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Enhancing Industry Experience of TVET Teachers: An Analysis of the Case of Lao PDR with a Focus on Teachers Catering to the Garments, Food Processing and Electronics Industries

Abstract

It is generally recognized that TVET teachers are better suited to impart relevant professional competencies if they themselves have extensive experience in the world of work (e.g., in industry or the trades). In many parts of the world, however, this is not the case, not least because many teachers go straight into teaching after an academic education. For this reason, policy makers have tried to integrate the acquisition of professional experience into the training of TVET teachers. The following article discusses this topic using the example of Lao PDR, in particular through an assessment of current levels of industry experience of TVET teachers in Lao PDR. The study used mixed methods: a quantitative survey (n = 74) and qualitative semi-structured interviews (n = 9). The article finds that the main reason for lack of industry experience amongst TVET teachers is poor cooperation between training providers and industrial enterprises. The article proposes ways to improve cooperation, so that teachers gain more experience in industry as part of their professional development.

Keywords: *TVET teachers, industrial experience, training provider-company cooperation mode*

1 Introduction

Throughout the world, and in particular in the Southeast Asian region, there is a major deficiency in the number and quality of teachers in Technical Vocational Education and Training (TVET) (Axmann et al. 2015; Choomnoom 2022; Hassan & bin Ismail 2022; SEAMEO VOCTECH 2012). Both policy-makers and experts in the field agree, therefore, that teacher training for both pre- and in-service training of TVET teachers needs to improve and keep up with technological changes (Paryono 2015; World Bank, UNESCO, & ILO 2023). Furthermore, policy-makers claim that TVET teachers should ideally have hands-on experience of working in industries, as this gives them industry-relevant skills that they can then impart to students in an engaging way (Johnston et al. 2016). Instead, however, many TVET teachers enter the teaching profession directly after academic training, without ever having worked in any substantial way in the professional fields they teach.

Numerous countries are therefore attempting to meet these challenges with reforms, for example, by adapting the admission requirements for the school service or by introducing

innovations in the training of TVET teachers. Many reforms like these are being implemented in lower- and middle-income countries (LMIC), and not just in Southeast Asia, and often with substantial support from multilateral and bilateral donors. Despite these extensive efforts, such reforms have hardly been the subject of academic research. Against this background, the following article examines the case of Lao PDR, whose government – in cooperation with different international development partners – has taken measures through which TVET teachers should gain more experience in their respective vocational fields and improve cooperation between vocational schools and the world of work that would, in turn, facilitate the acquisition of industry experience by TVET teachers (Ministry of Education and Sports 2007; World Bank 2023).

The study is focused on four main research questions: 1) How much industry experience do TVET teachers in Lao PDR have and how did they get it? 2) What are the obstacles to gaining industry experience? 3) What modes of cooperation do TVET institutions and industrial companies have? 4) What are the obstacles to cooperation?

The data presented here was collected in the context of the Skills for Industry project, which analyses industrial training in six countries in Africa and Asia. The sub-project on Lao PDR focussed on three industries that are particularly relevant in this country in terms of job creation in manufacturing: garment, food processing and electronics. A total of 144 companies were surveyed across these three sectors. In addition, with a view to writing this article, 74 TVET teachers were interviewed in the three industrial sectors mentioned above and in-depth semi-structured interviews were conducted with nine deputy directors. The two target groups were selected through purposive sampling from nine TVET institutes in Lao PDR. Table 1 provides some information about the sample of the 74 TVET teachers interviewed for this article:

Table 1: **Data Distribution of Respondents' Participants and Their Characteristics**

Demographic characteristics		Frequency	Percentage (%)
Gender	Males	33	44.6
	Females	41	55.4
Industrial sector	Garment	20	27
	Food processing	29	39.2
	Electronics	25	33.8
Teaching Experience	1 to 5 years	3	4.1
	6 to 10 years	14	18.9
	11 to 15 years	24	32.4
	16 years and above	33	44.6

The results of this article shed light on the challenges around TVET teachers' acquisition of industrial work experience. In conclusion, we propose ways to overcome these challenges, by improving cooperation between TVET institutions and industrial enterprises in the arrangement of work experience for pre-service and in-service teachers.

