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International Best Practices

Upgrading of technical/industrial skills: What do international good and best practices tell us?

1. Background and summary

Main messages

This note summarizes a literature review of good practices in upgrading technical/industrial skills through vocational training centers (VTCs). Key messages are:

- There is a serious **lack of comprehensive evaluations on the “how-to”** of vocational training centers, in spite of a proliferation of technical training programs as part of both education and labor market strategies. Evaluations focus on success/failure, rather than on best practice.
- **Training programs cannot be expected to change labor market patterns or economic growth trajectories on their own:** they make up one part of a broader skills development system and function within a system of political, economic and social opportunities and constraints.
- **Comprehensive training programs are more successful in terms of employment,** mixing practical and theoretical content, technical and soft skills, and providing specific services to ease school-to-work transition (such as job search assistance).
- **Sustainability and impact on broader skills development system relies on program success** (that it is perceived as useful), on significant **anchoring with partners** - local authorities and private sector - and within existing training system (often an existing VTC), and **on long term financing models** designed to last beyond project life. There is, as yet, no clear evidence on what works for systemic change.
- Gender segregated occupations pose a challenge in developed and less developed countries, but **targeted support that addresses obstacles related to information gaps** (among students, teachers, school management, and potential employers), **adapt training programs and school environment, and reduce opportunity costs,** can help.
- **Staff retention may increase with competitive employment conditions** including opportunities for continuous skills upgrading, **and collaboration between private firms to avoid poaching.**

Objective of the note

The Learning, Knowledge and Development Facility (LKDF) initiated by UNIDO and Sida is involved in several Private Public Development Partnerships (PPDPs) in technical skills upgrading. The purpose of these PPDPs is to contribute to economic development by removing critical skills shortages and generate employment opportunities, especially for youth. More specifically, the expected outcomes are:

*"The school provides **relevant training** [...] to youth, including **women** students, as witnessed by high value placed on skills by hiring firms, and **favorable employment outcomes** for students. The school forms **part of the national vocational training system** (as a private or public entity) and provides a **replicable model** for private-public partnerships in vocational training."*

These goals raise questions on the “how-to” of some key areas of technical skills upgrading:

- Favorable employment outcomes: How can the school-to-work transition be facilitated, so that students are successful in finding relevant and productive employment¹?
- Women students: How can the schools increase access for women to training?
- Sustainability, replicability and scaling up, and effects on systemic change: how can training programs be ensured to last beyond initial pilot period, how can they be replicated and how can they improve overall training systems, including enterprise based training?
- Teacher retention: linked to sustainability and overall program success, how can risks of high staff turnover or poaching² among private firms be reduced?

Against this background, this note identifies and analyses existing evidence as available in initiatives, programs and organizations comparable to the Learning and Knowledge Development Facility (see section 2 below) and identifies learning gaps regarding international best practices on technical skills training through vocational training centres (VTCs).

Approach

Information has been collected through a review of literature on the effectiveness of TVET Interventions, with a focus of low and middle income countries, based on the following sources³:

- Initiatives and organizations with similar focus: UNIDO provided contacts with **GIZ**, the **World Bank**, the **ILO**, and the **European Training Foundation (ETF)**. The GIZ in particular, and the ILO, provided background material for the note.
- Additional information was obtained through online searches, in particular the sites of the **Agence Française de Développement (AFD)**, the **Swiss Development Cooperation, USAID, CEDEFOP**, the **OECD, UNESCO**, and the **World Bank**.
- Broader literature search on knowledge platforms related to skills development and/or employment: **Global Public-Private Knowledge Sharing Platform on Skills for Employment (Global KSP)**; the **PPPLAB, Solutions for Youth Employment (s4YE)**, and the **Youth Employment Inventory**.
- LKDFs own experience as evidenced in the “How-to Guides” and the LKDF “Learning Nuggets”.

The task to identify good practices in skills upgrading through VCTs is nonetheless complicated. Skills development programs exist in many forms in OECD and developing countries. Yet, there is a paucity of information, or at least, limited access to information that can distil best practices in terms of design and implementation:

¹ Relevant employment implies that student find employment in an area where their training is relevant. Productive employment refers to jobs that provide a reasonable level of remuneration and stable and decent working conditions.

² In this context poaching refers to the practice of companies attracting trained staff thereby free-riding on other firms’ investment in training.

³ A list of reports and papers and a short description of key knowledge platforms consulted for the report, are available in Annex 1.

