



Original Research

Goal-Setting for TVET Reform: A Framework for Identifying the Ideal System in Nepal

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Abstract

Technical and vocational education and training (TVET) is a critical part of Nepal's education system, both now and as the country continues to develop. The system has an opportunity to revise itself under the Constitution of Nepal (2015), which is implementing a new federal system of government. This paper identifies the best model for TVET in Nepal, based on the principles of permeability, quality, good governance, and education-employment linkage. Although the first two characteristics are well established, the latter two depend on local preferences. Based on a survey of TVET stakeholders in Nepal, we determine that a coordinated input-oriented governance model is best for Nepal. Through document analysis of the country's TVET legal framework, we find that an occupation-driven style of education-employment linkage is the best fit. Both of these characteristics fit the country's goals, but not necessarily its current situation, so the TVET system will have to change as it adapts to Nepal's new Constitution.

Keywords: Technical and vocational education and training; TVET reform; Good governance; Education-employment linkage; Nepal

Introduction

Technical and vocational education and training (TVET¹) is considered to be a very important part of education systems, especially for its role in developing the human resources necessary for economic growth (Staff, 2004; UNEVOC, 2016). It "is often seen as the silver bullet to the problem of youth joblessness" (Eichhorst, Rodriguez-Planas, Schmidl, & Zimmermann, 2012, Abstract). However, approaches to TVET and the

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associated socially constructed concepts are very heterogeneous around the world (Rageth & Renold, 2017). For example, though Nepal and many other countries have systems called TVET, they may refer to anything from work-based training systems to purely school-based models. Therefore, it is important that a country clarifies the type, scope and concept of its TVET system in its TVET policy.

Our objective in this paper, based on the report by Caves and Renold (2017)², is to identify a possible vision for Nepal's TVET system in 2030. This is complicated because, while some features of an ideal TVET system are positive with clear best practices, others are normative and must be determined by local preferences. Positive characteristics include the permeability and quality of the system. Normative items include how TVET should be governed and how employment should be linked to education. In this paper, we focus on analysing local preferences for the normative characteristics: governance and education-employment linkage.

We review the literature on strong TVET systems in terms of four key criteria: permeability, quality, good governance, and education-employment linkage. The former two also include how a given country will organise key characteristics of good vocational education and training (VET) like relevance, effectiveness, efficiency, sustainability, and cooperation among actors. The latter two are normative, so we use document analysis of Nepal's new constitution (Constitution of Nepal, 2015) and a survey of stakeholders to identify preferences.

Theory and Evidence

Education systems in general serve three main purposes: individual control ability, human capital, and equality of opportunity (Klieme et al., 2006). The human capital function is to provide sufficient labour—both qualitatively and quantitatively. TVET should prepare young people to enter the labour market through meaningful and effective education processes (Renold et al., 2015, 2016), while providing entry into the labour market and further educational pathways (Becker, 1962).

Good TVET benefits individuals, societies, and industry. Individuals can continuously update and re-orient their skills over time, and industry has workers who can facilitate growth and spur innovation (Backes-Gellner, 2014). Moreover, strong TVET systems contribute to individuals' opportunity and ability while benefiting national human resource development and skills. Based on these purposes, we use four broad criteria for strong TVET systems.

Permeability refers to access and opportunity throughout the TVET system, with access enabling individuals to enter further education and training programmes and opportunity representing a diversity of programme options at multiple levels and in academic and vocational types. There must be progression routes throughout the TVET and education

systems both vertically to higher occupational qualifications and horizontally to higher general-education qualifications. Permeability is critical for equity and the prospects of TVET graduates (Tuor & Backes-Gellner, 2008).

Quality in TVET is about accountability of programmes to national standards, monitoring and evaluation to ensure standards are being met, and accreditation or certification so graduates can demonstrate their skills to potential employers. These principles guide TVET systems toward achieving the human capital function of education.

Good governance is a pre-requisite for efficient and effective TVET processes and indeed for having a system of TVET at all. Key aspects of good governance are integration and mode. Integration refers to how coordinated or fragmented governance is, and mode refers to whether policies and decisions are made with an input or output orientation (Rauner & Wittig, 2009). Determining the best governance model for TVET in Nepal is one of the key objectives of this paper.

Education-employment linkage means that employers are engaged alongside education-system actors in designing, applying, and updating the TVET curriculum (Bolli, Caves, Renold, & Buergi, 2018; Renold et al., 2015, 2016). This ensures that trainees learn skills and technology that are relevant to the labour market and curricula keep pace with technological change. A large amount of workplace learning is critical to this principle. Determining the best style of education-employment linkage is the second key objective of this paper.

Literature and Evidence on Good Governance

Even after decades of research into TVET, building an ideal governance model is challenging because of its sheer scope. Such a model would cover the role of the constitution in regulating TVET, interaction among government entities, and financing. The lack of an agreed-upon international best practice for TVET governance is partly because there are very few countries that have strong TVET systems. It is also partly because countries' own labour market needs, cultural contexts, and normative standards determine their ideal TVET governance models and preclude simple prescription.

