieved by supporting both entities, CEQAT and ETQAAN, since accrediting thousands of schools and tens of TE programmes requires considerable technical and human capabilities in place.

3.1.4.3. Streamlining monitoring data collection

Streamlining data collection and ensuring consistency in reporting is essential. This can be achieved by assigning **dedicated representatives for each TE track** in every geographic location who report directly to the TERO. Having a dedicated point of contact would improve the accuracy and consistency of data collection while ensuring that all governorates and TE tracks adhere to standardised reporting protocols. These representatives should be explicitly trained in data collection processes and requirements.

3.1.4.4. Enhancing school infrastructure

Adequate funding, primarily from public financing but also through development partners and PPPs, is essential to meet fundamental infrastructure needs such as internet connectivity, basic training and assessment tools, equipment, raw materials, and regular maintenance. **Simplifying procedures for redistributing machinery and equipment** between schools is recommended to address existing deficits. This could be achieved by, for example, implementing a centralised inventory system to track equipment availability, usage and condition across all schools and setting clear guidelines for redistribution, which can facilitate more efficient allocation.

3.1.4.5. Accelerating digital transformation

Accelerating progress towards digital transformation is critical (e.g., through investing in robust IT infrastructure and internet access, developing and deploying learning management systems, digitalising CBE curricula, enhancing digital skills, and digitalising M&E reporting). A **digitalisation strategy**, developed by GIZ and funded by KfW Development Bank, has been in the works. This strategy is a welcome step towards promoting digital transformation and realising the goals of the TE 2.0 Strategy. However, while the strategy would provide essential direction, successful implementation will require comprehensive support mechanisms. Schools will need sustained technical assistance and capacity building, whilst teachers must receive thorough training in digital pedagogy. Dedicated IT support services and ongoing maintenance will also be crucial to ensure the sustainability of digital initiatives.

In addition to enhancing the quality and efficiency of the educational process, embracing digital transformation presents an opportunity to **optimise resources** and fund the TE system. For example, reducing the use of printed textbooks in favour of digital formats can help reallocate financial resources to training and assessment equipment, tools, and raw materials.

3.2. Pillar 2: Transformed Relevance of Technical Education by Transferring to CBE

3.2.1. Importance of Transforming the Relevance of Technical Education by Transferring to CBE

Transforming the relevance of technical education by shifting to CBE is crucial for addressing the evolving demands of the local, regional, and international labour markets and ensuring the employability of Egyptian TE graduates. Under the TE 2.0 Strategy, this transformation pillar focuses on aligning education with the practical skills and competences required by employers, thereby bridging the gap between education and employment.

Traditional curricula often emphasise theoretical knowledge, which may not fully equip students with the practical skills needed in the workplace. By adopting CBE, Egypt aims to ensure that students acquire sets of competences directly relevant to their intended professions. This approach not only makes graduates more attractive to employers but also enhances their ability to perform effectively from the outset.

The transformation process involves significant collaboration with the private sector to validate and ensure the relevance of the CBE curricula. This includes involving industry experts in curriculum development and student assessments. CBE focuses on mastering skills benchmarked against international standards, ensuring that graduates can compete in international labour markets, which would enhance international labour mobility. This competitiveness is essential for integrating Egypt's workforce into the global economy and meeting the demands of multinational companies operating within Egypt.

CBE also allows for the inclusion of new programmes that address future labour markets and emphasise both technical and soft skills. For example, integrating entrepreneurship and innovation within the curriculum prepares students to be more versatile in their career paths. Another key aspect of transforming the relevance of TE is the adoption of digital content and blended learning. By incorporating digital tools, Egypt can facilitate continuous learning and upskilling, which are essential in a rapidly changing labour market. Meanwhile, updating TE curricula offers an opportunity to incorporate environmental sustainability concepts, such as renewable energy, sustainable agriculture, and green technologies, into the TE programmes. By doing so, students will be better prepared for the emerging green economy. Similarly, gender equality should be a foundational element of all curricula to ensure that educational materials and teaching practices promote inclusivity and challenge gender stereotypes.

3.2.2. Overview of Performance

Since the introduction of the TE 2.0 strategy, Egypt has made significant strides in reforming its technical education sector, achieving several critical milestones along the way. These accomplishments highlight

an ongoing effort to enhance the relevance of TE. Over the past five years, the relevance of Egypt's TE system has markedly improved, as evidenced by its rising rankings in Institut Européen d'Administration des Affaires (INSEAD) Global Talent Competitiveness Index. The 'relevance of education system to the economy' indicator improved from being ranked 117 in 2017, to 75 in 2022, and 69 in 2023. Similarly, the 'ease of finding skilled employees' indicator rose from being ranked 68 in 2017, to 30 in 2022, and a slight adjustment to 35 in 2023. In addition, the 'vocational and technical skills' category saw improvement from being ranked 69 in 2017, to 51 in 2022, and then at 55 in 2023.^{49,50}

A significant aspect of this transformation has been the shift to the **CBE** approach described above. A comprehensive framework for CBE curricula has been developed, with about 90% of the planned CBE curricula completed, covering 309 TE programmes between 2019 and 2023.⁵¹ Meanwhile, the number of schools offering CBE programmes has increased significantly, from 107 in 2019 to 1 198 by 2023.⁵² Across the four TE tracks, 100 programmes have adopted the CBE approach. A similar number of programmes were also developed under the ATS model. In the DS, 60 programmes have adopted the CBE approach, with another 10 currently in development with support from GIZ. The MoETE plans for all TE schools (apart from the labour/workers' system, which does not require attendance of classes) to transition to CBE by the 2024/25 academic year.

