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Promoting Research and Innovation in Vocational Education and Training (VET) in Israel

Final report on the German-Israeli VET project 2014 – 2016

January 2017

German-Israeli Programme on Cooperation in Vocational Education and Training

Preface

The following report is the result of an intensive dialogue and discussion between Israeli and German experts in the field of vocational education and training (VET) in their countries. The dialogue took place within the framework of a joint German-Israeli project launched by the Israeli Ministry of Economy and Industry and the German National Agency at the BIBB[1] (on behalf of the German Ministry of Education and Research, BMBF) in 2014 - 2016. Just as the writing of this report was nearing completion, the Israeli government decided to transfer the responsibility for the field of employment and VET from the Ministry of Economy and Industry to the Ministry of Welfare and Social Services (Government decision no. 1754, July 2016). The current report does not reflect the change resulting from this reorganisation, which was decided only very recently, but addresses the VET system in its existing form under the Ministry of Economy and Industry. As yet it is unclear how the expected change will influence both the VET system and our recommendations for improvement.

The project can be seen as an element of the German-Israeli Programme for Cooperation in Vocational Education and Training, which was initiated in 1969. The present project has been driven by the idea that it could be worthwhile to give a closer insight into the role of the BIBB and its specific functions in Germany. The dialogue is an attempt to reflect on a similar approach in Israel which could help to foster VET in that country.

This provides the rationale for the project's initial question, which is whether the establishment of a professional institution like the BIBB or a cluster of specific functions as reference model(s) could help to promote research, innovation and further development of VET in Israel.

Starting out from this question, the discussion of German and Israeli VET experts explored opportunities and approaches for revising and improving the VET systems in both countries:

The discussion reflecting on the functions of the BIBB for Germany's dual system of VET yielded a great deal of advice for the German experts on further development of both dual initial vocational training and continuing vocational education and training in Germany. Questions raised by the Israeli experts shed light on VET in Germany from an external point of view, which might help the German experts to see their own system from a different perspective and to rethink and possibly improve it.

On the other hand, the German experts had the chance to look more closely at VET in Israel and to recognise the political and societal conditions of VET in the Israeli context. The discussions with the German experts and the questions they raised, especially during their visits to Israel, gave the Israeli experts the chance to change their perception of Israeli VET. This in turn was a constructive precondition for the joint development of a

[1] BIBB is the German acronym for the 'Federal Institute for Vocational Education and Training' in Germany.

feasibility study and recommendations proposing the establishment of a professional VET body supporting innovation and research in VET in Israel. In this document the idea and role of the BIBB for VET in Germany becomes a starting point for the next steps towards fostering vocational education and training in Israel.

Bonn and Jerusalem

January 15th, 2017

Shmuel Pur and Dr. Peter Littig

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Acknowledgements

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In this context we would like to thank the BIBB in Bonn, the DGB and BDA in Berlin, the Manufacturers’ Association in Tel Aviv, the Chamber of Commerce and the Technological and Engineering Education Center both in Tel Aviv, the Association of Craft and Industry in Haifa, the ISCAR company in Tefen, and the Deroy vocational school, DEKRA Akademie and Telekom VET centre, all located in Munich, for their great hospitality and the interesting impressions we were able to gain from them.

Last but not least, we – Shmuel Pur, Israeli Ministry of Economy and Industry (MoE) as Israeli team leader and Dr. Peter Littig as German team leader - thank all our expert colleagues who have been temporary or full-time members of our joint project team (in alphabetical order):

- Mr. Aviv Belkin, Hisdadrut, the Employees organisation
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- Dipl.-Pol. Ulrich Degen, Bonn
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- Dr. Levy Nir, Myers-JDC-Brookdale Institute
- Mr. Haim Portnoy; Central Bureau of Statistics
- Mr. Dan Prath, Zur education network
- Mr. Shmuel Pur, Ministry of Economy, Team leader
- Ms. Sigal Sudei, Chamber of commerce
- Ms. Merav Waldmann, Federation of Israeli Chambers of Commerce
- Dr. Gert Zinke, BIBB

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contribution to the overall process and particulary Tirza Willner, a researcher at the institute, for her assistance in preparing the sections of the report that describe the situation in Israel and the recommendations.

Summary

The current report is describing the results of a project within the 'German-Israeli Programme on Cooperation in Vocational Education and Training' as part of the ongoing collaboration between the Israeli and German governments for the purpose of exchanging knowledge between the two countries. Within this project, a team of VET experts from Israel and Germany examined ways of strengthening the VET system in Israel. The process included a series of meetings, interviews with stakeholders and a review of existing data and previous reports.

In particular, the team examined the German Federal Institute for Vocational Education and Training (BIBB), which facilitates fruitful cooperation between stakeholders in the German VET system and conducts ongoing data collection and research. The committee discussed ways of adapting the goals and certain organisational roles of the BIBB to the Israeli environment. As an outcome of this, the primary recommendations presented in this report are incorporated in our suggestion for an organisational structure of bodies that will steer and design the Israeli VET system, as presented in the following figure:

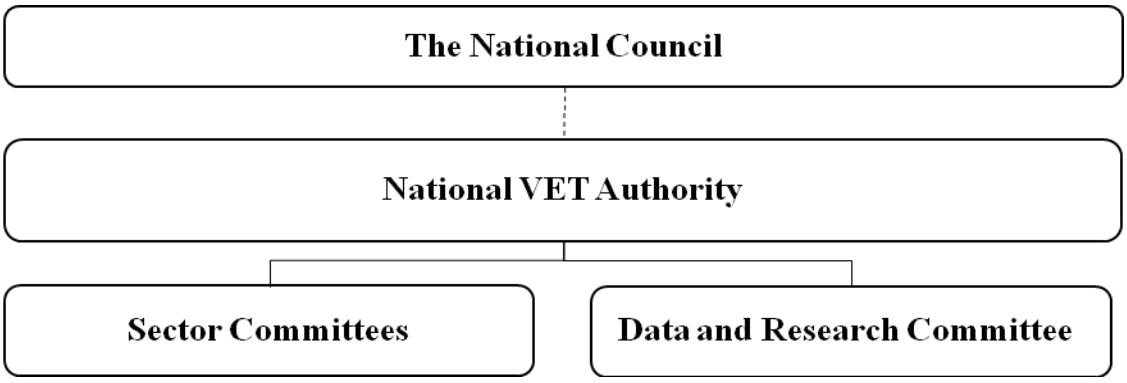


Figure 1: Organisational structure of the National Council for VET, the National VET Authority and the Committees

The above organisational structure highlights the following two recommendations:

- **Establish a National Israeli Council of VET ("The National Council").** The National Council will act as an executive body, advising the National VET Authority about national policies. The National Council will consist of representatives of different stakeholders in the VET field. This will help to ensure cooperation between

the different stakeholders by increasing the involvement of key players in the decision-making process.

- **Establish a National VET Authority.** The National VET Authority will be responsible for designing national and sectoral VET policies in light of the recommendations of the National Council. It will coordinate the activities of both the Data and Research Committee and the Sector Committees. The establishment of such an authority will help to minimise the fragmentation of system elements, whilst consolidating the system under one roof. This will allow for the development of policies that have a broader view of the system.

These two recommendations are key steps in enhancing cooperation between stakeholders in the Israeli VET system and developing a national perspective for governance. Furthermore, these primary recommendations may serve as a foundation and long-term goal for strengthening other aspects of the VET system, as recommended in this report:

- Establish Sector Committees that will be responsible for constructing new occupations and updating existing occupations according to the needs of the stakeholders, as well as continuously developing and updating curriculum examinations and certifications

- Develop an overarching legal framework

- Increase the usage of comprehensive and systematic VET data collection and research

- Establish a coordinating mechanism that will optimise the accreditation system

Introduction

The Vocational Education and Training (VET) system in Israel operates according to two main objectives. First, to provide Israel with a skilled workforce that will enable it to compete in international markets. Second, enabling groups with low participation in the labour market (especially ultra-Orthodox men and Arab women) to acquire skilled jobs so as to increase employment in these groups (Ministry of Industry Trade and Labour (MOITAL), 2012).

The Ministry of Economy and Industry is one of the primary bodies responsible for the VET system in Israel. The Manpower Training & Development Bureau within the Ministry is responsible for providing vocational education and training tracks for young people, practical engineers and technicians, adults, and for the retraining of academics. The Ministry runs the different programmes in special governmental training centres or by outsourcing to training service providers (schools, colleges). The Ministry provides professional infrastructure for these programmes, including creating the required standards, producing curricula and instructional literature, and providing equipment, teaching staff, and certification exams (Pur, 2008).

The Ministry of Education is an additional significant body in the VET system. It is responsible for technological education in Israel, a system in which more than 150,000[2] students are currently enrolled (Ministry of Education, 2015). Furthermore, the Ministry also operates practical engineering programmes for students straight out of high school who graduated from a technological track (Ministry of Industry Trade and Labour (MOITAL), 2012)

There are additional ministries that provide VET tracks in their respective sectors. The Ministry of Tourism provides training programmes for tour guides. The Ministry is responsible for the curricula and supervises the courses. Furthermore, it collaborates with the Ministry of Economy and Industry concerning additional courses in the tourism industry that are run by the Ministry of Economy and Industry (e.g. reception desk clerk and hotel management).

The Ministry of Immigrant Absorption provides a range of courses targeted at the immigrant population. Its primary activity focuses on the retraining of immigrants with an academic background in fields where there is a shortage of qualified personnel. Additionally, it funds short vocational training tracks (as drivers or cooks) in centres serving the Ethiopian population. Finally, the Ministry implements the voucher programme for immigrants in which the reimbursement is not conditional on employment. The Ministry of Health is involved in a range of vocational courses in the health field. It takes care of both implementation and supervision of these courses that have been installed as a response to the needs of the health occupations as seen by the departments in the Ministry, other ministries or workers in the field (MOITAL, 2012).

[2] The publication does not state the year that the data refers to.

The VET system in Israel has received much attention in recent years. A number of reports have been published by both national and international organisations, examining the system from different perspectives. Amongst them are four primary reports:

- In 2011, the Macro Institution compiled a report which maps the emerging structure of the Israeli labour market, the relation between supply and demand, and the adult VET system in Israel. It includes both position papers and studies, as well as the implications and recommendations for the Israeli VET system (Nathanson et al., 2011).

- In 2012, Myers-JDC--Brookdale prepared a report at the request of the Israeli Ministry of Economy and Industry (under its former name of the Ministry of Industry, Trade and Labour). It provided the background to a later OECD report on the matter. This report maps the VET system in Israel according to a number of attributes (MOITAL, 2012):

  a) The fields of study on both the vocational courses track and the practical engineering and technician track

  b) The different institutional arrangements for payment and responsibility. These include courses financed by the Bureau of Training, the voucher programme, training in the workplace, and courses run by the business sector (for details about the number of graduates in each of these arrangements, see Table 1).

  c) A statistical overview of the number of trainees and their characteristics (see Table 2), dropout rates (see Table 3), and labour market outcomes (rates of employment and wages (see Table 4)

  d) The access routes, second chance opportunities and equality

  e) The funding of the different tracks and the incentives for participation

  f) The social partners of the government agencies involved in the VET system including employers, workers' organisations, JDC – Tevet, academia and the Israeli Defence Forces (IDF)

  g) The professional requirements and training for VET teachers.

Table 1: Number of graduates in the various institutional arrangements for training, 2011

Institutional arrangement	Number of students
Training centres and courses funded by the Bureau	4,850*
Voucher programme Israeli Employment Service (IES) The Ministry of Immigrant Absorption	 1,450** 2,900**
Practical engineering and technician training National Institute for Technological Training (MAHAT) The Ministry of Education	 9,400*** 3,500
Training institutions in the business sector not funded by the Bureau	32,050*

Source: The Vocational Education and Training (VET) Background Report for Israel OECD Project: Skills Beyond School; (MOITAL, 2012)
* Refers to 2010.
** Refers to the number of participants.
*** Refers to the number of students that started their studies in the track.

Table 2: Total graduates of courses funded by the Bureau and their distribution by Gender, Education and Age, 2000–2010

			Gender	Education*			Age		
Year	Total graduates	Basic education**	Women	Less than 10 years	10 - 12 years	13+ years	18 - 24	25 - 39	40+
	(N)	(N)							
2000	23,209	229	44	3.8	68.9	27.2	23.5	51.2	25.3
2001	24,231	1,279	48.1	4.9	69.7	25.4	24.1	51.1	24.7
2002	26,351	2,119	50.1	4.6	70.3	25.1	19.4	52.5	28
2003	20,030	1,784	50.9	7.6	69.4	23	23.3	51	25.7
2004	11,604	352	53.3	8.3	70.8	20.8	26.2	51.2	22.6
2005	9,612	485	48.9	7.6	76.1	16.4	32.7	48.3	19
2006	7,409	122	48.1	8.8	74.3	16.8	29.1	50.3	20.5
2007	8,156	210	41.6	6.8	79.6	13.6	30.3	48.3	21.4
2008	5,611	118	44.7	6.4	80.9	12.7	28.6	49.7	21.7
2009	6,298	0	46.5	8.2	78.4	13.4	27.2	49.8	23
2010	4,873***	0	48.7	6.5	79.5	14	27.9	49.4	22.7
Average	13,399	609	47.7	6.7	74.4	19	26.6	50.3	23.1

Source: Special analysis of administrative data of the Bureau of Training in: the Vocational Education and Training (VET) Background Report for Israel OECD Project: Skills Beyond School (MOITAL, 2012)
* In some years, education data are missing for a substantial share of the graduates, up to 31% in 2009.
** The basic education courses targeted unemployed persons and were funded by the Bureau of Training. The Ministry of Education funded courses targeting other groups which are not included in the database of the Bureau of Training.
*** In addition, 1,220 job seekers participated in the IES voucher programme, funded by the Bureau of Training. We do not yet have full data on the participants' rate of graduation.