Good governance for TVET is realised when functions, strategies and goals are coherent and best fulfilled. We use Rauner and Wittig's (2009) model to describe international examples according to their position on the axes of integration (fragmented vs. coordinated) and mode (input-oriented vs. output-oriented). Integration is the degree of integration and coordination, for example, among responsible ministries and other bodies. Low coordination means public and private actors are autonomous within the rules; there is no (or little) coordination among the various parties involved, with responsibilities distributed by subject area. High coordination indicates that public and private actors cooperate within the legal framework, and responsibilities on all levels are allocated by function.

Governance mode determines what is regulated: inputs or outputs. In the input-oriented mode, detailed norms and rules regulate, for example, how curricula are implemented and which textbooks are purchased. Input-oriented governance leads to low autonomy for all actors outside the top level of government, which can be problematic for engaging employers and industry actors in leadership roles and for considering variation among local communities and industries. In the output-oriented mode of governance, on the other hand, standards and goals—but not processes—are set on a national level, then met by the sub-federal levels however they choose. For example, the government can set national qualification standards that must be met at the end of a programme, but local actors have high autonomy and flexibility in how they bring students’ knowledge and skills up to those standards. This is especially useful in TVET because it lets training companies customise training while still guaranteeing students a specific level of skill.

Combining the two axes yields four possible governance models, shown in Table 1. Each model entails a unique approach to nearly every TVET policy issue. We focus mainly on how each model would work in areas of leadership, standards-setting, and dealing with multilingual education policies.

Table 1
Models of Governance

		Integration of governance	
		Fragmented	Coordinated
Mode of governance	Output-Oriented	Fragmented output-oriented governance	Coordinated output-oriented governance
	Input-Oriented	Fragmented input-oriented governance	Coordinated input-oriented governance

(Adapted from Rauner & Wittig, 2009, p. 16)

Evidence on governance type. We can use the coordinated TVET system in Switzerland and the very fragmented system in the United States to illustrate common patterns of governance types. The Swiss constitution outlines the foundation for its TVET system (Swiss Constitution, Art. 63), and while it does not specifies details of implementation or organization, it requires federal laws that do. Every occupation has national standards, and every programme has clear points of entry and exit. A single ministry is responsible for TVET to set federal standards and policies, and sub-federal actors in the public and private sectors implement programmes. Two-thirds of Swiss young

people pursue TVET, the country has exceptionally high upper-secondary completion rates (State Secretariat for Education, Research and Innovation, 2016) and very low youth unemployment³.

In contrast, the United States has a very weak TVET system that is highly fragmented, even within individual states. Haubenreich (2012) notes that the federal government’s role oversteps its constitutional authority. In addition, vocational programs have a troubled history and major quality and permeability problems that make them ineffective (Gordon, 2014). The country’s TVET landscape is “program rich but systems poor” (Hecht, 2012, p. 22), with many small projects that do not relate to one another. According to the Organisation for Economic Cooperation and Development (OECD), no American programme qualifies as TVET, and young people are nearly twice as likely as adults to be unemployed (OECD, 2010).

Evidence on governance mode. Renold and Barmettler (2007) describe the process of changing the Swiss TVET system in the mid-1990s from an input- to an output-oriented mode. The reform dramatically changed financial flows from an opaque input-oriented model to a transparent and output-oriented model with lump-sum payments for each student. Those authors find that knowing the costs and being able to set financial priorities encourage rational use of funds. They conclude that financial autonomy and transparency are the bases of active TVET policy and quality assurance. The output-oriented mode of governance helped the Swiss system improve.

Developing countries have their own considerations. Bardhan (2002) points out that countries like Nepal are moving from centralised to decentralised governments, and success is measured more by poverty alleviation than efficiently allocating resources among regions. TVET is not a poverty-specific policy, but one of its key roles is to provide individuals with access to the economy while providing the economy with skilled human resources. Therefore, outcome-oriented incentives are helpful in developing countries.

Managing individuals’ and institutions’ incentives is a key issue for education governance in developing countries. A number of studies find that incentivizing outputs instead of focusing on funding inputs helps meet goals, limit corruption, and encourage efficiency (Dhungel, 2004; Faguet, 2013; Galiani, Gertler, & Schargrotsky, 2008). Faguet and Sanchez (2008) compare Bolivian and Colombian educational decentralization, finding improved enrolment responsiveness, at least partly because decentralization moved investment from education-related infrastructure to the services themselves. These improvements were even stronger in the worst-off villages and cities (Faguet, 2004). In developing countries, input-oriented policies risk incentivising corruption, while output-oriented policies are more likely to incentivise performance.

Evidence on governance models. In Rauner and Wittig's (2009) application of their framework to four European countries, they find a preference for coordinated output-oriented systems. Such systems are able to operate with high quality and low transaction costs. Figure 1 shows the results for Germany, Austria, Denmark and Switzerland—four of the most successful TVET systems in the world. Germany is a fragmented input-oriented model of TVET governance, while the other three countries are all coordinated output-oriented models. The analysis points out Germany's very high transaction costs when actors try to cooperate, and while Germany can apparently afford high costs of governance, such a system would be too inefficient for most other contexts.