The reform process has also seen the introduction of **31 new TE programmes and specialisations** (across the four TE tracks and the DS). These include cutting-edge fields such as Information and Communication Technology, Artificial Intelligence, Security Systems Technology, Digital Games, Nuclear Energy Technology, Logistics, New and Renewable Energy, Jewellery Industry, Retail Trade, Marketing and E-commerce, Customer Service, Date Palm Cultivation Technician, Bio-Agriculture Technician, and Arts Technology, among others.⁵³

In addition, the MoETE has established several TE schools with specific missions to support ongoing national economic projects. For example, the El Dabaa Nuclear Technology School aims to provide skilled workers for the Dabaa nuclear power plant, which is currently under construction. Other notable examples include schools focused on petroleum and petrochemicals, solar energy, heavy equipment in Ismailiya, river transport in Cairo, and drinking water and sanitation.⁵⁴

3.2.3. Opportunities for Improvement

3.2.3.1. Student CBE and training

Implementing the CBE approach is challenged by the **deficits in equipment and raw materials**, a concern highlighted by nearly all the schools visited during the field research mission. Some curricula remain unimplemented because of these deficits, as noted by the interviewed MoETE officials. For example, schools often have outdated machinery or insufficient raw materials for practical CBE assessments, which hampers students' ability to gain hands-on experience with tools and materials that they will encounter in the workplace.

Teachers have also pointed out that the **time allocated for classes** and their associated curricula is often insufficient to cover the required material, exacerbated by the existing teacher shortage. Addressing this issue requires a review of the curricula to ensure that they are achievable within the given timeframe and consultations with teachers to understand their needs. Some teachers have expressed concerns that certain CBE curricula have become lighter on theoretical content, which they believe is necessary for developing an understanding of basic concepts.

⁴⁹ INSEAD (2022). *The Global Talent Competitiveness Index (2022)*.

<https://www.insead.edu/sites/insead/files/assets/dept/fr/qtci/GTCI-2022-report.pdf>

⁵⁰ INSEAD (2023). *The Global Talent Competitiveness Index (2023)*. <https://www.insead.edu/system/files/2023-11/qtci-2023-report.pdf>

⁵¹ Internal MoETE memo on the progress in implementing the competency-based approach between 2019 and 2023.

⁵² Ibid

⁵³ MoETE (2023). *9 years of implementing strategies to reform and develop technical education in Egypt*.

<https://t.ly/U-rmp>

⁵⁴ Ibid

3.2.3.2. CBE student assessment

The **requirements for CBE student assessment**, such as extensive paperwork, filming and storing videos, and increased time allocation for some assessments, present challenges for teachers, as noted during meetings with teachers and school administrators. These challenges consume valuable teaching time and require technical and human resources that are not always available in all schools.

Interviewed teachers also indicated that, in some cases, students are not required to take **written tests to pass the assessment**, potentially affecting the comprehensiveness of their evaluation. In addition, the quality of CBE student assessment is compromised by **inadequate payment for business/private assessors**, which affects both their quality and availability. Some assessors, particularly the less experienced ones, may focus more on paperwork than on proper evaluation.

Evaluating the effectiveness of CBE student assessment methodology and practices is also crucial. When looking at the recent success rates in 2023, we find them 91.7% in industrial education (compared to 92.8% in 2018), 86.0% in agricultural education (87.9% in 2018), and 92.5% in commercial education (89.4% in 2018). In the five-year system, the rates stood at 97.6% in industrial education, 92.4% in agricultural education, and 94.6% in commercial education.⁵⁵ When looking at such high success rates combined with relative stability over a five-year period (which witnessed significant changes in student assessment approaches), this calls for an in-depth evaluation of the assessment methodology and practices to ensure that students' competences are effectively assessed.

3.2.3.3. CBE evaluation

Currently, there is **no mechanism for evaluating curricula after implementation** to ensure continuous improvement. This lack of a feedback loop means that once curricula are rolled out, there is little systematic review or adjustment based on student outcomes, evolving industry needs, or teaching effectiveness.

3.2.3.3. Labour market information

In terms of labour market relevance, there is a need for a **systematic approach to tracer studies** to track graduates' employment outcomes. Limited data on graduates' labour market performance hinders the ability to assess the effectiveness of the programmes and the relevance of the education provided. There is also insufficient statistical data to determine the required number of students for each specialisation based on labour market needs, affecting the planning and allocation of students across specialisations. Communication and coordination with the MoL are also insufficient, exacerbating the misalignment between training and labour market demands, as noted by the interviewed MoETE officials. Additionally, the existing UTTE have a critical role to play in this regard.

3.2.3.4. Alignment of TE specialisations and programmes

In some governorates, **job opportunities do not fully align with the specialisations** of TE graduates, considering the local economic landscape and job market, as noted by the representatives of two schools visited outside Cairo. This misalignment often results in graduates being unable to find relevant employment, leading them to consider migrating to other regions for work. For instance, in regions where agriculture or tourism predominate, there may be fewer opportunities for graduates trained in modern industrial fields. This calls for cooperating with the MoLD to assess local economic needs.

3.2.4. Summary of Policy Recommendations

3.2.4.1. Putting in place an incentive system for assessors

An **effective incentive system** is needed for both external verifiers from the MoETE and business/private sector CBE assessors to ensure rigorous and unbiased assessments. Incentives could include financial rewards and recognition systems. In addition, large enterprises can be approached by the MoETE to establish long-term agreements through their Cooperate Social Responsibility units/initiatives to second their staff as CBE assessors, which could be a cost-effective contribution for

⁵⁵ CAPMAS (2024). *Statistical yearbook (Education)*.

https://www.capmas.gov.eg/Pages/Publications.aspx?page_id=5104&Year=23561

those large (and multinational) enterprises. Continuous and timely training of both the MoETE verifiers and private sector assessors on CBE assessment methods is essential, as current training offerings are insufficient according to the schools visited during the field research mission (i.e. the orientation / training remains insufficient for a rigorous assessment process). With the annual increase in assessors, ongoing training support from the MoETE and development partners is essential.

3.2.4.2. Establishing quality selection criteria for business / private sector assessors

Establishing **quality selection criteria for business / private sector assessors** is necessary to ensure their capability to evaluate students' work. These criteria should include minimum educational qualifications, relevant industry experience, and experience in training or supervising and providing feedback to junior workers or apprentices. In this regard, ETQANN has a role to play by setting such criteria.

3.2.4.3. Embracing digital tools in CBE student assessment

Adopting **digital tools to reduce paperwork** in CBE student assessment is necessary. In addition, including at least one essay question in CBE assessments can ensure students' literacy and reading / writing abilities are evaluated.

