

HUNDRED RESEARCH REPORT #005

Spotlight: Technical and Vocational Education and Training

Report

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SPOTLIGHT: TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING

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Author Frederika Warren

Editors Noora Ruoho, Chris Petrie, Lasse Leponiemi

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Conclusions and recommendations from HundrED reports
represent the author's own views.

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Teknologiateollisuuden
100-vuotissäätiö



Teknologiateollisuus

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Professional expertise builds Finland – also in the future

In the spring of 2018, Technology Industries of Finland with its member companies published a report on the need for more trained employees from TVET industries. The report exposed that 53 000 new employees will be needed in the technology field over the next four years. We know that this figure may be too small one year after, as 14 000 new employees have already been recruited to our companies during the remainder of 2018. About 40 percent more new employees are needed from vocational education and training industries. Effective vocational education and training is needed to increase labor and employment, and also to help businesses exploit new technologies and improve productivity.

We receive constant messages from our member companies about the lack of people who are skilled, enthusiastic and trained vocationally. That's why Technology Industries of Finland with 20 VET institutions as a partner, asked HundrED to conduct this research and innovation survey to make sure that we get enough knowledgeable, enthusiastic and employable young people to the technology sector. This challenge is related to the attractiveness and quality of TVET, and also to the progression of the new reform. We want to find new ways to develop technical and vocational education and training.

The purpose of vocational education and training is to promote knowledge, skills and attitudes, professional skills and social skills required for work, participation to

society and lifelong learning. This report confirmed our assumptions that co-operation with employers and work-based learning are the most important aspects that promote the attractiveness of TVET and the development of knowledge. Similarly, students' social skills and giving and receiving feedback are emphasized as well as reflection skills. These results also follow the future funding criteria of vocational education and training. TVET strategy network is ready to apply globally discovered innovations in their institutions and in collaboration with employers nearby to increase the attractiveness of TVET and skilled workforce.

The international studies used in this report show that the direction of the new Finnish VET reform is right. For the implementation of the reform, it's vital that the next administration in Finland firstly refines the VET funding to meet the actual needs of the education providers' costs. Based on this report, all three stakeholders (representatives of VET institutions, employers and students) agree that vocational education and training should be developed by improving co-operation between institutions and employers so that the training students receive will benefit both as much as possible in the future.

We have a huge opportunity to create a model of joint action, which will develop the Finnish vocational education and training to be one of the best in the world. The field of technology can be a landmark to others. Technology Industries of Finland

wants to support the VET institutions in the success of the new reform. We support actively VET institutions to enter partnerships with technology companies. Meeting expectations and the realization of quality is highly relevant to the attractiveness of TVET and long-term interest of Finland.

Leena Pöntynen

Director of education /
Technology Industries of Finland





Executive Summary

This research was conducted by HundrED in collaboration with Technology Industries of Finland and the strategy network of Finnish Vocational Institutes. HundrED was asked to research Technical and Vocational Education and Training (TVET) on an international scale, looking at initiatives that would meet the needs of Finnish TVET students. There is an increasing disconnect between the skills students are obtaining in their education, and whether or not these skills are meeting the needs of an uncertain future.¹ With the recent reform to TVET in Finland, TVET institutions want to ensure that they are effectively preparing for inevitable changes.

The international 'State of the Debate', found that the key push factors that lead to students not enrolling in TVET are:

- Skills mismatch
- Program leadership
- Inflexible skill set
- Mindset/attractiveness
- Inclusivity (rural access, migration, gender equality, socio-economic disparity)

With the key pull factors that influence students to enrol in TVET courses are:

- The level of youth unemployment
- Economic growth
- Smooth transitions into workforce

Similarly to the findings of the international 'State of the Debate', Finland was found to have comparable barriers and goals when it comes to TVET. It is clear that whilst TVET is generally viewed more positively in Finland compared to its international counterparts, there are still areas that can be improved upon to ensure that TVET is seen as positively as general education, and as an attractive option to students.

As part of this research 'Spotlight' on TVET, three surveys were carried out, eliciting the opinions of TVET institution leaders, employers and students in Finland. Highlights of these findings were:

- that collaboration with companies attracts students to apply to TVET institutions
- employers also believed that they should be more involved in going to schools and explaining in-depth about the type of work and skills it involves
- employers also noted the value of social skills and teamwork skills
- a realistic and honest portrayal of TVET should be promoted in basic education
- all three stakeholders noted the value in improving the relationships between TVET providers and employers
- Institutions appear to be portraying a far more 'rose-tinted' view on the feedback they provide, with students feeling that this is an area that needs improving.

This report has provided a snapshot of the current situation of TVET globally, with a more focussed look at Finland; highlighting key barriers and goals. Through three surveys, it was possible to gain a deeper insight into how institutions, employers and students in Finland currently feel about TVET, and which areas the new Finnish VET Reform needs to be addressing. The country case studies, advisory profiles and policy insights have provided a brief but more in-depth view of TVET in Estonia, Denmark, England, Canada, Australia and Germany. It is hoped that the TVET initiatives highlighted in this report, as well as the ten areas for recommendation will help to provide guidance on possible solutions to the barriers that became clear in the research, and that these will be freely available and easily accessible for all TVET stakeholders.

This report concludes with three selected innovations that are to be piloted across 19 institutions in Finland, in a concerted effort to address the barriers found in this report. Following this is an overview of ten recommendations based on the 'State of the Debate', Survey findings and Country Case Studies:

- Improving the attractiveness of TVET
- Increasing understanding on how to minimise the skills mismatch

- Improving stakeholder cooperation
- Improving youth unemployment rates and TVET retention
- Improving the information and guidance given during basic education
- Encouraging regular professional development for TVET educators
- Improving feedback opportunities
- Improving flexible and personalized learning opportunities
- Inviting parents/carers in and involving them
- Encouraging a holistic approach to TVET education

This report provides an extensive overview of TVET internationally. Due to time constraints and the vast number of countries and research spanning TVET, it has been impossible to provide an in-depth analysis of all aspects of vocational education.

Frederika Warren

Researcher

Lasse Leponiemi

Executive Director

It is clear that whilst TVET is generally viewed more positively in Finland compared to its international counterparts, there are still areas that can be improved upon.



Introduction

There is an increasing disconnect between the skills students are obtaining in their education, and whether or not these skills are meeting the needs of an uncertain future.² The number of young people (aged 18 to 24) who are neither in education nor employment or training (NEET) has risen globally.^{3,4} With rising youth unemployment, an increasingly fast changing global economy, and the implications of accelerating technological disruption to employment, increasing significance has been placed on the value of Technical and Vocational Education and Training (TVET): “TVET is expected to address the multiple demands of an economic, social and environmental nature by helping youth and adults develop the skills they need”.^{5,6} A recent shift in focus by OECD and UNESCO has helped to create a global resurgence in TVET education to meet the employment needs of the 21st century.

Decreasing the number of young people who are NEET and ensuring that students are provided with the skills necessary to meet the demands of the 21st century are key goals reiterated by many international bodies.^{7,8} In ensuring that these international goals are met in the upcoming years, multiple cross country and national surveys have been conducted to get a deeper understanding of what changes need to be made.^{9,10} Surveys of young people and employers have shown that many graduates consider themselves, and are considered to be, unprepared for the workforce.^{11,12,13} These surveys have also highlighted that people experience finding skilled work a challenge.^{14,15} Despite an increase in research and goals for TVET being set (both nationally and internationally), there still appears to be a disconnect between research and practice.¹⁶

Internationally in the last 65 years, prior research on TVET has focused heavily on national contexts that quickly become outdated with many reforms in this area, changes to government and innovations in technology.¹⁷ Reports from international organizations create a unique overview of TVET on a global scale, and despite the obvious differences between local context and issues, they highlight clear barriers and goals that are shared internationally.

This study is a response to a recent reform to TVET policy in Finland, and the desire of Technology Industries in Finland and the strategy network of Finnish TVET institutions to ensure that they are helping students to meet the needs of the 21st century. This research project was supported by Technology Industries of Finland Centennial Foundation. These institutions, in collaboration with HundrED, a Finnish Education not-for-profit organization, decided to evaluate the need for innovation in TVET, analyzing numerous initiatives that have the potential to increase student enrolment and retention in TVET in Finland, as well as increasing student employability once qualified. For the purpose of this study, the focus will remain heavily on those who are post-education (15–24 years old), due to the predominance of the TVET institutions in this study having students in this age range (85.78 percent of participants in HundrED's student survey were aged 15–24), and the focus of the study being on what can be done within basic education to promote TVET. When referring to youth voice or student voice, this study is therefore mainly referring to those aged 15 to 24. However, the report will also reflect the fact that

TVET is accessed by young people who are post-education, as well as adults who are beginning a qualification later in life, or are returning to TVET to re-train. The study will focus on the value of ensuring all TVET stakeholders surveyed as part of this report (students, employers and institutions) have a voice in finding initiatives that address the needs they express, specifically focusing on technological training. It will be assessed whether TVET institutions in Finland are adapting to meet the needs of an increasingly unpredictable work climate, and what can be done to improve TVET education using findings from a literature review, surveys, and case studies.

TVET is difficult to discuss on an international scale due to differing definitions and localized research. It was found that there is a predominance of literature from countries which have a high socioeconomic status compared to countries which have a lower socioeconomic status. Therefore, 'international' research predominantly focuses on OECD countries, and this report acknowledges that this is a gap in research literature that needs to be addressed. Numerous international pledges to improve TVET and an increasingly globalized market are pushing for an international understanding of TVET. Pilz discusses the implicit difficulties of international comparative research when looking at VET, and how when we explore different VET systems, comparisons should be understanding, acknowledging and accepting differences.¹⁸ One of the implicit difficulties that has been highlighted is that vocational education is often defined in contrast to 'general education', and consequently, the skills vocational students attain are often undervalued. Moreover, the fact

Vocational education is often defined in contrast to 'general education', and consequently, the skills vocational students attain are often undervalued.

that every country has their own definition of what vocational education addresses and its aims in their context, can make finding a suitable international definition problematic. Taylor similarly argues that questions around labour market demands and what skills are needed are oversimplified. Taylor suggests the need for a reassessment of the focus and purpose framing of this debate to improve its fitness for the future of work: "What knowledge is the most valuable, who has access to it, and what agendas are fuelling the debate?".¹⁹ Therefore, in this research report, it is acknowledged that TVET is notably different, based on the individual context; however, for the purpose of an international study on TVET, there is a need for a definition that both researchers and readers can utilize.

DEFINING TVET

It is openly acknowledged in education research that it is hard to define Technical and Vocational Education and Training (TVET) on an international scale.²⁰ Each country has their own way of categorising what they believe constitutes a vocational education, as well as which requirements and qualifications are associated with a person who has studied TVET. This report will select a commonly agreed upon definition to give readers a referencing point for this study. This definition has been chosen due to its common use in international research.

TVET will be defined as:

'Technical and vocational education and training' (TVET) is understood as comprising education, training and skills development relating to a wide range of occupational fields, production, services and livelihoods. TVET, as part of lifelong learning, can take place at secondary, post-secondary and tertiary levels and includes work-based learning and continuing training and professional development which may lead to qualifications. TVET also includes a wide range of skills development opportunities attuned to national and local contexts. Learning to learn, the development of literacy and numeracy skills, transversal skills and citizenship skills are integral components of TVET.²¹

The terms 'general education' and 'basic education' are often used in international literature; 'general education' is often used in international research to address an alternative education path to vocational education that may traditionally be seen as more academic; 'basic education' will refer to education that has taken place up to the age of sixteen, where students have worked towards receiving a qualification before leaving education or attending further/vocational education. For the purpose of this study, the term 'general education' will refer to education that prepares students with the basic numeracy and literacy skills needed to cope with higher education.²²

As well as there being a range of definitions for vocational education, there is also a variety of related terminology used throughout the literature. Below is a table which briefly defines the most common terms found. This report will use the term TVET as defined above as it aligns most closely with the aims of this report; however, when referring to literature which may use a different term, this report will use that same term.

Vocational Education and Training (VET)	“...educational programmes that are designed for learners to acquire the knowledge, skills and competences specific for a particular occupation or trade or class of occupations or trades. Such programmes may have work-based components (e.g. apprenticeships). Successful completion of such programmes leads to labour-market-relevant vocational qualifications which are acknowledged as occupationally-oriented by the relevant national authorities and/or the labour market.” ²³
Initial Vocational Education and Training (IVET)	General or vocational education and training carried out in the initial education system, usually before entering working life. ²⁴
Continuing Vocational Education and Training (CVET)	Education or training after initial education and training – or after entry into working life aimed at helping individuals to: <ul style="list-style-type: none"> • improve or update their knowledge and/or skills; • acquire new skills for a career move or retraining; • continue their personal or professional development.²⁵

It is also important to briefly examine the ways in which TVET is most commonly classified: (i) vocational/technical schools, (ii) vocational training centers; (iii) formal apprenticeship; (iv) dual apprenticeship system combining school training with a firm-based approach, and (v) informal-based training.²⁶ These five classifications provide a basic, but brief overview of the most common classifications for the variety of TVET programmes found internationally.

TVET is accessed by young people who are post-education, as well as adults who are beginning a qualification later in life or are returning to TVET to re-train. TVET in terms of post-education, refers most commonly to young people 15–24 years old.²⁷ For the purpose of this study, the focus will remain heavily on those who are post-education (15–24 years old), due to the predominance of the TVET institutions in this study having students in this age range, and the focus of the study being on what can be done within basic education (ages 7–16) to promote and to enhance the attractiveness of TVET. When referring to “youth voice” or “student voice”, this study is referring to those aged 15 to 24. However, the report will also consider the fact that TVET also caters to older students internationally.

The focus will be on young people, because the purpose is to enhance the attractiveness of TVET.

State of the Debate

Internationally

This section of the report will look at research articles, academic books and reports to gain a greater understanding of the state of the debate in Technical and Vocational Education and Training (TVET) internationally. In order to find materials that focused on an international scale, the majority of resources came from international agencies and their annual reports. The reason for this is twofold; these resources remain the most up to date on the current TVET situation as they are produced annually, and they are some of the only resources which look at TVET on an international scale, whilst remaining mindful of context.

For this systematic review, 31 sources were identified. The inclusion and exclusion criteria were met if the article, book or report had the following characteristics:

1. discussed or related to vocational education
2. offered a global perspective (3 or more countries)
3. was published in English
4. was published after 2012

These criteria were chosen to narrow down the texts to only those which were relevant. The review will focus predominantly on sources from 2016 onwards, using sources from 2012–2016 for context. The state of the debate will begin first by looking at what TVET has the potential to offer students, followed by an exploration of the barriers many students face in accessing TVET, looking at the key goals

that are being discussed in order to address these barriers, and culminating in a discussion of these findings.

POTENTIAL

TVET offers students a wide range of opportunities to enhance and develop their skills to meet the needs of their future chosen careers. As TVET allows students to train for a specific role, it offers the opportunity to develop a curriculum based on employer needs. UNESCO highlights multiple aspects of what TVET can offer, including:

- equipping young people with the skills they will need to succeed in the world of work,
- increased productivity,
- increased wage levels,
- improved adaptability for a changing job market,
- reducing the barriers to students wanting to join the workforce,
- skills development opportunities,
- a highly trained workforce,
- low unemployment rates and less job shortages.²⁸

Youth unemployment is at an all time high globally, and TVET it is often attributed as having the potential to combat this international issue.²⁹ The International Labour Office is reporting that youth unemployment (those under 25 years old) is currently a major global challenge, with youth unemployment standing at 13 percent, three times higher than the adult rate.³⁰ In 2013, UNESCO wrote a conference report on how youth unemployment can be tackled through TVET. This conference report argued that: “TVET’s orientation towards the world of work and the acquisition of employability skills means that it is well placed to address issues such as skills mismatch that have impeded smooth school-to-work transitions for many young people”.³¹ Although it must be questioned why in the five years since this report was published, there has been little impact or further research on how TVET can decrease youth unemployment.

With the economic success of a country often being linked to how they develop and sustain a highly skilled workforce³², it is clear that tackling unemployment and skills shortages is a priority on a global scale. As the OECD highlight, a high-skilled workforce has the potential to encourage investment in a country, consequently increasing economic growth. It is also worth briefly noting the impact of ‘Brain Drain’ on countries and their economies. Zhang and Lucey examined the extent of mobility of skilled workers in 30 European countries between 2001 and 2015, and found that economically advanced countries tended to gain tertiary graduates, whilst less developed countries were more likely to lose their highly skilled workers.



Vocationally trained students
enter the labor market
more smoothly than their general
education counterparts.