- **TVET is more than training centres.** Support to workforce development is a broad area including national qualifications frameworks, skills certification, non-formal training, institutional support, etc., all of which are essential parts of developing a strong skills system but which are not directly relevant for the purpose of the study.
- **Paucity of evaluations.** A review of the Youth Employment Inventory, a comprehensive database on youth employment interventions worldwide, revealed that 45 percent of interventions registered in the YEI did not have any evaluation, and training programs were least likely to be evaluated compared to other forms of interventions. Another 35 percent of interventions reported only gross outcomes without any methodology involving baseline or control groups. Only one in ten programs measured both net impact and costs, and as a result, evaluations are likely to overestimate positive benefits.
- **Lack of details.** Different knowledge platforms have attempted at collecting “best practices” but details on specificities like teacher retention (very detailed) or systemic change (very broad) are difficult to identify.
- Related to this, there is a difference between **impact and process evaluation**. The focus of the note is essentially how to make an intervention more effective; by contrast, impact evaluations, where they exist, largely focus on a binary question: is the intervention effective or not? Once an intervention has been identified as effective, the reasons for its success need to be understood. This remains a key learning gap.
- Publicly available material appears to have a “**positive case bias**”, emphasizing success stories, but avoiding displaying important lessons from failures.
- No literature **focusing specifically on heavy industry mechanics** could be identified, outside LKDF’s own knowledge products.

Against these caveats, the following section details key findings from the review.



Photo: Henok Tadesse, student from the Heavy Duty Equipment and Commercial Vehicles Academy (HDECoVA) during his internship at Volvo Ethiopia.

2. Vocational training through formal through formal training institutions: key findings⁴

General findings

Skills training programs are the most common form of interventions to improve labor market outcomes, i.e. access to more jobs, and to more productive jobs. For example, skills development/training has been the dominant form of youth employment interventions in the Youth Employment Inventory, accounting for ¾ of programs in the inventory, if comprehensive training programs (training combined with other services) are included.⁵

However, training programs – like other forms of active labor market programs – operate within existing institutional and macroeconomic constraints, including insufficient labor demand, low investment levels, malfunctioning labor market regulation and poor basic education.⁶ Training programs are not, ever, a substitute for comprehensive employment strategy aiming at removing key bottlenecks, including weak business conditions that hold back demand for labor. Nor are youth/adult training programs well placed to remedy failures in the general education system. From a donor perspective, training programs are therefore one part of a broader skills development system that needs support: institutional strengthening, accreditation, financing models, etc.⁷

Public-private partnerships in training are no silver bullet. They are most likely to be successful in contexts where international companies are already operating, i.e. in relatively stable political and economic environments; and in sectors that are growing or have a clear potential for growth, and where business interests and social interests can be combined.⁸ They are also time consuming – involving many partners with different cultures, and an intense learning process. Such upfront investments are necessary for success, however.⁹

School-to-work transition

Successful transition from school to the world of work is the main purpose of vocational training. Indeed, evaluations of TVET, whether systems or individual programs and interventions, tend to focus on student job outcomes as the key indicators of success. “Improved” job outcomes can imply quantity effects - higher likelihood of being employed, an increase in hours worked – or quality effects – higher likelihood of formal jobs, increase in earnings compared to pre-training period.

Overall, training seems to be more successful in terms of labor market outcomes in low and middle income countries than in OECD countries. Potential reasons for this includes that training is better

⁴ These findings draw on papers and reports as cited in the bibliography; in particular the following multi-project evaluations: AFD (2014), Angel-Urdinola and others (2010), Betcherman and others (2007), Card and others (2015), Cunningham and others (2010), GIZ (2013, 2009), Drost and Pfister (2013), SDC (2011), and Tripney and others (2013). It also includes analysis drawn from the LKDF's own experience of PPDPs, in particular LKDF (2015, 2014a, 2014b, 2014c).

⁵ Betcherman and others (2007).

⁶ E.g. Cunningham and others (2010), Angel-Urdinola and others (2010).

⁷ See for example GIZ (2009).

⁸ Dunbar (2013), Johansson de Silva and others (forthcoming 2015).

⁹ LKDF (2014b, 2015), Drost and Pfisterer (2013).

able to equip (vulnerable) people for the labor market in developing countries compared to more developed countries where demands for high skill jobs are higher, that more rigid labor market institutions disfavor youth employment in industrialized countries, or that evaluations in less developed countries are less comprehensive and therefore overestimate positive effects.¹⁰

TVET training programs without other services attached have been less likely to result in better job outcomes.¹¹ Comprehensive programs tend to be more successful than simple training programs to the extent that they:

- Combine technical training with training in soft skills (“work place skills” such as team work, communication, time management, etc.),
- Combine theoretical training with significant practical instruction – a failure in many TVET systems in low and middle income countries,
- Related to the above, combine training with exposure to the world of work, through internships/ apprenticeships,
- Combine training with services directly focusing job search assistance and matching services. (In general, job search assistance is a relatively low-cost option to improve labor market outcomes compared to other forms of interventions.)