3.2.4.4. Conducting post-implementation curriculum assessment

TERO should include the **assessment of CBE curricula post-implementation** in its scope of work. Feedback from these assessments should inform enhancements to the CBE framework and curriculum development process. There is also an opportunity to collaborate with the MoPEDIC's Egypt Impact Lab to conduct such assessments.⁵⁶ Within this context, extensive consultations with teachers are required to gather their feedback, needs, and concerns and ensure alignment between class timeframes and curricula.

3.2.4.5. Conducting labour market studies and graduate tracking

The MoETE, in collaboration with relevant governmental entities such as the MoL, MoPEDIC, MoLD, MoHESR, and the Central Agency for Public Mobilisation and Statistics (CAPMAS), should **conduct labour market studies** to better align specialisations and programmes with market needs. These studies should focus on identifying emerging industry trends, skill mismatches and gaps, and evolving market demands. Within this context, SSCs have a critical role to play in collecting such labour market information. SSCs serve as a vital bridge between industry needs and educational outcomes, ensuring that the skills being developed in the TE system are closely aligned with labour market demands. By fostering a direct dialogue between employers and educators, SSCs can enhance the LMIS by providing real-time data on industry trends, skills gaps, and future workforce requirements, thereby facilitating more accurate and proactive skills anticipation. Effective skills anticipation (i.e. forecasting future labour market needs) and aligning TE programmes accordingly can stimulate labour mobility by ensuring that graduates possess the competencies required by employers both domestically and internationally.

Moreover, establishing a **robust nationwide graduate tracking system** is necessary to monitor the employment outcomes of TE graduates, providing valuable data on job placement rates, career progression, and skill utilisation. This data will help assess the effectiveness of programmes, inform future curriculum development, and ensure continuous alignment with market needs.

3.2.4.6. Reforming TE Tracks

The ongoing efforts to **restructure the commercial TE track** notably into a "business technology track" based on the CBE approach are commendable and should continue. In relation to this, Information and Communications Technology (ICT) represents an opportunity for attracting more girls to join TE. Similarly, the growing green economy presents significant opportunities, particularly in areas such as environmental compliance, which should be integrated into the business technology curriculum.

⁵⁶ It was reported by the MoETE that the TERO is currently working with the Egypt Impact Lab to prepare for such an assessment.

Meanwhile, the tourism (hotel) track should be further expanded and modernised in line with Egypt's strategic priorities.

3.2.5.7. Strengthening entrepreneurship within CBE curricula

By integrating and further strengthening entrepreneurship education into CBE curricula, students will be able to develop skillsets that are indispensable in today's rapidly evolving job market. Such focus on entrepreneurship can help align education with the demands of the labour market and foster a more dynamic and future-oriented pathway for students. Strengthening entrepreneurship education also addresses some of the identified systemic challenges in Egypt's TE sector, such as the turbulent school-to-work transition and the mismatch between skills acquired and labour market needs. By fostering an entrepreneurial mindset, TE graduates are better positioned to navigate these challenges, either by creating their businesses or by bringing innovative solutions to existing enterprises.

3.3. Pillar 3: Transformed Teachers through Training and Qualification

3.3.1. Importance of Transforming Teachers through Training and Qualification

Improving teachers' capacity through training and qualification is a critical pillar of the TE 2.0 Strategy, aimed at enhancing the overall quality and effectiveness of TE in Egypt. Teachers are the backbone of any educational reform, and their ability to deliver high-quality education directly impacts student outcomes and the success of the transformation strategy.

The establishment of the TVETA is a foundational step in this transformation. TVETA focuses on recruiting and building the capacity of teachers, ensuring they are equipped with the necessary skills and knowledge to deliver CBE. A competent teaching workforce is essential for providing consistent, high-quality education that meets required standards.

The TE 2.0 Strategy also emphasises the importance of ongoing training programmes to help teachers stay updated with new developments in their fields. Continuous professional development opportunities enable teachers to continuously improve their teaching practices, which in turn benefits student learning outcomes. Establishing clear qualification standards ensures that all teachers meet a minimum level of competence before they enter the classroom.

Accrediting master trainers and developing a pool of assessors and internal verifiers support the standardisation of teaching quality across the TE sector. This standardisation is crucial for ensuring that all students receive high-quality education, regardless of location. By focusing on these elements, the TE 2.0 Strategy aims to create a robust, well-trained teaching workforce capable of driving the desired educational reforms.

3.3.2. Overview of Performance

The training and qualification of teachers have improved markedly, as evidenced by Egypt's rise in the UNDP's GKI. In the 'continuous training and skilling' indicator, Egypt improved from being ranked 128 in 2017, to 93 in 2023 (slightly rising to 100 in 2024). In addition, in the 'extent of staff training' indicator, Egypt rose from being ranked 107 in 2017 to 44 in 2024.⁵⁷

A cornerstone of the TE 2.0 Strategy has been the focus on **teachers' capacity building**. The establishment of the TVETA in 2022 marked a significant milestone, with its director appointed in 2023 to spearhead its initiatives. Since its inception, TVETA has provided extensive training on CBE to schoolteachers, successfully training 42 654 teachers across the four TE tracks and the DS. In addition to CBE, over 6 000 facilitators have been trained in career guidance, entrepreneurship, and innovation, equipping them with the skills to support students in navigating their career paths and fostering entrepreneurial thinking. Furthermore, teachers have been trained in using Microsoft Office 365, enhancing their digital literacy and capacity to integrate technology into their teaching practices. To

⁵⁷ Knowledge Project (2024). *Global Knowledge Index (2024)*. <https://www.knowledge4all.com/country-profile?CountryId=1>

further support digital transformation, over 2 000 teachers have received training in digital content development. In addition, the MoETE, through the TERO and in collaboration with the Egypt Impact Lab, is planning an impact assessment of its teacher training activities.