2 Discussion of the literature

There is widespread agreement in research that teacher quality has a significant impact on learning outcomes (Hattie 2012; Johnston et al. 2016; Köpsén 2014). The quality of teaching staff, in turn, is seen in the context of a large number of different factors, with some research focussing on characteristics of the teachers themselves (e.g., motivation, professional competencies) or on features of the respective educational systems that potentially have some influence on the quality of teaching staff (e.g., requirements for teacher training, conditions of employment). In the educational research literature, those contributions that deal with the professional competencies of teachers undoubtedly have a particularly central position. One of the main findings of this literature is that good teachers do not only have a high level of overarching pedagogical competences (e.g., classroom management, teaching methods, communication skills), but also substantive knowledge and skills in the subject areas they teach (Hattie 2023; Ma & Yuan 2018).

However, the research investigating such relationships, specifically with regard to TVET teachers, is not comprehensive. Such research would be important because very specific demands are being placed on TVET teachers. For instance, It is expected – at least in conventional understanding in policy-making and in much of the relevant academic literature – that TVET ought to prepare students for the world of work and that the teaching should be geared to such an outcome. The teachers should thus have the required professional competencies, not only in terms of familiarity with the relevant instruments and working methods on a theoretical level – for example, through academic training in the relevant subject (e.g., engineering) – but also by knowing them from their own experience (Johnston et al. 2016; Köpsén 2014; Wagiran et al. 2019).

If there is little literature on the relationship between teachers' work experience and the quality of vocational education and training, there are at least indications in the research that TVET teachers' experience in the labor market is weighted differently depending on the education system. For example, in some countries with established TVET systems, the work experience of TVET teachers is considered to be very important, ensuring that vocational schools hire primarily teachers with many years of experience in vocational subjects, even if this is not necessarily required by law. The reasons for this are many, including the fact that employment at a vocational school is attractive even for people with the relevant professional experience (and the necessary academic degrees) (Boldrini & Wüthrich 2022; Driesel-Lange, Morgenstern, & Keune 2017). This prerequisite is much less important in many LMICs: here, individuals with the necessary academic qualifications and work experience in industry are often employed in comparatively high positions and would have to accept high salary losses if they entered the teaching profession. For this reason, TVET schools in many countries are mainly staffed by teachers who have completed academic training and – depending on the country – additional pedagogical training without any significant work experience (Bünning, Spöttl, & Stolte 2022; European Union 2014).

In this context, there are many efforts to promote the professional development of TVET teachers in LMICs, both in the area of pre- and in-service training. Some measures, e.g., in Malaysia or the Philippines, also aim to promote the industry experience of TVET teachers and are usually linked to efforts to promote the professional competencies of learners (Ahmad & Essien 2021; Clow 2001; Padillo et al. 2021). However, there is hardly any academic literature dealing with the impact of such reforms in the education and training of TVET teachers, with the exception of a few evaluations of individual projects, which, however, only marginally address the issue of teachers' professional experience. This lack of literature on the training of TVET teachers is in striking contrast to the large amount of literature dealing with the training of teachers in the field of general education, especially in LMICs, in which the acquisition of practical teaching skills (and their reflection) as part of formal training, among other things, is intensively discussed (Ahmad & Essien 2021). A key finding of this literature is that the linking of theoretical and practical teacher training continues to be associated with major challenges (Lipsmeier 2013), a finding that is relevant to the present study in that it suggests that reforms in education and training often become challenging when it comes to their implementation.

3 Context Lao PDR: TVET system and teachers

In the following section, we present the context of TVET in Lao PDR that is relevant to our study. We focus first on the TVET system and then on teacher training in this part of the education system.