They note how Germany who is below the EU average, loses some of their tertiary graduates to other countries, but due to its strong apprenticeship programmes is able to provide for its labor market. Therefore, Zhang and Lucey state that there should be further research on the development of the vocational education sector and its role in serving the labor market.³³ With global economies and job migration becoming increasingly prevalent, TVET has been gaining increasing momentum. Education 2030 draws attention to TVET skills development, with its Framework for Action, which has three of seven targets referring to TVET. In this report, TVET is seen as having the potential to address numerous social, economic and environmental demands, by helping young people and adults to develop the skills needed to combat these issues.³⁴

Forster et al. explore the various potentials that VET have stated to offer in their cross-national study of 22 OECD countries. One of the main findings from their review of VET literature is that vocationally trained students enter the labor market more smoothly than their general education counterparts. This is argued as being a result of the fact that students are trained in occupation-specific skills, making them more attractive to employers. Those with a vocational qualification were also shown to find a job faster and have a lower chance of being unemployed at the start of their career. Forster et al. have found that countries which place VET in a prominent position in their education system (most prominent in dual systems), are found to reap the most benefits from VET. Dual systems are defined as when school and work are combined.³⁵

There is an abundance of literature on what TVET has the potential to offer, however not all of these potential positive changes are realized due to a variety of factors. These barriers to TVET will be explored below.

BARRIERS

Despite the multitude of potentials that TVET can offer students, there are also multiple barriers that have been highlighted globally as stopping young people from successfully engaging with TVET. It is widely acknowledged that there are transitional issues for young people between school and the world of work. With rising youth unemployment, TVET is often attributed with being a solution.^{36,37,38} However, this goes hand in hand with critics arguing that TVET is not compatible with an unpredictable labor market, which is continuously changing due to technological advances.³⁹ TVET is also by no means a quick fix solution for youth unemployment, and requires a long term institutional and cultural change.⁴⁰

UNESCO has consistently expressed an urgency around improving skills development and TVET globally. The report highlights the necessity of ensuring that the skills acquired are work relevant.⁴¹ Global economic competitiveness has resulted in countries competing in the quality of their goods and services. This is all reliant on having a multi-skilled labor force, alongside what are considered high-level skills associated with a university education.⁴² This is still a recurring issue highlighted throughout the research literature, that TVET providers are not ensuring that the skills they are helping students to develop will allow them to adapt to a constantly transitioning work environment.^{43,44} As the World Economic Forum states, there is no room for a skills mismatch, it is "...crucial to ensure that skills taught at school are relevant for the working world; that they are maintained and further improved during working life; and that they are recognized and used by employers once people are in the labour market."⁴⁵

In an increasingly technology-driven economy, VET institutions which are not engaging with developing their students' technological abilities are creating barriers for their students' future success in the workplace. Pylväs writing from a solely Finnish perspective, looks at the impact of automatization and digitization on the labor market, and sees the influence of new technologies on the significance of which skills are required to be taught in VET, and how it has the potential to eliminate current work practices.⁴⁶ Frey and Osborne in their study of the implications of computerization on 702 occupations in the United States, found that despite an increase in job automation, they only predict that some functions of jobs will be automated, not all aspects of a job role. The study states that most workers in transportation and logistics occupations, the bulk of office and administrative support workers, and labour in production occupations, are especially at risk. They do however state that low-skilled and low-wage occupations are most susceptible to computerization, and the implications of this may affect employment numbers. They believe that for workers to be 'ahead of the curve', they will need to acquire

It is vital that students are able to exploit the opportunities created by automatization and digitalisation as an aspect of their future job.

creative and social skills.⁴⁷ Therefore, training students to be able to work with these computerized functions as an aspect of their future job role is vital, as well as ensuring that students build wider skills to be able to adapt to the changing work environment of the 21st Century.

How programs are led can also increase the barriers students face. For example, training cannot be left entirely to employers as students' training would become too narrow and firm specific. The OECD argue that Initial Vocational Education and Training (IVET) is needed to provide a general overview of the sector, allowing students to adapt easily to new workplaces and contexts. Firms may also face other barriers in providing effective training, e.g. they may be too small to provide a broad range of training opportunities.⁴⁸

In a recent study looking at 11 countries, Hanushek et al. have argued that although those who have been vocationally educated face less barriers when entering the workforce upon graduating, this often turns into a disadvantage in later life. They argue that this is due to the specific skills that students gain through VET, which means that they are initially trained for the job market they go into, but means that they are less flexible in a world where the job market is continuously evolving.

Hanushek et al. believe that technological innovations have changed the skills that are required, with the knock on effect that vocationally trained workers are not able to adapt. They also argue that the often highly regarded dual-system countries are most affected with this as they are strongly occupation specific (e.g. Germany), whereas in countries where VET is less institutionalized and more general in nature, workers face less issues adapting in later life (e.g. England). They argue that those who have a general qualification are more flexible, and able to respond to changes in the demand for skills.⁴⁹ However, the OECD argue that many VET programs fail to meet labor market needs, even initially. They believe that graduating students lack the skills to adapt to changing labor markets, and continue their professional development to address any gaps in their knowledge.⁵⁰ These different viewpoints may lie in the fact that different countries and data sources were used by the researchers when making these statements, highlighting a common research barrier.

! UNESCO, in their most recent report, currently see the main barriers stopping young people from successfully engaging with TVET as the following:

- a lack of partnerships with employers,
- mindset and the value given to TVET,
- a lack of understanding of what TVET entails,
- the influence of parents on choices,
- a lack of funding,
- the quality of teachers,
- a changing and broadening learner base,
- increased competition from other providers,
- weaker signals of demand from the industry sector,
- rapid changes in expectations which are led by governments and not employers,
- that TVET is often aimed at less academic students,
- a lot of jobs now requiring degrees despite being previously vocational
- and a mismatch between supply and demand for skills.⁵¹

This list summarises many common barriers nations face when trying to develop their national TVET systems. This list also reiterates what is being highlighted in multiple research reports and papers.^{52,53}

A barrier that CEDEFOP have explored extensively, is the barrier that VET attractiveness can pose.⁵⁴ CEDEFOP is the European Centre for the Development of Vocational Training, and “*supports development of European vocational education and training (VET) policies and contributes to their implementation.*”⁵⁵ They have found that VET often has a poor reputation, with university education still being favored.

They have shown that parents can have a large influence over whether or not their children participate in VET, as well as the influence of friends, schools and the general population.⁵⁶ Therefore, TVET needs to be made an appealing option to attract and retain learners, and its image needs to be improved for all key stakeholders, if there is to be a substantial impact on TVET attractiveness.⁵⁷

Vocational education, as with education generally, is affected by barriers to inclusivity. A few of these key barriers are worth briefly exploring: the impact of rural education, migration, gender equality and socioeconomic background. It was found that although barriers in TVET are acknowledged in the research literature, and that there are studies on national contexts, there is little research looking at how these barriers impact TVET globally, especially in recent years. Therefore, in this section more gray literature, such as news articles and other online sources, were used to work towards bridging this gap in research. This report acknowledges that this is an area that needs further research.

It has been shown that students living in rural areas have lower educational attainment than their urban counterparts, including in TVET.⁵⁸ Rural schools which engage with TVET have a lack of trained teachers and resources.⁵⁹ Rural areas often coincide with those who live in poverty, creating a double burden.⁶⁰ As well as issues with access to TVET education, students also struggle to find employment in rural areas for the skills they have trained in.^{61,62} The impact of rurality on TVET education, like many aspects of TVET research, was found to predominantly focus on a national context, limiting the number of resources available for this state of the debate.

An increase in migration globally, has put additional strain on TVET providers, particularly in regards to the accessibility of the content they provide.⁶³ Migrants and refugees are often unable to use and therefore develop any prior learning they had begun in their country of origin,⁶⁴ as well as struggling to engage due to language barriers.⁶⁵ In addition, many migrants and refugees lack access to employment opportunities, and are therefore unlikely to access and invest in further skills development as they see no future opportunities to put these skills to work.⁶⁶

“Although girls have high academic aspirations and employment expectations, there are systematic gender differences in areas of study at both tertiary level and in vocational training.”⁶⁷

– UNESCO, GLOBAL EDUCATION MONITORING REPORT 2019

Similarly to most areas of education, gender equality is lacking in TVET.⁶⁸ Globally, women have far fewer opportunities to develop their skills.⁶⁹ It has also been noted that TVET programs tend to be more gender segregated than academic programs.⁷⁰ The stigma that women face in some countries in accessing education and employment has led to low enrollment rates in TVET, and once enrolled, many women face gender discrimination, whether overtly or inadvertently.⁷¹ It is also well known that once entering the labor market, women face discrimination in the workplace and a gender pay gap.⁷² As well as gender inequalities in terms of accessing skills education, women also face preconceived notions of what they are capable of: "gender inequalities are already established among young workers, rendering future progress in reducing gender gaps even more difficult."⁷³ Reisel et al., look in great depth at the numerous barriers that men and women face in vocational education, stating: "...it is inefficient that gender gets in the way of the match between interests, talent and abilities on the one hand and occupational destinations on the other."⁷⁴ The gender disparity with attending and accessing education has seen significant improvements over the last 30 years, however, the most significant changes have been at primary school level, with secondary and further education still failing to address significant gender gaps.⁷⁵

A student's socioeconomic background can have a large role to play in the type of education, if any, they pursue. In 2012, UNESCO in its 'Education for All Global Monitoring Report: Youth and Skills – Putting Education to Work' noted that a trend of pushing lower academically achieving students into TVET has devalued these programmes and reinforces social inequalities.⁷⁶ Due to these barriers, as well as others, TVET students face high dropout rates.

These barriers have been consistently highlighted throughout the research literature as fundamental areas that need to be addressed. It is therefore worth looking at whether the key goals for improving TVET are addressing these known barriers.

KEY GOALS

When looking at the key goals for TVET internationally, it is vital to remember that individual countries will have their own goals in regards to TVET to meet the needs of their context. However, by using international organization's global agendas and goals, it will be possible to build a generalized overview of what are deemed the key goals for TVET on an international scale.

“Workers need to have strong literacy, numeracy and problem-solving skills, skills in the use of technologies, social and emotional skills, and the capacity and motivation to learn. When workers have the mix of skills that is well aligned with the needs of the most technologically advanced industries, and when qualifications reliably reflect what workers can do, countries can develop a comparative advantage by specialising in these industries.”⁷⁷

– UNESCO, YOUTH AND SKILLS: PUTTING EDUCATION TO WORK, 2012

“High-quality training, close co-operation with companies and modern learning environments attract the best experts to the field. Supporting the development of skills alongside work and the balance between work and study can reduce dropout rates in the following three ways: (1) introduction to qualifications, (2) VET institutions’ clear services for companies, and (3) enabling students to apply throughout the year. Training should take into account the impact of digitalisation and new technologies on developing the skills needed.”⁷⁸

– TECHNOLOGY INDUSTRIES OF FINLAND, 9 SOLUTIONS FOR FINLAND, 2018

UNESCO recently released a strategy for Technical and Vocational Education and Training (TVET) 2016–2021. The Strategy has three priority areas:

1. Fostering youth employment and entrepreneurship,
2. Promoting equity and gender equality,
3. Facilitating the transition to green economies and sustainable societies.

These priority areas are highlighted in UNESCO's strategy, “*which aimed at strengthening support to Member States to improve their TVET policies and systems*”⁷⁹ It is worth briefly looking in greater depth at these three areas and whether or not these are shared goals for improvement amongst international organizations and researchers.

In 2012, UNESCO highlighted that foundation and transferable skills are a priority in an increasingly diverse, demanding and dynamic global economy.⁸⁰ This is still a priority being pushed by UNESCO currently.⁸¹ This is reiterated by CEDEFOP, who believe that to counteract the high levels of unemployment and skills mismatch, VET needs to be given a higher value and linked better to the world of work.⁸² The OECD reinforces that students are not graduating with the skills needed for current labor market needs, nor the ability to adapt over time to changes.⁸³

“Gender equality is not just about economic empowerment. It is a moral imperative. It is about fairness and equity and includes many political, social and cultural dimensions. It is also a key factor in self reported well-being and happiness across the world... Gender inequality means not only foregoing the important contributions that women make to the economy, but also wasting years of investment in educating girls and young women. Making the most of the talent pool ensures that men and women have an equal chance to contribute both at home and in the workplace, thereby enhancing their wellbeing and that of society.”⁸⁴

– IRISH PRESIDENCY 2013 GENDER EQUALITY CONFERENCE, 2013

Gender equality in TVET is a key issue explored both nationally and internationally in the research literature. As discussed in the previous section looking at barriers, the multiple inequalities females face in TVET education must be a key target on an international scale. In 2013 a conference on ‘Gender Equality and Europe 2020’ was held, where key targets were discussed in closing the gender gap in Europe.⁸⁵

OECD also published a report on 'Closing the Gender Gap – Act Now', referring to the gender disparities experienced by girls in vocational education.⁸⁶ They both highlighted how increasing female participation in education and employment are key priorities.

"TVET has a role to play in ensuring that the knowledge, skills and competencies acquired by individuals will enable them to contribute to the developing green economy, and indeed to pursue sustainable practices in other areas of their lives."⁸⁷

– UNESCO, GREENING TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING, 2017. P. 18

UNESCO wishes to support member states in transitioning to Green Economies, and encouraging and supporting TVET institutions in embedding sustainable concepts.⁸⁸ This is reiterated by CEDEFOP, who question whether the transition to greener economies is also being reflected in VET in Europe and whether students skills and qualifications will satisfy the changing market needs.⁸⁹ UNESCO and UNEVOC (International Centre for Technical and Vocational Education and Training) recently released a practical guide to 'Greening Technical and Vocational Education and Training'.⁹⁰ The guide argues that: "TVET plays an important role in helping make transitions to a low-carbon economy and climate-resilient society."⁹¹ Similarly to the UNESCO and CEDEFOP, HundrED's recent research Spotlight on Sustainability stated that "...it is no longer adequate that our [young people] know about sustainability issues; in order to implement change they need to be actively behaving in a way that tackles them."⁹² By engaging learners actively in sustainable skills, institutions will be preparing students to meet the needs of the 21st century job market and improve their chances of employment.

"A worker who possesses knowledge, skills and competencies oriented to green occupations is a more employable worker than someone who does not possess these attributes. In case when there is a shift in job processes, displaced workers can be retrained and upskilled so they can be employed in other sectors, for them to find new jobs and enterprises to fill new positions."⁹³

– UNESCO, GREENING TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING, 2017. P. 19

In recent years, there has been a big push to further the targets of the Sustainable Development Goals (SDGs). The SDGs are "*a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity*."⁹⁴ For the purpose of this study, we will focus on Target 4, specifically 4.3 and 4.4, which relate to vocational education, as these are the key SDG goals focused specifically on TVET. Target 4.3 is to ensure that by 2030 there is "*equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university*,"⁹⁵ and Target 4.4 highlights the need for a "*substantial increase in the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship*."⁹⁶ This is reiterated in the Europe 2020 Strategy, which underlines the value of investing in citizens skills and ensuring that their skills remain relevant to the needs of the labor market.⁹⁷ Targets 4.3 and 4.4 of the SDGs bear a lot of similarity to the goals of UNESCO's TVET Strategy, promoting gender equality and youth employment in a time of high youth unemployment rates. Despite a lack of reference to Green Economies in Targets 4.3 and 4.4, the SDGs are interconnected, and are intended to all be taken into consideration with one another,⁹⁸ with Target 4.7 specifically stating that: "By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development..."⁹⁹ UNESCO reiterates that: "Education and training is key to achieving many of the SDGs. In particular, the greening of TVET is vital to meet these goals, and supports the fulfilment of the other targets of the SDGs."¹⁰⁰

Another significant area that has begun to draw attention is the need for improved data collection and research, which can help countries to highlight dropout rates, gender disparities, and other barriers.^{101,102} Comparing data across countries has proven difficult, due to differences in the framing of survey questions, making it far harder to gain a true global understanding of TVET.¹⁰³ Both UNESCO and CEDEFOP are encouraging synchronized data collection and an increase in the amount of data being collected.¹⁰⁴ This research report is therefore attempting to follow the same

strategy as CEDEFOP, one of the largest cross-national VET data analysts, to help ensure that the research findings can be used for comparative purposes.

DISCUSSION: PUSH AND PULL FACTORS

This 'State of the Debate' has highlighted key areas for further research, predominantly all aspects of TVET from an international perspective; specifically research focussing on TVET in countries which have a lower socioeconomic standing globally. However, this report does acknowledge the potential pitfalls of international comparative research and the generalizations that can be made. It is vital that this is considered when researching an aspect of education that is notably different based on context. Notably this research found that international bodies were quick to highlight barriers to TVET, yet neglected to explore these in greater depth. Across the research literature it quickly became apparent that the current focus of TVET research lies in the mismatch of skills. It was consistently highlighted how students were not adequately prepared for a constantly changing job market, and how skills development needed to be improved within TVET institutions. Youth unemployment was discussed by all key international bodies as a key issue that needs to be addressed, with TVET seen as the solution.

The 'State of the Debate' found that there were a large number of guidelines on how to improve TVET, however, the rate at which these guides are being utilized by institutions and educators still needs to be explored, and based on the fact that similar issues in TVET are still prevalent since 2012, one can assume that this may be another case of research not being put into practice.