3.3.3. Opportunities for Improvement

3.3.3.1. Teacher shortage

The teacher shortage is a persistent issue highlighted by most interviewed stakeholders. Efforts to address this shortage by hiring temporary or part-time teachers have been ineffective, as the financial compensation per lesson barely covers transportation expenses. A significant number of teachers are also over the age of 55, with more than 30% expected to retire within the next two years, according to interviewed high-ranking MoETE officials. This impending wave of retirements exacerbates the existing shortage of both practical and theoretical teachers, especially during ongoing major reforms where the MoETE is in dire need of younger educators with up-to-date knowledge and understanding of market and industry trends. Within this context, fast-tracking the training and certification of new teachers, especially in CBE, will be essential to fill the impending gaps.

In addition, there are cases of **unbalanced distribution of teachers** among schools, leading to surpluses in some and shortages in others. Providing incentives for teachers to relocate to underserved areas and enhancing transportation or housing support could help balance this distribution.

3.3.3.2. Capacity building in CBE teaching and assessment

The MoETE's development partners have played a significant role in the **capacity building of teachers, especially in CBE teaching and assessment**. Some teachers have been trained as trainers in the CBE methodology for specific specialisations, allowing the MoETE to continue CBE training independently. By developing an internal pool of qualified trainers, the MoETE can sustain and expand the reach of CBE training across the country. This self-sufficiency not only enhances the quality and consistency of education but also ensures that training can be adapted to local contexts and needs. In addition, it empowers the TE system to maintain high standards even after external support phases out.

3.3.3.3. Financial sustainability of TVETA

Preparing teachers with specialised knowledge, skills, and competences aligned with labour market needs is an ongoing process that requires considerable time to implement. However, there is **no dedicated budget for TVETA**, and the Academy's operations rely mainly on funding and support from development partners. This dependence on external funding poses a risk to the sustainability and long-term impact of TVETA's initiatives. Ensuring financial sustainability through a dedicated budget will be crucial for the continued success and impact of TVETA's programmes.

The 2023 revision of the Strategy aims to train 20% of teachers on an annual basis through TVETA. In addition, it aims to qualify 350 master trainers, 4 000 curriculum developers, 130 000 assessors, and 2 700 internal verifiers by 2026. These highly ambitious goals will be challenging to realise without considerable financial and technical support provided to TVETA.

3.3.4. Summary of Policy Recommendations

3.3.4.1. Hiring and capacity building of new teachers

To effectively address the ongoing teacher shortage, the MoETE should **prioritise the hiring and capacity building of new teachers** using notably the budgetary allocations from the positions of those who retire. Given the existing financial constraints, it is crucial to explore new and innovative recruitment strategies that can attract qualified educators. Ensuring a robust pipeline of new teachers is essential for sustaining educational quality and meeting the demands of the evolving TE sector. As elaborated earlier in the report, an **endowment fund** could be created with financial contributions from TE development partners and the business/private sector. The interest generated from the fund could be used, among other things, to hire additional teachers.

3.3.4.1. Ensuring sustainable funding for TVETA

TVETA plays a pivotal role in this effort but **requires sustainable funding** to carry out and expand its activities independently of external support. This includes providing adequate resources for its regional branches, which remain essential even with the ongoing support from development partners. Securing a dedicated budget for TVETA will ensure long-term success.

3.3.4.2. Better understanding of and response to teachers' needs

It is also important to engage in **extensive consultations with teachers** to understand their needs better, as well as the barriers they face to participating in training, and to evaluate the effectiveness of the training and capacity-building activities already implemented. By actively involving teachers in this process, the MoETE can ensure that professional development initiatives are relevant, effective, and responsive to the real challenges educators face in the classroom. This approach will help refine and improve ongoing training efforts while providing up-to-date insights into the actual situation on the ground. Additionally, using a suitable digital tool would strongly facilitate the feedback-gathering process.

3.4. Pillar 4: Transformed Schools through Employer Engagement & WBL

3.4.1. Importance of Transforming Schools through Employer Engagement and WBL

Transforming schools through employer engagement and WBL is a pivotal pillar of the TE 2.0 Strategy, aimed at enhancing the practical relevance of technical education and ensuring students are well-prepared for the workforce. This pillar focuses on creating stronger linkages between schools and industry, facilitating better alignment between educational outcomes and labour market needs. By involving employers in the education and training process, schools can offer more hands-on learning experiences. Such practical exposure is crucial for students to gain real-world skills and understand industry requirements, significantly improving their employability by providing them with both theoretical knowledge and practical experience.

Expanding ATS is a key initiative under this pillar. These schools are established through PPPs with leading private-sector companies and international QA institutions. The ATS model adopts CBE and applies international standards in teaching and training, ensuring that students receive high-quality education directly relevant to industry needs.

The DS, already well-established in Egypt, helps bridge the gap between theoretical education and practical application. This system integrates classroom instruction with hands-on training, providing students with a comprehensive understanding of their field.

Moreover, creating sector-specific CoC in priority sectors and governorates is designed to establish lighthouses of quality and innovation. These centres focus on advanced technical training and serve as benchmarks for other institutions, promoting excellence and setting high standards across the TE system.

By expanding ATS, enhancing the DS, establishing sector-specific CoC, and systematically integrating the private sector, the TE 2.0 Strategy aims to create a robust and dynamic TE system that effectively meets the needs of both students and the labour market.

3.4.2. Overview of Performance

The past five or six years have also seen an increased level of trust and credibility between the business/private sector and the MoETE, reflected in the increase of the number of ATs from 3 in 2018 to 81 in 2024⁵⁸, affirming the ongoing reform effort in transforming schools through employer engagement and WBL.

⁵⁸ Established through 81 PPPs.

Applied Technology Schools (ATS)

In 2018, the MoETE introduced a new generation of TE schools known as Applied Technology Schools (ATS). These schools embrace WBL and are based on PPPs with leading business enterprises in Egypt, accredited by international QA institutions. The initiative has grown remarkably; starting with just three schools in 2018, the number has increased to over 70 by June 2024 (with the latest one introduced in June 2024)⁵⁹, with plans to reach 150 by 2030. In the academic year 2022/23, 17 500 students applied to join the 52 operating ATS schools at the time, demonstrating the growing demand and success of this model.