Table 3: Main reason for dropping out and non-starting of vocational training funded by the Bureau (%), 2007

	Dropouts (N= 200)	**Non-starters (N= 100)**
Voluntary reasons- total	90	82
Personal (e.g. sickness or family problems)	25	29
Financial constraints	20	10
Dissatisfaction with the field of training/ changed their minds and wanted to learn another vocation	15	14
Found a job	10	15
Distance of home from training institution	7	14
Difficulties with learning material	7	--
Dissatisfaction with teaching level	6	--
Involuntary reasons - total	10	18
Expelled from the course (missed classes, did not fulfil course requirements)	10	__
Not accepted, course was not opened, personal reasons and others	--	18

Source: a survey conducted by the Research and Economics Administration (Porat, undated) and (Ministry of Industry Trade and Labour (MOITAL), 2012)

Table 4: Rates of employment in occupation of training at various points in time, by occupation of training (%) and average monthly wage (NIS) of graduates employed in occupation of training compared with those employed in a different occupation, by occupation of training, 10 years later (average)

Selected training occupations	Employed in occupation of training – 5 years later	Employed in occupation of training – 10 years later	Employed in occupation of training – at some point after training	Average monthly wage of graduates - employed in occupation of training	Average monthly wage of graduates - employed in a different occupation	Difference in %
Childcare	39.4	43.4	85.0	3,455	3,718	-7.1
Electricity & electronics	37.6	40.7	81.6	6,907	6,829	1.1
Computers	28.9	39.6	76.6	12,327	7,756	58.9
Metal/ automobiles	31.6	38.4	79.2	6,945	7,349	-5.5
Ad-ministration	30.2	33.4	72.3	6,018	5,299	13.6
Hotel & guest hosting	31.1	29.5	80.6	6,559	5,622	16.7
Average	29.0	33.0	75.2	6,492	5,591	16.1

Sources: surveys conducted by the Research and Economics Administration (MOITAL, undated; MOITAL, Research and Economics Administration, 2009) and (MOITAL, 2012)

- In 2014 the OECD published a report reviewing the VET system in Israel (Musset & Kuczera & Field, 2014). This report maps the challenges for the Israeli VET system and offers relevant recommendations. Amongst the challenges are:
    - A growing skills shortage

- Uncoordinated governance of VET system.
- The insufficient weight given to work-based learning in VET
- Limited pathways of access and opportunity for up skilling
- A skill structure that does not meet the dual requirements (for details on national expenditure per student as shown in the report, see Table 5).

Table 5: National expenditure per student, by year (in NIS)

	2000	2003	2005	2008	2011		
	Total	Total	Total	Total	Public	Private	Total
Pre-primary	11800	12600	13500	15100	13000	3000	16000
Primary	15400	16600	17700	20400	21000	1000	22000
Secondary	19200	19800	20700	25300	20000	7000	27000
Postsecondary VET	23300	21700	20900	19200	8000	12000	20000
Higher education	39700	40100	39400	46200	40000	11000	51000

Source*:* Ministry of Education (2012), The Education System in the 2012/2013 School Year, Ministry of Education - Economy and Budgets Directorate; The OECD report (Musset, & Kuczera & Field, 2014)[3]

- In 2014, the European Training Foundation (ETF) prepared a report on VET in Israel. This report describes the governance of the VET system in Israel. It investigates three main issues: management of the VET system, finance and funding for the system, and the quality assurance (Leney & Eyal, 2014).

This report suggests an Israeli National VET Authority that addresses some of the challenges mentioned in these reports, drawing on the structure and experience of the German Federal Institute for Vocational Education and Training (BIBB), a leading institute in Germany. The BIBB plays a key role in keeping the German VET system up to date and in facilitating cooperation between the relevant stakeholders. In addition, the BIBB is also a highly respected research institute focused on the VET system in Germany, as reflected in a report by the OECD (Hoeckel & Schwartz, 2010).

Based on this, each of the following chapters begins with the OECD's general recommendations, followed by a description of the current situation in Israel. We then describe the way the system works in Germany, and the key role of the BIBB in addressing the relevant issues. Last, there follow detailed recommendations, devised by the team, to realise the more general recommendations made by the OECD. Accordingly, Chapter 1 describes the general issue of cooperation and collaboration with relevant stakeholders. Chapter 2 offers recommendations for implementing this in practice. In addition, Chapters 3 – 9 each contain four main sections:

[3] cf. http://cms.education.gov.il/NR/rdonlyres/38CAE988-AC9B-4A4F-9AC1-118C6B5EB279/158894/2013.pdf

a) The challenge which the previous reports described

b) A description of the current situation in Israel with respect to that challenge

c) The element of the German system in general, and the BIBB in particular, that may be useful to Israel, and

d) The way in which we recommend making use of it.

1 Ensuring cooperation between stakeholders

Involving different stakeholders in the VET decision-making process is vital. The OECD in its report has noted the importance of involving many social partners in the VET decision-making process (Musset & Kuczera & Field, 2014) The report also describes the challenges faced by the Israeli VET system in regard to strengthening coordination and social partner engagement (2014:8):

> "*In Israel the different parts of the vocational education and training (VET) system are subject to uncoordinated governance systems. This makes the system difficult to navigate for students, and inhibits social partner engagement*."

The OECD recommends tackling this challenge by increasing cooperation between stakeholders. The report highlights that in order for the VET system to be beneficial for all involved, it should take into account the point of view of the society and the individual, as well as that of the employers, representing the economy and the industry. Additionally, this report states that employers are an especially important social partner, due to their knowledge of the skills their employees will need. Precisely this is the German approach to the VET decision-making process, and reflects the way in which the German system operates.

1.1 Challenge for the VET system in Israel (OECD)

The provision of VET in Israel can be roughly divided into two types:

- Provided, subsidised or regulated by the public sector
- Provided by the business sector without regulation

Regarding the first type, the government agencies tend to consult with employers and experts from each respective field. However, the involvement of employers and trade unions is insubstantial. This is at least partly due to the fact that employer involvement is not mandatory, and that the institutional arrangements to facilitate it are not clearly defined. Thus, there is currently insufficient cooperation between stakeholders in

designing the VET system.

In order to address this problem, efforts are being made by both the Ministry of Education and the Ministry of Economy and Industry to increase the involvement of relevant stakeholders. These efforts align with a recent OECD publication, which states that involving as many stakeholders as possible in the VET system is crucial in order to incorporate information about skill needs into policy (OECD, 2016). The Ministry of Education has drawn up a national plan for a new certification system. This system's aim is to award an occupational qualification certificate that is recognised by the employers and relevant to the labour market, alongside a matriculation certificate (Ministry of Education, 2015). The Ministry of Economy and Industry is attempting to institute a council of stakeholders that will take part in designing VET curricula. However, such cooperation frameworks have yet to become stable, nor do they have any formal status.

Against this background, additional efforts have already been initiated to promote such councils through legislation. A national council already exists in one VET field - "The council for certified practical engineers and technicians", which was established based on a law legislated in 2012 (2012) . However, the remainder of the VET fields do not have such legislation or an established council. Hence, in the majority of occupational fields, the cooperation with additional stakeholders is insufficient.

Besides the formation of councils, there are other initiatives for increasing the involvement of employers in the VET system. For instance, the Ministry of Economy and Industry has recently initiated a pilot apprenticeship programme in collaboration with JDC-Tevet – an employment initiative of the JDC[4] and the Israeli government. This programme involves the employers, who both sign an apprenticeship contract with the apprentices and provide them with the training. However, these initiatives are not anchored by formal regulations or legislation. Thus, they are not sufficient and the degree of cooperation and involvement of employers is dependent on the initiatives, the different stakeholders' desire for involvement, and the strength of the stakeholder or union.

Thus, Chapter 2 describes the committee's recommendations with respect to the formation of councils of stakeholders as a practical approach for creating a cooperation structure between VET stakeholders and giving it formal status.

1.2 The situation in Germany

Knowing that VET in Germany comprises more than dual training (see introduction), the following descriptions of the tasks and responsibilities of the stakeholders of VET in Germany are broadly based on the description of dual training published in a Federal Ministry of Education and Research (BMBF) brochure called "Dual Training at a Glance", 2009).

[4] The American Jewish Joint Distribution Committee

1.2.1 Responsibilities in dual training as an important element of VET

In Germany VET – especially the form known as dual training – is based on intensive, regulated and complex cooperation, especially between the unions and the employers, who both play a central role in guaranteeing that vocational training is to meet the demands of industry and the crafts as well as the demands of the employees as social partners: if one of the stakeholders of VET in Germany identifies any need for change – like the need for a new regulated occupation or for changes within one of the approx. 350 existing regulated occupations, they take official action. The Federal Government, the federal states (Länder) as well as industry and crafts have to agree on basic principles for adaptation as a starting point for working on (new) training regulations and framework curricula. This procedure has to be coordinated by the partners involved

1.2.2 Federal framework legislation

The legislation on Vocational Education and Training in Germany can look back on a long tradition that originally started in 1897 with the issuing of the Craftsmen Protection Act, which provided that Chambers of Crafts should be responsible for supervising the training of apprentices and journeymen. This was followed by the introduction of dual training for commercial occupations modelled on training in the crafts.

All the activities of the stakeholders involved in dual training are legally regulated by the Vocational Training Act (BBiG) adopted in 1969 and revised frequently. The Vocational Training Act was evaluated by the German Ministry of Education and Research in 2016 (see the evaluation report:

https://www.bmbf.de/files/2016-03-23_Evaluationsbericht_BBiG.pdf).

The Vocational Training Act has been supplemented by several labour law provisions that are legally binding on initial and continuing vocational training. Thus the legal provisions and rules governing work contracts are also applicable to training contracts, except those not specified in the Vocational Training Act.

1.2.3 The role of the Federal Government

Unless the vocational training is totally school-based – such as the training for occupations in the health and laboratory sector, which is provided by full-time vocational schools for which the federal states (Länder) are responsible – the Federal Government is responsible for the content of training in recognised occupations. This is to ensure that the basic principles, involving the industry, the crafts and the federal states, are taken into account and that training for recognised occupations is only provided in accordance with the training regulations adopted by the Federal Government.

The Federal Government's responsibilities also include activities to promote dual training like individual support through the Federal Training Assistance Act (BaföG) or, in a more general sense, like special funding aiming at the creation of additional training places in

structurally weak regions.

The Federal Government even provides data in order to update vocational training by supporting the establishment of a basis for VET, by monitoring international developments, identifying requirements, and testing newly developed models under practical conditions.

1.2.4 The German federal states

Concerning dual training, the federal states (Länder) are solely responsible for the school-based part of the training. Each of the federal states determines the curricula for instruction at part-time vocational schools in consultation with other federal states and stakeholders.

1.2.5 Industry and crafts: Employers and unions

The cooperation of employers and unions in the area of vocational education in Germany is based on the idea of a so called consensus principle: proposals for the development or revision of training regulations are only accepted by the Federal Government if they have been agreed upon by the employers and unions beforehand. Without involving the Federal Government, the social partners agree upon further details of vocational training, and particularly on the amount of the allowance paid to trainees, within a framework of free collective bargaining. Some collective agreements also include provisions concerning such points as subsequent employment of vocational training graduates under a limited contract.

The workers' councils in the enterprises as well as the personnel councils in administrative organisations take care that apprentices' and young people's interests are taken into account in their companies and administrative organisation. They even monitor whether there is enough engagement on the part of the enterprises and administrative organisations for VET. Workers' councils and personnel councils do intensively cooperate with the elected representatives of the young people and the apprentices, who have the right to address their concerns to the workers' and personnel councils.

1.2.6 Industry and crafts: Self-governing bodies (chambers)

The chambers as self-governing bodies have to fulfil public tasks in dual training, which include counselling and monitoring functions with regard to the individual training contracts. In this sense they check the aptitude of companies and in-company trainers and advise companies as well as apprentices. Additionally the chambers examine the training contracts formally and register them. On the other hand, the chambers are responsible for the overall organisation and quality of examinations by fixing dates and setting up examination boards to administer the examinations, which are composed of representatives of employers, employees and vocational schools. The chambers issue certificates to the candidates who pass the examination successfully.

For consultation on important questions of vocational training, the chambers set up vocational training boards composed of equal numbers of representatives of companies, unions and – in an advisory capacity – part-time vocational schools.

1.2.7 Federal Institute for Vocational Education and Training (BIBB)

As a national body acting on behalf of the German Federal Government, the Federal Institute for Vocational Education and Training (BIBB) represents the centre for all questions of VET. The BIBB publishes information about actual developments in VET and prepares – in agreement with the social partners - legal provisions aiming at the modernisation, the amendment and at the restructuring of occupations that require training. The main committee, the Board of the BIBB, is a kind of parliament for VET. Its members, representatives of the social partners, consensually decide on the future development of VET in Germany.

1.3 Recommendations

The previous two sub-chapters describe the situation in both Israel and Germany regarding the challenge of a sustainable cooperation basis for the successful development of VET, now and in the future. As described above, no regulated arrangements exist for cooperation between the ministries amongst themselves, or between the ministries and additional stakeholders in Israel. Consequently, neither employers nor employees are sufficiently involved in the VET decision-making process.

In Germany, there is a longstanding tradition of cooperation between the stakeholders of VET, which has resulted in a widely successful dual training model that has gained a very high reputation inside and even outside of Germany. The regulated cooperation of the VET stakeholders guarantees that the interests of all types of stakeholders and of the apprentices are safeguarded.