To summarize, it is useful to breakdown the findings of the 'State of the Debate' into push and pull factors. It is acknowledged that this is an oversimplified overview, with only factors that arguably have international impact being added (hence reducing the number of factors versus if this had been done in national contexts).

Push Factors

- Skills mismatch
- Program leadership
- Inflexible skill set
- Mindset/attractiveness
- Inclusivity (rural access, migration, gender equality, socio-economic disparity)

Pull Factors

- Level of youth unemployment
- Economic growth
- Smooth transitions into workforce

These push and pull factors, highlight some of the key findings of this 'State of the Debate'. However, it must be remembered that these push and pull factors offer an international overview, and may vary in actuality once explored in a national context.



Finland

Having looked at Technical and Vocational Education and Training (TVET) from an international perspective, it is now important to look in greater depth at Finland and explore any similarities and differences with the findings from the 'State of the Debate'. For the purpose of this chapter, vocational education will be referred to as VET (Vocational Education and Training), due to the latest reform referring to VET and the predominance of Finnish literature using this terminology.

"In Finland the mission of vocational education and training (VET) is to raise the vocational know-how of the population and foster the skills required in working life."¹⁰⁵

– FINNISH NATIONAL AGENCY FOR EDUCATION, CEDEFOP OPINION SURVEY, 2018. P. 3

OVERVIEW: FINLAND'S EDUCATION SYSTEM

All Finnish students complete basic education (7–16 years of age), at which point Finland's upper secondary education is then divided into two streams; general upper secondary and Vocational Education and Training (see Figure 1). Both options take three years to complete and offer students the potential to study in higher ed-

education.¹⁰⁶ The structure of qualifications, goals and core subjects of VET in Finland are decided upon by the Ministry of Education and Culture at the national level. As well as ensuring that IVET provides students with the basic skills necessary for

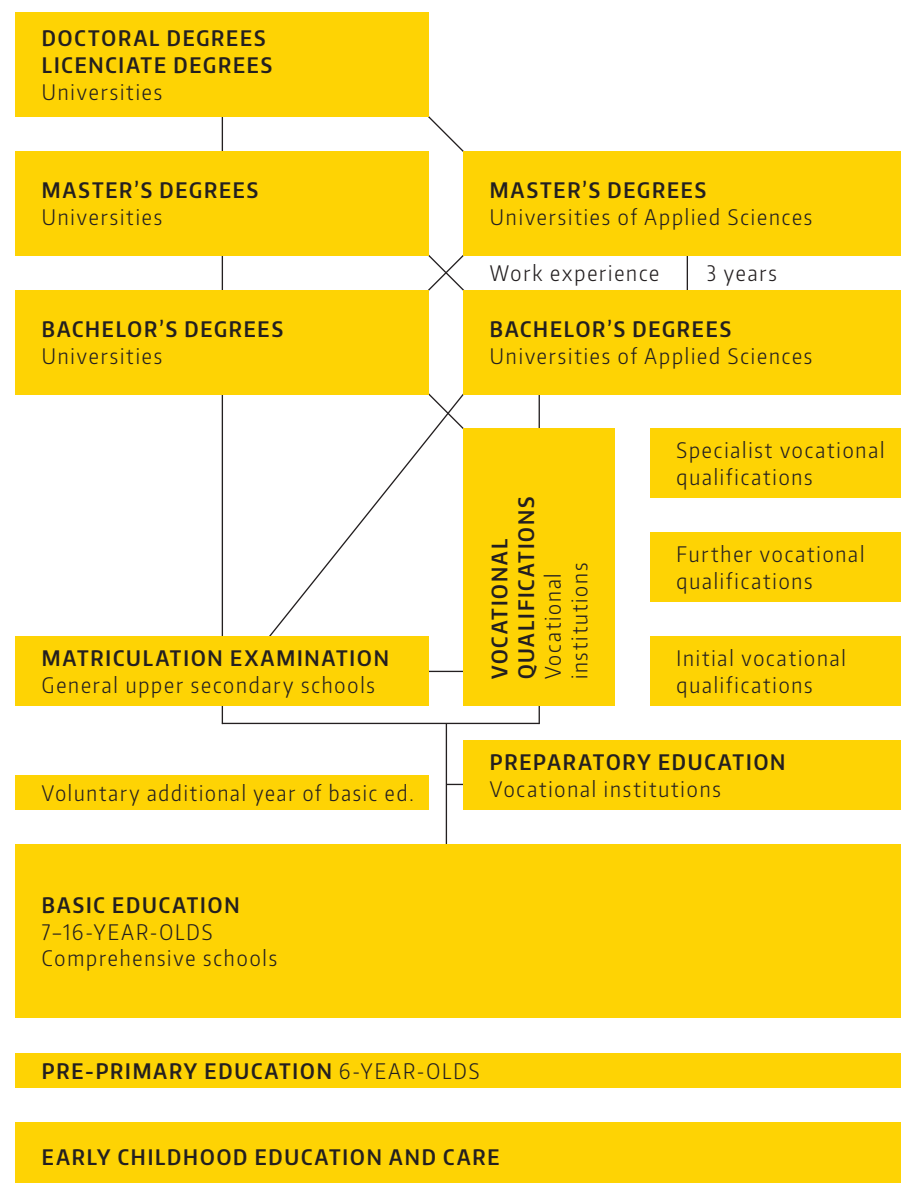


Figure 1: Diagram of the Finnish Education System, 2018¹⁰⁸

entry level jobs, Finland wants to ensure that: "VET also supports students' growth into good and balanced individuals and members of society, and provides them with the knowledge and skills needed in further studies and in the development of their personalities."¹⁰⁷

There are currently 165 VET providers across Finland, with provision varying dependent on geographic region.¹⁰⁹ VET is a popular option in Finland, in 2018 it was found that nearly 50 percent of students chose to enroll in this stream.¹¹⁰ VET is generally seen positively in Finland¹¹¹, however, improving the quality and appeal of VET has remained a key agenda for the Finnish Government and national policy. With a VET policy reform having been implemented in June 2017, there is concern over whether VET providers are meeting the expectations and needs of students.¹¹²

"The majority of participants agree that a qualification from vocational education and training creates good career prospects, matches labour market needs and plays an important role in reducing unemployment."¹¹³

– FINNISH NATIONAL AGENCY FOR EDUCATION, CEDEFOP OPINION SURVEY, 2018. P. 14

CEDEFOP in an opinion survey on VET in Finland, highlighted how students undertaking a VET qualification in Finland were satisfied with the education they were receiving. In this study, 90 percent of VET students also noted their satisfaction with the work-related skills they develop. Workplace learning is a compulsory aspect of VET education in Finland, and therefore may link to the positive response work-related skills were given:

"Workplace learning is also regarded to be one of the reason why VET is so attractive in Finland as it gives real opportunities for students to be part of the world of work and improve the skills needed in the future career."¹¹⁴

– FINNISH NATIONAL AGENCY FOR EDUCATION, CEDEFOP OPINION SURVEY, 2018. P. 3

CEDEFOP, contrary to what was found to be the case internationally, see Finnish VET systems matching well with the needs of the labour market, stating that: "96% of Finnish respondents agree that people in VET learn skills that are needed by

employers.”¹¹⁵ Which is higher than the EU average. Interestingly, the expectations of employment after having completed VET are not as positive as the EU average, with only 63 percent of Finns believing that VET helps you to find employment quickly after qualifying. It is noted that those with a VET qualification, especially men, struggle to find employment once qualified.

One of the most popular fields of study in VET is technology.¹¹⁶ In 2018 the technology industry in Finland comprised around 30% of Finland’s workforce, and is therefore a vital aspect of VET training, and a key focus of VET institutions and national policy.¹¹⁷ However, Finland is noted by the OECD as having not developed their VET curriculums and the skills taught to face the challenges of Global Value Chains (GVCs), with the OECD particularly commenting on how Finland has not increased their specialisation in technologically advanced industries. The OECD suggest that Finland could benefit more from participation in GVCs, “...by deepening their specialisation in technologically advanced industries, and by increasing productivity and employment.”¹¹⁸ The OECD states that Finland focuses heavily on specialising in manufacturing skills, unlike Estonia and New Zealand, who provide students the opportunity to access a wide scope of specialisation opportunities across the different technologically advanced sectors.

Similarly to the findings of the international ‘State of the Debate’, Finland has comparable barriers and goals when it comes to VET. One of the biggest barriers faced by Finnish youth, is social exclusion, with nearly 10 percent of young Finns being NEET.¹¹⁹ Youth unemployment in Finland currently stands at 17 percent, albeit a slight improvement on previous years, it still remains an area of concern.¹²⁰ Despite the percentage of young people who are NEET and unemployed being lower than the European average, it is still a major concern.¹²¹

A Finnish study in 2018 looking at dynamics of social exclusion in Finland, suggests that actions to prevent social exclusion should already be put in place during basic education to help keep the number of NEET students low. The study states that the most effective way to prevent social exclusion is to invest in preventative services instead of remedial services.¹²²

As well as social exclusion, the drop out rate from VET is far higher than general education, although once again still below the European average.¹²³ However, the Finnish Government noted in 2017 that the dropout rate between VET providers, varied between 2.3 and 19.6 percent (between 2013–14), highlighting how certain institutions suffer from far higher rates of dropout than others. They found that VET institutions in the Helsinki metropolitan area, suffered from far higher dropout rates than other areas in the country.¹²⁴ There is also a difference in drop-

out rate amongst age group, with ‘older’ students (20–30 years of age) having a higher dropout rate than younger students (those under 19 years).¹²⁵ The biggest dropout rate is in the field of technics (11,5% in 2016–17), with women more likely to drop out of courses that are traditionally male dominated. For example, in the field of technics the dropout rate of women was almost 7 percent higher than men. There is a lack of research that takes an indepth look at the factors that cause the variance in drop out rates across Finland.

Similarly to international trends, students who are academically lower achieving, are believed to be pushed towards VET as it is believed to be easier to gain a qualification in VET, than it is in general education.¹²⁶

“The main objective of Finnish education policy is to offer all residents equal opportunities to receive education, regardless of age, domicile, financial situation, gender or mother tongue.”¹¹²⁷

– CENTRE FOR THE STUDY OF DEMOCRACY, INTEGRATING REFUGEE AND ASYLUM-SEEKING CHILDREN IN THE EDUCATIONAL SYSTEMS OF EU MEMBER STATES, 2012. P. 57

The actions to prevent social exclusion should already be put in place during basic education to help keep the number of NEET students low. The most effective way to prevent social exclusion is to invest in preventative services instead of remedial services.

Finland similarly to the 'State of the Debate' findings, faces challenges regarding rural accessibility to TVET.¹²⁸ The Finnish Ministry of Education and Culture acknowledged in their 2017 report, that there are regional differences in employment as a result of structural problems within the labour market.¹²⁹ This highlights the same issue faced by many students in rural areas globally, who struggle to both access quality education and find employment once qualifying.

"It is estimated that by 2025 about one in five students attending school in the greater Helsinki area will be of immigrant background."¹³⁰

– LOOGMA, K. ET AL., COUNTRY REPORT: FINLAND, 2012. P. 9

It is argued that there are less barriers for migrants to VET in Finland, with Finnish and Swedish language classes and career counselling aiding students in accessing VET programmes.¹³¹ The Finnish Ministry of Education and Culture notes how one of the biggest barriers migrant VET students face is the language barrier, which is a prerequisite for studying VET in Finland.¹³² However, as well as language classes, Loogma et al., note that VET qualifications can be completed in a foreign language at many schools. They also note how schools in Finland have sometimes run courses for migrant children and parents to introduce VET possibilities.¹³³ A report on 'Integrating Refugee and Asylum-seeking Children in the Educational Systems of EU Member States', noted how "Finland exemplifies good practices at a local level which, together with efficient policies, provide newcomers with stable conditions for integration."¹³⁴

Chadderton and Edmonds researched the extent to which refugees have access to VET in Europe (however, they did not specifically look at Finland), with them concluding that VET access for refugees is intrinsically linked with the views on race and racial structures in each country. They also note how there is a distinct lack of research on refugees experiences of VET, and elude to the fact that a lot of remarks on how students find VET are based on assumptions of the measures in place. They note the common barriers across European countries, such as the fact that language support is in place in most countries, but not enough to complete a vocational qualification.¹³⁵ A study by CEDEFOP and OECD on bridging the gap between refugee and employer needs through vocational education, again states that Finland has made a concerted effort to support recognised refugees and notes how NGOs in Finland are allowed to provide entrepreneurship training and mentoring for asylum seekers who want to develop their own businesses.¹³⁶

INSIGHT

GERMAN FEDERAL MINISTRY FOR ECONOMIC COOPERATION AND DEVELOPMENT (BMZ), GERMANY/TURKEY

"Objective: Syrian refugees and Turkish citizens in the host communities have better access to vocational education and training and labour market services."

Since 2011 when the war began in neighboring Syria, Turkey has taken in over 3.6million refugees. In 2016 legislation was changed to allow refugees to find work legally and access VET. Germany in collaboration with Turkey (2016–19) has been working extensively to adapt Turkey's VET to ensure inclusion of refugees and migrants, which was previously insufficient in providing services. A project with a two fold approach is being used to achieve their objective; to ensure that existing services are more easily accessible to refugees (this has been done through inclusive job fairs with Arabic literature, employers and jobseekers being educated about relevant legal regulations and cultural differences and assistance for those who wish to be self employed/start a business) and training VET providers and educators in areas such as intercultural communication, conflict prevention and career advice. So far, the project has benefited 3,300 vocational trainees and apprentices with better equipped VET providers, and 170 vocational teachers and school management staff have taken part in additional training.¹³⁷

INSIGHT

THE BRITISH COUNCIL, UNITED KINGDOM

"Objective: The British Council in 2018 undertook a research project and developed recommendations, based on developing the inclusion of refugees in TVET, specifically focussing on funding, planning and delivery."

The British Council is the UK's international organisation for cultural relations and educational opportunities. They examined the inclusion of refugees in TVET in five countries – Ethiopia, Jordan, Pakistan, South Africa and the UK, developing an extensive list of recommendations, with the following being most relevant to the Finnish context:

Highlighting the benefits of TVET

- The need for a specific research focus on the impact of refugee interventions. These should be made publicly available, so that countries can learn from one another. Funders should use this to determine which initiatives are most successful and should be provided with more funding.

Increasing flexibility

- Planners and funders of skills training should create systems which draw on evidence about the cultural and personal expectations of refugees as well as their prior educational attainment.
- Policymakers and donor agencies should consider how strategies for refugee inclusion can be included in broader development policies which also demonstrate clear benefits to the nationals of refugee host countries.

The British Council have provided clear guidelines on how to improve TVET for nationals, as well as refugees, It will be interesting to see the impact of this report, if any, in the next year.¹³⁸

INSIGHT

UNHCR TECHNICAL AND VOCATIONAL TRAINING PROGRAMME, EGYPT

"Objective: Courses in the fields of culinary arts, tailoring, car and electrical maintenance were developed to help create opportunities for refugee youth to become self-sufficient and learn new skills."

In 2018, UNHCR and their partners the Catholic Relief Services (CRS), saw the first 29 students from their TVET training program graduate in Egypt. The courses were developed to last from three weeks to three months, depending on the curricula. They targeted 100 youth using a gender balanced approach to help them acquire technical and practical skills and restart their lives. As well as learning technical skills, students who were working with other students from a variety of cultural backgrounds, were able to develop their cultural understanding and empathy skills.

Ali a 19 year-old student, was the only male graduate of the sewing programme. "People ask me all the time why I did not join the Maintenance programme like the many of the boys," he chuckled. "But I love fashion and I was hoping for an opportunity to step into the field."

By ensuring a gender balance approach to their courses, UNHCR and CRS are able to debunk traditional gender norms, a common barrier in TVET courses internationally. To ensure that graduates continued to develop their skills once completing the TVET programme, CRS provided information on options for taking advanced TVET courses in their area of specialization post-graduation and livelihood opportunities to enhance employability prospects. Since 2018, 80 young refugee and asylum seekers have benefited from the course offered.¹³⁹

UNESCO states that globally students are more likely male, except in Latin America and the Caribbean.¹⁴⁰ From these global trends, it can be seen that Finland's VET intake is far higher than the average, with half of Finnish VET students being female (although this varies greatly when broken down into fields of study).¹⁴¹ As mentioned, it was found however, that men who graduated from VET found it far more difficult to find employment after qualifying than women.¹⁴² This indicates that there may be a difference based on the courses males and females opt for in VET, and their employment potentials once qualifying. This skills mismatch is a common issue globally.

It was interesting to find that preparing students for green economies is seen as a key goal from international organizations, yet in Finland this does not appear to be an area that is being developed, or is at least not referred to in the research literature. This is despite the fact that Finland's industries have been held in high esteem for their consideration of environmental impact.¹⁴³ This indicates that there is environmental awareness across the sector, however, a skills mismatch when it comes to ensuring that students are receiving the training to implement positive change upon graduating.