Dual education and training system (DS)

The dual system has also seen substantial expansion. The number of students enrolled in this system has increased from 42 000 in 2017 to over 70 000. To support this growth, the MoETE updated the governance structure of the DS, involving more partners and clearly defining their roles and responsibilities. Additionally, PPPs have been established within this context, further strengthening the link between education and industry.

Centres of Competence (CoCs)

To further enhance TE, the MoETE has established two sectoral CoCs: the Zayn al-Abidin Centre for engineering industries and the Al Obour Centre for the automotive sector. These centres serve as lighthouses of quality and innovation in their respective fields. The MoETE is also currently establishing three CoCs in Renewable Energy and Energy Efficiency with KfW and the EU, which are expected to be completed by 2026. Moreover, agreements have been signed with KfW for additional CoCs in construction, agribusiness, and woodworking, with plans to reach 26 CoCs in total.

Sectors Skills Councils (SSCs)

In late 2023, a regulation was introduced to establish an umbrella organisation to govern the establishment of SSCs. The MoETE, in collaboration with the MoPEDIC and international development partners (such as the USAID, EU, and European Bank for Reconstruction and Development (EBRD)), is encouraging the establishment of several SSCs, including those in the renewable energy, tourism, and industrial engineering sectors. The aim of these councils is to further align TE with market needs, ensuring that graduates are well-prepared for the workforce. The SSCs are intended to be hosted within the CoCs to leverage the resources and expertise available and to better align the supply with the needs of the labour market. By situating SSCs within CoCs, the aim is to create a more cohesive and responsive TE that can effectively address the skill demands of various industries. This strategic placement also facilitates collaboration with the business/private sector, ensuring that the training provided is both relevant and of high quality.

3.4.3. Opportunities for Improvement

3.4.3.1. Business/private sector engagement

Despite significant successes, the potential for establishing PPPs has not been fully exploited. The economic contribution of Small and Medium-sized Enterprises (SMEs), which comprise over 90% of the Egyptian economy and account for over 75% of the total employment⁶⁰, is relatively limited. While the strategy places private sector engagement at its core, it primarily focuses on **larger enterprises rather than medium-sized ones**, particularly in the ATS model. Larger enterprises are seen as more capable of providing the necessary financial and technical resources, infrastructure, and expertise to support high-quality TE. They help develop comprehensive educational programmes and offer valuable WBL

⁵⁹ Invest-Gate (2023). *Mountain View International Applied Technology School inaugurated as groundbreaking institution for facility landscape management education.* <https://invest-gate.me/news/mountain-view-international-applied-technology-school-inaugurated-as-groundbreaking-institution-for-facility-landscape-management-education/>

⁶⁰ Zawya (2023). *Small enterprises contribute 43% to GDP, account for over 75% of employment - MSMEDA.* <https://www.zawya.com/en/economy/north-africa/small-enterprises-contribute-43-to-gdp-account-for-over-75-of-employment-msmeda-vg3dnfmy>

opportunities crucial for the success of the ATS model. However, to ensure a more inclusive and financially sustainable approach, initiatives to engage medium-sized enterprises are also needed.

Some stakeholders, especially at the school level, highlighted the **high level of centralisation and complex procedures that hinder business/private sector participation** (in relation to investing in education and training as private TE providers, cooperating with or supporting schools in local communities, or by providing WBL opportunities). Excessive bureaucracy creates bottlenecks and delays, discouraging companies from getting involved. Simplifying regulatory requirements and providing clear guidelines for business / private sector involvement can further encourage participation in the ongoing reforms.

3.4.3.2. Business/private sector role in CBE student assessment

Despite ongoing efforts, **cooperation from the business/private sector in providing CBE assessors remains insufficient**. The MoETE had to source these assessors independently through teachers and collaboration with local business/private sector representatives. To scale up the adoption of CBE in all TE schools while maintaining high-quality student assessments, increased business / private sector engagement is crucial, potentially fostered by offering adequate incentives.

3.4.3.3. Sustainability of the ATS model

Several stakeholders pointed out the **high operating costs of ATS** due to educational materials, teacher salaries, and other expenses, leading industrial partners to reconsider their ROI. For instance, the annual cost per student can exceed EGP 50 000, as highlighted during one of the visits to the ATS. Financial sustainability is a significant issue impacting both current ATS operations and future expansion. **Developing a diversified funding model is essential**, involving increased government budget allocations, PPPs with collective financing from multiple industrial partners, and exploring revenue-generating activities within ATS schools, such as production units or consultancy services. A tiered investment model where industrial partners contribute based on their capacity can ensure broader participation. Meanwhile, it was highlighted during the interviews with stakeholders that some ATS schools are considering introducing enrolment fees. Indeed, WE ATS has already introduced enrolment fees starting 2023/2024 that range from EGP 6 000 for first-year students to EGP 8 000 for third-year students.

3.4.3.4. Quality of the DS in-company training

In the DS, some interviewed stakeholders at the school level highlighted issues of student mistreatment in factories and inadequate measures to prevent inappropriate behaviour during training. Some companies view DS students as a non-costly core workforce rather than apprentices. The Regional Units for the Dual System (RUDS) often lack the human resources needed for adequate and frequent supervision of students. In addition, the potential of these units for conducting labour market studies and graduate tracking remains untapped.

3.4.3.5. WBL in traditional TE schools

While the strategy has boosted business/private sector involvement and fostered WBL through various models, **opportunities for TE students outside the ATS, DS, and CoC models remain limited**. Expanding these opportunities requires developing partnerships with a broader range of industries and businesses, including SMEs, offering flexible WBL programmes tailored to various sectors and regions.

3.4.3.6. The Capital project

The Capital project (i.e., productive schools) is generally perceived as a positive initiative by various interviewed stakeholders. However, the **revenue distribution ratios were deemed insufficient to meet schools' needs**, and there is a **lack of flexibility for school administration in using the received revenues**. Additionally, one of the interviewed TVET experts reported that some schools sought the help of outsiders to accelerate production and fulfil their orders. This highlights the importance of maintaining the focus on training students as the primary objective rather than generating income, which calls for a close M&E of the Capital project. To address these issues, it is essential to reassess and potentially increase the revenue distribution ratios to ensure schools receive adequate

funds to support their operational and quality-enhancement needs. Granting **more autonomy to school administrations** in managing these funds can enhance the initiative's effectiveness. Implementing a transparent and accountable financial management system at the school level will also ensure efficient and effective use of revenues.