3.1 The TVET system: An overview

After completion of lower secondary education, students in Lao PDR have the choice of continuing to upper secondary general education or of entering upper secondary technical and vocational education and training (TVET). This TVET system comprises five levels (see Table 2).

Table 2: **Ratio of theory to practice and duration of the curriculum** (Source: Ministry of Education and Sports 2021)

Level of Curriculum	Theory (%)	Practice (%)	Duration (m/y) and estimated Hours
Certificate C1	10	90	3-6 months (420-840 hours)
Certificate C2	15	85	1 year (960-1,120 hours)
Certificate C3	20	80	2 years (1,920-2,240 hours)
Diploma (C4)	30	70	2 years (1,920-2,240 hours)
High Diploma (C5)	40	60	3 years (2,880-3,360 hours)

Table 2 also shows that the share of practical learning is more than 50% at all levels. This learning is normally organized at school-based workshops (“TVET laboratories”). Despite the comparatively high share of practical learning, TVET continues to be criticized for its lack of practical orientation. Against this background, a curriculum and instructional reform started in 2011 which introduced competency-based training (CBT) and “dual-cooperative training” (DCT) to replace the traditional approach of vocational learning that was more focussed on the teaching of theory (Ministry of Education and Sports 2020).

Clearly, the government considers TVET to be a key element in the country’s education and training system and therefore has the ambition to further expand it (Ministry of Education and Sports 2015). For this reason, stipend and voucher programs have been introduced and new dormitories have been established, particularly to reach female students from rural and minority ethnic communities. Furthermore, with different projects being financed with the help of bi- and multilateral donor agencies, TVET schools have been upgraded and been provided with more equipment. Yet, despite political commitment to strengthen TVET and external funding, enrolment in TVET programs has hardly increased over the years, currently enrolling no more than approximately 1 percent of all upper secondary students (UIS 2023).

While the challenges to expand enrolment in TVET suggest that it remains difficult to convince potential learners (and their parents) to choose TVET as their preferred option, various critical statements from employers were recorded in this study regarding the low level of relevance of TVET for the labor market. TVET graduates are often considered not to have the skills required by the world of work, which becomes an even more vital consideration given that the country’s economic structure and the technologies used in the different sectors are both changing rapidly. While these weaknesses are evidently a result of the lack of exposure of students to practical learning in the world of work, many observers are of the view that the lack of practical skills at the level of students also results from low teaching quality, particularly in view of the latter’s limited understanding of new equipment and professional resources as well as their own insufficient experience in the labor market.

3.2 TVET teachers in Lao PDR

As in many other countries, there are two types of TVET teachers in Lao PDR. On the one hand, theoretical teachers conduct teaching in a classroom or laboratory, while on the other hand, practical teachers carry out practical teaching in workshops and laboratories,.

While the training for practical teachers is hardly formalized, there are two qualification paths for theory teachers (see Figure 1): one path is via TVET, which requires that at least two years of training must be completed with a diploma (C4). As mentioned above (see Table 2), this training includes a certain amount of practical learning, although it is usually school-based. This training is then followed by a two-year training program at the Vocational Education Development Institute (VEDI). It focusses on studies in a vocational subject, includes pedagogical training, and can be completed with either a high diploma or a bachelor's degree.

The other route is via a university course of at least four years in a subject relevant to TVET (e.g., mechanical engineering), which must be completed with a Bachelor's degree. This university-based program is then followed by training at the aforementioned VEDI, which, however, is much shorter (70 hours).