NORDIC COMPARISONS

Having compared Finland to the findings of the international 'State of the Debate', it will be interesting to see how Finland compares in comparison to other Nordic countries. Denmark, Norway, Sweden and Finland are often grouped together in VET comparative research despite their differences; however, they have similar well organised labour markets and universal types of welfare states. They also prioritise social inclusion and equal opportunities.¹⁴⁴ Virolainen and Stenström, note how since 2011 IVET policy in Sweden and Finland have similarly moved towards building stronger connections with the labour market.

A recent research study in Sweden looking at social justice in vocational and academic programs, found that the gender split in VET programmes, and what was valued as important knowledge and behavior between genders was vastly different.¹⁴⁵ They also found that girls tended to be given more theory than boys, this resulted in students leaving VET with different skill sets, and an assessment of the practice that may not be truly reflective of their capabilities. They argue that the current curriculum standard does not do much to challenge gender stereotypes and inequalities. Sweden has slightly more men than women studying VET, however, as in Finland, Sweden has an uneven distribution when looking more closely at subject areas.¹⁴⁶ This may be a factor in the difference of employment rates for men

Preparing students for green economies is seen as a key goal from international organizations, yet in Finland, this does not appear to be an area that is being developed.

and women who have studied VET in Finland. The research report is also critical of the fact that students are prepared to take an active part in shaping society once they complete VET.¹⁴⁷ The Swedish research study looks at the socioeconomic backgrounds of students and the impact of this.

As mentioned, there tends to be a big push for students from lower socio-economic backgrounds to study VET.¹⁴⁸ Virolainen and Stenström look at the strengths and weaknesses of Finland's IVET system in comparison to the other Nordic countries.¹⁴⁹ They note how Finland has comparatively high levels of participation rates in IVET, and believe some of the factors which have influenced this are: an improved image of IVET through skills competitions, the positive cultural images of IVET through popular media (e.g. chefs) and the opportunity to attend university after completing IVET, to name but a few.¹⁵⁰

Rationale: Why focus on TVET?

It is important to give context for this study and the value of providing further research on TVET. As mentioned, TVET has had an increase in research in recent years, yet it is often hard to compare research data on an international scale. This report aims to provide an overview of the barriers and goals that are internationally common, exploring initiatives that are being developed to break down these barriers and aim to meet the goals being set internationally.

How is vocational education seen internationally?

European citizens generally view VET as offering high quality learning. There appears to be a clear correlation between countries that view VET highly and those who believe it offers high quality education. How VET is viewed in a society has an impact on the number of students who opt for VET and graduate. As a study from CEDEFOP on the attractiveness of VET shows, VET attractiveness is very contextual.¹⁵¹ VET is seen as an attractive option in Finland, with nine out of ten Finns seeing the image of VET as positive.¹⁵² CEDEFOP attribute this to the fact that the quality of VET is deemed high amongst Finland's general population, however, despite this, general upper secondary has a more positive image.¹⁵³

There is a lot of research in recent years that focuses on what influences young people opting in or out of vocational education. CEDEFOP in their survey on the attractiveness of VET across Europe, found that students were most influenced by their parents and families first, followed by teachers, internet/social media and people from the world of work.¹⁵⁴ In 2014, the Economic information office in Finland conducted a survey called 'What happens after basic education'. The survey found that despite education and career guidance in schools, relatives and friends played a pivotal role in influencing choices. The CEDEFOP opinion survey on vocational education and training in Finland, also found that students were heavily swayed by the opinions of their friends and families, similarly to the majority of countries surveyed by CEDEFOP.¹⁵⁵

VET is seen as an attractive option in Finland, with nine out of ten Finns seeing the image of VET as positive.

“[T]VET has been neglected: it has received limited attention compared to other parts of the education system and is often seen as having lower status.”¹⁵⁶

– OECD REVIEWS OF VOCATIONAL EDUCATION AND TRAINING, 2011. P. 7

It is clear that whilst vocational education is generally viewed more positively in Finland compared to its international counterparts, there are still areas that can be improved upon, for example, that it is seen as positively as general education, and as an attractive option to students.



Why the need for a ‘Spotlight’ on TVET in Finland?

HundrED is a Finnish education not-for-profit that seeks and shares inspiring innovations in K12 education. They have developed a vast database of innovative, impactful and scalable initiatives globally. In collaboration with Technology Industries of Finland and the strategy network of Finnish vocational institutes, HundrED was asked to research TVET on an international scale, looking at initiatives that would meet the needs of Finnish TVET students. With the recent reform to TVET in Finland, TVET institutions want to ensure that they are effectively preparing for inevitable changes.

“[T]VET has to respond more swiftly to changes in work life and operating environment and to adapt to individual competence needs.”

– THE MINISTRY OF EDUCATION AND CULTURE, 2017 ¹⁵⁷

FOCUSSING ON THE TECHNOLOGY SECTOR

This report is produced in collaboration with Technology Industries of Finland, therefore, as well as looking at vocational education generally, there is a specific focus on the technology sector and the ways in which TVET stakeholders are engaging with students in this sector. Kozík despite writing in relation to the importance of technical education in Slovakia, notes the importance of students beginning to learn technical skills from an early age, in order to prepare them for vocational education and the future labor market.¹⁵⁸ A new term, the 'T-Shaped Graduate' is commonly used to describe a graduate who has "...both specific technical skills and knowledge, and the enterprise skills of collaboration, digital literacy, critical thinking, complex problem solving and creativity."¹⁵⁹ There is an increasing emphasis on the value of having employees who are technically trained. In 2014, The Economist Intelligence Unit conducted a survey of 343 senior executives from the US on how higher education and training can be made more workforce relevant. Participants were asked to answer the questions 'At your company, what workplace skills are considered most important for employees to have when they join?' they were given multiple options and asked to choose the top four skills. The fourth most common answer was: 'Technical skills associated with the job'. The report also includes

a case study on the value of German apprenticeships and how a similar apprenticeship model through BMW was successfully piloted in the US, in order to address the deemed gap in technically trained candidates.¹⁶⁰ This brief overview has highlighted the international concerns over the 'skills gap' in technically trained employees, as well as the insufficient number of students studying in technical fields, hence the focus it has therefore been given in this report.¹⁶¹

"Future workplaces require collaboration skills in which members of different work communities use technologies to solve complex problems. Vocational education and training (VET) programs need to meet the challenge to prepare students to be part of a competent workforce."¹⁶²

– SCHWENDIMANN, B.A. ET. AL. 2018

VET REFORM IN FINLAND

At the end of June 2017, the Finnish Parliament approved a new reform to Vocational Education and Training (VET) legislation. This is the biggest change Finland has seen in twenty years, which went into force 1st January 2018 (see Figure 2).¹⁶³ VET moved from a supply orientated approach, to demand driven, with the primary focus being on what the student learns and is able to do, with an increase in learning at the workplace. The reform also gives providers increased freedom in organizing activities. There are currently 160 vocational qualifications available in Finland, which have been narrowed down under the new reform, providing fewer qualifications, but with broader skills offered under each.¹⁶⁴ In this move, the new Finnish reform is attempting to ensure that students qualifications meet numerous skill requirements, rather than further diluting the number of specific skill qualifications.

“The vocational education and training (VET) reform, entered into force on 1 January 2018, is the most extensive reform in Finnish education legislation in the past decades and one of the key projects of the Finnish Government. The reform aims to strengthen vocational competence, promote students’ access to employment and support their transition to further studies, and to prevent school dropouts and social exclusions. The new VET assigns great importance to work-based learning and workplace learning.”¹⁶⁵

– TAMPERE UNIVERSITY, 2018

The reform will allow students to have personalized learning available to them whilst undertaking their VET, as well as increased links with the labor market.¹⁶⁶ The European Commission, states that this will be achieved through increased in-company training, more personalized guidance (e.g. more advanced students being guided into apprenticeships rather than institutional learning) and ensuring qualifications are more competence-based. They state that these goals align with the European goals for cutting down on education dropout rates (currently standing at 11,4 percent in Finland, significantly lower than the EU average¹⁶⁷), and improving the efficiency of education.¹⁶⁸ The reform also aims to increase the employability of VET graduates, which repositions VET in the Finnish school system and increases its number of applicants.¹⁶⁹

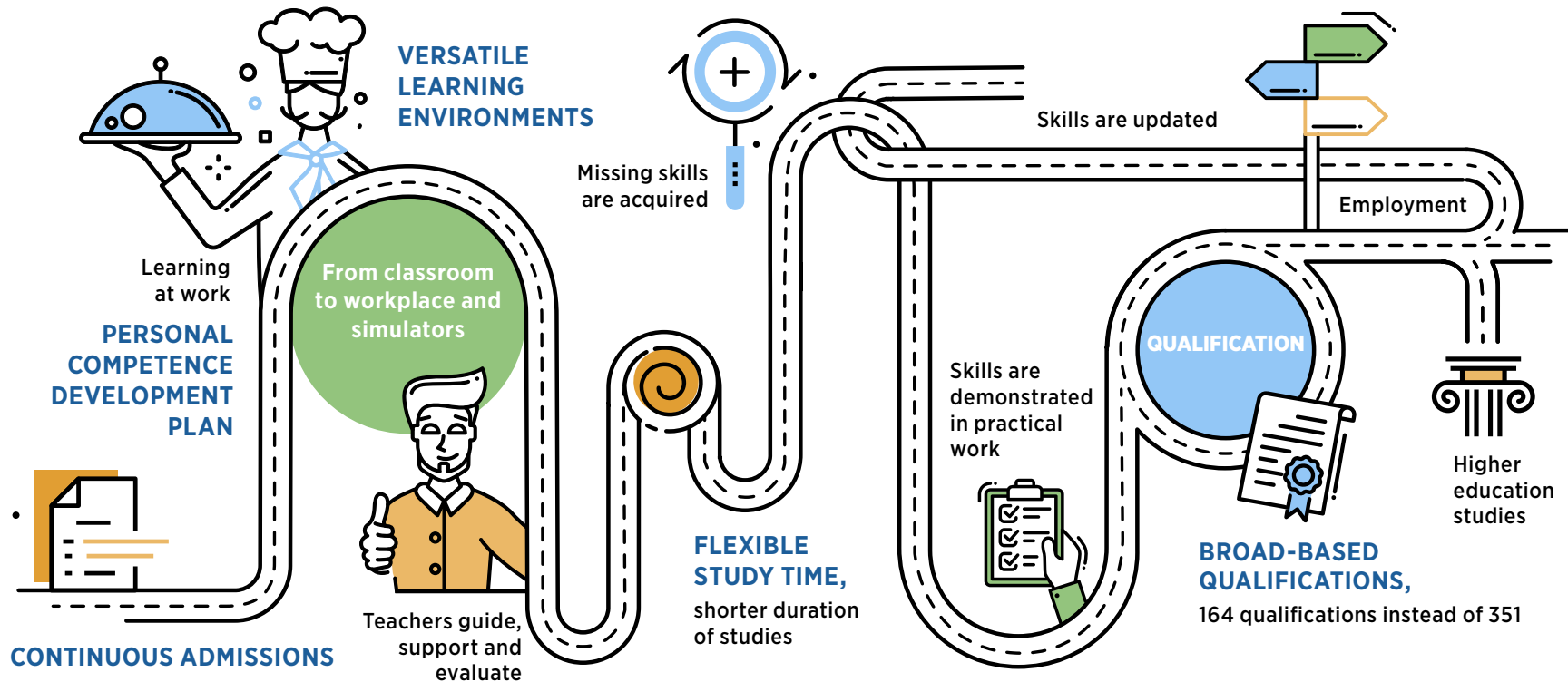
The OECD believes that ensuring students are equipped for their futures, requires a multistakeholder approach to reform: “They need to: i) develop qualifications together to reflect labour market needs; ii) provide diversification of qualifications without too much fragmentation; iii) incorporate high-quality assessments into qualifications, including competency-based approaches; and iv) better link competency-based qualifications to the labour market.”¹⁷⁰ Finland’s VET reform currently addresses multiple aspects of the OECD’s recommendations, however, despite engaging with a wide range of experts who collaborated on the necessary changes, there does not seem to be reference to the inclusion of students or employers in the process.

The recent reform changes to VET in Finland were a catalyst for the development of this report. There have been many concerns voiced over the quality of VET in Finland, due to a larger proportion of training being moved into the workplace.¹⁷² Technology Industries of Finland believe that they need help identifying TVET initiatives that have the potential to create positive impact across their 20 institutions. This is where HundrED comes in!

The reform aims to increase the employability of VET graduates, which repositions VET in the Finnish school system and increases its number of applicants.

NEW VOCATIONAL EDUCATION AND TRAINING as of 1 January 2018

Working life is undergoing changes. New occupations keep on emerging and old ones disappear. Technology advances. Revenue models are renewed. Students' needs are becoming more and more individualistic. Skills need to be updated throughout careers.



FUNDING THAT ENCOURAGES EFFECTIVENESS
Students do not drop out, they complete their studies, obtain a vocational qualification, access employment or continue studying



A SINGLE ACT, A SINGLE AUTHORISATION TO PROVIDE EDUCATION
No boundaries between young people and adults



LESS BUREAUCRACY AND MORE AUTHORITY
for education providers

MINISTRY OF EDUCATION AND CULTURE
UNDERSVINGS- OCH KULTURMINISTERIET

#AMISREFORMI

Figure 2: CEDEFOP – Overview of the new Finnish VET reform¹⁷¹



Views on new reform

“The role of a VET teacher is turning into someone who supports from the background; only writing reports and helping as a project worker. Teaching and education are being transferred to workplace learning places. It is not right that employers have to take young people to work, with no work-life skills and knowledge, at their own expense. Of course, there are exceptions in the students, but not all 16-year-olds can be expected to have the ability to absorb extensive content.”¹⁷³

– MARIKA NIEMI, LECTURER OF BUSINESS & HEAD OF THE BOARD OF EDUCATION AND EARLY CHILDHOOD EDUCATION IN ESPOO

“Young people need a group to belong to and a daily rhythm to their lives. In this system they learn that it isn’t mandatory to go to school every day. So how will they learn regular working?”¹⁷⁴

– ERJA SANDBERG, DOCTOR OF EDUCATION

“This is a broad reform where execution won’t happen in one semester. In order for more and more learners and companies to benefit from the opportunities offered by the reform, educational institutions need to continue to develop their function in close and continuous cooperation with companies...”¹⁷⁵

– JOONAS MIKKILÄ, HEAD OF DIGITAL ENTREPRENEURSHIP AND EDUCATION IN FINNISH ENTERPRISES

“Increasing discretion and studying in working life may motivate many students. At the same time the change requires a lot of self-discipline, studying after a workday, acknowledging broad entities and ability to recognize your own knowledge.”¹⁷⁶

“Who is in charge that the guidance students get is proper?... How are the companies able to train students beside doing their own work, especially in fields where workforce is already needed?”¹⁷⁷

– TOMMI KINNUNEN, FINNISH WRITER & LECTURER

“One should hope that workplaces will not have to shoulder the bulk of the pedagogic responsibility after the reform in Finland, at least without the staunch support and close involvement of important stakeholders, such as educational institutions. Whatever the success of the reform, Finland’s VET overhaul will be a case to follow closely and an example to learn from. Finland’s reform exemplifies the need for an open and inclusive policy design process.”¹⁷⁸

“Workplaces are not primarily pedagogic institutions – how will quality offers be guaranteed?”¹⁷⁹

– MARKUS PALMÉN, FINNISH JOURNALIST

Finland: in Focus

This section of the report will begin by looking at what existing vocational education surveys have identified. This will be followed by looking at HundrED's own survey results from institutions, employers and students in Finland. The apparent needs of all stakeholders in vocational education will then be addressed, before concluding with a discussion of the research and survey findings. For the purpose of this chapter, the term VET (Vocational Education and Training) will be used, as all surveys discussed used this terminology.

Introduction to VET Surveys

There are multiple surveys looking at vocational education globally, yet the lack of cohesion, means that it is hard to draw definitive comparisons. Therefore, this report will initially draw conclusions from CEDEFOP's large-scale survey on VET attractiveness across Europe, before focussing in on surveys conducted in Finland. This study was chosen due to CEDEFOP having undertaken one of the largest scale VET surveys globally, and the fact that their research data also gives us an in-depth look at VET in Finland.

One of the most far-reaching cross-country surveys was initiated by CEDEFOP (The European Centre for the Development of Vocational Training). CEDEFOP studied the 'Attractiveness of initial vocational education and training (IVET): identifying what matters' across EU-27 Member States, as-well-as Norway, Iceland, Switzerland, Australia and South Korea. This ambitious scope provides an effective overview of guidance counsellors, teachers/trainers, and employers views on IVET attractiveness. As CEDEFOP highlights, a key stakeholder when it comes to the attractiveness of IVET, are prospective and current students. They argue that more information is needed from students, so that IVET can meet their needs. It is therefore interesting, that current VET students were not a participatory stakeholder in this survey, something that HundrED in this report chose to prioritize. CEDEFOP state that labor market relevance of IVET is going to have a large influence over student decision making, alongside their own personal interests in the subjects offered. They also found that the likelihood with which students feel



Labor market relevance of IVET is going to have a large influence over student decision making, alongside their own personal interests in the subjects offered.

they will gain employment after completing IVET correlates with the esteem VET is given in that country.¹⁸⁰ The study highlighted how countries who regarded IVET highly, also saw IVET as offering high quality learning, as is the case in Finland. The key finding was that context was crucial when looking at IVET attractiveness.