3.4.4. Summary of Policy Recommendations

3.4.4.1. Enhancing the business/private sector engagement in education and training

There is a need to **shift the perception of the business / private sector** to ensure that it views the development of TE not just as a social responsibility but as a valuable investment in human resources with a good ROI. Highlighting the long-term benefits of a skilled workforce can help change this perception. Sharing success stories and case studies from existing partnerships can illustrate the tangible benefits of investing in TE. Encouraging private investment in establishing and running TE schools through incentive packages, such as tax breaks, free land on a BOT basis, subsidies, and grants for infrastructure development, is essential. Streamlining regulatory processes and offering public recognition for contributions to TE can further motivate private investment in TE.

3.4.4.2. Fostering higher support by the business/private sector to CBE

The business/private sector needs to support CBE in TE schools by, for example, providing raw materials for CBE training and assessment. Local industries can contribute by donating excess materials for practical training, reducing waste, and supporting education simultaneously. Schools and factories can collaborate to set up systems where materials that would otherwise be discarded are redirected to educational institutions, promoting environmental responsibility among students. Recycling / reusing raw materials can be a potential source, which would also help instil environmental responsibility in students.

3.4.4.3. Sustaining and expanding the ATS model

Considering the MoETE's target to establish 150 ATS by 2030 and 30 International Applied Technology Schools (IATS) by 2035, it is important to revise and update the **ATS model** to attract industrial chambers and medium-sized enterprises. This can diversify funding and reduce financial burdens on individual companies. This multi-partner approach was highlighted by the Federation of Egyptian Industries (FEI) as an approach they intend to promote by attracting industrial chambers to engage in ATS schools. A similar approach has been adopted in the CoC model. This approach can diversify the funding sources and reduce the financial burden on individual companies. It also allows for a broader range of expertise and resources to be shared with students, enhancing the quality and relevance of the training provided.

3.4.4.4. Expanding and improving the DS

The TE 2.0 Strategy aims for 10% of TE students to be enrolled in the DS by 2030. When accounting for the annual increase in TE students, it is expected that 10% of TE students in 2030 would be equivalent to around 250 000 students. This is a very considerable leap from the 70 000 students currently enrolled in the DS. Thus, it is recommended to **revise the target based on a careful and factual assessment of the economic and industrial landscape in Egypt** and the technical and human capacities of the 57 RUDS units to ensure that such quantitative expansion does not come at the expense of comprising the quality of the DS in-company training.

Within this context, implementing robust standards and continuous oversight is crucial. Conducting independent and comprehensive mapping of all training sites to assess their eligibility for hosting DS students is necessary. This includes evaluating facilities, safety, and training capabilities of potential host companies to ensure they meet the necessary criteria for effective in-company training. In addition, assessing the technical and operational capacities of the DS service providers (RUDS units) will help identify gaps and improve management. This should include reviewing their technical and human capacities. For example, interviews with the representatives of the RUDS units revealed that currently, a single supervisor may be responsible for 500 students within the DS.

3.4.4.5. Consolidating WBL models

To enhance the effectiveness of WBL, it is important to **consolidate various WBL models, not only in ATS, DS, and CoC but also in traditional schools, under a unified framework** rather than creating parallel structures and independent brands. This framework should integrate best practices and methodologies and establish common standards for curriculum design, assessment methods, and industry engagement across all WBL initiatives. Encouraging collaboration and knowledge-sharing among different WBL models will streamline operations and improve outcomes. Within this context, SMEs can offer engagement opportunities in WBL according to their size and capacity, providing practical experience for students at a scale beyond the ATS, DS, and CoC models.

3.4.4.6. Expanding and improving the efficiency of the Capital project

Amending the regulations of the Capital project to work towards higher independence of schools in managing their projects and revenues. Providing schools with greater autonomy in financial management will enable them to address their specific needs more effectively and foster better resource utilisation. This can involve setting clear guidelines for financial accountability while granting schools the flexibility to allocate funds where they are most needed. Establishing a permanent sales outlet for school products can ensure continuous revenue generation. Encouraging all TE schools in Egypt to participate in the Capital project can enhance their self-sufficiency. Schools can start by providing internal services such as equipment maintenance, carpentry, furniture making, and electrical installations, while more performant schools can provide training and technical assistance for enterprises.

3.5. Pillar 5: Transformed Image of Technical Education through Changing Social Perception

3.5.1. Importance of Transforming the Image of Technical Education through Changing Social Perception

This pillar focuses on improving the public's view of technical education, making it an attractive and respected career pathway. Changing social perception is essential for increasing enrolment, enhancing the quality of education, and ensuring that TE is seen as a valuable and viable option for students. One of the primary challenges facing TE in Egypt is the stigma associated with it. Historically, TE has been perceived as a lesser alternative to general education, often linked with low-skilled jobs and limited career prospects. This perception discourages students and parents from considering TE a desirable path. The TE 2.0 Strategy aims to transform this image, making TE more attractive and highlighting its potential for leading successful and fulfilling careers.

Transforming social perception is also crucial for aligning TE with national development goals. A positive image can garner broader support from parents, industry leaders, civil society and policymakers, leading to increased investment and resources for the sector. It can also encourage greater private sector engagement, with companies more willing to partner with technical schools and provide training opportunities. This enhanced collaboration can result in more relevant and high-quality education and training, better preparing students for the labour market.

3.5.2. Overview of Performance

The MoETE has been actively working to improve the public perception of TE. Media coordinators within the MoETE have unified communication efforts, focusing on social media channels to promote TE and its achievements. New models and initiatives, such as ATS, DS, and CoC, have enhanced the attractiveness of TE in Egypt. This is evident from the high demand for ATS, with 40 000 students applying for only 8 000 places in 2021.