The actual situation in Israel and the experiences in Germany concerning the cooperation of VET stakeholders lead to the first recommendation of our committee. In order to foster the further development of the system, the next step should be a significant increase in regulated cooperation of VET stakeholders in Israel.

Against this background, our document describes an institution which can play a significant role in strengthening such cooperation, in a number of ways. The subsequent chapters go on to describe the preferred option for increasing the involvement of additional stakeholders.

2 Installation of a National VET Authority and a VET council

The OECD (2014:8) in its report on Israel recommends tackling the cooperation challenge by installing a VET council:

"Establish a national body involving all the key stakeholders, including the ministries, employers and unions to provide strategic guidance on the development of the VET system."

In this report, the OECD's recommendation is assisted by four arguments that support the need to establish a national body (Musset & Kuczera & Field, 2014):

- Establishing a national body allows strategic development and enhancement of the sector.
- The engagement of employers is vital for a good VET system.
- The coordination and cooperation with many stakeholders balances the influence of each of the different stakeholders.
- The different stakeholders support the establishment of a new national body.

2.1 Challenge for the VET system in Israel (OECD)

The VET system in Israel is fragmented and distributed across a number of ministries and organisations. The Ministry of Education is mainly responsible for technological education, whilst the Ministry of Economy and Industry is responsible for VET (Vurgan & Nathan, 2008) . Furthermore, there are additional institutions and entities, such as the Israeli Defence Forces (IDF), that have part of the VET system under their responsibility. This fragmentation of the system challenges the creation of long-term policies and planning. For example, it is more challenging to create policies that address the continuity of VET from youth to adulthood. This reaffirms the need to establish an authority that will coordinate the VET system on the national level, and that will have the necessary impact to undertake long-term planning for the VET system.

2.2 The situation in Germany[5]

As mentioned above (3.2.7), the Federal Institute for Vocational Education and Training (BIBB) represents the centre for legally regulated cooperation between stakeholders of VET in Germany. The BIBB was founded in 1970 based on the Vocational Training Act (BBiG), and the Board of the BIBB – as the BIBB's executive body and as the German government's statutory advisory board in fundamental matters regarding VET – consists of members representing the stakeholders of VET in Germany.

The Board plays an important role in the German VET system, in that the representatives of employers, trade unions, Germany's federal states (Länder) and the Federal Government cooperate confidentially on the Board, with each group having an equal

[5]Most of the information concerning the BIBB is based on the website of the Federal Institute for Vocational Education and Training (BIBB) (http://www.bibb.de/en/35.php)

share of votes. - Each of the four groups represented in the Board has eight votes, regardless of how many members it has. The Federal Government's five representatives always cast their vote unanimously. A representative of the Federal Employment Agency and a representative of the municipal government associations that are active at national level may also take part in decisions in an advisory capacity.

As a government institution for policy, research and practice in VET, the BIBB has to provide individuals with qualifications of lasting value for their economic security and employability, and to ensure the international competitiveness of German business and industry by carrying out sustainable research and development work and advisory activities.

Being directly accountable to the Federal Government, BIBB is funded directly from the Federal Government budget and is subject to the legal supervision of the Federal Ministry of Education and Research (BMBF).

The Institute's research and findings support the following target groups:

VET- planning

- Federal Government and federal-state-ministries and other authorities, bodies and committees involved in VET-planning
- Employers' and employees' organisations
- Chambers of industry, craft and commerce
- Trade associations (e.g. trade associations of health, agriculture, information technology, trade etc.)

VET practice

- Competent bodies for initial and continuing vocational education and training and their vocational training committees
- Specialist staff responsible for initial and continuing vocational education and training in companies, training and continuing education establishments and vocational schools
- Chambers, for instance to support their autonomous processes like organising the examinations
- Management, human resources managers, works councils and staff councils in companies, training and continuing education establishments and administrations.

VET- research community

- Researchers at universities (particularly in the disciplines of vocational and industrial education, educational sociology and economics, and labour market research)

- Researchers in non-university research institutions.

The Board of the BIBB adopts the Institute's medium-term and annual research programmes, establishes its budget, gives formal approval to the actions of the president, makes recommendations for fostering and progressively developing VET, and may issue written opinions on the German government's annual vocational training report.

A standing committee comprising 16 members of the Board - four per bench - prepares the meetings of the Board and conducts the Board's business between meetings. - Two other committees were set up for vocational training research at BIBB and for the annual consultations on the draft of the government's vocational training report and the BIBB budget.

All rights and tasks of the Board are mentioned in the new Federal Vocational Training Act; it is also stipulated that the Board shall not be bound by any instructions in the execution of its tasks.

Based on the BBiG, the Board of the BIBB may appoint subcommittees which may include individual members who are not members of the Board. The membership of the subcommittees shall include representatives of the employers, employees, the federal states and the Federation including federal institutions like the Federal Labour Office.

The president and the deputy president of the BIBB conduct the Institute’s operational management, which includes the personnel management, representing the BIBB in public, generating of research projects aiming at the further development of VET, and supporting basic VET research. Fostering cooperation and networking with relevant organisations and stakeholders in VET is as much part of the operational management as the annual budget and personnel planning.

2.3 Recommendations

a. Establish a National VET Authority

b. Establish a national Israeli Council of Vocational Education and Training ("The National Council")

c. Establish committees - the Data and Research Committee and the Sector Committees.

In order to tackle the challenges mentioned above and in the subsequent sections of this

report, we recommend establishing a National VET Authority that should coordinate the activities of both the Sector Committees and the Data and Research Committee that function within it, as well as the activities of the National Council.

Establish a National VET Authority:

The National VET Authority should be responsible for the national policy on the VET system as well as sectoral policies, in light of the recommendations of the *National Council*. It should implement committees of VET arranged by economic sectors (*Sector Committees*) as well as a committee responsible for gathering data and ordering research (*Data and Research Committee*). The National VET Authority should also be responsible for initiating VET in new sectors. It should be advised on significant issues by the National Council. (See Figure 2 for the organisational structure).

The National VET Authority should act as a governmental coordinating body that should be responsible for all issues related to VET in Israel, including coordinating the activities of both the National Council and the committees. Amongst the issues that should be under its responsibility are:

- Deciding upon national VET policies, including the policies regarding specific sectors.

- Coordinating between the council and the subcommittees. It should be responsible for coordinating the activities of the *National Council*, the *Data and Research Committee* and the *Sector Committees*. The National VET Authority should allocate the appropriate responsibilities to the council or the committees, while creating collaboration between the bodies when needed.

- Coordinating materials from the committees. Coordinating the materials received and discussed in each of the committees, while consolidating the information received or the decisions made into unified information on the VET system.

- Preparing working papers for the *National Council*. These working papers should include summaries of the activities of the *Data and Research Committee* and the *Sector Committees*, summaries of the research on the Israeli VET system, and studies of international "best practices".

- Preparing the issues and topics on which the National Council will assist and advise the National VET Authority. This includes preparing the topics on the National Council's agenda and which need the collaboration of the relevant stakeholders.

- Initiating the hearings within the National Council. This includes creating the infrastructure, preparing the room for the hearing, preparing the issues under discussion, inviting the members of the committee or council, and inviting experts in the field.

Establish a national Israeli Council of Vocational Education and Training ("The National Council"):

The National Council should act as an advisory body, advising the National VET Authority on policies and decisions whilst representing the views of all relevant stakeholders.

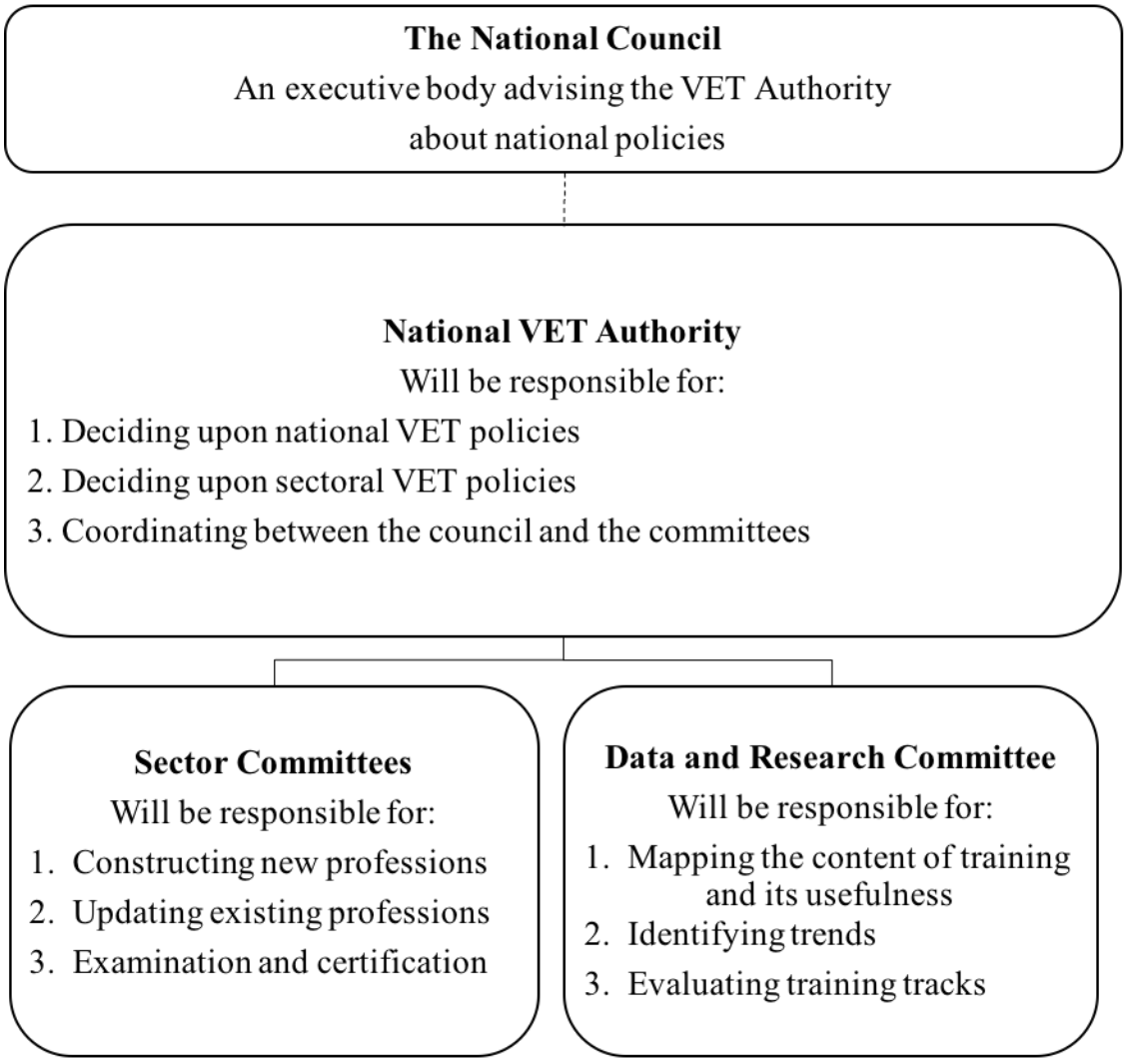


Figure 2: Organisational structure of the National Council for VET, the National VET Authority and its Committees

The National Council should represent the interests of all relevant stakeholders and social partners who will be involved in establishing and sustaining the National Council. These include:

a. The government
b. Employers' associations
c. Employees

d. Representatives of VET networks

e. Israeli Defence Forces

f. Representatives of the public

The National Council should deal with issues and decisions connected to the VET system as a whole, as well as influencing the issues that should be on the agenda of the National VET Authority, as described in subsequent chapters. Additionally, the National Council should be responsible for advising the National VET Authority on the following functions and tasks:

1. The development of an overall aim and vision of VET in Israel

2. The establishment of national policies regarding VET

3. The development of a legal framework for VET to involve all relevant stakeholders, listed above.

4. The promotion of evidence-based policy in the VET field by ordering reports and research studies that will be presented in the National Council's discussions, as well as experts' participation

5. The initiatives of pilot programmes to test innovative models of VET in Israel, which will be evaluated through rigorous research.

Establish Sector Committees:

The *Sector Committees* should deal with issues regarding occupations in specific sectors. Permanent skills councils should be established in vocational sectors. When signs appear that a new occupation is emerging or an existing occupation needs to be updated, the relevant Sector Committee should assemble. These committees should involve relevant stakeholders, such as government agencies, employers, trade unions and professional experts. The curriculum for the vocational training should be established in light of the needs of these stakeholders. Occasionally additional participants, such as additional professional experts and researchers, should also be invited (without needing to be officially appointed).

In addition to establishing curricula, the possible responsibilities of the Sector Committees include:

- Developing, designing and implementing new occupations in light of the needs of the labour market

- Revising existing occupations

- Developing examinations and certifications, as well as the relevant regulations. Examinations should include assessment of labour-market relevant and generic skills.

- Specifying the infrastructure that is required for training (equipment, materials, tools, etc.)

- Establishing profiles of teachers including the requirements that the teachers need to meet (necessary industry experience and teaching certificate in order to teach)

- Basic decisions on qualification analyses, research, and skill needs

- Initiating pilot projects, in order to develop and implement innovative training programmes and methods or on the quality of VET. These pilot projects should be rigorously evaluated, similarly to those initiated by the National Council.

Establish the Data and Research Committee:

The second type of committee that should be created is the Data and Research Committee. As seen in Figure 1, the *Data and Research Committee* should be responsible for:

1. Mapping the content of training and its usefulness
2. Identifying trends in supply and demand gaps
3. Evaluating training tracks.

For further information on the Data and Research Committee, please see Chapter 5, which extensively describes both the responsibilities and the activities of the Data and Research Committee.