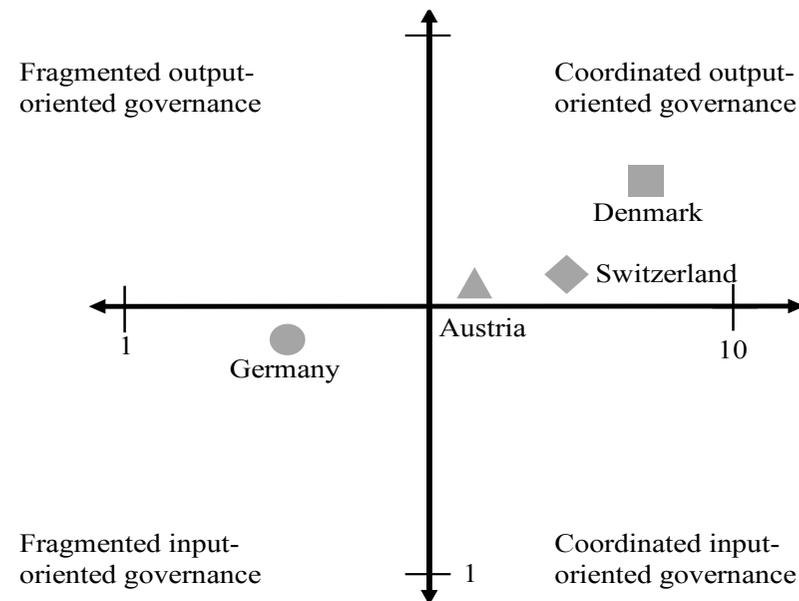


Figure 1. TVET governance in four European countries (adapted from Rauner & Wittig, 2009).

Literature and Evidence on Education-Employment Linkage

Linking education- and employment-system actors is an important determinant of TVET quality. Bolli et al. (2018) indicate that higher education-employment linkage in countries' largest TVET programme is likely correlated with improved youth labour market outcomes for the country overall. Linking education and employment features prominently in UNESCO's recommendations on TVET (UNESCO, 2015). In African TVET systems, "public-private multi-stakeholder partnerships... are capable of generating synergies for the development of employable skills" (Afeti & Adubra, 2012, p. 18). Adams (2007) also points out the benefit of work experience and apprenticeships for improving school-to-work transitions. The best TVET systems are recognisable by their involvement of all relevant stakeholders, especially those from employment, business, and industry (Renold et al., 2016).

Unlike general education, TVET must interact with employment. This necessitates more coordination because there are more actors involved, and because the programming and coding of the education and employment systems are different (Renold et al., 2016). Furthermore, the actors come from different fields and have different—even conflicting—goals and incentives. Education-system actors engaged in TVET represent the public sector. Therefore, they use the operational and communication norms of that sector and favour general and transferrable skills. In contrast, employment-sector actors from the private sector communicate and operate differently. Employers prefer programmes where the content is more firm-specific so their benefits of training are higher (Wolter & Ryan, 2011), rather than the more academic general content.

The relationship between education and employment can be structured in various ways. Richter (1994) argues that TVET should mirror further education and industry in its design. TVET programmes must also fit the enterprises where training takes place, and those are organised based on the production and distribution of goods and services (Richter, 1994). His contract model of education is the best fit for TVET, organised by the citizens independently within a legal framework.

Cooperation among actors from the education and employment systems—or public and private sectors—is critical to the contract-model TVET system (Richter, 1994). How can the different systems communicate and structure collaboration? Clematide, Dahl, Vind, and Joergensen (2005) use Georg's (2000) concept of the occupation as a work-structuring principle to describe three principles that can structure the relationships among actors in public-private TVET: markets, the state, and occupations. Table 2, adapted from their work and Renold (2016), shows how those principles structure actors' relationships. Each approach has different consequences for governance and the allocation of functions to various levels of government.

Evidence on Structuring Education-Employment Linkage

The most innovative TVET systems in the world—and those where human capital needs are arguably best met—are in the occupation-driven category. Table 2, adapted from Clematide et al. (2005), shows the models. The market-driven approach, common in the USA, UK, and Japan, is flexible and cheap but tends to result in under-investment and overly specific training. The state-controlled approach, favoured by France, China, and Singapore, has strong general education and training but is weakly connected to the labour market. The occupation-driven approach, used by Germany, Switzerland, Austria, and Denmark, facilitates appropriately broad TVET and matching labour market needs, but must be regularly updated to prevent institutions from falling behind.