Egypt has also increased its presence in international competitions, such as the WorldSkills International Competition, and hosted nationwide skills competitions covering six different occupations. The Innovative Technician competition, supported by the USAID, witnessed the participation of 160 000 TE students. The competition aired on national and satellite TV in July 2024. Other notable competitions include the Future Chief competition, which was sponsored by the EU's TVET Egypt programme.

A Social Perception strategy developed by the EU's TVET Egypt programme was shared with the Prime Minister for official adoption. Additionally, several international agreements have been signed to promote TE graduates as a competent workforce capable of competing in foreign labour markets. For instance, the MoETE collaborated with the Towards a Holistic Approach to Labour Migration Governance and Labour Mobility in North Africa (THAMM) project on the recognition of qualifications for short-term labour needs in some EU Member States. An international labour market study, funded by the EBRD, was conducted to identify the skills and qualifications needed for TE graduates to compete in foreign labour markets, including Europe and the Gulf states. Meanwhile, since 2022, the MoETE has also been participating in and sponsoring EDUTECH, the annual TVET forum and exhibition, with the latest edition held in April 2024.⁶¹

The MoETE has also undertaken several promotional activities, including the production of a promotional video on TE titled 'Success Stories,' designing and disseminating promotional materials on TE through various social media channels and collaborating with major digital news outlets to publish credible news on TE and the MoETE's PPPs with the business/private sector. Additionally, the MoETE, through the TERO and in collaboration with the Egypt Impact Lab, is planning an impact assessment of the social perception of TE.

To further enhance higher education opportunities for TE graduates, the Egyptian government, through the MoHESR, established Misr International Technological University (MITU). MITU, the first of its kind in Egypt, consolidated four technology complexes into a new structure with three technology colleges in Cairo, Fayoum, and Assiut. Since 2020, a total of 10 TUs have been established, providing TE graduates with greater opportunities for higher education. In the 2022/23 academic year, 72% of students in TUs were TE graduates.

3.5.3. Opportunities for Improvement

3.5.3.1. The social perception of TE

There have been positive developments in improving the social perception of TE, such as the increasing number of ATS and their popularity. Furthermore, the number of preparatory school students applying for the DS has doubled in recent years according to one of the interviewed MoETE officials. However, when examining the transition rate from preparatory education (middle school) to technical secondary education, the data shows the following trends for 2023: 17.12% moved from middle school to industrial education (compared to 19.82% in 2018), 13.55% to commercial education (16.93% in 2018), 3.53% to agricultural education (5.55% in 2018), and 1.06% to hotel education (1.39% in 2018).⁶² The decline in transition rates is consistent for both boys and girls. This indicates that **the growing popularity of TE might differ according to the type of school and education (i.e. ATS vs. DS vs. traditional TE schools)**. Therefore, changing the social perception of TE takes time, and consistent positive messaging and tangible examples of success are crucial for reshaping public attitudes and building greater acceptance and respect for TE.

In addition, there is a need for further efforts towards better inclusion of girls in TE. The percentage of girls enrolled in TE in 2023/24 stands at 33.90% in industrial education (36.24% in 2018), 14.86% in agricultural education (15.93% in 2018), 57.14% in commercial education (60.41% in 2018), and 36.83% in tourism and hospitality education (32.23% in 2018).⁶³

3.5.3.2. The pathways to higher education

Enrolment in higher education has positively impacted the perception of TE. TUs, in particular, have increased the appeal of TE by offering advanced skills that align closely with labour market demands. New technical colleges are being established to develop skills that align more closely with labour market demands. These higher education opportunities help dispel the notion that TE is a dead-end, highlighting it as a viable and respectable route to professional success. However, challenges remain in aligning curricula and professional specialisations between TE schools and TUs, making it

⁶¹ EduTech (2023). Tech Website. <https://www.tech.edutech-eg.com/#>

⁶² CAPMAS (2024). *Statistical yearbook (Education)*.

https://www.capmas.gov.eg/Pages/Publications.aspx?page_id=5104&Year=23561

⁶³ Ibid

more difficult for TE graduates to enrol. In addition, TUs face a shortage of training equipment, leading professors to often teach theoretical knowledge without practical application, as noted by one of the interviewed experts.

3.5.4. Summary of Policy Recommendations

3.5.4.1. Enhancing the social perception of TE

A **comprehensive media campaign** is essential to improve the social perception of TE. Despite some progress, the overall perception remains low. This campaign should leverage various media platforms to highlight success stories, career opportunities, and the modern, high-quality nature of initiatives such as ATS. Involving influencers, industry leaders, and successful TE graduates can amplify the message and reach a wider audience. Additionally, integrating positive depictions of TE into popular culture, such as **television shows and movies**, can play a crucial role in reshaping the public perception of TE.

Moreover, improving the image of TE can be significantly enhanced through **active participation in national, regional, and international skills competitions**, and international TVET school networks⁶⁴, as well as by focusing on creating and promoting 'role models' within the TE community. Expanding these competitions and networking not only showcases the talents and competences of TE students and graduates but also elevates the perception of TE as a viable and rewarding career path. These role models can be featured in various media, speaking engagements, and educational campaigns to illustrate the potential and achievements of TE students and graduates.

International labour mobility opportunities can also enhance the image of TE by showcasing the global demand for skilled workers and the international recognition of their qualifications. Returning graduates who have worked abroad also bring back new skills, experiences, and perspectives, which can further enhance the local TE system and the industries they join. Their success stories and professional achievements abroad serve as powerful testimonials that can be used in marketing and advocacy campaigns to promote TE. Within this context, the Government of Egypt envisions that 10% of TE graduates should acquire international accreditation and be able to work in foreign labour markets.

In relation to this, **entrepreneurship education** carries a strong potential for enhancing the appeal of TE by improving graduates' job prospects. By integrating entrepreneurship into the curriculum, students can develop crucial skills such as creativity, problem-solving, and business awareness, which are indispensable in today's rapidly evolving job market.