3 Strengthening the statutory status of VET through legislation and regulations

The VET system in Germany is highly regulated, anchoring VET in legislation. Section 5.2 describes the German VET law in detail. Additional countries, such as England and Switzerland, also anchor their VET system in legislation. In the U.K. for example, the VET system is regulated in the law of 2009, and it is under this law that Ofqual[6], the government agency responsible for VET, operates. An additional example comes from Switzerland. The Swiss VET system is regulated in the law of 2004. This law establishes that the responsibility for VET is shared between the Confederation, the cantons and the professional organisations (Levi & Wolde-Tsadick, 2016).
In the background to the legislative efforts concerning the VET system stands, the

[6] The Office of Qualifications and Examinations Regulation

underlying notion is the right to vocational education and training drafted by Michael Atlan, the legal advisor of the Ministry of Economy and Industry. The focus of this draft is on the basic right that individuals have to acquire vocational education and training. According to Michael Atlan, the basic right to vocational education and training in Israel stems from the basic rights to education, employment and equality. VET addresses the dimensions of educational need, employability, and the social affiliation that can promote employability (Atlan, 2011).

3.1 Challenge for the VET system in Israel (OECD)

In Israel there is no comprehensive law regarding VET, in contrast to academia which is regulated by legislation (e.g. *The Council for Higher Education law, (1958)*). There are a few laws that indirectly relate to different aspects of the VET system. For example, *The Apprenticeship law (1953)* deals with young people (under 18 years old) who acquire an occupation within a dual framework, combining guided practical work and supplementary studies in a professional school certified by the Minister of Economy and Industry.

In addition, there are laws regarding the regulation of specific occupations or specific occupational issues, such as: *The Equal Opportunities for People with Disabilities law (1998) ; The Employment Service law, (1959) ; The Business Licensing law (1968) ; The Absorption of Discharged Soldiers law, (2010)* ; and *The Public Health law, (1983)* . However, there is no legislation regarding other important issues, such as the volume of training, certification, introduction of new occupations, and training throughout employees' working lives (Melloul, 2010).

In one VET field, namely Technicians and Practical Engineers, there is comprehensive legislation. The *Certified Practical Engineers and Technicians law*, (2012) incorporates the operative area of this vocational field, as well as the legislative restrictions. The law covers a number of facets:

- The council for certified practical engineers and technicians
- The certifying committee
- Recognised technical college
- The certified practical engineers' registry
- Uniqueness of the degree and its activity
- Sanctions and disciplinary proceedings
- Miscellaneous provisions.

A few legislative efforts have surfaced in the attempt to crystallise a comprehensive law regarding VET in Israel. A legislative effort from 2012 focused on creating a VET law that includes a number of principles (Ministry of Economy, 2012):

- General access to VET in different populations

- The regulation of the VET system for young people. In order to ensure reserves of manpower required for the overall needs of the economy, including the needs of the industry military (long term), amending and integrating existing laws into the current law

- Regulating the training and retraining pathways for adults, including technicians and practical engineers (medium-term and short-term)

- Determining the activities, tools and means necessary for the development and upgrading the domain in which the various levels of professionals operate. It includes setting standards and the required scope in accordance with international standards.

- Regulating the pathways for professional promotion and upgrading of employees during their employment; includes regulation of the issue of the involvement of employers and employees in the arrangement.

- Regulating the ways to cooperate with all relevant stakeholders, including representatives of: employers (including industrial and commercial), employees, government agencies with the equivalent authority, and the IDF.

These types of legislation will strengthen the ability of the state to regulate its functions and to secure funding from the annual budget, thus helping to provide stability and continuity to the system.

3.2 The situation in Germany

3.2.1 The normative basis

In Germany the so-called “Berufsprinzip” (occupation principle) provides the normative basis for all statutory provisions in VET. The occupation principle is both the point of reference and the starting point for vocational training in Germany. Vocational training in general has to be oriented to the idea that the entire occupation requiring vocational training, with all its requirements and training contents included in framework curricula of the federal states (Länder), provide the starting point for occupational activities and an action-oriented, holistic vocational training. For example, the discussion on modularising vocational training may highlight the idea of occupation principle described above, since a strictly modularised vocational training concept would be deeply contradictory to the occupation principle and its idea of a form of vocational training that reflects the holistic working processes seen in real working life.

3.2.2 The legal framework of Vocational Education and Training in Germany

Together with the Crafts Code[7] and acts concerning vocational education and training legislated by the federal states (Länder), the Vocational Training Act provides the legal framework (cf. https://www.bibb.de/en/13953.php) for VET in Germany.

The Vocational Training Act (BBiG), first passed in 1969, was amended in 2005[8], and has been in force since April 1, 2005. One of the goals of the Act is to ensure that young people just getting started in the world of work have full vocational capacity in a wide range of activities. Only then they can cope with the constantly changing requirements of working life. In the former Act as well as in the amended Act, the state declared the entire field of non-school VET to be a public task, although its implementation is entrusted largely to the employers in the private sector and the public administrations.

All those involved in VET contribute to the planning and preparation of new or modernised occupations:

- the companies and the chambers (employers)
- the trade unions (workers)
- the federal states (Länder) and
- the Federal Government.

Under the Works Constitution Act and the Employee Representation Act, the trade unions have extensive rights of participation in the implementation of VET. The associations of employers represent the interests of the enterprises – mostly private-law entities – in which the training takes place. The Federal Government dictates the legal framework of initial vocational education and training through laws and regulations. Training regulations set the objectives, content and examination requirements for training in enterprises. These are adopted by the competent ministries of the federal states (Länder) in agreement with the Federal Ministry of Education and Research (BMBF) through ordinances. They apply nationwide and have the force of law

3.3 Recommendations

Develop an overarching legal framework:

[7]The Crafts Code (HandwO) is a law regulating practice, initial and continuing vocational training as well as self-government arrangements in the craft-sector. Concerning vocational training, the Crafts Code is a special law complementing the Vocational Training Act.

[8]In 2016 the evaluation of the Vocational Training Act (BBiG) amended in 2005 has bee submitted by the Ministry od Education and Research (BMBF) attesting the amendment of the BBiG realized in 2005 has paid off. The most important results of this evaluation and the analysis of the needs for change amendment done by the BMBF can be viewed under https://www.bmbf.de/files/2016-03-23_Evaluationsbericht_BBiG.pdf.

We recommend building a comprehensive legal framework that will include and complement existing laws regarding the following issues:

- Formation of the National VET Authority including its two types of committees (the Data and Research Committee and the Sector Committees) as well as the National Council, as described in Chapter 2. The law regarding each of these components should specify:
    - The goals of the National VET Authority, the committees and the National Council
    - The legal validity of the resolutions made by the National Council, the National VET Authority and the Committees, as well as the legal framework for the decision-making procedures of these bodies
    - The responsibility for implementation of the decisions
    - The conditions of service as a representative on the National Council
    - The process of introducing new professions and updating existing ones, and the organisation and classification of initial training, further training and retraining
    - Certification and examinations of professions.
- Issues regarding the VET system as a whole. The law regarding the system should specify:
    - Disciplinary proceedings, including, code of ethics, disciplinary infractions, disciplinary committee, and disciplinary actions
    - Provisions, including, eligibility for positions, implementation, regulations and fees
    - Financing of the VET system
    - Recognition of programmes and courses
    - Qualifications of teachers and trainers in the VET system
    - VET research, planning and statistics.

The previous chapters discussed the necessity for increasing regulated cooperation between VET stakeholders to foster the development of VET in Israel, followed by recommendations for dealing with the idea of implementing a National VET Authority and a National Council. In the following chapters of the report, we will present a more

detailed discussion of the issues falling under the responsibility of both the National VET Authority and the National Council.

4 Developing curricula, regulations of trainings and exams

The OECD (2014:8) states in its reports that the building of an effective framework of work-based learning is a challenge to the development of VET programmes:

> *"Despite all the benefits of work-based learning, both as a powerful learning tool and as a means of encouraging partnership with employers, work-based learning is little used in the vocational system."*

The OECD (2014:8) recommends a way to tackle this issue:

> *"Integrate work-based learning systematically into postsecondary vocational programmes, as a mandatory, quality-assured and credit-bearing element. Establish a regulatory framework in support of this end."*

4.1 Challenge for the VET system in Israel (OECD)

The development of the curricula for VET, certified by the government, is under the responsibility of the Ministry of Economy and Industry and the Ministry of Education, each in their respective domain. Employers, trade unions and experts work informally with the Ministry of Economy and Industry on developing new curricula and updating the existing ones. However, these efforts have no official role in the process and are still in the early stages. Thus, we do not know whether they will become stable and receive recognition in the law. Furthermore, the institutions providing the VET have weak connections with companies in industry (Leney & Eyal, 2014; Musset & Kuczera & Field, 2014) which adds to the necessity for regulating the involvement of additional relevant stakeholders (trade unions, employers and professional experts) in the construction and development of VET curricula. This regulation should be a function of the National VET Authority and its committees, and in consultation with the National Council.

The Manpower Training & Development Bureau within the Ministry of Economy and Industry describes ten stages for developing the training curriculum for a new occupation or updating an existing one.

The stages are:

1. **Mapping the labour market and needs analysis** - in this stage, research evaluates the different needs associated with the new occupation.

2. **Curriculum planning** - in which the planners set long-term training objectives, as well as decide upon the essential subjects to be covered by the training.

3. **Professional objectives** - which refer to the analysis of the level of skill, attitudes and knowledge that individuals will gain once they finish their training.

4. **Curriculum development** - includes, amongst other elements, the learning objectives, details of the content, didactic directives of implementation, and the development of learning materials.

5. **Standards formulation** - the establishment of standards regarding the development of the occupation, the curriculum, the examinations and the certifications

6. **Development of materials and teaching aids** - instructs the teaching aids and materials that teachers use as part of their lessons.

7. **Training of teachers** - in-service training for teachers regarding the didactic aspects of the curriculum

8. **Defining candidate profile** - based on the different social needs and having the specific qualifications that will allow one to succeed in both the training and tests

9. **Pilot implementation** - tests the curriculum under field conditions for a limited time and environment. According to the results of the pilot, the curriculum is modified before expansion.

10. **Evaluation** - includes both formative evaluation and summative evaluation. These evaluations include collecting information in order to improve the projects.

4.2 The situation in Germany

4.2.1 Regulatory proceedings to modernise and initiate occupations

When the content or the structure of a training occupation needs to be modernised or a new occupation needs to be defined, the initiative generally comes from trade associations, employers' umbrella organisations, trade unions or the Federal Institute for Vocational Education and Training (BIBB).

The final decision on new or revised training occupations is made by the competent Federal Ministry in coordination with the federal states (Länder) after consulting all stakeholders. Often it is preceded by a position statement from the Federal Institute for Vocational Education and Training, or else – especially in case of major reform projects – based on the results of research projects carried out by the BIBB.

Both the development of new training regulations and framework curricula and the

adaptation of existing training regulations to update vocational practices proceed according to a regulated procedure involving the Federal Government, the Länder governments, employers, trade unions and vocational education researchers. By agreement, such a procedure should normally be limited in duration.

The regulatory work should take into consideration the binding character of the intended legislation specifying the content and goals of the training as well as the dynamics of technological, economic and social development. The use of certain methods and technical systems is not made a mandatory provision of training regulations. The objectives are listed in a technology-neutral and function-oriented manner and remain open to changes and new developments.

The procedure for drafting training regulations (cf. https://www.bibb.de/en/14094.php) should focus on these steps :

- **Defining** "benchmarks" for the training regulation: The "benchmarks" of the training regulation are specified in an "application interview" at the relevant ministry - in most cases the Federal Ministry for Economic Affairs and Energy – in coordination with the Ministry of Education and Research.

- **Elaboration and coordination**: During this second step, training regulations for the enterprises and framework curricula for vocational schools are prepared and coordinated.

- **Adoption of the regulation**: The "Federal-Länder Coordinating Committee for Training Regulations/Framework Curricula" (KoA) gives final agreement to the new training regulations and the corresponding framework curriculum.

The procedure described above indicates the structure of the VET regulations and is based on the consensus principle. The responsibilities and competencies for VET are interrelated and interdependent. A workable outcome can only be achieved by taking into account the various interests and wishes of all those involved. A new or modified training regulation will only be accepted by the companies if it has been drafted in consensus by all parties.

If there is a consensus on the results of the training regulation procedure in the Board of the BIBB, the federal states (Länder) – responsible for the curricula for the training occupations in vocational schools – will match the curricula with revised or new training regulations.

While new framework curricula for training occupations are published in the Law Gazettes of the federal states (Länder), modernised or new training regulations are published in the Federal Law Gazette, underlining the legally binding character of those framework curricula and training regulations.

4.2.2 Examinations

As mentioned before, the chambers are responsible for the examinations. For this purpose, each of the chambers of commerce, chambers of crafts and other chambers issue examination regulations – which have to be certified by the state – regulating the examination procedures of the so-called intermediate examinations and the final examinations in the occupations under that chamber's competence.

To guarantee a consistent and comparable qualification level all over Germany, committees exist which are responsible for creating and designing examinations for each training occupation that will be applicable all over Germany.

The audit committees that finally execute the examinations will be organised by the chambers. The members of the audit committees – the auditors – are proven experts in the occupations and carry out the examinations work on a voluntary basis.

On completion of vocational training, the certificate for passing the final examination is issued by the competent chambers. In the event of failure, one re-examination is possible. When the apprentices have officially finished their vocational training they start applying for jobs as qualified employees in the labour market. As the certificate has a good reputation and is recognised by employers, certificate holders have good prospects of finding a job.