Table 2

Structuring Principles for Relationships to Employment-sector Actors

Criteria	Market-driven	State-controlled	Occupation-driven
Rationale	Production logics	School logics	Occupational logics
Political culture	Free market, competition-oriented	Centralistic, state-centred (elitist/autocratic)	Neo-cooperative, driven by social consensus
Education-programme frameworks	Businesses and individuals	School subjects, collectivist values, labour market plans	Vocational occupations
Content	Present needs of individual enterprises: -Utility-oriented -Short-term -Specific skills	Politically determined, focus on: -General/academic knowledge -Coursework -Planned economic goals	Determined by organizations: -Occupational relevance -Tradition -Labour market need -Innovation
Relevant labour market	Internal labour market	Planned labour market	Occupational labour market
Strengths	Flexible, cheap for the state, closely matches the needs of production	Strong linkage to general education, no problems with lack of training places	Broad TVET with status equal to general education Matches labour market needs
Weaknesses	Under-investment in training and education	Weak linkage to labour market, reliance on planning	Institutional inertia
Examples	USA, UK, Japan	France, China, Singapore	Germany, Switzerland, Austria, Denmark

(Adapted from Clematide et al., 2005)

For example, one market-driven system is the Registered Apprenticeship in the United States. That programme is driven almost entirely by enterprises with very little input from the education system. It results in a flexible and low-cost programme, but also one that does not provide high-value credentials nor does it enable participants to pursue further education and training options. Singapore is a good example of a state-controlled system, with a centralised government making detailed training and education regulations to meet planned economic goals. This programme is well-connected to general education programmes, but does not efficiently respond to labour market needs. Finally, Switzerland is a good example of a country with occupation-driven education-employment linkage.

Employers' associations and individual employers determine curricula at the occupational level in partnership with education-system actors. This enables the curriculum to change quickly with labour market demand while maintaining strong alignment with education-system programmes.

Method: Identifying Nepal's Goals for TVET

We use a survey of Nepali TVET experts and leaders to determine the preferred governance model, and document analysis of TVET-related laws and policies to identify the best mode of education-employment linkage. Permeability and quality are also important aspects of strong TVET systems, but we focus in this paper on governance and education-employment linkage. The latter two are less straightforward and require some analysis to determine the best model for Nepal. Our main question in this paper is what the best model for TVET governance is and what the best style of education-employment linkage is for Nepal.

Method for Governance Model

Although coordination is an important topic in the Constitution (see Constitution Art. 232), it does not define an ideal model of TVET governance. We discussed the four models of TVET governance with some key TVET stakeholders in Nepal. After discussing their ideas and opinions in person, we sent an online survey to the same stakeholders asking where TVET governance stands and where they think it should be in 2030.

We collected 80 email addresses, and 25 responded to the online survey. Of those, 22 answered questions, about half were full responses, and the others completed up to 80% of the survey questions. We used all responses. Respondents occupy various roles in Nepal's TVET system: two came from government ministries, three from the Council on Technical Education and Vocational Training (CTEVT), seven from the National Vocational Qualifications Framework advisory committee, four from donors or non-government organisations (NGOs) active in Nepal's TVET system, four from the research or university sector, and two from other parts of the system.

The survey asked respondents to rate specific characteristics of Nepal's current TVET system and in the ideal TVET system in 2030. Questions were formatted as statements about a TVET characteristic, and scored on a one-to-five-point Likert scale from "not accurate at all" to "very accurate." The survey measured TVET governance models using 30 questions in six dimensions translated from Rauner and Wittig's (2009) framework: 1. Legal framework for TVET, 2. Actor & stakeholder interactions, 3. Improvement & updating, 4. Policy balance, 5. Distribution of strategic and operational functions, 6. Results orientation, and 7. Standard-setting orientation. We aggregated questions into dimensions and then into a final score following Rauner and Wittig's (2009) methodology.

Method for Education-Employment Linkage Model

To identify the ideal model of education-employment linkage (Renold et al., 2016) in Nepal, we used document analysis of Nepal’s Constitution and its existing legal framework around TVET. We found documents through internet search; consultation in person with Nepal government officials from the Prime Minister’s office, Ministry of Education (MoE), and CTEVT; and consultation with donors and NGOs working on TVET in Nepal. The final document analysis included a comparison of the current Constitution with the previous constitution, as well as analysis of all six Acts and five Policies in Nepal’s legal framework that relate to TVET, summarised in Table 3.

Table 3

Documents Used in Document Analysis

Constitutions
- The Constitution of Nepal (Government of Nepal, 2015)
- The Interim Constitution of Nepal, 2063 (Government of Nepal, 2007)
Acts
- Council for Technical Education and Vocational Training Act, 2045 (MoE, 1988)
- Education Act, 2028 (1971) and Amendments up to 2016 (MoE, 2016a)
- Industrial Trainee Training Act, 2039 (1982) (Ministry of Industry [MoI], 1982)
- Labour Act, 2048 (1992) (MoI, 1992a)
- The Industrial Enterprises Act, 2049 (1992) (MoI, 1992b)
- Trade Union Act, 2049 (1992) (MoI, 1992c)
Policies
- Technical and Vocational Education and Training Policy, 2012 (MoE, 2012)
- Industrial Policy, 2011 (MoI, 2011)
- Youth Policy, 2010 (Ministry of Youth and Sports, 2010)
- School Sector Reform Plan 2009-2015 (MoE, 2009)
- Non-Formal Education Policy 2007 (MoE, 2007)

Our document analysis method was to close-read the full text of every document, looking for any reference to TVET, human capital development, secondary education opportunities, training, relevant labour policies, or relevant equity-related policies. We recorded every relevant quotation by category in spreadsheets. Those consolidated quotations enabled us to identify the main themes of each source relevant to key TVET topics. We present those spreadsheets as tables in Caves and Renold (2017).