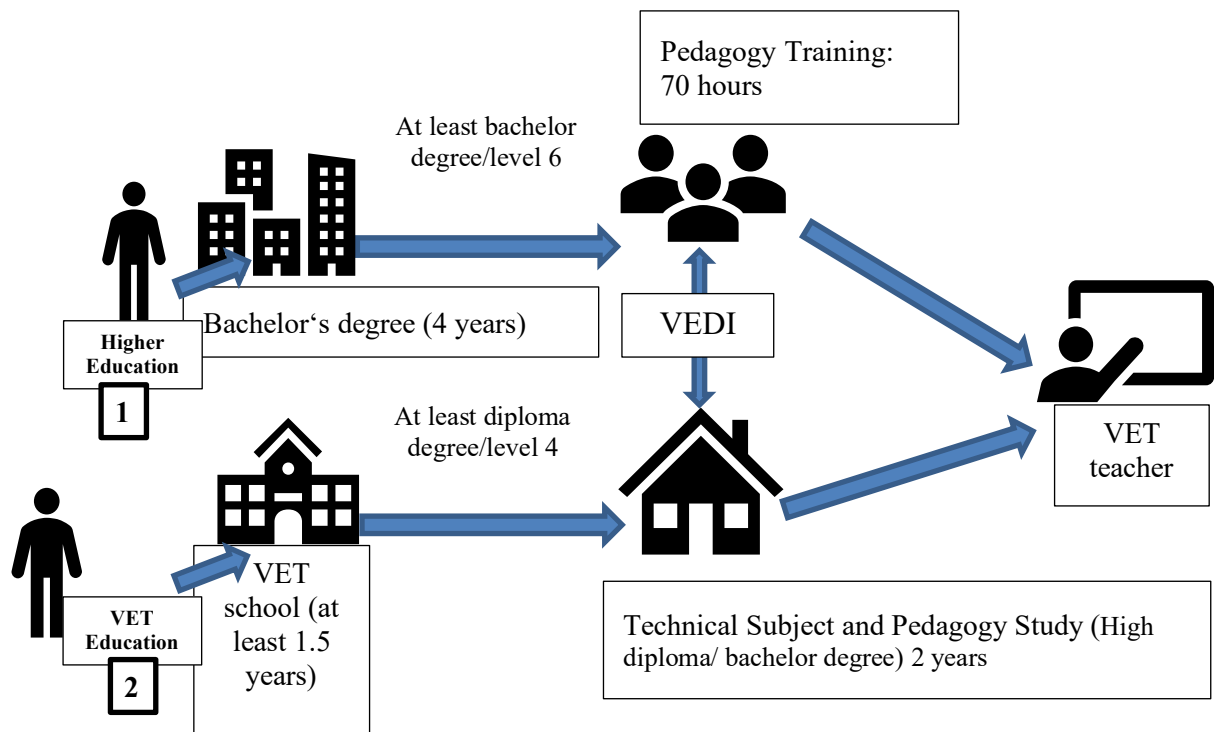


Figure 1: Two paths to becoming a TVET teacher

For most TVET teachers, however, training at the VEDI does not take place immediately after the completion of the TVET Diploma or Bachelor's degree. Rather, the TVET schools initially employ the teachers without the VEDI training, usually for two years. After these two years, the young teachers submit an application to VEDI, with which suitable candidates are proposed to the responsible national authorities (TVET Department) and the Minister for Education and Sports, after consultation with the vocational schools. Training at VEDI can only begin once this application has been approved, with approximately 200 students being admitted per year (VEDI 2021).

Whichever course is chosen at VEDI, the curriculum continues to be heavily weighted in favour of theoretical subjects. The only mandatory practical component is a pedagogical module, which includes an internship at a TVET institution, but there is no requirement for an extension of practical experience in the relevant industry. In fact, the TVET Teacher Standard defines three levels of industry experience (high: 171–240 days; medium: 51–170 days; low: less than 51 days) and even proposes that suitable TVET teachers should have at least 240 days of work experience in the professional field they teach before taking up permanent employment. As will be shown below, this latter requirement has not been met at all.

4 Analysis of industrial experience of TVET teachers and factors influencing it

The following will now discuss this article's topic based on quantitative and qualitative data collected by us. In a first step, the results from interviews conducted with 74 TVET teachers in three industrial sectors will be presented, which focussed on their industry experience. The second section deals with the factors which, according to our analysis, are the cause for the lack of industry experience of TVET teachers.