The initial vocational certificate is a first step in the progression towards the next level of qualification. It supports the idea of life-long-learning and is a precondition for further qualifications like a "Meister" (master craftsperson) and other examinations in continuing training occupations. Additionally, the certificate opens the way to a vocational baccalaureate diploma and even to higher education opportunities at universities.

In terms of the European Qualifications Framework (EQF), which is designed as a translation tool between qualifications in the different countries (with eight EQF reference levels (Level 1=low, Level 8 = high) describing the learning outcomes of a qualification process in terms of knowledge, skills and (wider) competences), the learning outcomes of a three- or three-and-a-half-year apprenticeship are assigned to Level 4 (the same as in the German Qualification Framework). This demonstrates the prospects of further and higher education based on a VET qualification. The EQF does not interfere in the national training regulations, which are up to the national bodies; the idea of the EQF is that it is merely a tool for comparing learning outcomes certified by means of examinations regulated by national bodies.

4.3 Recommendations

Standardised certificates and examination system:

Our recommendation is to create a system with standardised examinations and certificates that should unify all the programmes in the same field, administered by different ministries, by different institutions and by the private market. This unified

certificate system should determine the qualifications that are necessary for the occupations. One possible way is to make use of the system underlying the EQF[9] used in Europe.

The relevant Sector Committee should be responsible for determining the qualifications for occupations, as well as for developing the exams conferring the certification. This should be done based on the legal framework developed by the representatives of the stakeholders in the National Council. As a basis for the development of the curricula, the needs assessment should be carried out in collaboration with potential employers and training institutions to ascertain the needs of the labour market. Programme administrators should develop the curriculum for each programme in such a way that they meet the qualifications of both the Sector Committee and the needs of the market. All relevant stakeholders should sign off on these curricula and qualifications defined by the National VET Authority.

5 Supporting data collection and research on VET in Israel

According to the OECD (2014:24):

> *"The development of VET policy depends on good data and the analytic and research capacity to make use of data and conduct evaluations of policy and policy reform. Such a foundation is essential to ensure that a strong evidence base can guide policy."*

The OECD (2014:24) states in its report that in respect of international standards, research capacity in Israel is a strength and not a challenge:

> *"In Israel, although data remain a challenge, research and analysis are well-developed by international standards, with a strong capacity for research in academic universities and research institutes, often with international reputations."*

Although the OECD report on Israel reflects a positive outlook concerning research capacity, they do still see data as a challenge. Thus, in order to improve the VET system, it is important to discuss a number of its challenges in this domain.

5.1 Challenge for the VET system in Israel

5.1.1 Data collection and research on VET - Graduate surveys

There are two primary organisational bodies conducting research on this matter in Israel: the Ministry of Economy and Industry and the Central Bureau of Statistics.

The Ministry of Economy and Industry surveys individuals in training and graduates of

[9] European Qualifications Framework

some vocational training tracks every two to three years. One of the main goals of this survey is to assist in providing the business sector skilled workers in fields where there is unfulfilled demand, as well as enhancing individual decision-making based on the information produced by the survey. This survey provides a number of key indicators, such as (see Table 6):

- The percentage of VET graduates who are employed in their field of training in each occupation
- Reasons for not working in the studied occupation or leaving the occupation
- Average salary of VET graduates and the trainees' level of satisfaction with their training
- The degree of improvement from the job the VET graduates previous held

In addition, this survey provides information regarding the VET programmes that generate high rates of placement and those that generate low placement rates.

Table 6: Graduate Survey: Percent of individuals that work in the occupation and say that there was a positive improvement

% of individuals that answer that there is a positive improvement in their work	Physical conditions	Promotion prospects	Salary	Supervisor treatment	Job security	Interest in the work
Electricity and Electronics	42.6%	45.9%	44.3%	49.2%	50.8%	60.7%
Accommodation	51.5%	**68.8**%	**62.4**%	**72.0**%	**71.0**%	**75.3**%
Computers	**58.0**%	52.2%	**65.2**%	53.6%	52.2%	68.1%
Building and Environment	**58.7**%	**60.9**%	56.5%	60.9%	**64.0**%	71.7%
Metal and Machinery	56.2%	52.1%	57.5%	47.9%	**65.8**%	71.2%
Administration	**73.9**%	52.2%	52.2%	**69.6**%	65.5%	**82.6**%
Caregivers	44.4%	27.8%	50.0%	50.0%	61.1%	55.6%
General Average	52.1%	52.5%	54.1%	55.4%	59.4%	69.9%

Source: Graduate Survey, presentation by Alon Porat, Ministry of Economics, Research and Economics Administration.

The Central Bureau of Statistics (CBS) also conducts data collections regarding VET. Official statistics are regularly published regarding counts of trainees on vocational tracks by various breakdowns, for both secondary and tertiary education, as well as adult training. Most of these data are based on administrative databases obtained annually from the Ministry of Education and the Ministry of Economy and Industry. At the end of every school year, annual files are produced for CBS, and published during the following year. These data are currently published in descriptive statistical tables, but can be used for

more complex analyses and merged at CBS with other identified micro data for the purpose of longitudinal follow-ups. One promising track is to analyse the job-market and higher-education outcomes of VET graduates.

Table 7: Students in schools for apprentices under the supervision of the Ministry of Economy, by field of training and sex, 2013/14

	Arab education			Hebrew education			
Field of training	Girls	Boys	Total	Girls	Boys	Total	Total
	ABSOLUTE NUMBERS						
TOTAL	**988**	**5,121**	**6,109**	**1,815**	**6,411**	**8,226**	**14,335**
Building							
Printing, photography and production	18	35	53	275	378	653	706
Hotel keeping	-	64	64	120	344	464	528
Electricity and electronics	1	968	969	34	1,105	1,139	3,108
Paramedical occupations	-	-	-	38	87	125	125
Computers	43	420	463	14	380	394	857
Nursemaids	212	-	212	26	11	37	249
Administration	234	19	253	563	314	877	1,130
Metal working	1	457	458	69	1,277	1,346	1,804
Hairdressing and beauty care	376	55	431	461	215	676	1,107
Woodwork and furniture	-	199	199	1	22	23	222
Automotive	-	2,412	2,412	11	1,384	1,395	3,807
Fashion and textile	-	-	-	28	2	30	30
Miscellaneous	103	492	595	175	892	1,067	1,662
	PERCENTAGES						
TOTAL	**16.2**	**83.8**	**100.0**	**22.1**	**77.9**	**100.0**	
Building	-	-	**-**	-	-	**-**	
Printing, photography and production	34.0	66.0	100.0	42.1	57.9	100.0	
Hotel keeping	-	100.0	100.0	25.9	74.1	100.0	
Electricity and electronics	0.1	99.9	100.0	3.0	97.0	100.0	
Paramedical occupations	-	-	-	30.4	69.6	100.0	
Computers	9.3	90.7	100.0	3.6	96.4	100.0	
Nursemaids	100.0	-	100.0	70.3	29.7	100.0	
Administration	92.5	7.5	100.0	64.2	35.8	100.0	
Metal workers	0.2	99.8	100.0	5.1	94.9	100.0	
Hairdressing and beauty care	87.2	12.8	100.0	68.2	31.8	100.0	
Woodwork and furniture	-	100.0	100.0	4.3	95.7	100.0	
Automotive	-	100.0	100.0	0.8	99.2	100.0	
Fashion and textile	-	-	-	93.3	6.7	100.0	
Miscellaneous	17.3	82.7	100.0	16.4	83.6	100.0	

Source: Ministry of Economy; The Statistical Abstract of Israel 2015, the Central Bureau of Statistics

For example, the annual tables currently published on the Ministry of Economy and Industry's programmes, which combine work and study (apprenticeships) at upper secondary level, show annual breakdowns by school ownership, Hebrew/Arab education, class level, gender, religion and field of training (Table 7).

Other breakdowns are possible, since data linking at the individual level can be performed on these micro data using national ID numbers, thus being able to add additional variablesSome of CBS's VET data are based on a unique survey – the Survey of Vocational Training Institutions. This survey runs during the school year and is published on an annual basis. The survey collects aggregate data on all post-secondary schools running vocational programmes for adults and not covered by administrative data. One shortcoming of these data is that, being aggregate in nature, they do not allow for the flexibility of analysis provided by the micro data cited above.

According to the Department for Research and Economy in the Ministry of Economy and Industry, the data collected is comprehensively organised (Fefferman, 2016). However, according to conversations with experts in the field, such a database is not sufficient for guiding decisions by policy-makers. Moreover, in practice the database is not widely used. Hence, steps should be taken in order to raise awareness about the database, thus increasing its practical usage.

5.1.2 Evaluating skill needs and trying to identify trends

As of today, there is no formal process or institutional arrangement for integrating the information received by surveys and studies in the VET decision-making process. There are two primary employer surveys, which evaluate skill needs in Israel. The first is conducted by the Ministry of Economy and Industry, and the second is conducted by the Israeli Central Bureau of Statistics.
The employer survey of the Ministry of Economic and Industry:

In 1997 the Ministry of Economy and Industry began to conduct a quarterly survey using a national sample of employers in Israel. The survey currently includes 3,000 companies in the business sector, sampled according to grids of size and economic sector. The collected data presents:

- Job vacancies – duration, wage offered
- Hires – duration, wage
- Separations – cause (layoff, quit, retirement)
- Forecast/expectations – growth expected in economic activity (of the firm) and employment in the forthcoming quarter.

For the main findings from the short and medium term survey, see Table 8.

The employer survey of the Ministry of the Central Bureau of Statistics:

The Israeli Central Bureau of statistics also conducts an employer survey to evaluate skill needs, the Job Vacancy Survey. This survey measures the stock of job vacancies in the country, serving as a tool for researchers and policy-makers in measuring labour demand and identifying job opportunities by economic sector and by the size of enterprise.

The importance of the survey is in identifying sub-groups in the labour force that are influenced by current economic situations. This information can be of important value in planning vocational programmes that answer the economic needs of the private sector

Table 8: Business Sector Survey: Main Findings – Short & Medium term Survey (1-3 years)

	Practical Engineer Training	Vouchers	Evening Training	Day Training
Years	2010-2009	2011-2008	2010	2013-2008
Employed share (%)	85.4	73.7	83.8	76.1
Employed in Training field (%)	45.7	47.6	41.4	44.8
High placement	Electronics, Architect	Computers	Construction, Electronics, Nursing	Accommodation, Nursing
Low Placement	Industrial, Chemical	Cosmetics	Management, Cosmetics	Management, car mechanics
Training Satisfaction				
Teachers	56.6	82.1	---	79.1
Proper Job Skills	---	79.1	---	78.0
Labs & Equipment	50.6	---	---	58.2
Job Satisfaction				
Wage	47.6	50.0	55.0	51.8
Job security	70.4	65.3	84.3	57.2
Job interest	83.2	88.2	90.8	71.7

Source: Employers Survey, presentation by Michael Ornstein, and Howard Ross, Ministry of Economics, Research and Economics Administration

5.1.3 Challenges with the employer surveys

There are a number of challenges associated with both Employer Surveys. According to decision-makers in the VET field, both employer surveys have limited impact on the steering of the VET system. This is due to a number of challenges associated with both Employer Surveys that may help explain this limitation.

- **Firstly,** there is no institutional procedure for including these surveys' findings in the decision-making process. This may stem, at least partially, from the following other challenges:

- **Secondly,** according to the Department for Research and Economy in the Ministry of Economy and Industry, they reinforce special geographic areas, as the north or south of the country in their survey, thus allowing for the data to assess employer needs and demands according to specific geographic areas. However,

programme developers indicate that they do not use these data in their programme planning. Further research should focus on this matter, trying to pinpoint the reasons why actors in the field are not making use of the data.

- **Thirdly,** according to experts in the field, these surveys are not coordinated on a national level and the data that they collect is not integrated into a national data set. However, according to the *Department for Research and Economy* there is much coordination and cooperation between them and the Central Bureau of Statistics regarding the employer surveys, highlighting that there is a gap between their operations and the way they are perceived in the field. This indicates that steps need to be taken in order to increase the use of the information and dissemination amongst key players.

- **Fourthly,** no data exists today on teaching staff in VET, and this is a severe limitation in the ability to plan ahead and strengthen the provision of quality VET in Israel.

