

## Chapter 16. Perspectives on Future TVET Research<sup>1</sup>

The aim of this study was to report on the state of research on TVET in SSA through a systematic literature review enhanced with a structured community review, interviews and focus groups. Across 15 chapters and several appendices, this report defined terms and provided contextual information (Chapters 1–3), and an overview of the research landscape (Chapters 4–15). The report also summarised the various findings (see executive summary preceding Chapter 1). Now, in this final chapter, we provide an outlook on future TVET research programming based on the findings of this report.

### 16.1. Cross-cutting approaches for designing joint TVET research in SSA

In this section, we put forward suggestions for approaches to TVET research in SSA. This report has demonstrated that — while research on TVET in SSA is available and covers multiple facets — there is a clear need for much further research on TVET in SSA (Chapters 6, 14). If researchers in SSA are to undertake research, then research funding and capacity building have to be priorities.

#### 16.1.1. TVET research needs to be broad and systematic

Complex problems may not have simple solutions; where differentiated and complex approaches are needed, these need to be evidence-informed. TVET research needs to be interdisciplinary. We cannot rely on some kind of notion of ‘narrow TVET research’: TVET research has to be undertaken in the context of other research branches, such as social scientific research, education research and other specialist subject disciplines. This applies to TVET research in general, as well as to TVET research in SSA.

The complex challenges for TVET in SSA have consequences for the design of TVET research. We, therefore, suggest focusing on the following interlocking areas of TVET research.

- **Research on ‘TVET research’.** What is the scope of TVET research? How is TVET research conducted in SSA? Which methodologies and paradigms form the basis

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for TVET research? How does it relate to other disciplines, and how could it usefully relate to those other disciplines? What capacity needs to be built to facilitate successful research? (Chapters 7, 13).

- **Research on the TVET system.** What are the goals of TVET in SSA? How is TVET integrated into the education system and at which levels (macro-, meso-, micro-level<sup>2</sup>) is it influenced, and by which institutions? At each of these levels, how can TVET be influenced in relation to educational policy, planning, practice, professional development and the promotion of education, etc.? (Chapters 8, 10, 11, 12).
- **TVET research at the level of education delivery.** Competence measurements and advanced approaches for TVET educators are needed. This needs to include pedagogy in TVET teacher education as well as curriculum development towards flexible use and application of teaching and learning concepts. (Chapters 4, 8).

### 16.1.2. Accurate measures

Accurate measures of the effectiveness of interventions need to be developed (Chapter 13). Such measures need to include a variety of different aspects of the TVET system (such as institutions and policy) in order to capture correlations accurately, and in order to stand a chance of approaching the identification of causal relations (†[Rauner, et al., 2007](#)). Importantly, the relationship between policymaking and policy implementation needs to be strengthened (Chapters 7, 13). Pertinent goals are recognised as important and enshrined in policy; yet, in practice, they are not realised by the relevant authorities and institutions (Chapter 13).

### 16.1.3. TVET research needs to be long-term

Undertaking long-term research means having access to long-term research funding (Chapters 6, 14). Longer-term research should span at least 2–3 years. Longer programmes — often shunned because of costs — can be divided into different research and implementation phases (such as conception, planning, implementation, testing / evaluation, re-planning, implementation). Longer-term funding empowers researchers and implementers to undertake full cycles of implementation, evaluation and re-implementation (Chapter 6). This allows for successful approaches to be expanded further.

### 16.1.4. Research in partnership, multilateralism and diversity

Multilaterality and diversity — including interdisciplinary approaches — are worth promoting. This plurality includes diversity of topics and the partners involved, with organisations from the research sector as well as from industry, businesses or other entrepreneurial institutions. Such broad designs offer the opportunity to innovate (Chapter 15). Purely bilateral cooperation may well be limited in its effectiveness and flexibility. Naturally, for research to be effective and equitable, partners from the African continent need to be involved in research projects and partake in research grants for research in SSA.

It is essential to develop not only the African regions within Africa but the African regions within a global context. The interviews we conducted have shown that all partners have to see clear advantages in cooperation (means, publications, regional innovations) in order to undertake committed work in networks or cooperations (Chapter 15). TVET researchers often work without specialised support, and are isolated in their institutions or countries (ibid.). Although TVET networks are identifiable (UNEVOC, TVETA Kenya), and sometimes TVET research takes place within networks, there are few research networks dedicated specifically to TVET research, e.g., RAIFFET, TVET-Net (Chapters 5, 15). There is an urgent need to develop networks and methods that can support TVET researchers effectively.