Another of CEDEFOP's reports spreads across seven volumes published between 2017 and 2019, using data from surveys between 1995 and 2015, each focussing in on a key VET issue.¹⁸¹ These volumes provide an incredible insight into the changing nature and role of vocational education and training in Europe between 1995 and 2015, and investigates the main challenges and opportunities facing the sector today and in the future.

Volume One explores how VET has been defined and explained across the research literature over time.¹⁸² The paper then goes on to explore the implications of changing definitions on national policy and VET. This first volume offers a basis for understanding the changing nature and role of VET across Europe. Volume Two builds upon the first volume, however, delves further into the opinions of VET experts, who responded to a survey looking at how they believe national VET systems are understood, looking at both official definitions and overall conceptions.¹⁸³ As explored earlier in the report under definitions, this survey also found that defining VET was very much contextual based on nationality. Volume Three goes on to look at the responsiveness of European VET systems to external change.

! The executive summary of Volume Three highlights the key challenges facing most countries as being: teaching skills that meet labour market needs, increasing VET attractiveness, securing high level students, ensuring the system adapts to the changes resulting from technological drivers, that educators are provided with the technical skills and access to the latest technologies in order to teach relevant skills, balancing the need for students to have a broad education and training to meet the specific needs of industry and the impact of funding constraints.¹⁸⁴

! Common responses – though not necessarily evident in every country – to the various challenges outlined above include: giving multiple stakeholders a say in the content of VET and work-based learning, finding new sources e.g. accreditation of migrant skills, moving to a competency-based system of IVET, increasing the number of students partaking in apprenticeship training and work-based learning, creating better partnerships with local employers so students have access to the latest technologies often not available to VET providers due to cost and allowing teachers to keep their industry knowledge up to date, investing in skill anticipation systems, providing the opportunity for VET students to access higher education and developing/using qualifications frameworks to ensure that the VET system is transparent.¹⁸⁵

Volume Four explores the decline in VET enrollment across Europe, which has gone hand in hand with a big policy focus across Europe on how to improve VET attractiveness.¹⁸⁶ The study found that much of the decline can be attributed to demographic changes and changes in classification of VET. Volume Five published in 2018 looks at education and labour market outcomes for graduates from different types of VET system in Europe.¹⁸⁷ It found that in countries with school-based VET, graduates faced a higher risk of unemployment than general education graduates. Surprisingly, Finland was shown to be an exception to this pattern. Volume Six and Seven and the Synthesis Report are yet to be published and will be interesting to read upon completion.¹⁸⁸

CEDEFOP's 2018 report 'Making VET fit for the future', also highlighted some of their key findings:

- 60% of vocational education and training students found their first long-term job before or within a month of finishing their studies.
- 87% of vocational education and training students are happy with the work-related skills they developed.
- 2 out of 3 Europeans have a positive opinion of vocational education and training.
- Almost 9 out of 10 Europeans believe that learners in vocational education and training acquire skills that are needed by employers.¹⁸⁹



CEDEFOP's findings give an invaluable insight into the state of VET across numerous countries, reiterating many of the key findings in HundRED's TVET 'State of the Debate'. The focus will now be on Finland. It will be interesting to see how CEDEFOP's Finland specific findings compare to HundRED's surveys and other VET surveys carried out within Finland.

CEDEFOP's survey comprising 35,000 interviews across 28 EU member states, was broken down into national overviews.¹⁹⁰ Finland's results were explored in greater detail in the previous chapter, to summarise, CEDEFOP's findings on VET in Finland can be broken down into:

Pull factors

- skills to continue to further education
- skills match with employer needs
- education satisfaction

and push factors

- low levels of progressing to further education
- general upper secondary education has a better image

In 2014, the Economic Information Office in Finland conducted a survey called 'What happens after basic education'. This survey found that more than half of the students asked, wanted more information about skills opportunities and working life, with 63 percent of respondents asking for more guidance for their future career.¹⁹¹ The survey also found that despite education and career guidance in schools, relatives and friends played a pivotal role in influencing choices. The CEDEFOP opinion survey on vocational education and training in Finland, also found that students were heavily swayed by the opinions of their friends and families.¹⁹² The Economic Information Office in Finland runs their survey annually, the key findings of their 2017 survey were:

- VET education has become less attractive to students in basic education (in 2015, 30 percent of students considered choosing VET, in 2017 only 25 percent of students considered this option).
- Students in basic education are longing for more information about work life and career choices (50%), especially in 8th grade (61%) (currently career counselling focuses on students in 9th grade)
- Parents and friends are the most important people, who students from basic education listen to when making choices for their future.
- Students in basic education believe that some fields are gender specific, with the field of technology seen as a male dominated field.¹⁹³

In 2018 the Economic Information Office in Finland survey for the first time included the views of VET students (from 2014–2017 this survey only included views of general education and basic education students).¹⁹⁴ The survey found the VET students were most interested in finding employment after they have completed their studies. With the following key findings:

- VET students felt that their parents were less likely to discuss further education opportunities with them.
- 69 percent of VET students said that they received enough counselling about their current studies, compared to 79 percent of students in General Education.
- Only a little over 30 percent of VET student felt they had enough career counselling or counselling for further studies.

The survey clearly highlights how VET students feel neglected when it comes to support from their counselors compared to their classmates who have chosen to pursue general education. Interestingly, this survey also found that VET students felt their parents were less involved with their choice than their General Education counterparts. This cannot be directly assessed against CEDEFOP's findings, as the surveys asked different questions about parental engagement. However, with

this survey showing that 70 percent of VET students discussed their choice with their parents, it is still highlighting the large influence parents have over their children's choice.¹⁹⁵ The fact that this survey compares the results of VET and General Education students in Finland, provides an interesting insight into the current situation in Finland. With Finland generally doing 'better' than most EU nations when it comes to VET, it is hard to always argue the need for improvement. However, this survey has shown that there is a difference in the way that VET students and General Education students feel supported in Finland, a gap that needs to be acknowledged.

In 2018, Pylväs conducted a study on the 'Development of Expertise in Vocational Education and Training' for her doctoral dissertation, using data from 119 interviews that she conducted. The basis of this study was on the new VET reform in Finland. Pylväs found that creativity was seen as a desired skill by current and former vocational students' and working life stakeholders', as well as logical-mathematical skills. High value was said to be placed on VET students being able to think of a new idea or method of working. Logical-mathematical skills incorporated problem solving skills and innovativeness. Other skills which were deemed valuable were: perspective skills (e.g. situational awareness), multitasking skills and learning skills (e.g. to be able to take in new information). Interpersonal skills and social skills, an area not often discussed in relation to vocational skills, were deemed vital. The report criticised outdated teacher knowledge, theoretically oriented curricula, obsolete technologies and devices, with employers concerned that students had a lack of business skills that they considered crucial. Students who participated in workplace learning noted the high expectations of employers, and the lack of support and guidance they were given.¹⁹⁶ This study gives an interesting insight into which skills are seen as desirable for students entering the 21st century labour market, as well as current barriers that they are facing.

Amisbarometri is a notable VET student survey in Finland that is repeated every second year to gain a deeper understanding of VET in Finland from student's perspective. The latest available study was published in 2017 and aimed to provide an insight into the daily lives of students studying a curriculum-based programme in a Finnish VET institution. The 80-item survey looked at student's perceptions of their current studies, their future prospects, and their attitudes towards working life. Some of the key findings were:

- 64 percent of the respondents thought their vocational competence is sufficient for working life, while 10 percent did not trust their vocational competence.
- two out of five respondents aim for higher education studies, most typically from fields such as social, health and sports.

- slightly over 70 percent of respondents believe that they will find employment in the field they are studying or find meaningful work after graduation.
- 91 percent of Finnish students think that their own positive attitude will help bring success in working life. Training, skills and work experience are also considered important.¹⁹⁷

To summarise, and provide a quick overview of the survey's looked at in this section, the following table attempts to highlight the key findings across these surveys, focussing only on a Finnish context. Each survey framed their questions differently, therefore eliciting different results, however, the table allows us to see a general comparative overview with a focus on five key areas. The table also includes data from HundrED's own student VET survey for comparative purposes, before the findings will be explored in greater detail below. The table below clearly shows that all surveys found that students were not receiving enough adequate career support. It was also found that most surveys indicate that VET is seen as positive in Finland, corresponding to the research literature. Interestingly, HundrED's student survey was the only one to find that parents did not play a pivotal role in influencing students choice to study VET. This will be explored in greater detail when looking in-depth at HundrED's student survey. When looking at what the biggest barriers to VET are, each survey addressed this question differently, therefore, eliciting a variety of responses. However, a skills mismatch was noted more than once. Similarly, when looking at what can be done to improve VET, each survey addressed this question differently. However, it was found that the need for more career guidance repeatedly came up across the surveys, addressing the finding that student's do not believe that they are receiving enough career support.

91 percent of Finnish students think that their own positive attitude will help bring success in working life. Training, skills and work experience are also considered important.

Survey	Are students given enough career support?	How is VET seen?	What influences student's choice to study VET?	What are the biggest barriers to VET?	What can be done to improve VET?
CEDEFOP (Finland Survey)	63% of respondents agreed that students need more guidance and counselling, (2018)	Nine out of ten Finns see the image of VET as positive (2014)	Students were most influenced by their parents and families (2014)	The social exclusion of youth and dropout rates from VET. Skills mismatch. Low participation in higher education after completing VET qualification. (2018)	More guidance and counselling. Promoting higher education and lifelong learning. (2018)
Economic Information Office	33% of VET students think that they have had enough counselling to their career choices. (2018)	25% of secondary school students think of applying to VET. (2017)	51% of secondary school students say that parents' and relatives' advice is important when thinking their further studies. (2017)	VET students stated that the three most poorly taught skills are: economic skills, tolerance of uncertainty and risk-taking capacity (2018).	Greater support from guidance counselors on career choices. (2018)
Pylväs	Notes that only a few students stated that work experience and VET school tours encouraged them to choose VET. The role of family in choosing VET was discussed far more by students. (2018)	N/A	Immediate family environment and parental profession were a guiding factor in whether students chose VET. (2018)	Skills mismatch. (2018)	Strengthening and diversifying the networks to working life and develop the learning environments at workplaces. VET should give more opportunities to students to strengthen their self-regulatory skills which are needed at work life. (2018)

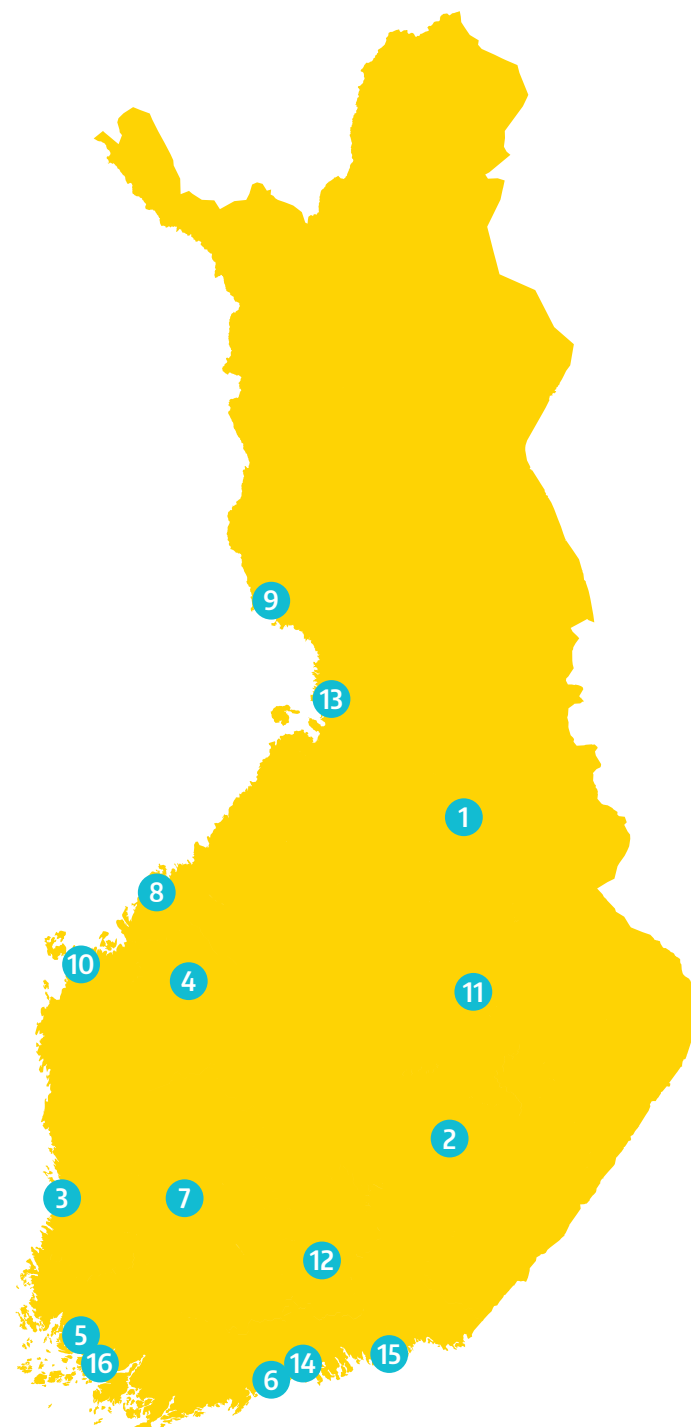
Amisbarometri	<p>37% of students believe they have had enough information and guidance on their further studies from a guidance counselor.</p> <p>(2017)</p>	<p>75% of VET students said they liked studying in their VET institution.</p> <p>(2017)</p>	<p>56% of students say their parents encouraged them to choose VET.</p> <p>(2017)</p>	<p>Students reported not being interested in the field they are studying, not interested in studying generally, and having learning difficulties.</p> <p>(2017)</p>	<p>Guidance counselors need to encourage VET.</p> <p>Students need to be given more information on what to expect from their studies.</p> <p>There needs to be more feedback from institutions to students on their learning.</p> <p>Student voice in underutilized.</p> <p>Once studying students feel like they need more support from student counsellors/teachers/employers.</p> <p>The image of VET needs to be improved.</p> <p>(2017)</p>
HundrED Student Survey	<p>Students appeared to see their career advice as not being of an adequate standard.</p> <p>(2019)</p>	<p>The most common theme that arose was that VET was generally seen as positive (almost half of respondents.)</p> <p>(2019)</p>	<p>Interest in the subject, was by far chosen as the most common reason. Interestingly, it was found that parents and family had a very minimal input.</p> <p>(2019)</p>	N/A	<p>That practical learning and learning in the workplace should be increased. Students also hoped that there would be connections to employers.</p> <p>(2019)</p>



Purpose and Approach to HundrED's Surveys

It is vital that all stakeholders in VET are given a platform to share their thoughts and opinions so that their needs can be taken into account when discussing reforms to VET. The surveys looked at in the previous section, influenced the development of our own cross-stakeholder VET Surveys in Finland. In the following sections, the findings of our multi-stakeholder VET survey developed by HundrED's research team in collaboration with Technology Industries of Finland, give an insight into how different stakeholders are responding to the current VET climate in Finland. Please see Appendix A-C for copies of the survey questions institution leaders, employers and students received. It was felt that a survey using the platform 'Survey Monkey' would be the best way to ensure data comparison between stakeholders, due to its user friendly design. The survey was created in English and then translated into Finnish, in order to allow for as many participants as possible to access the surveys.

- 1 Kainuu Vocational College
- 2 Etelä-Savon ammattiopisto Esedu
- 3 WinNova Länsirannikon koulutus Oy Ltd
- 4 Järviseutu Vocational Institute Jami
- 5 Raseko
- 6 Omnia
- 7 Tampere Vocational College Tredu
- 8 Kpedu
- 9 Vocational College Lappia
- 10 Vamia
- 11 Savo Vocational College
- 12 Salpaus Further Education
- 13 Oulu Vocational College
- 14 Keuda
- 15 Etelä-Kymenlaakso Vocational College
- 16 Turku Vocational Institute





VET Institution Survey

The institution survey had 20 respondents, across 16 institutions, with a spread of institutions from rural and urban areas of Finland. As can be seen from the table above, the respondents offer an insight into varying sizes of locations and institution sizes, with a common theme of much larger proportions of males than females choosing to study technology, and relatively small numbers of students who spoke languages other than Finnish or Swedish.

The institution survey
had 20 respondents across
16 VET institutions in Finland.