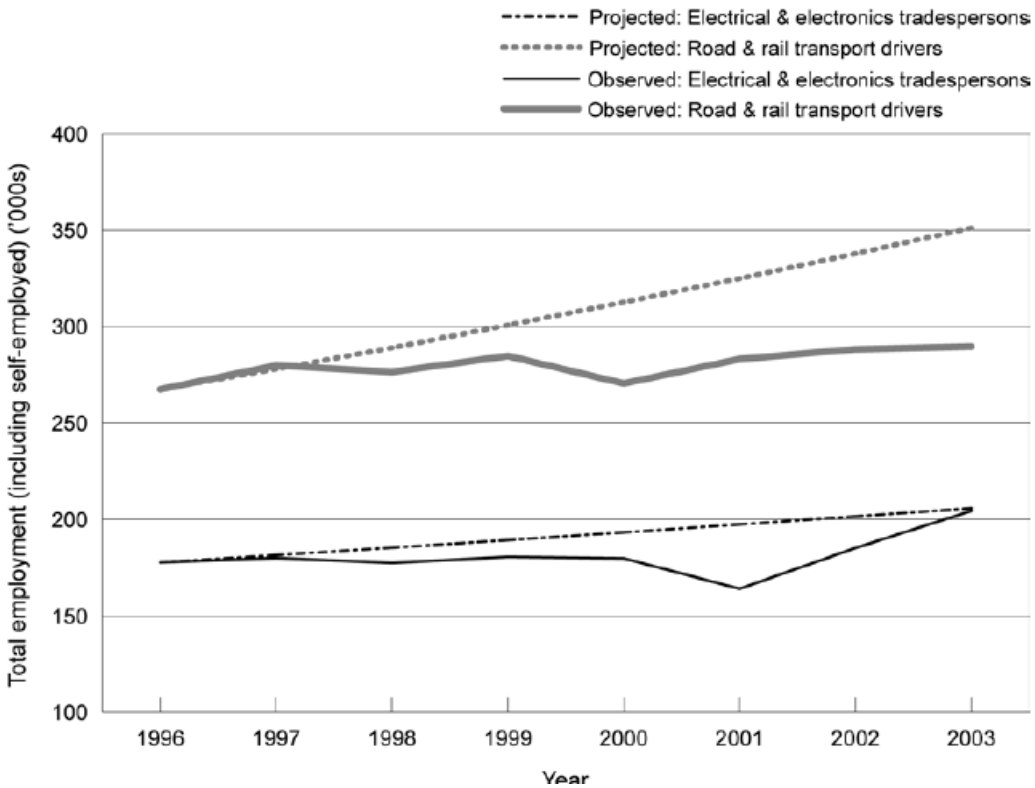
In addition, there are other occasional efforts to assess skill needs. For example, the Manufacturers Association of Israel also occasionally surveys employers in order to identify skill needs in the industrial sector. However, this survey is limited to the needs of the industry and does not address other economic branches such as trade and commerce. Furthermore, this survey is not formally integrated in the decision-making process either.

5.1.4 Forecasting skill needs

These attempts at identifying skill needs are conducted with reference to the current gap in supply and demand. Unlike other western countries, Israel does not conduct any forecasting of the skills that will be in demand in the future labour force. Rather, current studies conducted by the Ministry of Economy and Industry and the Central Bureau of Statistics produce indicators of supply and demand according to the present situation only.

A recent publication by the OECD highlights the importance of the prediction of trends and skills in policies for reducing skill mismatches (OECD, 2016). However, evaluations of forecasting models in other countries indicate the need to treat these predictions as limited in accuracy when planning VET curricula (for an example of a gap between actual and predicted growth in Australia, see Table 9). Furthermore, these evaluations indicate that the forecasting models are extremely limited when it comes to long-term predictions and forecasts for specific fields rather than broad skill sets (Stekler & Thomas, 2005; Krekel & Helmrich, 2015; Richardson & Tan, 2007). The prediction literature reveals that the longer the time-frame that the prediction refers to, the more general the conclusions. That is, short-term predictions may identify gaps in specific occupations; however, as the prediction becomes more long-term, it is more accurate in predicting general skills instead of specific occupations.

Table 9: Comparison of predicted and actual change in employment for selected occupations, 1996 - 2002



Source: (Richardson & Tan, 2007)

5.2 The situation in Germany

5.2.1 VET research at the Federal Institute for Vocational Education and Training

Since 1970 the Federal Institute for Vocational Education and Training (BIBB) has been conducting systematic empirical quantitative and qualitative research and data collection concerning all relevant aspects of vocational training, and especially of dual vocational training in Germany, in keeping with international research standards.

Objects of research of the BIBB are:

- Costs and benefits of vocational training
- Qualification of teachers and trainers in VET
- Qualification requirements
- Requirements of training regulations.

Since the BIBB began conducting empirical studies in western Germany, and subsequently for the whole of Germany, it has cooperated with the Institute for Employment Research (IAB) at Nuremberg for many years, especially in the context of

the IAB Establishment Panel survey (cf. www.iab.de/769/section.aspx/593). According to the IAB, "The IAB Establishment Panel is a representative employer survey of employment parameters at individual establishments. Near to 16,000 establishments from all branches of the economy and of all sizes are surveyed annually and nationwide from June to October. The survey is carried out orally by way of personal interviews conducted by Kantar Public Germany (formerly: TNS Infratest Sozialforschung), Munich, on behalf of the Institute for Employment Research (IAB). This representative survey of establishments covers a wide range of questions on a great many topics related to employment policy that are examined in various research projects.

The standard annual programme of questions is complemented by topics of current interest. The IAB Establishment Panel has been in existence in western Germany since 1993 and in the east since 1996. As a comprehensive longitudinal data set, it forms the basis for research on the demand of the labour market. The data provided by establishments are intended to help the placement and advisory services of the Federal Employment Agency to orientate their activities more closely to the realities experienced within the establishments. The analyses also provide the basis for the decision-making processes of politicians, management/labour representatives, and various associations."

The BIBB itself is in charge of different empirical surveys like the BIBB/BAuA[10] Labour Force Survey which is a periodic survey based on 20,000 gainfully employed people. The BIBB/BAuA labour force surveys are jointly conducted by the German Federal Institute for Vocational Education and Training (BIBB) and the German Federal Institute for Occupational Safety and Health (BAuA) and funded by the Ministry of Education and Research (BMBF). Another empirical survey handled by the BIBB is the "BIBB company panel on qualification and competence development". This is a representative annual survey of about 3,500 companies in Germany that was conducted for the first time in 2011 and is supported by the Federal Ministry of Education and Research (BMBF).

In 2008, BIBB complied with the German Commission on Improving the Information Infrastructure by founding a Research Data Centre (FDZ) to provide researchers with standardised access to BIBB data.

The BIBB regularly publishes the research results via the Internet (www.bibb.de) or in different publications like the annual BIBB report or in a magazine called "Berufsbildung in Wissenschaft und Praxis (BWP)": Vocational Training in Research and Practice (see: https://www.bibb.de/veroeffentlichungen/de/publication/seriesitem/id/3).

Additionally the BIBB regularly conducts questionnaire-based surveys (Experts' Monitor) via the Internet, where VET experts are invited to answer questions on current issues of vocational education and training (see: https://www.bibb.de/bibb-expertenmonitor).

5.3 Recommendations

Increase the usage of comprehensive and systematic VET data collection and research:

[10] BAuA (Bundesanstalt für Arbeitsschutz und Arbeitsmedizin: Federal Institute for Occupational Safety and Health)

An important body regarding research on the VET system is the Data and Research Committee, described in Chapter 2. The Data and Research Committee is responsible for the overall coordination of research regarding VET. One significant participant in the Data and Research Committee will be the Central Bureau of Statistics (CBS).

As mentioned above, one major challenge of the VET system in Israel is the non-usage of existing data and research in the decision-making process. One way in which to strengthen the integration of such research into the decision-making process is to have research findings presented regularly to the National VET Authority, the National Council and the Sector Committees, described in Chapter 2.

Thus, we recommend the following mechanism:

- Both the National Council and the Sector Committees will request the research of interest from the National VET Authority.

- The National Council will request research regarding lateral issues, whilst the Sector Committees will request research regarding the specific sector or an occupation within the sector.

- The National VET authority will allocate the requests to the Data and Research Committee, who will hand the research to a research body.

- The research body will present its findings in front of the National Council and/or the Sector Committee, as well as the National VET Authority, thus ensuring that the National VET Authority has the relevant information before making a decision on the relevant topic.

In addition to coordinating the requests, as described above, we propose that the Data and Research Committee will also perform the following activities:

- **Map the content of training and its usefulness**:
  Mapping the actual training that the various VET programmes provide, as well as producing the relevant recommendations. The content of the training and the degree to which it is useful for work in the field will by mapped by the following means:

  i. Employer surveys
  ii. VET programme curricula
  iii. Surveys of VET programmes
  iv. Surveys of graduates.

- **Identify trends**:

  Identifying trends in supply and demand gaps and technological innovations.

a. Identify skills for which there is growing demand as well as skills with declining demand.

b. Try to anticipate the occupations in which a large number of individuals are going to leave the workforce in the relevant future, and in which replacement demand will therefore occur.

c. Distinguish between trends for different demographic and geographical groups.

d. Help identify priority occupations.

e. The trends will be identified by:

   i. Employer surveys

   ii. Expert interviews

   iii. International trends.

- **Evaluate training tracks**:

  a. The number of people on each track (beginning and graduating)

  b. The outcomes of the VET system: participation in the labour force, wages, percentage of young people working in their field of study, the percentage hired by the firm that provided their training, etc.

  c. The collection of data on control or comparison groups in order to facilitate analysis of the effectiveness of various types of training. Such comparisons, as well as comparisons between VET and higher education, should be done with caution since participants in each track have different characteristics.

  d. The execution of cost-benefit or cost-effectiveness studies on the various types of training, based on the causal analysis described in the point above.

  e. Usage of administrative data. Matching a cohort of VET graduates with the following years' data on employment and income as well as new entrants to higher education, in order to see the hard data regarding these graduates. The usage of administrative data has a number of primary advantages; i.e. it is cost-effective in terms of resources, it allows for a consistent set of measures over time, and it is not limited by sample size.

  f. Linking up administrative data, graduate data and outcome data – currently collected survey data (existing surveys run by the Ministry of Economy). Such an activity could be part of an enhanced cooperation between CBS and the Ministry of Economy, engaging in ways to obtain richer data by linking

databases which remain unconnected today. This will be done by integrating the data-collection efforts of the two bodies, and instituting coordination between the two. Such cooperation could result in market needs being addressed more effectively and matched to training programmes.

g. The data evaluation of the training tracks should consider analysing the training of VET teachers. No data exists today on teaching staff in VET, and this is a severe limitation in the ability to plan ahead and strengthen the provision of quality VET in Israel.

    i. How many teachers are currently in the system?
    ii. How many teachers are needed, and in what fields?
    iii. What is the training that they receive?

h. The evaluations will include both graduate surveys and evaluation studies

These three primary activities will assist in:

a) **Creating new occupations**: According to technological innovations and new needs that come from the labour market regarding occupations that do not yet exist, new occupations will be formulated and created, including certification, training programmes and curricula.

b) **Updating existing occupations**: According to the need for modification of occupations.

c) **Creating a financing concept**: The results of the research activities should assist decision makers in deciding on the financing concept of the VET system. For example, the financing concept should include the percentage of government subsidy for each training programme and by the number of student places on the programmes. Within the financing concept, priority occupations should receive preferential treatment. For a more expansive discussion of the financing concept, see Chapter 9.

d) **Dissemination of information**: The data should be integrated in order to facilitate increased dissemination of the information. The dissemination of the information regarding the VET system and its outcomes will be directed towards four primary groups:

- Potential VET trainees – provided directly to the individuals in order to assist them in making a more informed decision
- Decision-makers – accessible to those making the relevant decisions and policies
- Researchers – allowing accessible data and open files for analysis by additional researchers and institutions

- Organisations in the field – allowing them to make evidence-based decisions on issues that have to do with VET.

e) **Marketing**: Further marketing of the VET system and specific training programmes. For further information on marketing, see Chapter 7.

6 Strengthening training and availability of teachers and in-company trainers

6.1 Challenge for the VET system in Israel (OECD)

The OECD described the challenges of the training and availability of teachers in detail in its report. This section presents a summary of the chapter in the OECD report describing these challenges. For further reading, you may refer to the OECD report (Musset & Kuczera & Field, 2014).

The OECD (2014:83) states the importance of the quality of teaching in the VET system (Musset & Kuczera & Field, 2014):

> "*The quality of the teaching and training profession is as critical in vocational programmes as it is in general education. For vocational teachers there are often challenges in meeting the demanding dual requirement of pedagogical skills and practical professional expertise. While most countries require teachers to have pedagogical preparation, and usually practical experience in their specialism, keeping that practical knowledge of the workplace up to date is often more difficult.*"

The OECD recommended that strengthening of the VET system should be done by implementing a dual system that combines a theoretical and pedagogical training with professional experience and work-based knowledge (Musset & Kuczera & Field, 2014). According to the OECD (Musset & Kuczera & Field, 2014), teachers' career structure in Israel does not meet the requirements of a dual system. Practical engineering and technician programmes do not ensure this balance between pedagogical knowledge and practical experience. This is in part due to some limited use and recruitment of part-time teachers as well as less than adequate development opportunities for the teachers that are already in the system.

The OECD identifies and expands on several challenges that Israel faces with respect to the development of a dual-skilled teaching workforce (Musset & Kuczera & Field, 2014):

- **The lack of an adequate balance between pedagogical preparation and professional competence.** The formal requirements for teachers in practical engineering and technician programmes, under the Ministry of Education and the Ministry of Economy and Industry, accommodate only one of the two elements

in the dual system. Teachers in the programmes under the Ministry of Education, which require an academic training, may lack the practical work experience. In contrast, teachers in the programmes under the Ministry of Economy and Industry, which recruits teachers with more practical experience, may lack pedagogical training.

- **The lack of regular up-skilling of the teachers in the system.** This challenge is not primarily a problem of the dual system; rather, it is a problem in the VET system in general. There is no formal in-service training that is applied across the programmes provided by the Ministry of Economy and Industry and the Ministry of Education. While those provided by the Ministry of Economy and Industry are not mandatory and depend on institutional arrangements, those provided by the Ministry of Education are mandatory and organised by the Ministry. Furthermore, the in–service training is not fully integrated as part of the job, and thus does not ensure that the teachers' knowledge is up to date professionally.

- **The prevention of workers in the industry from moving in to teaching.** There are a number of obstacles preventing this transfer. Amongst them are the similar qualification requirements for both full-time and part-time teachers. It is unlikely that part-time teachers coming from -industry will want to go through a lengthy extensive preparation. Nonetheless, these teachers can clearly be a link to the practical experience element of the system. Furthermore, in the coming years we are expecting an extreme shortage in vocational teachers due to the retirement of many teachers. This shortage is larger amongst occupations that have a high demands for skilled workers in the labour market and offer higher salaries in the industry than those offered for teaching positions.