### 16.1.5. Applied and practical research

Contemporary issues such as gender or sustainability, which are discussed in the international research community, are — despite some interesting trends — still not sufficiently reflected in the discussion about TVET and TVET research in SSA (Chapters 9, 14). Involvement in international TVET networks can offer support for engagement with contemporary and future discourses (Chapters 5, 15). However, such involvement always needs to be designed according to the needs of all partners (including, of course, those on the continent). Examples from the past two decades of international research funding show that international cooperation can be problematic and ineffective (Chapters 6, 14). Even with other contemporary approaches to building international cooperation in TVET (e.g., ‘doing development differently’ or ‘adaptive management’)<sup>3</sup> it is not certain what the effective approaches are precisely. This justifies the need for action and research to interlock as tightly as possible: practical research and evidence-based implementation are two sides of the same coin (Chapter 14).

Calls for action, such as TVET implementation in certain areas, should always be calls for researching that action, too. Appropriate methods and research designs play a major role here: research on isolated scientific problems cannot lead to solutions to complex problems (Chapters 8, 14). This means that research on TVET must be set up in such a way that it can address practical and practice-oriented problems. Research needs to be action-oriented: research that focuses on improving practice, on real-world problems that are of societal relevance (ibid.). In a best-case scenario, researchers who are also practitioners can reflect on and further develop their own (teaching or administrative) practice during the research process (ibid.).

### 16.1.6. Approaches to funding TVET and TVET research

In this context, a joint approach by research and business sponsors makes sense. A practice-oriented project by TVET providers is prepared, planned, carried out and evaluated together with researchers (Chapter 5). It might, therefore, be worth considering whether a ‘mixed’ economic / implementation / research funding is expedient. A

3 †Building State Capability, *The Doing Development Differently Manifesto*, available at <https://building-statecapability.com/the-ddd-manifesto/>

network of companies, TVET schools / colleges and universities could work together in such a project. Likewise, it is advisable to underpin existing projects in the field of TVET with additional TVET research. It would also make sense to work with other ministries. Depending on the project, expertise and support could be brought in by the Ministry of Labour, Development and Agriculture, etc. (Chapter 10).

## 16.2. Topics and themes

As noted, above, while diverse research on TVET in SSA is available, there is a clear need for further research on TVET in SSA. We now turn to a number of clear starting points for such future research in terms of topics and themes that we present in this first section (Chapters 6, 7). Clear objectives for what constitutes meaningful TVET have to be developed (Chapter 4). There is an urgent need for research on the establishment and introduction of TVET standards linked to well-founded teaching approaches according to the current international state of research (Chapter 12). Similarly, the continuing education of TVET teachers must be further researched, and further developed in evidence-based ways (Chapters 4, 7).

### 16.2.1. Societal perspectives

If we are to undertake further TVET research, then it is important that it does not only target the economically viable side of TVET. In the light of broader social development in SSA, providing education for *responsible citizens* — who play a part in shaping a cohesive society and sustainable world — needs to be a topic of research and development (Chapters 4, 7). Student-centred teaching approaches are needed to develop the skills required to become such responsible citizens, who are self-reliant and (self-)reflective. Such aspects need to be part of the competence-orientation of TVET (Chapter 8). If the issue of personal development and individual education — especially relating to critical reasoning — is neglected, as is often the case in informal education, graduates of these forms of TVET are vulnerable to abuse and exploitation in the workplace (*ibid.*).

Integration, equal opportunities and gender aspects need to be addressed — both in research and implementation. Specific suggestions as to how change in this direction can be implemented effectively are — as our analysis shows — still rare (Chapters 8, 9). Research can make valuable contributions in foregrounding this.

In many countries in SSA, despite a high level of youth unemployment, there is a shortage of skilled workers (Chapters 4, 9). Demand- and competence-oriented TVET will benefit both industry and young people. If this alignment can be created, then it will be possible to get better support for TVET programmes from industry and business. Industry and business benefit from recognised and systematically implemented TVET standards and correspondingly skilled workers (Chapter 12).