4.1 Industrial experience of TVET teachers in Lao PDR

The survey of TVET teachers (n=74) revealed that a clear majority of them actually have no or a low level of experience in the field they teach, although this is now required.

Table 3: Level of industry experience among survey TVET teachers

Level of industry experience	Frequency	Percentage (%)
No	46	62.2
Low Level	9	12.2
Moderate Level	11	14.8
High Level	8	10.8

The survey also found that most TVET teachers gained experience from non-official work (after teaching hours, on weekends, public holidays, etc.), which meant they sought industrial experience on their own; some gained experience by taking students to companies or by visiting students during internships which are organized by some TVET colleges.

Yet, the survey also showed that there are certain differences in this regard between training sectors (see Figure 2). For example, the proportion of teachers with no industry experience is particularly high in "Garments" training sector (74.9%), while it is markedly lower in "Food processing" (51.92%) or "Electronics" (63.9%) sectors.

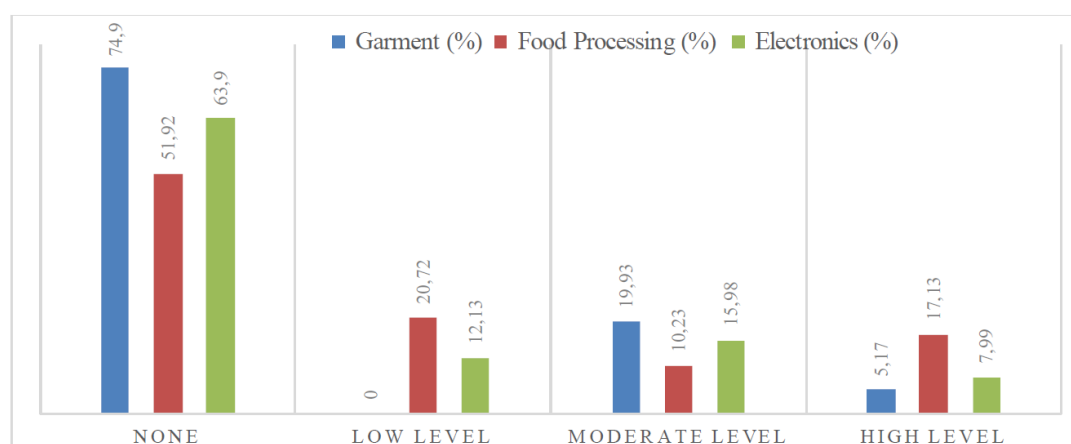


Figure 2: Industrial experience of TVET teachers per industry sector

Certain differences can also be seen when looking at industry experience by level of education (see Figure 3). The share of those with no or a low level of industry experience is particularly high among those who have a Master's degree or an even higher educational qualification (86.67%), while it is much lower among those who have only acquired a TVET qualification at the diploma level (40%).