Early career guidance and information provision is also critical for improving TE's perception. This should include systematic career orientation programmes in preparatory schools, helping younger students and their families understand the diverse opportunities available through TE pathways before they make educational choices. **Dedicated outreach to parents** through school meetings, open days at TE schools, and targeted information campaigns is equally crucial, as they are key influencers in educational decision-making.

Within this context, the TE 2.0 Strategy aims to increase the number of TE students to reach **65% of the total number of secondary education students by 2030**. Achieving this targeted increase in the number of TE students requires not only significant financial allocations for TE but also a significant improvement in the social perception and attractiveness of TE.

3.5.4.2. Aligning the educational pathways between technical and higher education

Aligning technological colleges with TE curricula is crucial to ensure that every TE graduate has the opportunity to pursue relevant higher (technical) education. This alignment will facilitate **seamless transitions from TE to higher education**, enhancing the overall appeal and credibility of TE as a pathway to further educational and career advancement. To support this transition, students would benefit from strengthening basic / core academic skills through, for example, top-up courses that could provide a foundational background for success in higher education programmes.

⁶⁴ ETF (2024). *Vocational excellence – ENE*. <https://www.etf.europa.eu/en/what-we-do/vocational-excellence-ene>

4. Concluding Remarks

The TE 2.0 Strategy marks a pivotal shift in Egypt's approach to technical education reform, targeting the transformation of the sector to better align with the evolving demands of the labour market. This strategy supports Egypt's broader economic and sustainable development goals. The assessment highlights the considerable progress achieved under the TE 2.0 Strategy, demonstrating a strong commitment from the MoETE and other stakeholders to this ambitious reform agenda. Between 2018 and 2024, substantial achievements have been made, laying a solid foundation for the comprehensive transformation of Egypt's TVET system.

The reform process has introduced innovative models such as the ATS and CoC, alongside the adoption of CBE. The past five years have also seen significant expansion in the DS. These initiatives have not only enhanced the quality of TE but have also strengthened partnerships with the business and private sectors, which are crucial for aligning educational outcomes with labour market needs. Additionally, the establishment of new entities like the CEQAT, the ETQAAN, the TERO, and the TVETA stands out as key achievements. The Strategy's implementation has fostered a stronger sense of ownership within the MoETE, empowering the ministry to effectively guide the reform process and reduce its reliance on international development partners. The increased involvement of the business and private sectors in curriculum development, student assessment, and scaling WBL models further reflects growing confidence in the ongoing reforms.

However, the assessment also identifies several areas requiring further attention. One critical need is the development of a more detailed and comprehensive action plan that includes clear timelines, resource allocation, defined roles and responsibilities, and measurable performance indicators. Strengthening inter-institutional cooperation, particularly with other ministries involved in TVET, is essential to supporting the current reforms and advancing toward a more holistic, sector-wide approach. Governance structures and mechanisms must be improved to ensure transparent and accountable decision-making, with TERO playing a central role in M&E.

Financial constraints pose a significant challenge to the sustainability of the reforms. The continued reliance on donor funding for critical aspects of the reform highlights the need for a stronger financial framework. Addressing the shortage of qualified teachers, particularly in light of impending retirements, is crucial to maintaining the quality and effectiveness of TE. Moreover, improving the infrastructure, reducing excessive bureaucracy, and enhancing school autonomy are necessary steps to ensure that TE institutions can operate efficiently and meet labour market demands. Other areas for improvement include aligning different TE models, strengthening linkages between technical and higher education, enriching labour market information, accelerating digital transformation, and developing and implementing occupational standards and the NQF, among others.

The findings of this assessment provide a clear roadmap for addressing these challenges and should serve as a key input in developing the next phase of the TE 2.0 Strategy. By capitalising on emerging opportunities and mitigating risks, the next iteration of the strategy can build on the successes already achieved while addressing its shortcomings. Moving forward, it will be essential to maintain a clear vision, adapt to changing circumstances, and continuously assess performance to ensure that the strategy's implementation remains aligned with its objectives and capable of meeting future demands.

Below is a matrix of policy recommendations that outlines specific actions to enhance the effectiveness and sustainability of Egypt's TE reforms.

Figure 14. Summary of policy and pillar-specific recommendations

Key Policy Recommendations		
Short-Term Actions	Medium-Term Actions	Long-Term Actions
<ul style="list-style-type: none"> Enhancing strategic planning Establishing robust governance structures Positioning TE schools at the heart of the transformation Addressing teacher shortage and capacity development needs Enhancing the business/private sector participation Reforming the labour/workers' system Developing the capacity of newly introduced structures Enhancing downstream communication 	<ul style="list-style-type: none"> Ensuring the financial sustainability of the planned reforms Improving the alignment of TE programmes and specialisations 	<ul style="list-style-type: none"> Advocating for the activation of the Supreme Council Restructuring TE schools in Egypt
Pillar-Specific Recommendations		
Pillar 1 [Transformed Quality of Technical Education]	Pillar 2 [Transformed Relevance of Technical Education]	Pillar 3 [Transformed Teachers]
<ul style="list-style-type: none"> Enhancing CEQAT's human and technical capacities Accelerating the operationalisation of ETQAAN Streamlining monitoring data collection Enhancing school infrastructure Accelerating digital transformation 	<ul style="list-style-type: none"> Putting in place an incentive system for assessors Establishing quality selection criteria for business/private sector assessors Embracing digital tools in CBE student assessment Conducting post-implementation curriculum assessment Conducting labour market studies and graduate tracking Reforming TE Tracks Strengthening entrepreneurship within CBE curricula 	<ul style="list-style-type: none"> Hiring and capacity building of new teachers Ensuring sustainable funding for TVETA Carrying out consultations with teachers
Pillar 4 [Transformed Schools]	Pillar 5 [Transformed Image of Technical Education]	
<ul style="list-style-type: none"> Enhancing the business/private sector engagement in education and training Fostering higher support by the business/private sector to CBE Sustaining and expanding the ATS model Expanding and improving the Dual System Consolidating WBL models Expanding and improving the efficiency of the Capital project 	<ul style="list-style-type: none"> Enhancing the social perception of technical education Aligning the educational pathways between technical and higher education 	

Source: Developed by the assessment team.

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