Results

We find that Nepal’s stakeholders clearly prefer a coordinated output-oriented model of governance, and the Constitution and legal framework indicate a preference for an occupation-driven model education-employment linkage—though the current legal framework does not necessarily enable such a model.

Results for Good Governance

The survey on governance models addressed the current and ideal future TVET systems in Nepal on seven dimensions. Figure 2 shows the average scores of each dimension for the current TVET system (in grey) and ideal 2030 system (in black). Respondents consistently rate the current system poorly, and choose high scores for the ideal system in 2030. Scores for Nepal’s current TVET system range between 2.383 and 3.321. The current system’s strongest point is its “Standard-setting orientation” (3.321), and its weakest point is “Results orientation” (2.383). In the ideal 2030 system, scores range between 3.754 and 4.759, with “Standard-setting orientation” still the highest score and “Legal framework for TVET” the lowest.

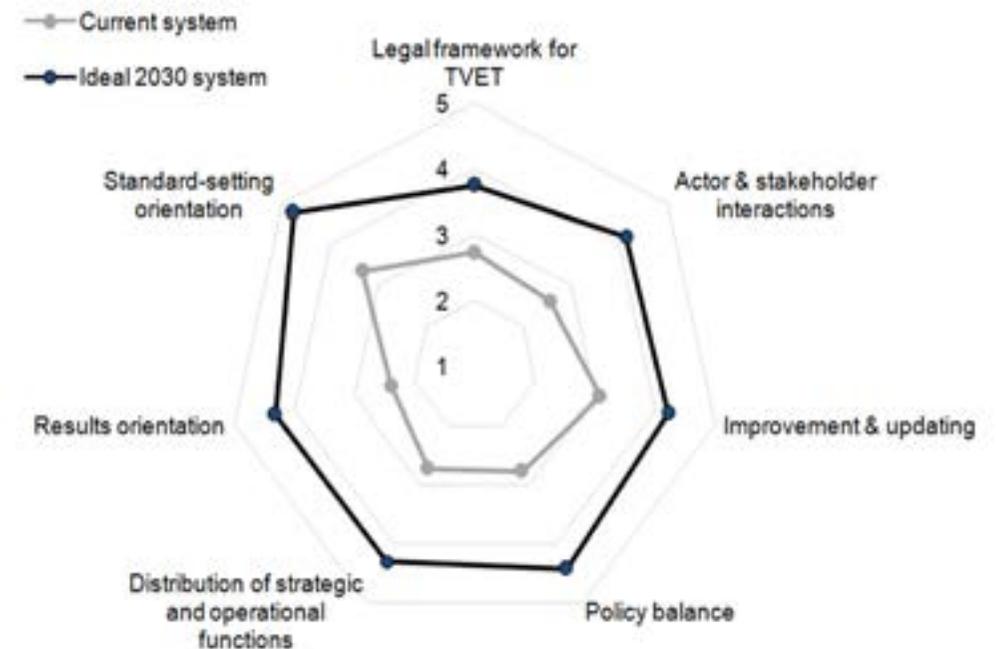


Figure 2. Survey scores by dimension.

To compare overall systems, we combine the dimensions into a single score. Rauner and Wittig (2009) use an empirically derived weighting scheme, shown in Table 4. “Actor

& stakeholder interactions” is the most important at 23.90% of the total score, followed by “Legal framework for TVET” at 16.70%. The least important is “Standard-setting orientation”, making up only 8.10% of the total score. Individual questions load into their respective dimensions as simple averages.

Table 4
Dimension Weights

Dimension	Weight (in %)
Legal framework for TVET	16.70%
Actor & stakeholder interactions	23.90%
Improvement & updating	14.30%
Policy balance	11.40%
Distribution of strategic and operational functions	11.00%
Results orientation	14.30%
Standard-setting orientation	8.10%

(Adapted from Rauner & Wittig, 2009)

Nepal’s score for the current TVET system is 2.748 on a one-to-five scale, and the ideal 2030 TVET system scores 4.213. Aggregating the scores also gives us scores for governance integration and mode. Dimensions one to five – all except “Results orientation” and “Standard-setting orientation” – load into integration, while the other two load into governance mode. Higher scores are closer to coordination and output-orientation. We combine scores using the same relative weights, and plot results for the current and ideal 2030 TVET systems in Figure 3.