### 16.2.2. Perspectives of industry and business

In all further TVET research and implementation, it is of the utmost importance to consider the perspectives of all stakeholders, including industry and businesses (Chapters 4, 5, 6, 14). It is advisable to identify TVET needs on a regular basis — both in terms of quality and quantity — through the consistent participation of regional companies and institutions (Chapters 6, 11). This not only leads to increased industry participation in TVET, thereby increasing the chances of conceptual and financial support; it also makes TVET more attractive to potential students, because their chances of being employed in the regional labour market increase. Moreover, more skilled employment ultimately increases workers' incomes and living standards. Measures that strengthen both industry and workers are likely to result in strengthening the economy overall.

In order to keep the barrier of entry low and increase the attractiveness of TVET programmes, innovative solutions are needed (Chapter 7). For example, it will also be necessary to consider to what extent existing qualifications and abilities can be used and recognised in the future (Chapter 6). Many people in the regions surveyed have obtained skills and experience without any formal training in a wide range of fields, including artisanal work, craft or agriculture (Chapters 8, 13). Such TVET — in the informal sector and without a (state recognised) certificate — nonetheless has value; existing skills need to be made identifiable in order to gain formal recognition and contribute to society to full effect.

### 16.2.3. Information and Communication Technology in TVET

There is a clear need for research to guide the introduction of skills development in Information and Communication Technology (ICT) through TVET; this effort is in line with the stated objectives of SSA TVET policies (i.e., in Nigeria, Uganda, Kenya, Ghana, Tanzania, Cameroon, Malawi, Rwanda and others; Chapters 6 and 8). TVET research must consider the relevance of ICT-based teaching and learning in TVET against the background of current developments and changes of work processes in the economy. So far, existing research in TVET indicates a lack of evidence of the impact of ICT on the efficiency of TVET programmes (†[South Africa, Namibia, Zambia, Botswana: Hoosen, et al., 2017](#)). Research findings on the meaningful use of even simple ICTs, such as the use of video material (†[Ghana: David & Asamoah, 2011: 12](#)), are rare.

As mentioned in Chapters 6 and 8, first, it is important to prepare TVET students for a working world in which ICT plays a decisive role. Second, there is a demand for integrating modern technologies into the TVET process, and, indeed, it is essential to do so. This applies to both the training of teachers and students. TVET research must provide suitable educational concepts through which ICT-use can improve teaching and learning.

Our analysis identifies strong infrastructural constraints that affect the ICT sector in SSA. Therefore, on a larger scale, SSA should initially focus on the use of basic technologies to support teaching and learning (laptops, tablets, digital resources). TVET research must integrate this into existing teaching and learning concepts and develop workable models for different approaches in the broad spectrum of blended learning.

#### 16.2.4. Align TVET research with the SDGs

All countries worldwide in the UN have adopted the Sustainable Development Goals (†United Nations)<sup>4</sup> on globally oriented targets for ecological, social and economic sustainability as well as for poverty reduction by 2030. The SDGs represent an important guideline worldwide and also in SSA, on which TVET policy is based. The results in this report show that, so far, current TVET research in SSA has not been sufficiently developed to make a significant contribution to achieving the SDG (Chapter 5, †Ogwo, et al., 2018). The question must be asked whether and how research on TVET in SSA can be used to help achieve the SDGs.

The aim should, therefore, be to establish cooperations with SSA that fund joint TVET research which makes a fundamental contribution to achieving the SDGs (ibid.). This is a challenge that can be met most fully by a multilateral and international group of researchers who actively work together in a network (Chapter 15). Capacities for TVET research in SSA and multilateral research cooperation needs to be strengthened.

In conclusion, we note that some countries and research locations are grappling with these complex problems and are working towards addressing the pertinent issues. For example, in Kenya, Ethiopia, Ghana and Tanzania, efficient institutions have been created to run the TVET system; in Burkina Faso, the education of TVET teachers is being professionalised (University of Koudougou; Chapters 10, 11). In other settings, however, it appears less likely that progressive reforms are going to improve existing TVET systems and offer better life chances for young people (ibid., †Arias, et al., 2019).

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4 The 17 SDGs are anchored in the UN 2030 Agenda. This was adopted by all UN member states in 2015. The SDGs consider all three dimensions of sustainability – social, environmental, economic – equally. The declared goal is the transformation to a world in which everyone acts in an ecologically compatible, socially just and economically efficient manner (see, e.g., the 2030 Agenda for Sustainable Development, †BMZ, as available at [https://www.bmz.de/de/ministerium/ziele/2030\\_agenda/index.html](https://www.bmz.de/de/ministerium/ziele/2030_agenda/index.html)).

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