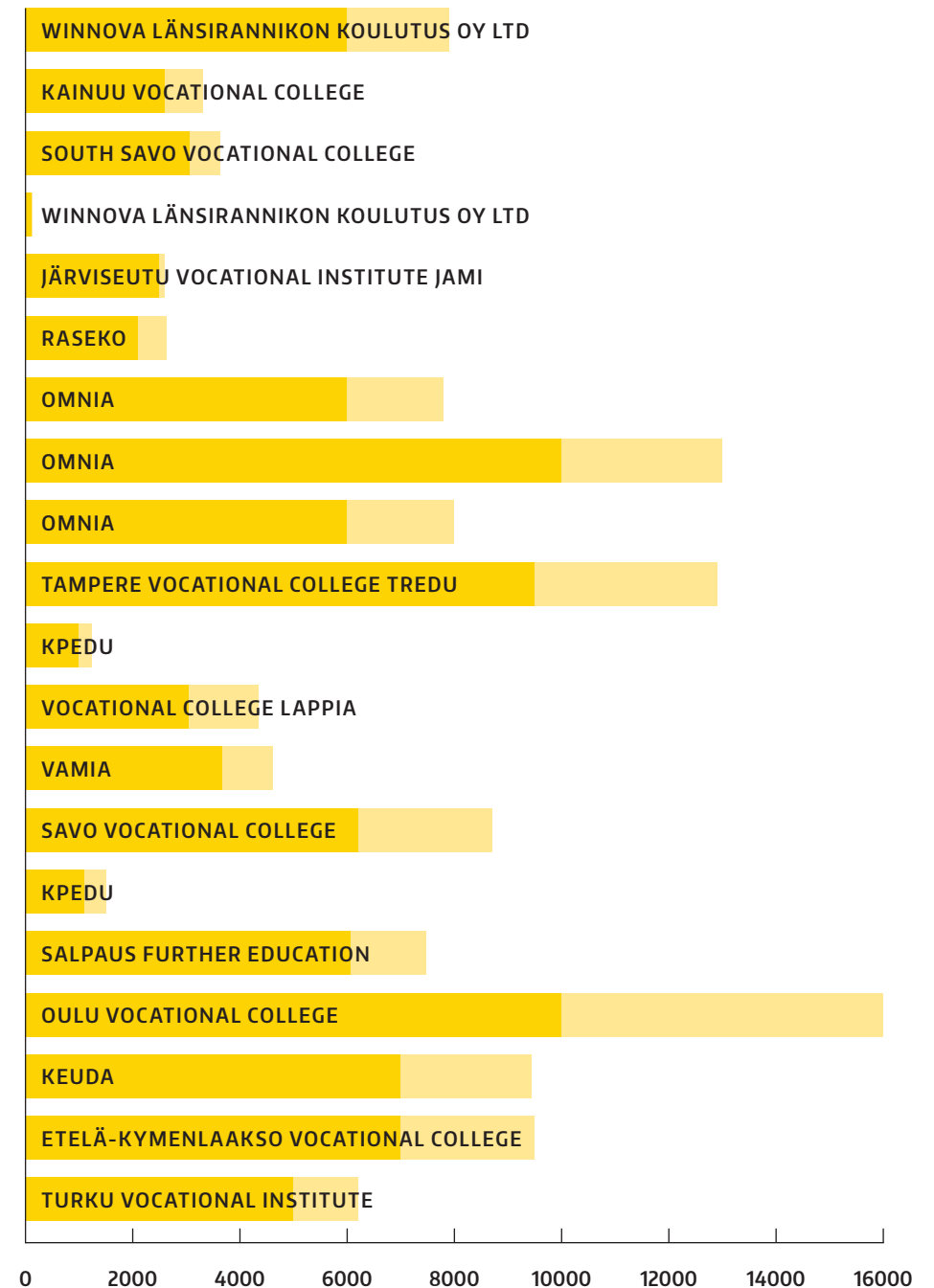
	Institution	What is the size of the area in which your institution's main campus lies?	How many VET students does your institution have?	How many technology VET students does your institution have?	What are your gender ratios among technology VET students?		What is the ratio of technology VET students whose native language is something other than Finnish or Swedish?
					Female	Male	
1	Winnova Länsirannikon Koulutus Oy Ltd	between 30.000–80.000 inhabitants	6000	1900	25%	75%	3%
2	Kainuu Vocational College	between 30.000–80.000 inhabitants	2600	700			9%
3	South Savo Vocational College	between 30.000–80.000 inhabitants	3067	569	5%	95%	5%
4	Winnova Länsirannikon Koulutus Oy Ltd	more than 80.000 inhabitants	6000	700	25%	75%	15%
5	Järviseu tu Vocational Institute Jami	less than 30.000 inhabitants	2500	100	20%	80%	10%
6	Raseko	less than 30.000 inhabitants	2106	532	21%	79%	14%
7	Omnia	more than 80.000 inhabitants	6000	1800	22%	78%	4%

8	Omnia	more than 80.000 inhabitants	10000	3000	15%	85%	25%
9	Omnia	more than 80.000 inhabitants	6000	2000	10%	90%	30%
10	Tampere Vocational College Tredu	more than 80.000 inhabitants	9500	3400	20%	80%	13%
11	Kpedu	between 30.000–80.000 inhabitants	1000	250	38.9%	61.1%	10%
12	Vocational College Lappia	less than 30.000 inhabitants	3050	1300	23%	77%	9%
13	Vamia	between 30.000–80.000 inhabitants	3675	932	11%	89%	25%
14	Savo Vocational College	more than 80.000 inhabitants	6200	2500	20%	80%	5%
15	Kpedu	between 30.000–80.000 inhabitants	1100	400	20%	80%	15%
16	Salpaus Further Education	more than 80.000 inhabitants	6066	1400	10%	90%	8%

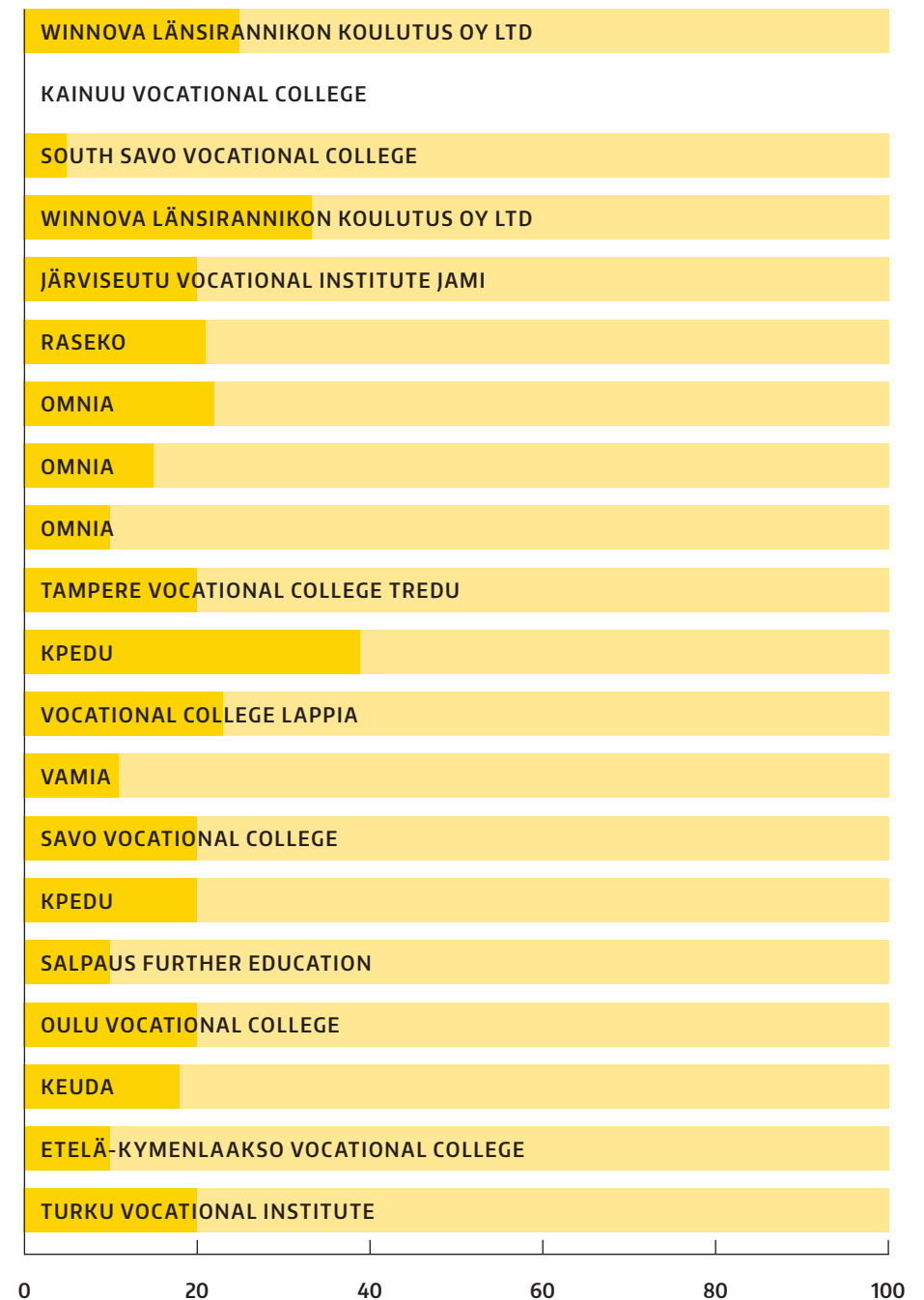
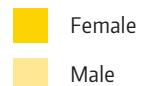
17	Oulu Vocational College	more than 80.000 inhabitants	10000	6000	20%	80%	5%
18	Keuda	between 30.000–80.000 inhabitants	7000	2442	18%	82%	8%
19	Etelä-Kymenlaakso Vocational College	between 30.000–80.000 inhabitants	7000	2500	10%	90%	15%
20	Turku Vocational Institute	more than 80.000 inhabitants	5009	1200	20%	80%	21%

The amount of VET students

- How many VET students does your institution have?
- How many technology VET students does your institution have?



What are your gender ratios
among technology
VET students? (%)



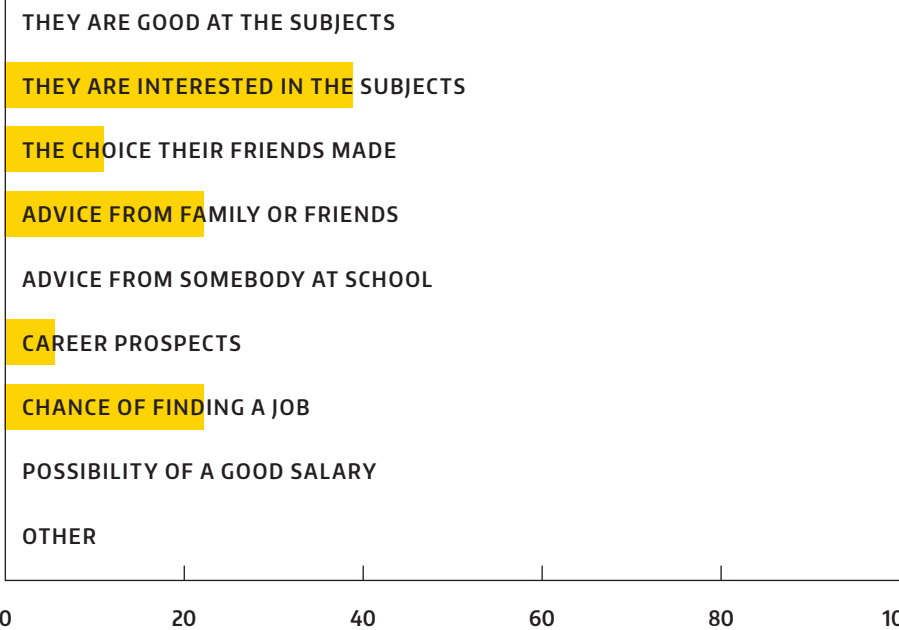
In answer to the question ‘How do you hope that the VET reform will affect vocational education in Finland by 2023?’, the most common answer (included in 9 answers), was that institutions hope that work-based learning and close co-operation between companies and VET institutions would increase. An equally common theme (included in 9 answers), was that the reform would enable individual and flexible learning opportunities for VET students. Other common themes included: the hope that the reform would increase the attractiveness of TVET and therefore the number of applicants would increase and that the reform would encourage TVET institutions to take employers needs into account.

Institutions in answer to the question ‘What do you think motivates students to choose VET?’, predominantly chose the option ‘they are interested in the subjects’, followed by ‘advice from family or friends’ and ‘chance of finding a job’. Interestingly, no participants chose because ‘they are good at the subjects’, ‘advice from somebody at school’ or ‘possibility of a good salary’. This reflects findings from this report so far, that parents are seen to play a pivotal role in students choices, and that careers and further education advice within schools is not seen as instrumental in helping students in making their future choices.

What do you think motivates students to choose VET? (%)

Answered: 18
Skipped: 2

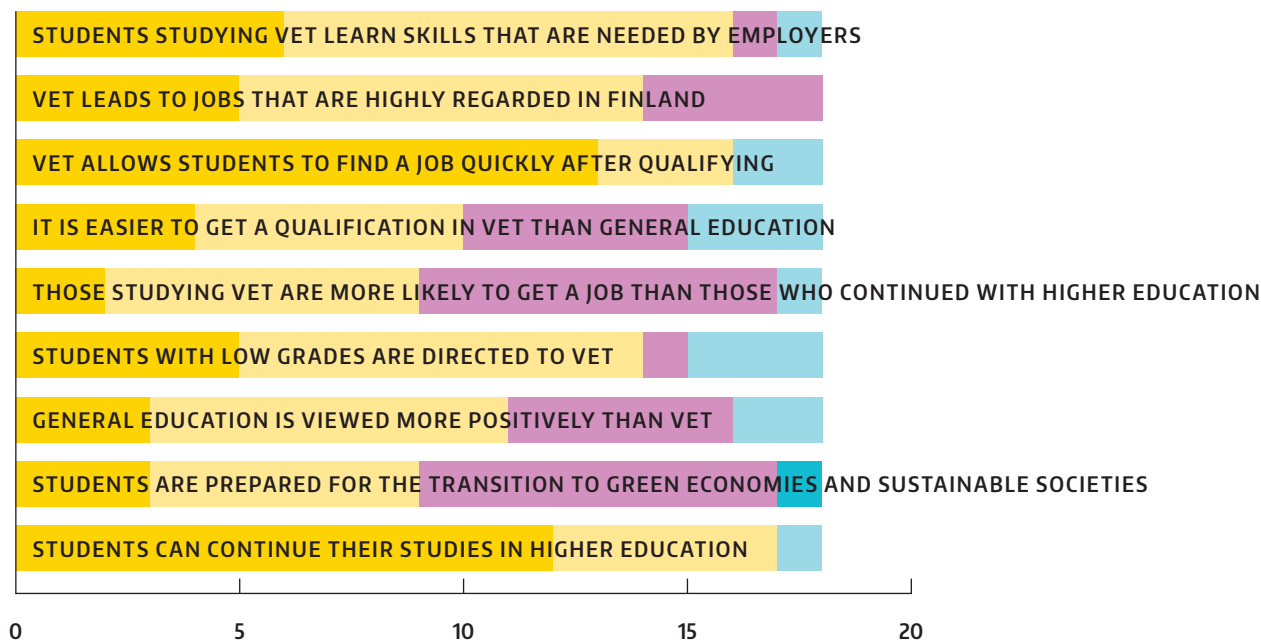
When institutions were asked whether or not they agree or disagree with 9 statements, it was found that institutions predominantly agreed with the statements: ‘VET allows students to find a job quickly after qualifying’ and ‘Students can continue their studies in higher education’. Interestingly, the statement: ‘Students are prepared for the transition to green economies and sustainable societies’, was the only statement that was disagreed with, reflecting what was found in the ‘State of the Debate’. The statement: ‘Those studying VET are more likely to get a job than those who continued with higher education’, also appears to have elicited a mix of feedback, with the fewest amount of respondents agreeing with this statement.



Do you agree or disagree with these statements:....?