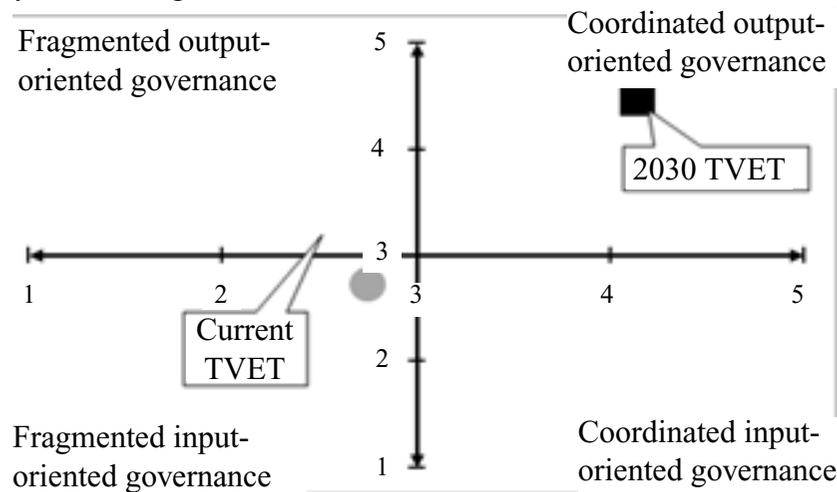


Figure 3. TVET governance models in Nepal.

Nepal’s current TVET system (grey circle) falls into the “fragmented input-oriented governance” model. The ideal governance system for 2030 (black square) reported by Nepal’s key TVET stakeholders is strongly in the “coordinated output-oriented governance” quadrant.

Table 5 shows how different models of governance might appear in Nepal. The current situation, according to our results, is the bottom-left quadrant. There are 17 Government Ministries responsible for TVET, making the system very fragmented. Regulations govern every decision made by local education actors, making the system input-oriented. In the ideal 2030 model shown in the upper-right quadrant, one or two ministries are responsible for TVET under an Umbrella Act that also sets standards while leaving implementation up to local actors. This would be a coordinated and input-oriented system. We can use this parameter to move on to our next step: determining the best model of education-employment linkage for Nepal.

Table 5
Examples of TVET Governance Models in Nepal

		Integration of governance	
		Fragmented	Coordinated
Mode of governance	Output-Oriented	<ul style="list-style-type: none"> - 17 Ministries are responsible for TVET and coordinate all tasks with the business sector. - Standards are set on a federal level with implementation autonomy at sub-federal levels. - Languages: every Ministry defines its own language policy and regulates in its own Act how many languages should be taught. - RPL: every province or local unit defines its own standards for RPL (informal sector) 	<ul style="list-style-type: none"> - One or two ministries (i.e. Education, Labour) are responsible for TVET and coordinate all tasks with the business sector. - Standards are set on a federal level with implementation autonomy at sub-federal levels. - Languages: TVET umbrella Act requires at least 3 languages—Nepali, English, and a third national language on which sub-federal levels are free to decide. - RPL: national occupational standards are the reference for RPL (informal sector)
	Input-Oriented	<ul style="list-style-type: none"> - 17 Ministries are responsible for TVET and coordinate all tasks with the business sector. - Detailed regulations govern implementation, norms, rules and responsibilities. - Languages: every Ministry defines its own language policy and regulates in its own Act how many languages should be taught. - RPL: every province or local unit defines its own procedures for RPL (informal sector) 	<ul style="list-style-type: none"> - One or two ministries are responsible for TVET and coordinate all tasks with the business sector. - Detailed regulations govern implementation, norms, rules and responsibilities. - Languages: TVET umbrella Act requires at least 3 languages—Nepali, English, and a third national language on which sub-federal levels are free to decide. - RPL: national occupational procedures are the reference for RPL (informal sector)

(Source: Own depiction, examples based on Constitution of Nepal and experience of the authors)

Results for Education-Employment Linkage

We begin our document analysis with the Constitution (The Constitution of Nepal, 2015). The Constitution is not explicit on TVET, but mentions TVET-related issues and topics at multiple points, usually from the human capital point of view. For all TVET-related articles and quotations in the Constitution, see Caves and Renold (2017).

The basic economic objectives of Nepal as laid out in the constitution are sustainable economic development and rapid economic growth (Constitution, art. 40.3). This relies on competent and well-prepared human resources, plus “scientific, technical, vocational, empirical, employment and people-oriented” education (Constitution, art. 40.3.1). The Constitution emphasises the role of the private sector (Constitution, art. 41. d.2) in economic growth and encourages investment in Nepali labour and skills (Constitution, art. 51.d.8). These goals relate specifically to the human capital function of TVET, and emphasise education-employment linkage.

Nepali citizens are granted certain freedoms in the constitution, including the “freedom to practice any profession...in any part of Nepal” (Constitution, art. 51.h.1). If that is to be a practical as well as political freedom, Nepalis will need portable credentials that certify their skills in their chosen occupations and are recognised throughout the country. This indicates an occupational labour market and the occupation-driven model of linkage. The call for research to identify and define Nepal’s traditional skills and occupations (Constitution, art. 51.c.2) also hints at an occupation-driven model.

Despite the constitution’s non-explicit point of view on TVET, its goals and the specific purposes for TVET seem to lean towards an occupation-driven model of education-employment linkage. The characteristics of high-status TVET, an occupational labour market that facilitates mobility, and strong labour market connections to TVET are all features of occupation-driven education-employment linkage.