In order to tackle these challenges the OECD (2014:9) offers a number of suggestions:

"Pursue reforms in vocational teacher policy in the practical engineering and technician programmes to meet the "dual requirement" of industry knowledge and experience alongside teaching skills by:

- *Encouraging part-time working arrangements, allowing people with valuable work experience to enter teaching.*

- *Designing initial teacher education programmes so as to ensure a good mix of pedagogical skills, vocational competence and industry knowledge.*

- *Converging the entry requirements and training programmes for all teachers of practical engineering programmes to a common standard, under the Ministry of Education and the Ministry of Economy."*

6.2 The situation in Germany

6.2.1 Qualification of teachers and trainers

In Germany teachers in vocational schools do their training and exams at universities or universities of applied sciences, pursuant to the laws of the federal state (Land) where they are examined. Additionally, many join the profession as lateral entrants from the business sector or the chambers as former trainers who have passed an additional examination. The final exams are evidence of their educational skills as well as their professional competence.

Two types of trainers exist in German companies:

- Full-time trainers (mainly in large enterprises) responsible for the in-company training, and
- Others who train the apprentices besides their daily work on the production or service line in their company (known as part-time trainers).

Apprentices during vocational training will be taught and trained by teachers at vocational schools as well as by in-company trainers who have received special training for their task.

The vocational schools focus more or less on the theoretical teaching of skills and knowledge whereas the in-company training is concentrated on practice-oriented training of skills and developing practical experience. Teachers and trainers at both places of learning teach and train skills and knowledge based on principles of modern learning psychology and concepts of action-oriented learning and working.

As many companies and administrative organisations regard vocational training not mainly as a cost factor but rather as a social obligation, they have actively contributed to the success story of dual training: One of the results of dual training during recent decades that must be highlighted is the fact that women and men who have successfully passed vocational training are deeply appreciated by society and by all actors in the labour market.

Another important contribution to the success story of dual training made and make all the good qualified teachers at vocational schools and all those not less qualified in-company trainers helping the trainees to reach their goals and final certifications.
Even though teachers at vocational schools and in-company trainers enjoy a good reputation in industry, craft and society, it is generally difficult to find young talents to become teachers and trainers in VET what is especially true for teachers in mathematics, informatics and natural sciences and what is also true for teachers in special trainings in the field of low-demand occupations: As about 350 certified (dual) training occupations now exist in Germany, it is not easy to locate appropriate specialist classes in every vocational school. – Nevertheless specialist classes for so called low-demand occupations are organized by concentrating them in special regional vocational schools followed by some logistical problems like the housing of the apprentices if necessary and even finding

the specialized teachers in those training fields.

In spite of a permanent shortage of qualified teachers and trainers in some fields the vocational schools and the companies have been successful so far in providing nationwide coverage of vocational training by teachers and trainers in the available training occupations. – This would not work if – aside from the good salary – there would not be a chance to obtain a tenure position making it attractive to teach in the VET system.

Guaranteeing an adequate supply of teachers for relevant subjects is one of the positive results of coordinating activities between local vocational schools and local companies and organisations causing positive synergy effects. – The cooperation between the people working in vocational schools and companies has increased over recent decades and follows flexible solutions even for special problems.

In order to keep the teachers' and trainers' skills up to date, the teachers at vocational schools are obliged by law to work continuously and regularly on their qualifications. Even the companies demand that trainers undertake continuous updating training so as to assure the quality of their in-company training.

Teachers at vocational schools and full-time in-company trainers have a high qualification capability whereas the part-time trainers need additional support, specifically by the industry, crafts and trade associations and unions and within the companies and enterprises.

The part-time in-company trainers permanently carry a double burden: they do their "normal" job and are, additionally, engaged in vocational training.

At this point the BIBB is trying to support the in-company trainers by providing a digital information portal to satisfy the information and qualification needs of the part-time trainers. This portal called "Foraus.de" (see: www.foraus.de) provides a great deal of important pedagogical and learning information.

For the group of part-time in-company trainers the BIBB additionally provides substantial information resulting from research projects. To assure a problem- and context-oriented vocational training based on real production- and administrative-conditions this group of teachers is indispensable.
The business-sector and its associations support the in-company trainers by conducting specialist conferences and events to underline the importance of these experts for dual training, the economy and German society in general.

Due to the importance of vocational teachers and trainers, a considerable amount of data concerning the training personnel in Germany is collected within the Research Data Centre (FDZ). In addition to these activities, the BIBB reports occasionally about developing the training personnel as a whole. In the Federal Government's national Report on Vocational Education and Training, for which the BIBB supplies the data,

there is more information on the training personnel (see: www.bmbf.de/pub/Berufsbildungsbericht_2015.pdf).

6.3 Recommendations

The recommendations regarding the training of the teachers in the VET system focus on updating the knowledge of teachers and trainers and enabling them to develop their competences throughout their working lives:

1) **Develop a mechanism for updating the training of teachers** so that it is aligned with the updates in existing occupations and the development of new occupations. This mechanism can work in accordance with the process of the Data and Research Committee described in Chapter 5. The Sector Committees will order research from the Data and Research Committee who will allocate the study to a research body, which will in turn present its findings to the Sector Committees and the National VET Authority. According to these findings, the Sector Committee will decide upon creating a new occupation or updating an existing one, while implementing the necessary changes to the training programmes. In addition, the Sector Committee will also ensure that the knowledge of the trainers and teachers is up to date, determine how to do so, and enhance the tools provided to the teachers; including pedagogical training, continuing education and training (courses, conferences, training and workshops), teaching materials, facing a class etc. This can be done by developing new training programmes focused on the training of the teachers and instructors in the VET system, or rather by implementing the appropriate training for teachers and instructors of the VET system in existing VET programmes for teachers. These programmes will receive recognition from The National VET Authority.

2) **Develop a dual-skilled teaching workforce**. A possible mechanism that can support the process described in the point above is developing a dual-skilled teaching workforce, as described by the OECD. The OECD wrote at length on this issue, including an extended detailed description of recommendations. (Musset & Kuczera & Field, 2014).

3) **Strengthen the mechanism of monitoring and supervision of the teachers and trainers, through the existing professional-technological-pedagogic supervisors**. Making sure that all the trainers and teachers in the VET system meet a training standard set by the relevant Sector Committee. This standard will refer to:

    a. Requirements for teaching personnel
    b. Continuous training for teaching personnel
    c. Quality of training
    d. Training content.

7 Marketing of VET and improving public acceptance

7.1 Challenge for the VET system in Israel (OECD)

As of now, the VET system is largely associated with individuals coming from lower socio-economic backgrounds, from less prestigious high schools, and with individuals who do not meet the admission requirements for an academic degree. Even though occupational demands have been rising in recent years, the prestige of VET continues to be low. One of the consequences of this low prestige is that employers face difficulties in recruiting for many positions in industrial production, which require workers with English, mathematical, analytical and problem-solving skills.

The primary efforts in the marketing of the VET system are carried out individually by the schools providing the VET programmes. Each school independently markets its programmes, in the attempt to attract the greatest possible numbers of potential individuals to their training programme. However, there is no national effort to market the VET system or to rebrand it within society, and so these efforts are not coordinated on a national level. The marketing of VET needs to be accompanied by real improvements in the VET system. Some of the areas with room for improvement and ways of bringing this about are described in this report.

An additional challenge is the difficulty of obtaining information about VET programmes. Due to the multiplicity of courses that are not certified by any national body, it is difficult for both employers and trainees to assess the quality and value of each vocational training programme.

7.2 The situation in Germany

In Germany there is no coordinated marketing approach for marketing VET by means of permanent and direct advertising concepts. Marketing for VET and dual training in Germany happens mainly within regional initiatives, with some occasional activities undertaken by the Federal Government, especially by the Ministry of Education and Research (BMBF).

One important reason for this more reserved marketing approach is the long tradition of vocational training in Germany: “Dual training in Germany has a long history. In the distant past, of course, training took place in the company alone. The dual system began to take shape when compulsory school attendance was introduced. Efforts to provide systematic training were already made in the Middle Ages in the area of the skilled crafts and trades. The Vocational Training Act, which was adopted in 1969, introduced a national legal framework for the different traditional training paths in the skilled trades, in industry and commerce” (cf. Federal Ministry of Education and research, 2009).[11] Due to this tradition, the vocational training concept has constantly grown in accordance

[11]Citation: Stratmann, K. et al.: Quellen und Dokumente zur Geschichte der Berufsbildung in Deutschland, Cologne, Weimar, Vienna (Sources and documents concerning the history of vocational training in Germany)

with the development of crafts, trade, commerce, industry and German society. Today VET is a self-evident part of the nationwide education system in Germany. Therefore there is an awareness of the practical and social value of vocational education and the benefit of upgrading training and career opportunities resulting from vocational specialisation.

The information about 350 dual training occupations in Germany is widely accessible, and young people receive plenty of information and counselling before they leave school. Additionally, employers' associations like the Confederation of German Employer Associations (BDA) or the chambers' associations, public organisations, unions, the German Confederation of Trade Unions (DGB) as well as the Federal Labour Office with its nationwide career guidance centres, and others, offer numerous publications about vocational training opportunities in different regional business sectors. To support this concept, the organisations involved invest a lot of money in information which is published in the daily press. With the support of all stakeholders of VET in Germany, a quite differentiated and professionalised network of information has grown to inform young people (and their parents) interested in a vocational training about their possibilities.

Moreover, all ministries of the Federal Government support these activities and networks with specific funding programmes. Additionally – to set an example in practice – the ministries themselves act as training companies providing vocational training for many training occupations, such as clerical occupations, occupations in information technology or in market and social research.

This kind of marketing has been enrooted in Germany for decades and is being developed continuously.

The Federal Institute for Vocational Education and Training (BIBB) supports these activities and networks by providing the knowledge needed, in the form of detailed information resulting from its own research.
Many companies and administrative organisations are very engaged in advertising actively to recruit specialists who have successfully completed a full vocational qualification. They also appeal to their customers with advertisement concepts that place a central focus on their role as training company, to demonstrate their vocational and social engagement to customers.

7.3 Recommendations

Strengthen marketing efforts:

Marketing of the VET system serves two primary purposes:

1) **To provide information**: Providing information on the earnings and career paths of graduates in the VET system. In particular, raising awareness of the fact that the

starting salary is relatively high in some fields of VET. The Data and Research Committee, described in Chapter 5, should assist in providing such information.

2) **To create a more appealing image**: Focusing on tracks that can appeal to populations that would normally go to higher education. In particular, marketing should focus on the aspects that can appeal to all types of groups in the Israeli population – aspects such as:

   - Acquiring labour market experience during training
   - A high chance of finding work immediately after graduation.
   - A chance to advance within the workplace

The National VET Authority should initiate marketing and publicity of the VET system as part of a national effort. For example, these activities can include large media campaigns as well as more targeted publicity efforts through social media. Stakeholders in the National Council can assist these efforts.

The Sector Committees should initiate sector campaigns promoting their sector and the occupations within the sector, as well as marketing new occupations in the sector.

The effectiveness of marketing efforts would be greatly increased if they were combined with efforts in other fields, some mentioned in other sections of this report. These include:

- Ensuring cooperation between stakeholders
- Regulating the VET system in law
- Further developing the accreditation of prior VET
- Developing a financing concept

8 Developing the accreditation of prior vocational learning

The OECD (2014:9) in its report suggests that the challenge of accreditation is in building pathways of access and opportunity for individuals on vocational tracks:

> *"Graduates of vocational tracks at the upper secondary level often face obstacles in entering postsecondary programmes, which damages the status of these vocational tracks. Although many graduates of practical engineering programmes enter university programmes, when they do so they often fail to receive adequate recognition for their practical qualifications."*

The OECD (2014:9) offers a number of recommendations to tackling this challenge:

"Take steps: i) to improve the access of upper secondary VET graduates to further learning opportunities, including postsecondary VET; and ii) to enhance access to universities and credit recognition for graduates of practical engineering programmes."

8.1 Challenge for the VET system in Israel (OECD)

8.1.1 Accreditation of prior learning within vocational tracks

There are two primary challenges of accreditation within vocational education and training tracks:

- Firstly, the different VET tracks are not divided into different stages of expertise.
- Secondly, vocational training does not reach a level that is higher than a Practical Engineer (ISCED 5). This level contains an amount of study hours that is just above that of a Bachelors' degree, thus barring VET graduates from acquiring additional expertise and having an advancement perspective within their occupation.

Furthermore, the fragmentation of the VET system between high school tracks, military tracks and adult education tracks, with no formal transition between these tracks, does not allow for effective progression within the system (The Prime Minister's Office, 2016).

8.1.2 Accreditation of prior learning in Academia

The OECD (2014:73) mentions "Weak transition from postsecondary to tertiary programmes" as one of the challenges faced by adult VET in Israel. An inter-ministerial committee under the responsibility of the Prime Minister's Office has recently published a report on this matter (The Prime Minister's Office, 2016). In their report, they present the challenge of accreditation of VET in academia as part of a lack of a lateral vision for the system, which does not allow for an efficient transfer between the practical engineering track and higher education (The Prime Minister's Office, 2016). What often happens is that the practical engineering track and the academic engineering tracks do not overlap in a way that permits any minimisation of the resources needed (time, credits, etc.) to make the transition to an academic track. This is further exacerbated by the universities' limited impact on easing this transition due to the academic freedom they enjoy.