To increase the labor market relevance of curriculum, access to internships, and jobs after graduation, there are strong arguments in favour of involving the private sector in training programs (ranging from consultative meetings to full-fledged partnerships as is the case for LKDFs PPDPs).

The intake process is also important for labor market success. Careful selection mechanisms, focusing on motivation and drive as well as academic credentials, has proven to reduce drop-outs and increase chances for employment.¹² More vulnerable groups (women, low income groups) are generally more excluded from training than others, and when they are given access to training, the evidence on job outcomes is mixed. Programs need to be specifically designed to allow for their participation and provide additional services in the transition into work.

Diplomas or certificates must provide value in signalling competencies in the labor market. Thus, training programs need to be part of national TVET system, recognized as such and where applicable be linked to accreditation programs to ensure that the diplomas carry a signalling value in labor markets.¹³ This underscores the importance of anchoring program interventions well with local authorities.

Sustainability and systemic change

Training program interventions’ sustainability (in that they last beyond project life) and whether they affect systemic change (that their models are replicated and/or have an impact how the overall training system and labor market function) are closely linked issues. Program success is a necessary,

¹⁰ Betcherman and others (2007).

¹¹ See for example AFD (2014), Betcherman and others (2010), Card and others (2015), Cunningham and others (2010), Dunbar (2013).

¹² LKDF (2014).

¹³ GIZ (2009).

albeit not sufficient, condition for sustainability, and is likely to promote replication as well.

These outcomes ultimately depend on whether there is local ownership of programs and whether the intervention is perceived as useful among stakeholders – students, their parents, authorities, potential employers, civil society. Apart from the key conditions for imparting relevant skills (modern training material, modern training methods/pedagogical skills, hands-on/practical work during training, internships), they also rely on a sustainable financing model including fees, private firms' contribution, and/or government budget. Program design should therefore focus on:

- Anchoring program intervention with local authorities and ensure incorporation in national systems; take time and effort to understand the existing education policy system,
- Preferably working with existing private training schools/programs as this helps save time and costs and favors continuity beyond project life, even if significant resources are needed to provide support initially¹⁴; ensure long term commitment of management and business partners¹⁵,
- Anchoring program intervention with private firms that can provide training material, internships, and co-financing and that ensure market relevance of intervention,
- Involving more than one firm as a stakeholder as this will reduce vulnerability and serve as a diversification of sources of financing, curriculum development, training of trainers, sources of internships, sources of employment, etc,
- Developing sectoral training networks, grouped around a “resource center”, by consolidating VTCs supported in previous programs. The resource center would be in charge of supporting capacity building and monitoring and evaluation in several partner centres.¹⁶

Women's access to training

Multi program evaluations suggest mixed evidence of outcomes in terms of both the quantity and quality of jobs for female youth involved in training programs¹⁷. With respect to heavy industry, it is clear that gender specific roles restrict career options – not only in low and middle income countries but also in modernized economies.¹⁸ While gender balance should be a goal, is important to establish realistic expectations as to what ratio of women/men will be attracted to certain traditionally male/female occupations.¹⁹ At the same time, courses can be offered in areas where female graduates can be more likely to find jobs within the heavy duty industry (e.g. not as mechanics, but in administration).

Specific adaptations are needed to increase program success.²⁰ Thus, feasibility studies of training programs must include gender differences in opportunities, employment outcomes, and the specific constraints (economic, social, or cultural) faced by women in terms of accessing training and employment. More specifically, initiatives should be adapted as follows:

14 E.g. AFD (2014), GIZ (2013), LKDF (2015).

15 LKDF (2015, 2014a, 2014b)

16 AFD (2014).

17 Betcherman and others (2007), Tripney and others (2013).

18 LKDF (2014a).

19 Ibid.

20 The section on female students draws significantly on AFD (year unknown) and LKDF (2015).

- Increase the incentives for women and girls to participate, including sensitization of family and other social structure that affect choices, the identification and use of role models in advocacy, and clear information on safety and security of facilities. Providing information on earnings opportunities in traditional male occupations has proved effective elsewhere.
- Sensitize potential employers on equality of opportunity and advantages of gender-balances in the work place.
- Adapting training programs for the benefit of both female and male students: Ensure that material is void of gender stereotypes; train management, teachers, career guidance professionals, and general staff, to avoid gender stereotyping; adapt facilities (separate toilets and other rooms as needed, secure transport); provide flexible/modular training to allow for training to be combined with multiple household responsibilities; provide training for students with lower education levels in contexts where this is a barrier for women.
- Reduce the opportunity cost of attending training by providing targeted grants/financial support; child care to facilitate attendance for young mothers (or siblings); or additional life skills training that enhances attractiveness of training package as a whole.