Comparison with the previous constitution. Nepal’s most recent previous constitution shares many provisions with the current Constitution. Both constitutions include rights to education (Constitution, art. 31.1&2; 2007 Constitution, art.17.2) and employment (Constitution, art. 33.1; 2007 Constitution, art. 18.1). Both Constitutions focus on development as the primary economic goal (Constitution, art. 40.3; 2007 Constitution, art. 34.4), with the private sector a key partner in reaching that objective (Constitution, art. 51.d.2; 2007 Constitution, art. 35.2). Therefore, education-employment linkage is certainly prioritised if not clearly spelled out.

Where the current Constitution differs from its predecessor, it is less specific regarding TVET and emphasises human resource development more for economic development. In contrast, the previous Constitution frames TVET as part of the infrastructure necessary to

support development. Comparing the two constitutions indicates that the trend is moving towards occupation-driven education-employment linkage over the other models.

Legal framework analysis. Many current acts and policies cover TVET-related issues that overlap, contradict, and duplicate one another. The full detailed list and relevant contents of each TVET-related act in Nepal is in the full report (Caves & Renold, 2017), as are the relevant contents of TVET-related policies.

While the *TVET Policy* mentions education-employment linkage, it appears to be based on a state-controlled model wherein a *Labour Market Information System* is supposed to forecast labour market needs and inform TVET policy in time for curricula and training numbers to react (TVET Policy, obj. 3, working policy 11). This contradicts the Constitution’s guarantee that citizens are free to pursue any employment they wish (Constitution, art. 3.17). The Policy also contradicts Nepal’s leaders’ goal for good governance, allocating responsibilities for TVET across 17 ministries (TVET Policy, sch. 1).

The *CTEVT Act* establishes the CTEVT along with its oversight, makeup and functions. The Act establishes a TVET Senate, composed entirely of government representatives and without any education-employment linkage. Though CTEVT itself has some industry representatives, they are a token and much-outnumbered group (CTEVT Act, art. 3.2). The Act states that CTEVT certifications are to be equivalent to general-education certificates. This act has potential to support education-employment linkage, but does not give employers a powerful role in the system.

The *Education Act* defines Nepal’s basic and secondary education system. TVET in Nepal is mostly delivered within the secondary level, but it is not explicitly mentioned. However, the Act does mention secondary schools that offer TVET subjects and specifies that their School Management Committees should include at least two representatives from district-level industry, commerce, and trade unions (Education Act, art. 12.2). This is a start towards fulfilling the principle of linking TVET to the labour market, but tends towards the state-controlled model. A positive aspect of such an approach lays in its strong link to education, but leaves out high-level linkages between the school sector and the employment system.

The *Industrial Trainee Training Act* (ITTA) of 1982 is the most relevant Act for the employer-related side of TVET. It provides regulations for what workplace learning should be and stipulates common best-practice requirements. However, it fails to include the education side of TVET: trainees take no classes and are awarded a company-issued certificate (ITTA, art.14). A Training Council is composed of representatives from the government, industry, Tribhuvan University, and labour (ITTA, art. 16.2). That might support education-employment linkage, but the Council itself is directed by the government

(ITTA, art. 19.1) which reduces employers' decision power. Overall, this Act does not link education to employment and is very unclear how the little linkage that exists should be organised.

The *Industrial Policy* (IP) obliquely refers to TVET in its calls for human resource development, industry and sector infrastructure development, and even training specifically. However, like the Constitution it does not refer directly to TVET and like the Industrial Trainee Training Act it does not include education along with training. The Policy does bring employer resources to bear for TVET, but leaves the responsibility and power to the government. Industrial clusters (IP, art. 9.5) imply education-employment linkage, but the National Productivity Council and Academy for Development of Human Resources (IP, art. 20.3), which would plan and establish quotas for training, lowers linkage.

The *Labour Act* governs the conditions of work, including workplace learning. However, this type of workplace learning is more related to continuing education or job training than TVET. The Act gives the government of Nepal the right to set and enforce a minimum wage, (Labour Act, art. 21.1 & 21.6) which affects companies' and students' incentives to train. It also stipulates that minors should not work unless as part of vocational training, which should be formally arranged (Labour Act, art. 32A.1-2). This implies that training should be either state-controlled or occupation-driven to ensure it is sufficiently tied to education.

The *Youth Policy* aims to develop the potential, capacity, and human resource energy of young people (Youth Policy, art. 5.1, 5.3, 5.6). It calls for policies that create and develop programmes for knowledge, skills, and entrepreneurship development in all young people and especially target groups. It includes the private sector to create an atmosphere that permits career development (Youth Policy, art. 6.6, 6.9, 6.13-14, 6.16, 6.18, & 6.21). Its relevant working policies focus on youths' right to livelihood, education, employment, career guidance, access, equity, technology and partnership (Youth Policy, art. 7.1, 7.2, 7.4-6, 7.12, 7.15-17). Though the Policy mentions partnership, it is not clear how it would link education to employment. Its emphasis on labour market mobility and quality in TVET, however, implies that linkage is important.