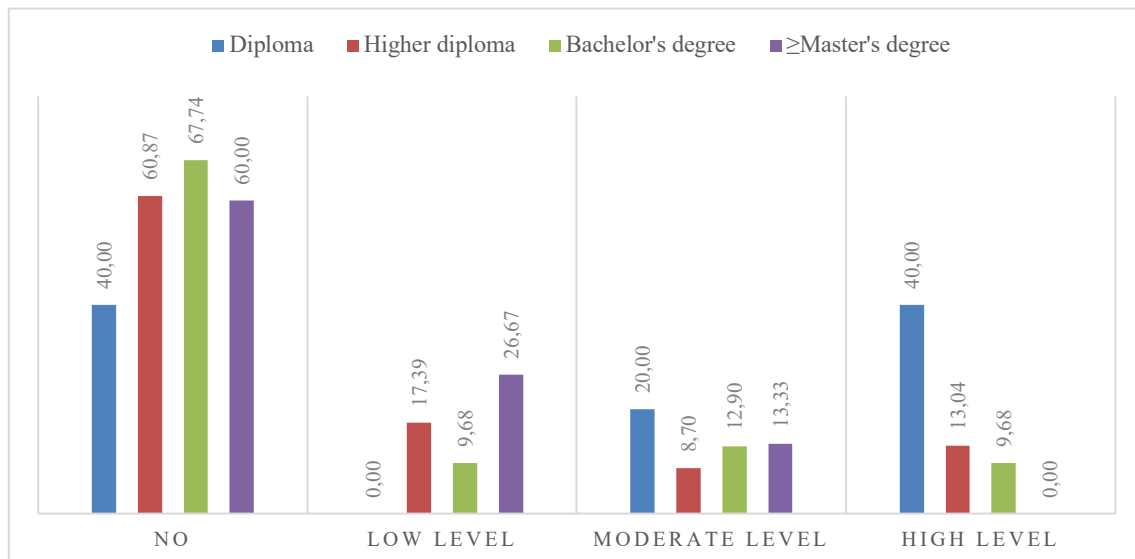


Figure 3: Industrial experience of TVET teachers per education level

However, our data show that individuals who have little teaching experience and have recently completed their education as TVET teachers have comparatively more teaching experience than persons with many years of teaching experience: About a third of teachers with less than five years of teaching experience report having a high level of industry experience, whereas this proportion stands at approximately 9 percent among teachers with over 15 years of teaching experience. At the same time, among teachers with less than five years of experience, the proportion of individuals with little or no industry experience remains very high at 66 percent.

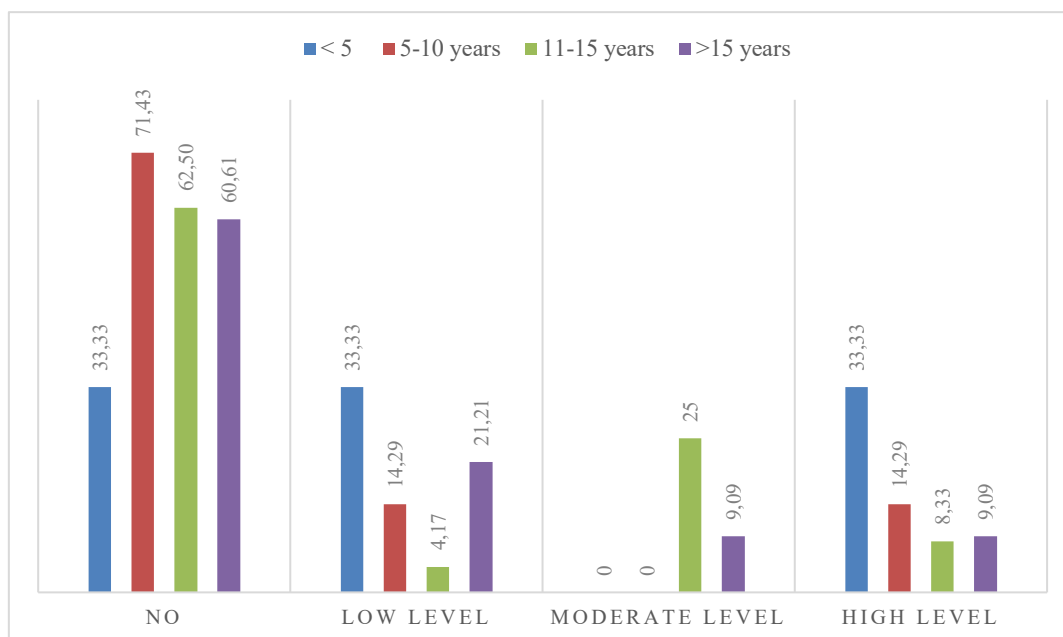


Figure 4: Industrial experience of TVET teachers per work experience

4.2 Reasons underlying the lack of industry experience

The reasons for the insufficient industrial experience of TVET teachers are numerous and will be discussed in this section in more detail based on the data collected.