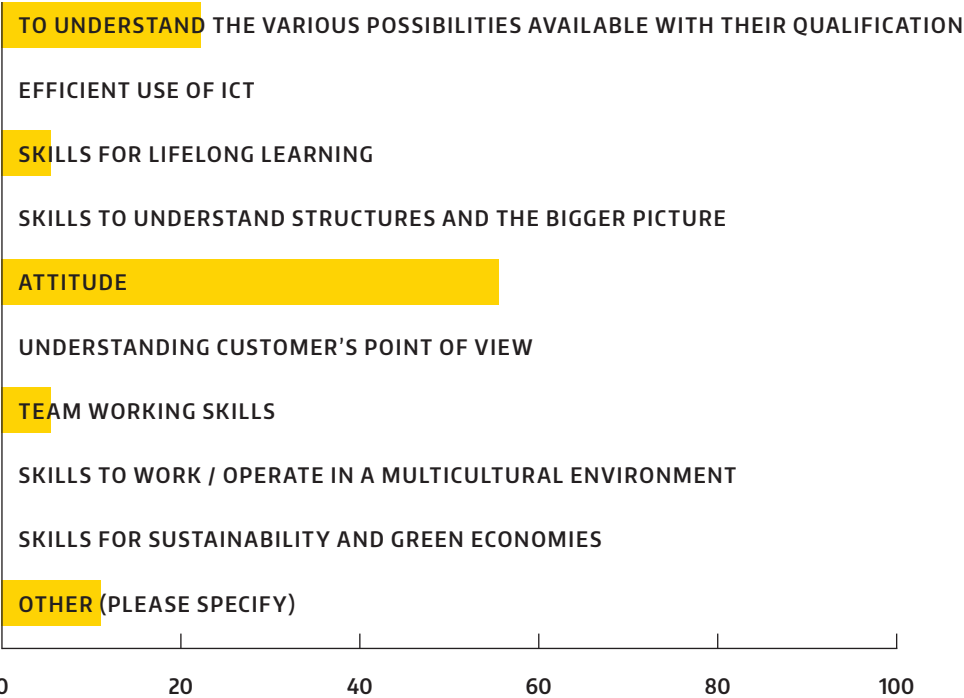
VET institutions attached great importance that the reform would enable individual and flexible learning opportunities for VET students.



In response to the question, ‘How are students provided with feedback about their studies?’, it was noted that students are given feedback continually on a daily basis and also in HOKS-conversations (conversations based on their PCDP-Personal Competence Development Plan). Respondents stated that students are given feedback from their teacher verbally or in written form. Feedback from students is predominantly seen as meaningful amongst institution personal. In answer to the question ‘How do partner employers for technology VET students provide feedback about learning at the workplace?’, institutions said that students are given feedback at their workplace continually, especially at the end of their time on-the-job learning. This is provided both verbally and in written feedback. Some

Which skills do you believe are most useful for students after their graduation? (%)

Answered: 18
Skipped: 2

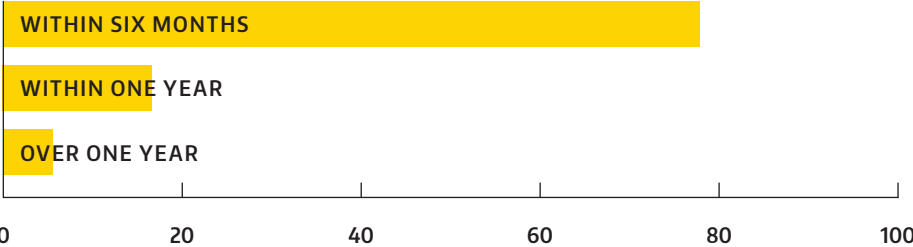


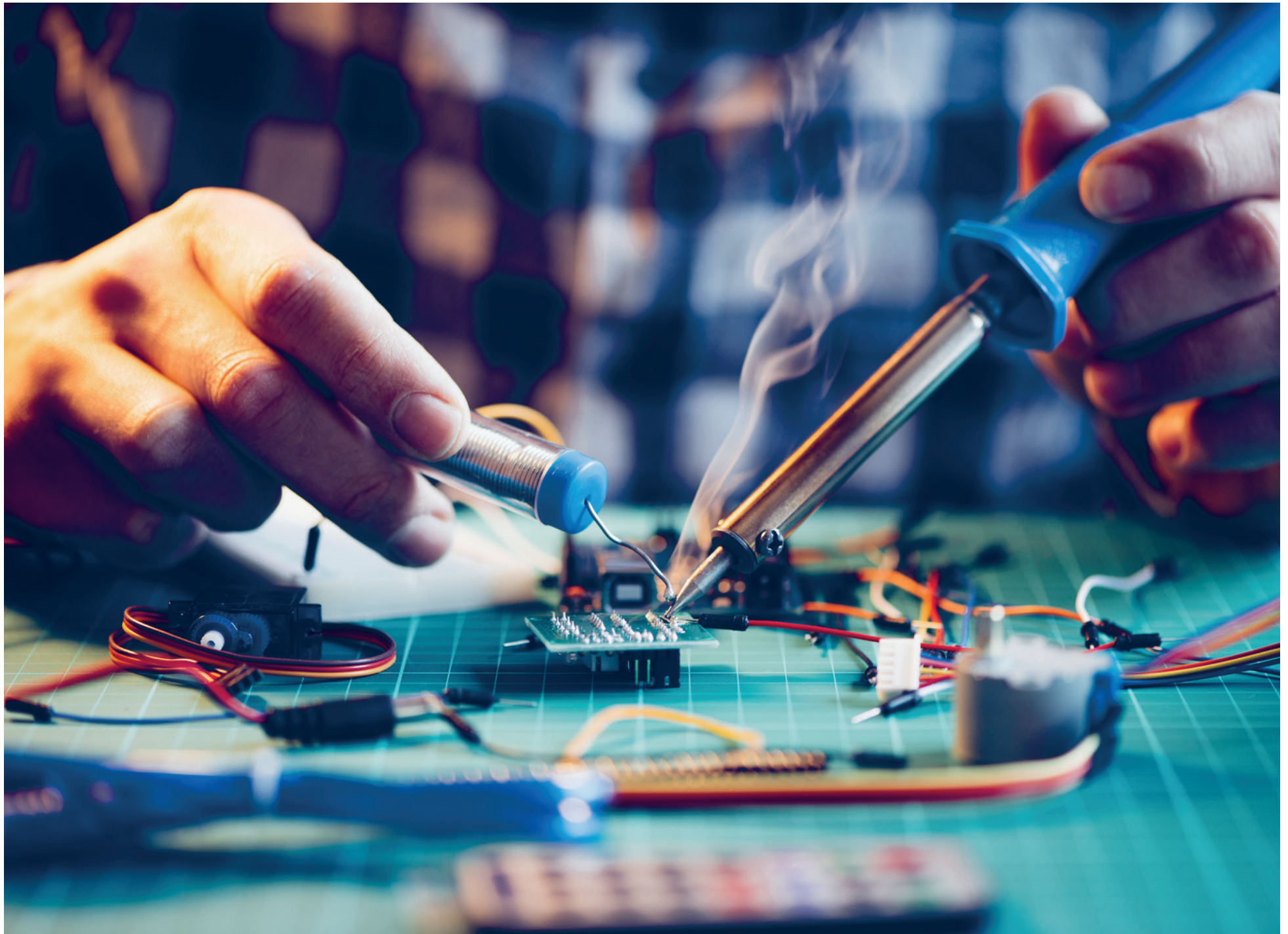
institutions however, noted that employer feedback is given to varying degrees: “There is a lot of variation, some get good feedback while others get only a comment that it went well. More feedback is given during the evaluation.” However, institution personnel still saw this feedback as extremely meaningful (72.22%) or meaningful (27.78%). Whether they thought students found the feedback meaningful, garnered more diverse answers, with only 44.44 percent believing students find the feedback extremely meaningful.

In answer to the question ‘Which skills do you believe are most useful for students after their graduation?’, there are clear skills which institutions deem far more valuable than others. Student’s ‘attitude’, ability ‘to understand the various possibilities available with their qualification’, ‘skills for lifelong learning’ and ‘team working skills’, were the only options chosen by respondents from the options available. In the field of ‘other’, respondents added: ‘learning the basic skills in the field and the knowledge of rules in working life’. It will be interesting to see whether the skills given priority by institutions, are also reflected by students and employers.

How quickly are your students from technology programs employed after graduating? (%)

Answered: 18
Skipped: 2





In answer to the question: 'How difficult it is to become enrolled in your technology programs?' institutions stated that:

- It is difficult to get the necessary amount of students (26.32%)
- Most of the study places are filled (42.11%)
- All study places are filled (21.05%)
- All study places are filled, slightly more demand (5.26%)
- All study places are filled, a lot more demand (5.26%)

The majority of institutions stated that their students from technology programs are employed within six months of graduating (77.78%), with responses varying on the proportion of technology program students who are employed in their own career after graduating.

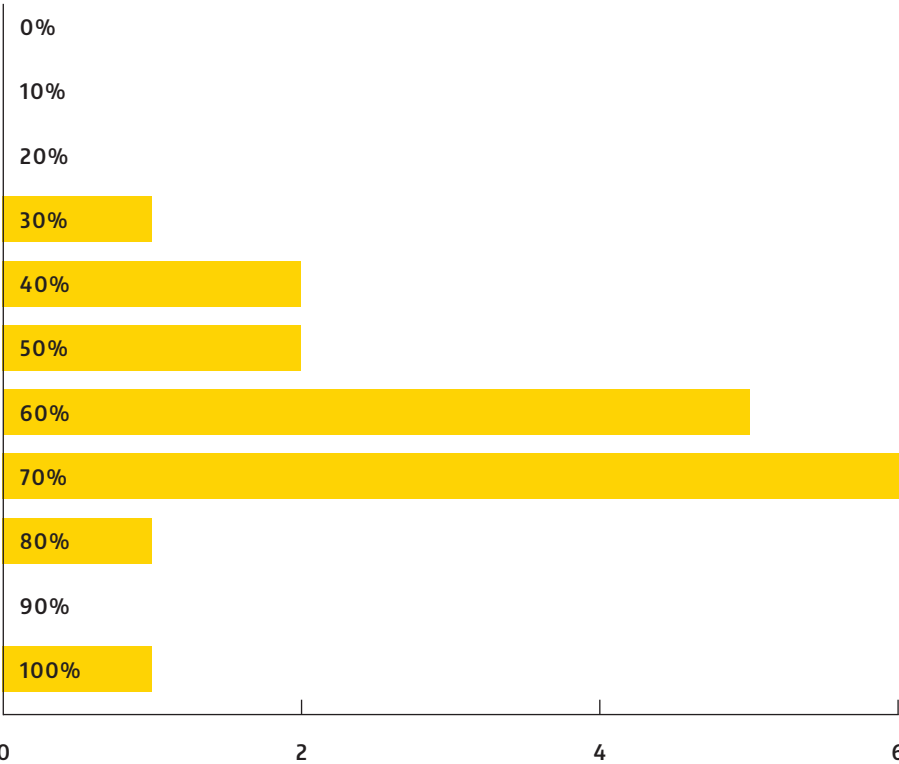
What proportion of your students from technology programs are employed to their own career after graduating?

VET institutions (number)
Number of students (%)

In response to the question, 'How good are the employment opportunities for technology VET students in your region?', the majority of respondents believe there to be lots of opportunities in their region. With institutions believing that technology programs match the expectations of students the majority of the time (63.16%).

The question 'What could be done in Basic Education to promote VET?', elicited a wide range of responses. These are listed below in order of the number of times they were mentioned from highest to lowest:

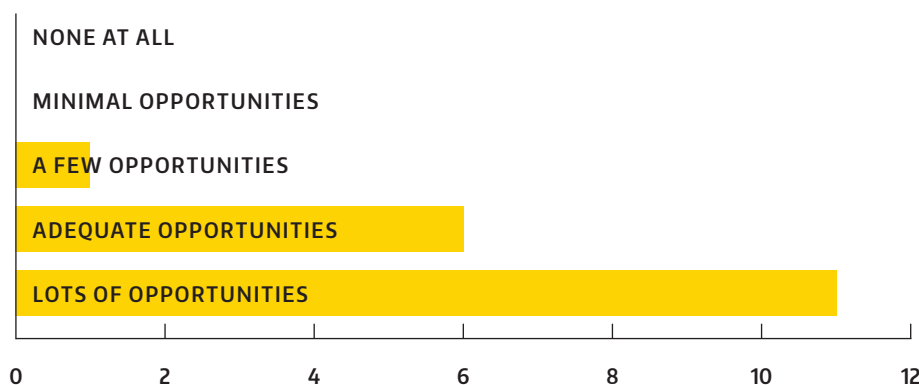
- Getting to know VET days/weeks (institution experience).
- Having practical experience of VET (E.g. experience repairing a car).
- Visits from both current and past VET students to basic education schools to share about their experiences.



- Having VET teachers visit or become permanent staff members of basic education to help create realistic views about VET.
- Student counsellors should have better knowledge of VET, so that they can promote it to students.
- Cooperation projects between 9th graders (aged 15) and VET students.
- Optional courses for 9th graders which are organized in VET institutions.
- Events, fairs and contests promoting VET.
- Using social media to tell young people about VET.
- That basic education students are given more information on the different VET fields and choices.
- Visits in companies, meeting with employers, employers visiting schools and parents evenings in companies.
- Emphasizing the option to participate in further studies after VET.

How good are the employment opportunities for technology VET students in your region?

VET institution (number)
Number of job opportunities



In answer to the question: 'How do you believe VET can be improved to meet the needs of students and their futures?', the most common answer noted by institution leaders was 'by having more collaborations with employers and working life'. Some respondents also hoped that there would be 'more practical learning/projects in jobs', 'that teachers should be committed, inspirational, motivated and encouraging' and 'that facilities and equipment should be updated and that enough should be provided for students'.

With funding becoming linked to VET student employment rates, it was seen as important to ask institution leaders what changes they foresee being necessary in order to ensure institutions still receives adequate funding. The most common answer was that by increasing collaboration with companies and working life, with some respondents also stating that there should be attractive on the job learning places and companies that are appealing to VET students.

! Institutions were asked to list 1–3 actions which they believe are important to keep the current student enrollment rates. The most common answer was to increase general marketing about VET through social media, internet and newspapers, in collaboration with the companies. The second most common answer, was to invite basic education students to VET institutions. Thirdly, they believed that by highlighting collaboration with companies attracts students to apply to VET institutions. Respondents also noted that enrollment rates could be increased through informatic events and fairs, increased cooperation with student counsellors and parents evenings.

Institutions were then asked to list 1–3 actions they are planning to do to improve student enrollment rates and quality. Again, similar themes became apparent e.g. more collaboration with companies, including marketing strategies. It was also noted that increased collaboration with secondary schools could benefit enrollment rates, as well as targeting female students in technology and having the option to study online. The fact that targeting female students is prioritised in answer to this question, is clearly a valuable aim for institutions, given the disproportionate amount of male students participating in the field of technology.

In conclusion, it can be seen that there are common themes that institutions view as important when considering the whole of VET. Collaborating with employers was consistently discussed, as well as engaging with basic education providers, students counsellors and parents. The idea of generally marketing VET on wider platforms, and encouraging application through events, company visits and having VET students and employers visit schools were also commonly referred to.



VET Employer Survey

Given that one of the main objectives of VET institutions is to ensure that their students are employable and skilled to work in their industry of choice, it was deemed vital to gain a better understanding of the desires of employers who work with VET students as a part of their training.

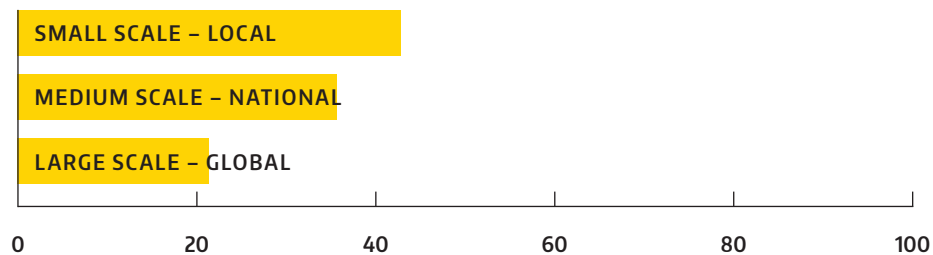
HundrED's employer survey had 28 responses from organizations who work with VET trainees. Employers responded from firms such as Hellman's, Skanska, Avant Tecno Oy, Caverion and Volvo. The scale of the organizations varied, giving valuable insights from small to large employers.

The number of students the employers worked with varied greatly, ranging from 0 to 60 VET students. The proportion of those students who were technology VET students, also varied from 0 to 60.

Employers hope to get more employees to their companies. They also believe that the reform has the potential to shorten and intensify VET courses.