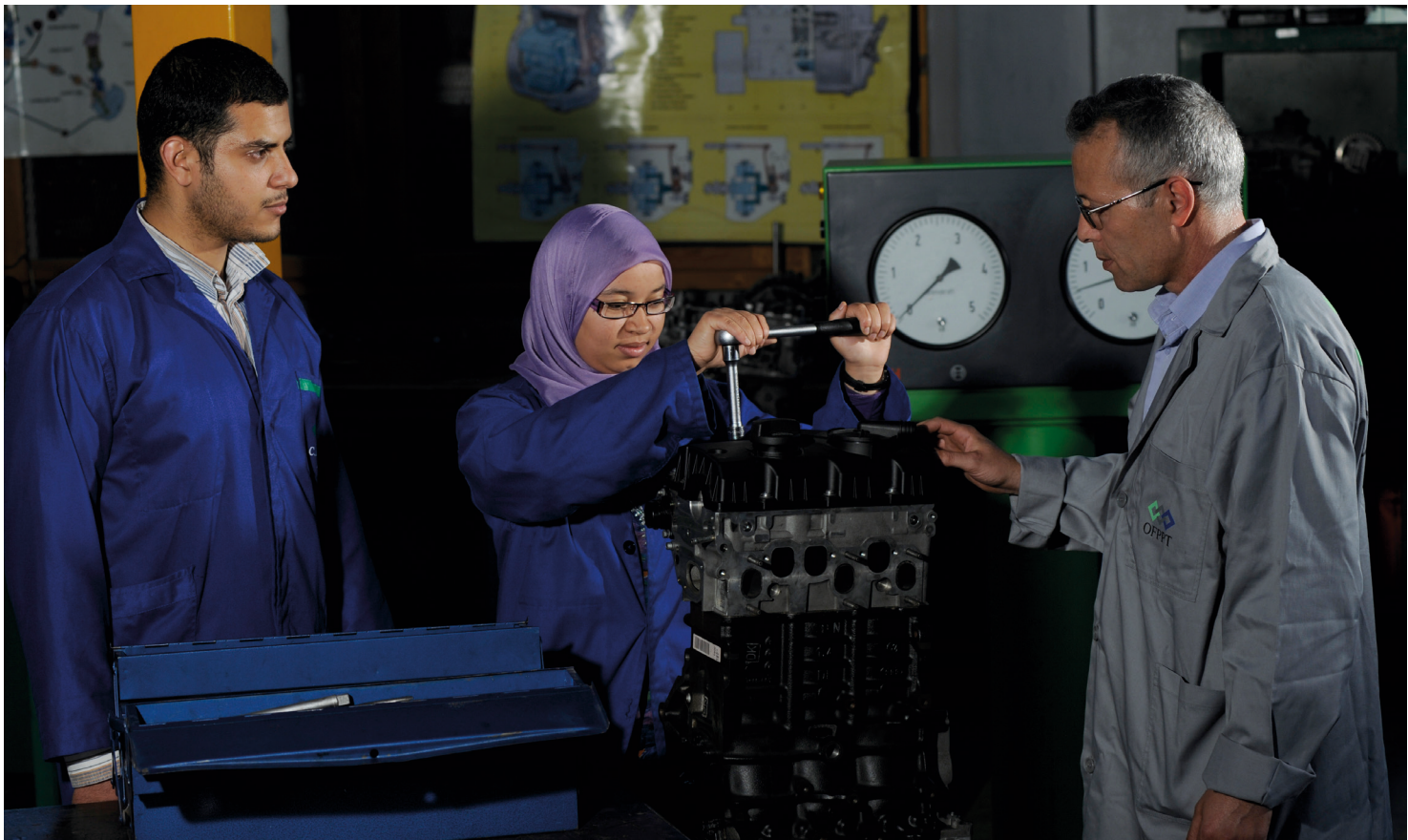


Photo: Students and trainer from the Académie Engins Lourds et Véhicules Commerciaux (AGEVEC) in Morocco.