From the point of view of the teachers surveyed, the employment conditions, in particular, make it difficult for them to gain industry experience. First, most teachers are not employed part-time and therefore – unlike TVET teachers in some other countries – do not work in the industry on the side. Accordingly, work experience would have to be acquired alongside teaching activities. From the teachers' point of view, however, there is usually no time to visit companies, especially if such companies are not located near the school. This challenge is evident in the Garments Programme, for example: although it is offered throughout the country, the industry is concentrated in a few, mainly urban, regions particularly in the Vientiane region close to the border with Thailand, where many investors come from.

From the teachers' point of view, the acquisition of practical work experience is also made difficult by the lack of cooperation between schools and industrial companies: there is ever any contact between the two. This is certainly due to the great geographical distance in some cases. However, the lack of any contact also reflects a general disconnect between formal TVET and the world of work in Lao PDR: employment in the industry (for example, in the garment industry) does not require a formal vocational qualification (Maurer, Morlok, Khammouty, & Teutoburg-Weiss 2019). Accordingly, young people are often part of a TVET program not because they are looking for a job in the sector they are trained in, but because they hope to gain a recognized educational qualification that will also offer them further opportunities within the education system – as well as with a view to landing public sector jobs (e.g., as a teacher in TVET).

The missing link between schools and the world of work is also reinforced by the requirements for TVET teachers: those people with extensive work experience from the industry, for whom employment as a TVET teacher would be attractive in terms of the remuneration, do not fulfil the qualification requirements, in particular, because they mostly do not have the required higher Diploma or Bachelor's degree. If they do have such qualifications and already work in the industry, they are usually in management positions, and so employment at a TVET school is generally not very attractive for them, either in terms of remuneration or social status.

Finally, as the study also makes clear, the lack of industry experience among TVET teachers also results from the fact that there are hardly any incentives for teachers to gain industry experience: To date, neither employment as a TVET teacher nor the start of TVET teacher training has been linked to a corresponding requirement, and neither better remuneration nor improved career opportunities are guaranteed as a result of industry experience. The interviews conducted even suggest that the authorities are unable or unwilling to enforce that teachers should have the necessary work experience in the industry. Rather, there are many indications that the political intention to increase the industrial experience of TVET teachers does not correspond to a consolidated political will; instead, it essentially reflects an expectation of the bilateral and multilateral donors.

5 Discussion and conclusions

The article makes evident that a large majority of TVET teachers in Lao PDR have little or no work experience in the sector in which they teach. Although the study found some differences between the three sectors analysed (garments, electronics and food processing), overall, such work experience is not widespread, despite the efforts of education policy-makers. The article also makes it clear that the lack of industrial experience of TVET teachers is only one aspect of a general lack of links between the formal TVET programs and the world of work in Lao PDR. This confirms research findings which suggest that despite comprehensive reforms of TVET, especially in LMICs, the relevance of these training programs for the world of work is hardly increasing.

Despite these findings, it can be stated that the quality of formal TVET can only be improved if its links with the world of work increase. With regard to Lao PDR teachers, it is unlikely for the time being that a large majority of them will work in the industry for a long time in the future: the requirements for teachers and employees in the industry are simply too different at present. Nevertheless, in the medium term, only TVET teachers who actually have a minimum of industrial experience should be employed. If possible, this should be done before the start of teacher-training at VEDI, possibly as part of internships that can be organized by VEDI in cooperation with industry associations. If possible, these prospective teachers should be employed in the industry in such a way that a traineeship salary can be justified, which covers expenses in particular. Compliance with such a regulation should then be mandatorily demanded by the authorities.

With a view to addressing the global debate on quality in TVET, the case of Lao PDR makes it clear that even reforms that seem comparatively simple, in this case increasing the industrial experience of TVET teachers, often hardly make any progress due to challenges at the implementation level. It is therefore important to carry out a comprehensive assessment of not only the legal provisions, but also the relevant incentives for the relevant stakeholders to support such reforms.

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