The *Non-Formal Education Policy* (NEFP) deals with "programmes related to lifelong and continuous education, skill development and income generation...training and support for developing technical and vocational skills useful for earning livelihood at the local level" (NEFP, "Introduction"). The policy clearly frames TVET as a critical part of lifelong learning and improving individuals' opportunities and contributions. However, it also seems to assume that education in practical knowledge and skills is a second-class education (NEFP, "Policy 2"). The policy uses TVET to improve individuals' lives and human capital contributions to Nepal, but fails to adequately consider how the private sector can formally

contribute to the design or delivery of TVET.

The *School Sector Reform Plan* (SSRP) aims to improve education in Nepal over a six-year period from 2009 to 2015. It has been succeeded by the new School Sector Development Plan (2016) since the writing of this article. The Reform Plan aims "to meet the national development needs by producing competent and skilled human resources and to provide a sound foundation for tertiary education" (MoE, 2016b, SSRP, sec. 3.4). However, the plan excludes TVET from schooling in all but the most superficial ways. TVET is an alternative programme, its graduates are given separate certificates (SSRP, sec. 3.4), and TVET-related curricula and funding are under the CTEVT instead of the secondary school mainstream (SSRP, sec. 5.1). TVET content will be included in secondary curricula, but only through employment-related soft skills, basic life skills, and trial programmes (SSRP, sec. 5.2, 5.5-6). The plan states that TVET curricula change too rapidly to be maintained by education authorities, and its facilities are too expensive (SSRP, sec. 5.3). This is a state-controlled plan with very low education-employment linkage.

Overall, the many laws, policies, and plans related to TVET in Nepal create an unclear and conflicting framework. The Constitution is fairly clear in its orientation towards high education-employment linkage, and the Acts and Policies imply linkage as a goal. The goals of each policy seem to support occupation-oriented linkage, but some policies are more characteristic of state-controlled linkage. As with governance models, it appears that the current reality of TVET in Nepal does not match its aspirations. Though the current situation most closely resembles state-controlled education-employment linkage, it seems to aspire for an occupation-driven style.

Conclusions

Based on a review of theory and literature related to TVET systems, analysis of the Constitution and TVET-related legal framework, and survey results from Nepal's TVET leadership, we conclude that the best objective for Nepal is a TVET system with output-oriented and coordinated governance, occupation-driven education-employment linkage, permeability and quality. Such a system would help the country achieve its stated goals of competent and well-prepared human resources developed through "scientific, technical, vocational, empirical, employment and people-oriented" education that should make the labour force "competent and professional" (Constitution) while providing equity and opportunity for all Nepali citizens.

Strong TVET should have good multilevel governance that is coordinated instead of fragmented, and oriented to outputs instead of inputs. The system should have strong education-employment linkage driven by an occupational organizing principle. TVET needs to be fully permeable—vertically and horizontally—to every level and type of education and further training available. This might require development of new training

options at multiple levels, and that should be included. Finally, Nepal's ideal TVET system should bear high quality in terms of standards, non-exploitative workplace training, and enforcement of standards and learning goals through quality assurance and examinations.

This study is an application of the research as it currently stands and an exercise in bringing together a number of perspectives. It is not comprehensive—especially in the area of TVET financing—and not in-depth. We do not deal with implementation, and indeed TVET reform implementation of recommended TVET reforms in general is a blind spot in the literature (see Caves & Baumann, 2018).

In this study, we have taken a rather overarching view of Nepal's TVET sector and where it can go from here. The goals of the TVET sector and the structure of government will change under the Constitution, so the TVET sector will change whether or not there is a plan. We apply existing research and theory to identify the broad strokes of a goal that fits Nepal's TVET leaders' own preferences for their system and should help make the upcoming changes productive and positive for all of Nepal's citizens.

Individual countries have unique contexts that affect their ideal TVET systems. One size does not fit all and systems cannot be copied from one context and pasted into another. This study develops a framework for highlighting the most important characteristics of strong TVET systems from the empirical literature and theory, then determining how in-context leaders and stakeholders want to design the normative elements of strong systems. We use that framework to identify an ideal future TVET system for Nepal, a country where TVET reform is inevitable but the end goal was not previously clear.

The purpose of this paper was to identify a vision for Nepal's ideal TVET system as can be accomplished by 2030. We determine that the system needs to have output-oriented and coordinated governance, occupation-driven education-employment linkage, permeability and quality. In order to achieve this, Nepal will probably need to add a TVET Umbrella Act to its constitutional reform. This can bring TVET governance under one or a few government ministries, resolve conflicts among existing TVET-related acts and policies, and coordinate between the new Constitution and Nepal's goals for TVET. Accomplishing this goal will require clear focus on Nepal's goals for TVET—both laid out here and more broadly in the Constitution—and continuing expert analysis of what works for TVET in Nepal by both internal and external experts.

Notes

¹ We use TVET throughout this paper. The term is essentially interchangeable with vocational education and training (VET).

² The full report with literature review, details on methodology and research design and each country report can be obtained from CEMETS. See: <https://www.research-collection.ethz.ch/handle/20.500.11850/128901>

³ <https://data.oecd.org/unemp/youth-unemployment-rate.htm>

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