According to the Ministry of Economy and Industry, in its report to the OECD (MOTIAL, 2012:52-53):

"There are possibilities for transferring between practical engineering training and academia but they are not so easy to realise. Graduating in the practical engineering track gives 30 out of 160 credits needed to earn an academic degree in engineering. Graduates of vocational training in vocations such as electricity and machinery get credits in practical engineering colleges which, in principle, should

enable them to save 30% - 40% of the time needed to earn a practical engineering diploma.
The problem is that these credits are divided among various subjects in a way that does not exempt the student from entire courses. In order to make the most out of the credits it is preferable for the students to attend special programmes, tailored to students with the relevant credits. Unfortunately, there are almost no such classes targeted at students with credits."

According to the OECD (2014:74):

"The Ministry of Economy or the Ministry of Education (depending on the Ministry responsible for the programme) determines practical engineering programmes' curricula. Universities can determine their own curricula, and are not always keen to put together programmes in which the courses and the curricula mesh with those of the practical engineering colleges.
An additional difficulty is that there are significant differences between practical engineering programmes under the Ministry of Education and the Ministry of Economy, increasing the complexity of arranging credit transfer."

8.2 The situation in Germany

Even without formal certification of learning outcomes in VET in Germany based on the European Qualifications Framework (EQF), there has always been a way of gaining admission to a university for holders of a vocational certificate. To be sure, this process is very difficult for everybody, but the laws of the federal states (Länder) allow people certified within the dual system to apply to study at a university or at a university of applied sciences, after having completed several years of practical work experience. And since there are various opportunities for distance learning, this chance has become a real option and is used today.

As there is now a large group of people in Germany with vocational training certificates who later obtain academic degrees, this is another aspect that emphasises the importance that society attaches to VET. It underlines that the theoretical and practical competences developed in VET can open up opportunities for higher degrees in the German education system.

If a clear valuation of vocational training compared to a higher education is needed – knowing that the process of valuation is quite difficult – it is necessary to carry out an analysis of the curriculum of the dual occupation as well as of the comparable higher education programme, in order to assess the learning outcomes of a VET programme as a basis for a higher education programme.

This provides a plausible justification for the public approval for qualification and performance on the vocational training track in companies and organisations prior to studying at a university or at a university of applied sciences.

By the same token, the outcomes of learning at specialised secondary schools can be recognised when starting a VET programme, and can lead to a reduction of the time required to complete vocational training.

Meanwhile, numerous laws have been implemented in Germany and its federal states (Länder) to assure permeability between different parts of the education system. International developments in different countries show clearly a general tendency towards minimising the differences between general and vocational education. Both parts of a national education system will strengthen opportunities for the transfer of assessment, credits and certification.

8.3 Recommendations

The Prime Minister's office has recently assembled an inter-ministerial committee whose purpose was to examine the accreditation arrangements for VET in Israel and produce recommendations for improvement. The committee dealt with accreditation of prior VET in academia as well as within the VET system. It published four primary recommendations (The Prime Minister's Office, 2016):

- **Establishing a coordinating mechanism that will optimise the accreditation of prior learning system.** This mechanism will include a National Qualifications Framework (NQF) that will create a mapping and ranking system of all the national certificates issued by the education, training and higher education systems.

- **Striving to maximise the recognition of theoretical, technical and professional studies in the secondary and post-secondary stages**.

This includes:

- Striving to maximise the professional recognition of high-school students training on the technical-professional track

- Striving to maximise the opportunities for achieving a matriculation certificate and receiving a technological education for high-school students on different tracks

- Expanding the opportunities for receiving a high school completion certificate amongst soldiers and adults

- Increasing the rate of high-school students that take part in the advanced track for post high-school professional technical studies

- **Examining possible collaborations between academia and the military over training provided in the army, as well as recognition of military training for the purpose of technological studies and professional certificates.**

This includes:

- Promoting collaboration between higher education and military theoretical training

- Finalising the recognition of military training for professional certificates and formulating an outline for the recognition of military training in technological studies

- **Stratifying the technological track and promoting channels for transition**.

This includes:

- Stratifying the technological track, i.e. dividing it into levels of training so that each level draws on the knowledge gained in the level below it

- Creating a route for continuous studies into practical engineering

- Exploring ways for creating a significant transition track from practical engineering into higher education.

9 Developing a financing concept

The OECD (2014:8) in its report has discussed the inadequate funding with regard to tackling the skills challenge:

> "*A number of serious and growing skills challenges threaten the Israeli economy: employers are voicing concern about the inadequacy of vocational skills; a wave of retirements affecting highly-skilled migrants from the former Soviet Union will substantially exacerbate skills shortages; and enhanced vocational provision is necessary to tackle low economic activity rates in the growing Arab, Israeli and Haredi populations. But despite these growing pressures, there is less vocational provision than in many other OECD countries, and funding in the sector is inadequate and sometimes declining".*

The OECD (2014:8) recommends addressing this issue with the support of suitable funding:

> *"In the face of serious and growing skills shortages, exacerbated by demographic change, take decisive action, supported by adequate funding, to launch a strategic expansion of high-quality vocational education and training programmes, guided by partnership with industry, and underpinned by legislation. Make the vocational skills learnt during the military service more transparent and transferable."*

9.1 Challenge for the VET system in Israel (OECD)

The primary challenge (as mentioned by the OECD above) lies in developing and expanding high-quality VET programmes. This challenge is especially difficult to tackle due to the increasing shortage of skilled and adequately trained workers. This is despite the expected retirement of workers causing an increasing demand for skilled workers (Musset & Kuczera & Field, 2014).

A secondary challenge lies in creating a unified framework for funding. There are generally four types of VET funding in Israel (MOITAL, 2012):

- **Courses and training that are fully funded by the government alone**. These courses cost between 3,000 – 16,000 NIS (equivalent to, $ 774 – $ 1547) and are paid for by the government, directly to the institution. On these courses, the trainees do not pay any tuition. However, they do pay for their books or tools throughout the course (150 – 1,000 NIS, equivalent to $ 39 - $ 258) and for the final examination (265 NIS, equivalent to $ 68). The courses run for durations of between three to eleven months, depending on the course.

- **Courses and training that are government-subsidised**, which are jointly paid for by the government and the student. These courses are paid for by the trainees, who are later reimbursed by the government. For example, in the *voucher programme*, government funding can cover up to 80-90% of the cost. These courses can run for up to a year.

- **Courses and training with no government supervision that are privately funded by the student alone**. In these courses, the cost of the course varies (can reach up to 20,000 NIS, equivalent to $ 5159) and the trainees do not receive any governmental certificate. In some of these courses, the trainees can get partial or full reimbursement from their employer.

- **Workplace training and courses that are funded by the employers alone**. On these courses, too, the trainees do not receive a governmental certificate.

This challenge arises because, for each of the courses, the funding and government supplement differs according to course or training. Often, similar tracks provided privately or by the government can have different tuition fees. Furthermore, on the same courses, trainees manage to come up with different assistance for the courses, further increasing the variance in payment. Nevertheless, the variance in payment, occupational trends or supply and demand gaps do not play a major role in guiding government budgeting. Rather, courses in different fields are usually funded similarly, regardless of labour market demands. Furthermore, government funding of trainees on VET courses is significantly lower than that of students in higher education (see Table 5). This increases the need to come up with a financing model that will guide the funding of different courses. This model will support national standards of training curricula and national

certificates, ensuring that the VET system and the different programmes meet a standard of quality that will strengthen the system and its acceptance.

9.2 The situation in Germany

The financing of VET in Germany is currently organised as follows:

1. Companies, enterprises and administrative organisations conducting vocational training finance the provision of training places (trainers, material, infrastructure, technical equipment etc.) with their own resources. The costs for vocational training are normally budgeted within the companies' regular budget for employee qualification. Additionally the Federal Government fosters VET and research on VET via different ministries, especially the Ministry of Education and Research (BMBF) and the Ministry of Economy and Energy (BMWI) in their regular short-term, mid-term and long-term programmes.

2. Costs for vocational education in vocational schools and for the vocational teachers are financed by the federal states (Länder). The vocational apprentices do not have to pay any school fees. Apprentices can receive an additional grant for VET from the Federal Government, especially when they have to finance the costs of residential placements or travel expenses to attend their vocational school. This happens, in particular, when they are trained in vocational occupations with low demand and the teaching needs have to be centralised in a few vocational schools.

3. As well as the training places available at vocational schools and in companies / enterprises, there are also extra-company training centres in the crafts and some industry occupations. These extra-company training centres are used by apprentices coming from different vocational training companies. As not all companies are able to provide the whole vocational training programme within their particular company, vocational training in extra-company training centres is firmly anchored in the dual vocational system in Germany, and is mainly financed by the organisations of the chambers. In addition to this the Federal Government sponsors construction measures, infrastructure and equipment of the extra-company training centres.

4. Based on collective agreements between employers' organisations and unions, vocational occupations regulations exist for all 350 occupations with regard to the training allowance that has to be paid to the apprentices during their first, second and third year of vocational training. These are minimum wages to be paid by the employers during the whole period of vocational training, including the school-based part of vocational training as well as in-company training.

5. Internal continuous training is exclusively financed by the employers of the

trainees. Employees are released from work for internal training purposes for a certain time which causes additional internal costs for the employers.

6. Furthermore, the federal states (Länder) as well as the Federal Labour Office finance continuous training of employees with different amounts of support. These costs are budgeted by the Federal Government and the federal states in the regular yearly budgets of their ministries (education, economy, labour, social issues, agriculture etc.). The funding for all kinds of continuous training is budgeted at an amount in the four-digit millions of euros.

7. Additionally, substantial infrastructural costs are financed by the state (Federal Government, federal states), such as the costs of special equipment, electric power, release of employees from work, specific continuing training, etc.

8. Those who want to qualify as a 'Meister' (master craftsperson/supervisor) in their occupation in crafts or industry have to bear significant direct and indirect costs to finance their special preparation

    a. like course fees up to 9000.- € for preparation courses (not mandatory but mostly necessary) depending on the discipline they want to pass the examination for

    b. like examination fees about 750.- €

    c. like individual travel and housing costs (if necessary) etc.

    To give more people the chance to qualify as a 'Meister' and depending on their financial situation they have - like other apprentices or students — the chance to apply for a special grant awarded by the state, the 'Meister-BAföG' (education advancement grant).

9. Many funding programmes of the European Union support vocational training concepts that aim at Europe and the idea of the European Union. The German National Agency at BIBB (NA) moderates all support programmes of the European Union for young apprentices (exchange programmes for apprentices, language programmes as part of vocational training, organisation of examinations in other countries).

All these aspects have to be taken in account when discussing the financing of VET in Germany.

The annually published national report[12] on vocational training gives information about

[12]The national Report on Vocational Education and Training is developed by the Ministry of Education and Research with the help of the BIBB.
[18]The development of investment in VET is permanently monitored and researched. For more information see: https://www.bibb.de/de/34042.php and https://www.bibb.de/de/698.php

the financial resources allocated to the social partners, the training providers, and to state institutions in Germany.

The intensity of VET funding[13] by the state and other organisations (Federal Government, federal states, associations, unions, chambers etc.) represents another indicator of the importance of VET for the state, the society and the economy overall. Without that level of commitment to VET and the vocational training of non-academic specialists, a major problem would arise for the economy and ultimately for German society. Against this background, investment in VET in Germany is a good investment that supports the country's economic development and political stability in general.

9.3 Recommendations

There are two primary recommendations regarding the financing concept:

a) Regulating government funding:

1) **Budgeting of the framework for including stakeholders in the VET system**. This will include the budgeting of**:**

   - The National VET Authority
   - The National Council
   - Sector Committees
   - Data and Research Committee
   - Research and expert reports requested by the bodies above.

2) **Evidence-based financing.** The National VET Authority should be flexible to determine the necessity of funding specific occupations according to the data and information available, integrating the identification of trends (described in Chapter 5) into the decision-making process. This financing concept can also be used for determining the extent of funding for each occupation, and not only whether it will be funded or not. The funding of occupations will be determined according to the following considerations:

   - The Data and Research Committee (skill gaps that prevail along a number of years, demographic trends such as ageing of the population and retirement of skilled workers from the former Soviet Union)
   - Experts in the field

- Cost of training in each occupation.

3) **A national decision on the funding of individuals studying on VET tracks compared to higher education students**, in light of the state of the economy. As of today, students in the higher education system receive from the government more than double the budget allocated to individuals studying on VET tracks (see Table 5). The improved financing concept should include a nationally established decision on the attitude towards individuals studying on VET tracks in comparison to higher education students. This attitude should be supported by a defined policy that directs students to each channel, while defining the budget allocated for each track.

4) **Budgeting of training for teachers in the VET system**. The current financing concept does not refer specifically to the training of teachers in the VET system or the continuing training that teachers receive in order to ensure that their knowledge is up to date.

b) Increased involvement of the employers: Introduce employer funding to training recognised by the government (i.e. where trainees receive governmental certificate) by establishing cooperation between the employers and the government, as mentioned in Chapters 1 to 3 of this report. One example of employer involvement is in apprenticeship programmes. In these programmes, the employers provide a monthly stipend to the trainees whilst they are training them. The financing concept should find a way to increase both this channel of employer involvement and additional channels.

Conclusion

In recent years, there has been an expanding consensus on the need to increase the support for VET for adults in Israel. This is expressed in the number of reports on VET that were published in recent years, as well as the ongoing cooperation between the OECD and the Vocational Training and Manpower division in the Ministry of Economy and Industry. This report aims to contribute by outlining practical steps for implementing the recommendations raised in previous reports and in conversations with partners in the field.

We recommend starting with the establishment of the National Council, the National VET Authority and the committees outlined in Chapter 2 as a first step in the process of strengthening the VET system.

The need for this process is growing with the entry of new technologies to many industries and the increasing need of employers for skilled workers. We hope that the recommendations in this report will help to address this need, and to provide a larger number of people in Israel with the lifelong opportunity to gain professional employment.

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