Teacher retention

For programs where substantial resources are spent in upgrading teacher skills, the risk of losing the investment in human capital through teacher attrition is a deterrent for investment in the first place. Private firms involved in these training programs always face the risk of investing in training staff only to find them “pouched” by other firms.²¹ High levels of staff turnover also translate to substantial costs to training systems.

As for students, application and intake process should be used to identify personal motivation and the probability of a particular candidate leaving the job. When programs are established with existing VTC, chances of retaining staff are likely higher than if they are hired on a project basis.²²

For teachers as for other forms of employees, conditions of work – of which earnings are only one parameter - affect job satisfaction and career choices.²³ Programs that offer competitive conditions of work and VCTs that are seen as “good employers” are likely to minimize staff attrition.²⁴

Teacher motivation should be part of monitoring and evaluation systems. Information management systems should include stay and exit interviews – the former, when teachers are regularly interviewed on their opinion of their work place; the latter, when staff are renouncing to understand their motivations for leaving.

Involving more stakeholders from private firms also means fewer free-riders and better shared risk. Informal agreements on no-poaching between participating firms can be made.²⁵

Finally, VTCs may have to prepare for turnover by allowing for some oversupply of trainers. This can also contribute to systemic change, but is of course connected to higher costs.

²¹ SDC (2015).

²² LKDF (2014a, 2014b).

²³ Work environment factors associated with staying include: (1) higher salaries (2) positive school climate (3) adequate support systems (4) opportunities for professional development (5) reasonable role demand, and (6) manageable case loads. See e.g. Pitose (2013).

²⁴ Ibid, and LKDF (2015).

²⁵ An important example of such an agreement is the cluster of German firms in North Carolina who engaged in skills development, using the German apprenticeship model. Member companies agree to a common curriculum, recruit as a group, and have agreed not to poach employees. See e.g. <http://www.theguardian.com/world/2013/dec/31/german-firms-us-apprentice-model>

3. Learning Gaps

As stated in section 1, there are large learning gaps in terms of good practices in industrial/technical skills provision through VTCs.

A first gap relates to identifying, under one heading, programs focusing on heavy industry/technical skills. A possible next step would be to approach “TVET-intensive” donors with specific requests for identifying evaluations of projects involving mechanics schools similar to those managed by UNIDO.

A second gap relates to the lack of evaluations of “how-to” rather than “if” a program is successful. Broader evaluations of training programs tend to focus on whether a particular type of programs is successful, rather than identifying the factors that explains success or failure. While both types of information are important, more in depth analysis of specific factors that contribute to successful programs are needed.

A third gap is the lack of program evaluations over a longer time-frame. Program evaluations rarely provide tracer studies to establish labor market outcomes (or other results) over time. Programs addressing particularly difficult-to-reach groups, or programs involving significant behavioural changes among students, employers, and training institutions, are likely to take time to see effects.

A fourth gap is related to the impact on systemic change. Although this is often a critical motivation for donor participation, there appears to be little evidence available, possibly because of lack of appropriate results indicators and too short time spans for evaluations.

A fifth gap relates to engaging clusters of firms. As discussed, program sustainability and effectiveness as well as systemic change are likely to increase if more firms than one are involved. However, more evidence and positive models for collaboration among different firms are needed.

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B. Knowledge platforms/websites

Global Public-Private Knowledge Sharing Platform on Skills for Employment: The Global KSP is intended to share work on approaches, knowledge and experiences that governments, employers, workers and international organizations have found effective in skills development. It is supported

by the ILO, the OECD, the UNESCO, and the World Bank. See <http://www.skillsforemployment.org/KSP/en/AboutThePlatform/index.htm>.

The PPPLab is a knowledge platform established over 2014-2018, intended to collect and analyze knowledge and methodological lessons from Dutch supported public-private partnerships (PPPs). It presently focuses on PPPs in Food security and Water sustainability. See <http://ppplab.org>.

Solutions for Youth Employment: S4YE's mission is to promote youth employment by serving as a platform in order to foster joint learning and dissemination, coordinate efforts in youth employment, develop and disseminate tools to design and implement interventions. S4YE's founding partners are Accenture, the World Bank Group, Plan international, Youth Business International, International Youth Foundation and the RAND Corporation. See <https://www.s4ye.org/>.

The Youth Employment Inventory is a comprehensive database on youth employment interventions worldwide. It documents design, implementation, and achieved results if these are available. It is supported by the World Bank, the German Ministry of Economic Cooperation and Development (BMZ), the Inter-American Development Bank (IADB), the International Labour Organisation (ILO), and the Youth Employment Network (YEN). See <http://www.youth-employment-inventory.org/>.

Notes



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