What is the scale/size of your organization? (%)

Answered: 28
Skipped: 0



Company name	No. of VET students	No. of technology VET students	Percentage of students who study TVET
Unknown	1	0	0%
Ascora Oy	1	0	0%
Unknown	1	0	0%
Unknown	1	0	0%
Siimet Oy	30	2	6.67%
Unknown	15	2	13.30%
Tarkmet Oy	10	2	20%
Volvo Truck Center	4	1	25%
Caverion	50	40	80%
Avant Tecno Oy	7	6	85.71%
Hellmans's Production Oy	1	1	100%
Unknown	2	2	100%
Skanska Talonrakennus Oy	50	50	100%

Machinery Oy	1	1	100%
Suomen Kenttävaruste Oy	3	3	100%
DYNASET Oy	3	3	100%
TH-Tools oy	1	1	100%
Nokeval Oy	1	1	100%
Unknown	2	2	100%
Tampereen Koneistus Oy	2	2	100%
Unknown	5	5	100%
Veisto Oy	1	1	100%
Tormets Oy	60	60	100%
Reifer Oy	0	0	n/a
Otapro Oy	0	0	n/a
Hits-Ari Ky	0	0	n/a
Bierkühl Oy	0	0	n/a
Unknown	0	0	n/a

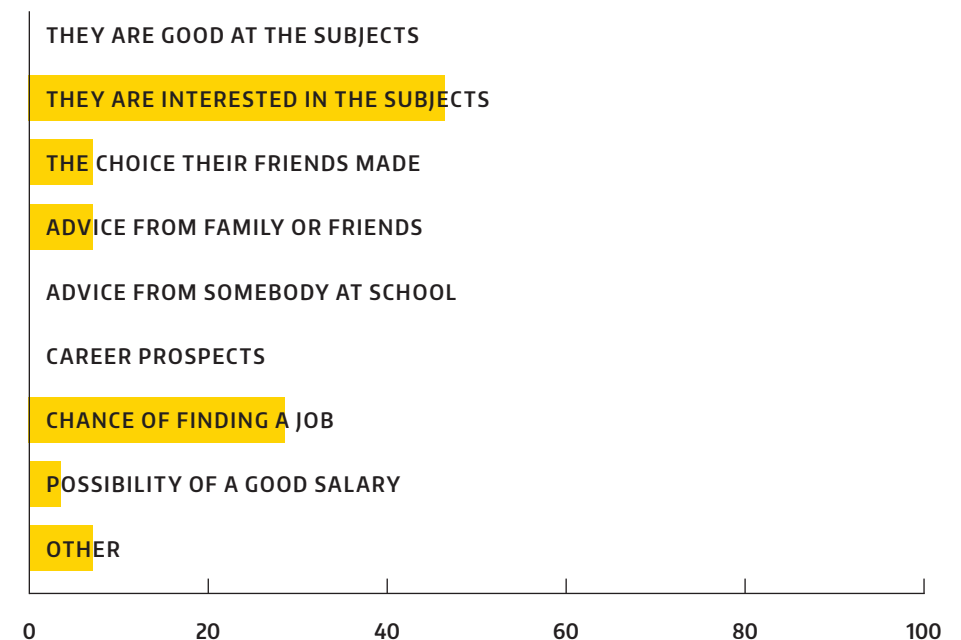
In answer to the question: 'How do you hope that the VET reform will affect vocational education in Finland by 2023?', the most common answer was that employers hope to get more employees to their companies, followed by employers also thinking that the reform will increase work-based learning. They also believe that the reform has the potential to shorten and intensify VET courses, there would be less bureaucracy, and that having students would be less work consuming for companies.

Employers were also asked 'What do you think motivates students to choose VET?', with the most common factor chosen being 'they are interested in the subjects', followed by 'chance of finding a job', 'the choice their friends made' and 'advice from family or friends'. Again, similarly to how institutions responded to this question, employers also see interest in the subject and the advice of family and friends as major contributing factors to what motivates students to choose VET.

It's important to employers
that they find competent workforce
– attitude and good professional
skills are valued.

What do you think motivates students to choose VET? (%)

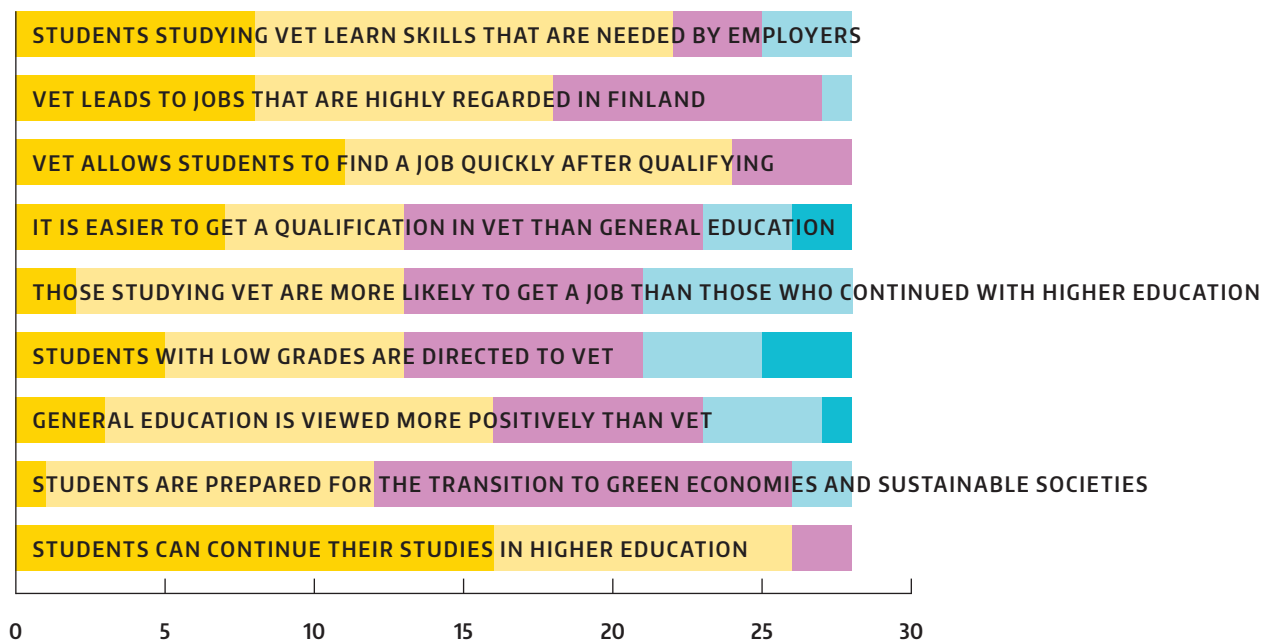
Answered: 28
Skipped: 0



Do you agree or disagree with these statements:...?



Again, employers the same as institution leaders, were asked to rank nine statements on how far they agreed. Interestingly, employers most strongly agreed with 'Students can continue their studies in higher education', followed by 'VET allows students to find a job quickly after qualifying'. Compared to institutions, employers disagreed more commonly, specifically on the statements that 'Students with low grades are directed to VET', 'It is easier to get a qualification in VET than general education' and 'General education is viewed more positively than VET'. It is encouraging to see that employers disagree with these statements, and therefore deem vocationally trained students as strong candidates for employment.

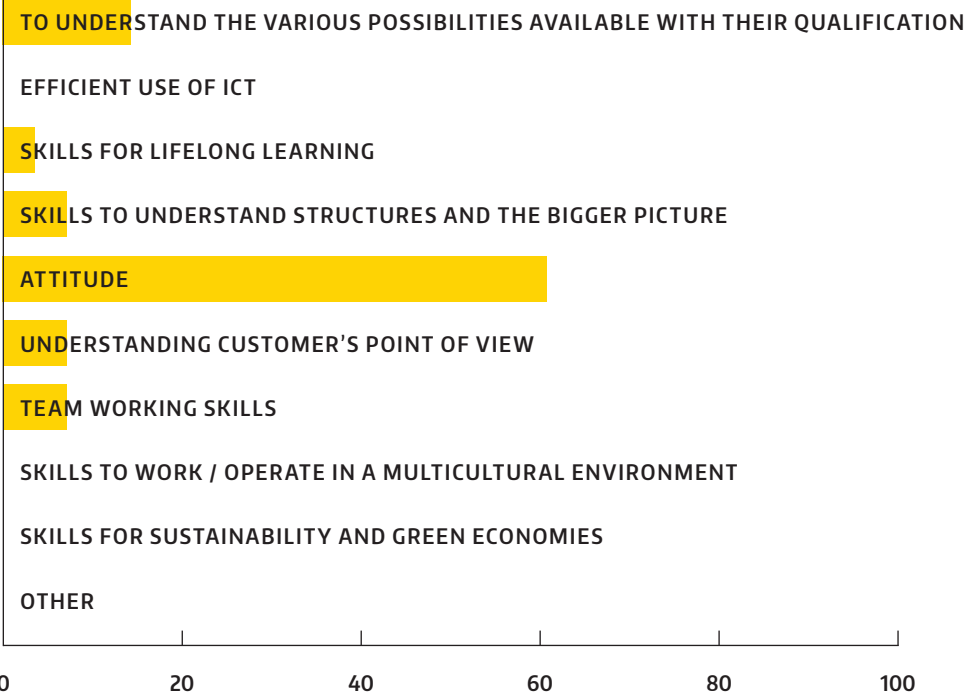


In answer to the question: 'How do students provide feedback to you?', there was an equal split of respondents who stated that 'feedback is given verbally during conversations' and that 'students rarely give feedback if at all'. Therefore, it can be seen that there are little opportunities for students to provide detailed feedback to their employers, despite 42.31 percent of employers finding students' feedback extremely meaningful.

Which skills do you believe are most useful for students after their graduation? (%)

Answered: 28
Skipped: 0

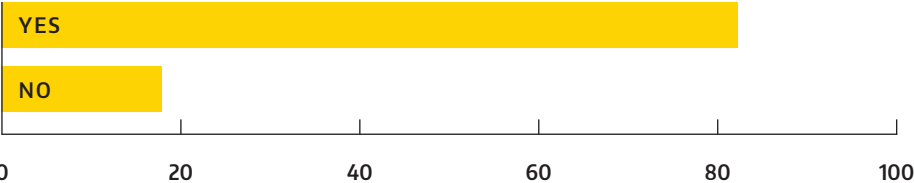
When asked 'Which skills do you believe are most useful for students after their graduation?', employers (reflecting institutions priorities) also deemed 'attitude' a key skill. This was followed by 'to understand the various possibilities available with their qualification', 'skills to understand structures and the bigger picture', 'understanding customer's point of view' and 'team working skills'. Interestingly, skills that were not selected once, were 'efficient use of ICT', 'skills to work / operate in a multicultural environment' and 'skills for sustainability and green economies'. It was surprising to find that not a single respondent selected these three skills, especially given the priority of 'skills for sustainability and green economies' in the 'State of the Debate', as well as Finland's notoriety for having sustainable work practices.



An area of the survey that it is vital to draw attention to, is the fact that 82.14 percent of employers who responded believe that their organization has noticed a shortage in the skills they are looking for amongst candidates. This clearly reflects the skills mismatch that is reiterated throughout the research literature, and is a key area that needs to be addressed. Most respondents attributed this to students having a shortage in the professional skills they require of them, followed by students having a bad attitude to the work and being unmotivated. This further explains the priority given to 'attitude' in desirable skills for students upon graduating.

Has your organization noticed a shortage in the skills you are looking for amongst candidates? (%)

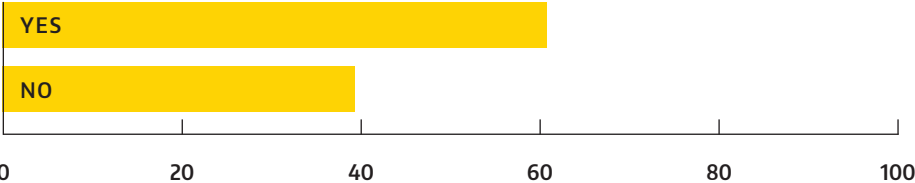
Answered: 28
Skipped: 0



There also appears to be a disconnect in the way in which employers think VET institutions are training students, and whether or not it is meeting the requirements of the workplace. VET employers stated that it was very dependent on the teacher of the student, and their skills; as well as, commenting on the motivation of students. Whether or not motivation is something that can be improved through institutions, needs to be explored further. However, the quality of teachers, is an area that has consistently been discussed in the research literature, and is clearly seen as an area that needs to be addressed.

Do you think that VET institutions are training students to meet the requirements of the workplace? (%)

Answered: 28
Skipped: 0



The amount of opportunity for VET students once qualifying is an area for concern for all stakeholders, particularly in more regional areas; 46.43% of respondents felt there were lots of opportunities for technology VET students in their region, with 46.43% of respondents believing that there are adequate opportunities and 7.14% believing there are a few opportunities.

! In answer to the question 'What could be done in Basic Education to promote VET?', the most common response was that a realistic and honest portrayal of VET should be promoted in basic education. Employers also believed that they should be more involved in going to schools and explaining in-depth about the type of work and skills it involves. Employers also believed it was necessary to give students more information on the opportunities for further study after VET. The value of improving student counsellor knowledge on VET field options and including parents in discussions were also noted.

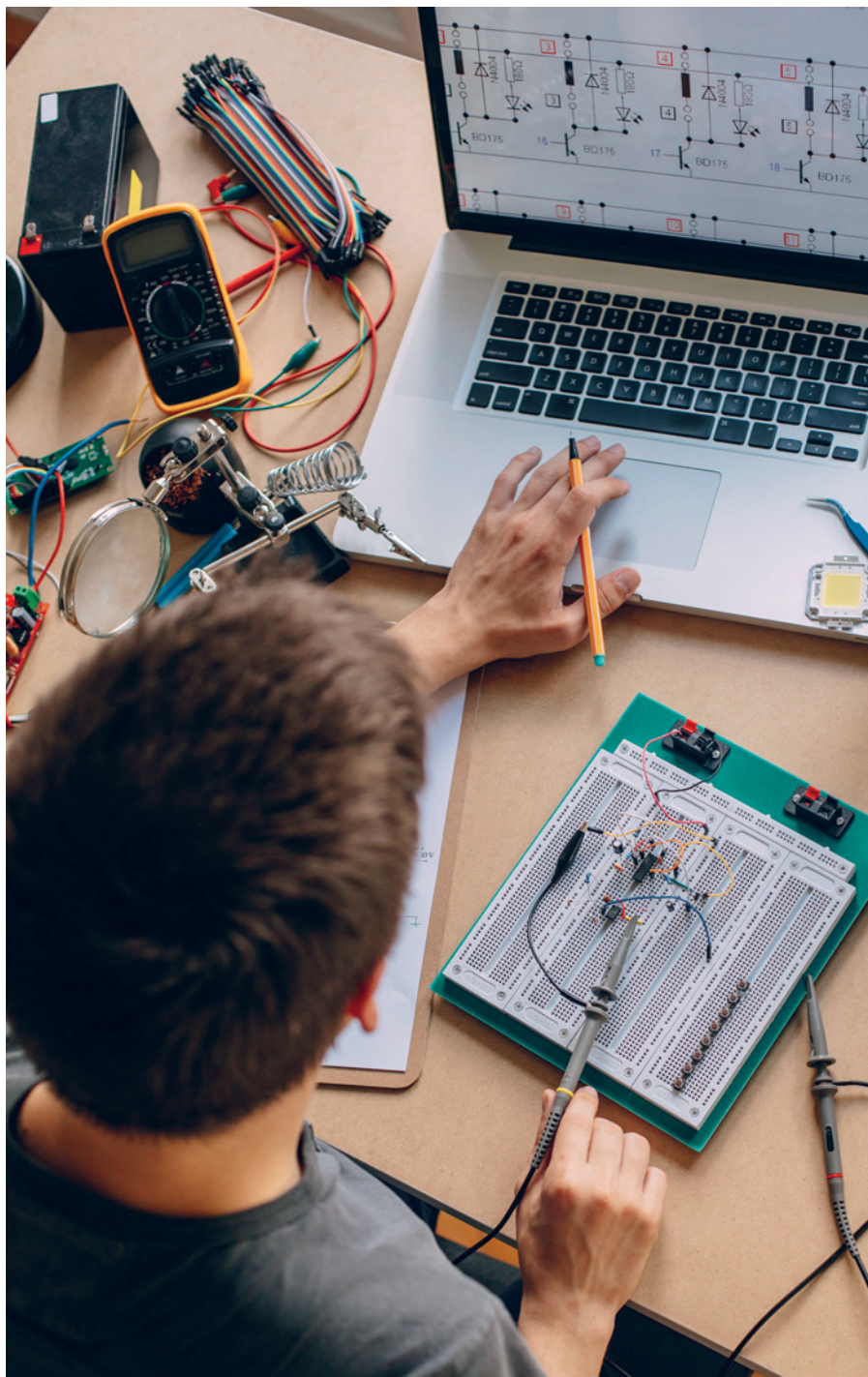
! When asked how VET can be improved to meet the needs of students and their futures, employers felt that improving the cooperation between employers and VET institutions was vital, and that students should be given more opportunities to learn on the job. Employers valued the skill of students fully understanding the role of their job and the ability to continually learn on the job through professional development. Attitude was also highlighted once again as a key skill to be encouraged amongst future workers. Interestingly, employers also noted the value of social skills and teamwork skills.

In answer to the question 'How do you think organizations like yourselves could best engage with VET institutions?', the most common answer was that work-based learning/on-the-job learning is the best way to engage with institutions.

In conclusion, it can be seen that there are common themes that employers view as important when considering the whole of VET. Collaborating with VET institutions was consistently discussed, as well as engaging with basic education providers, students counsellors and parents. This is also reiterated by the research literature. The Confederation of Finnish Industries EK in their 2018 report 'Work based learning in Finland: Finland's new VET system from the companies perspective', also found that they need a more active role with VET providers.¹⁹⁸

Employers thought that a realistic and honest portrayal of VET should be promoted in basic education. Employers also believed that they should be more involved in going to schools and explaining in-depth about the type of work and skills it involves.





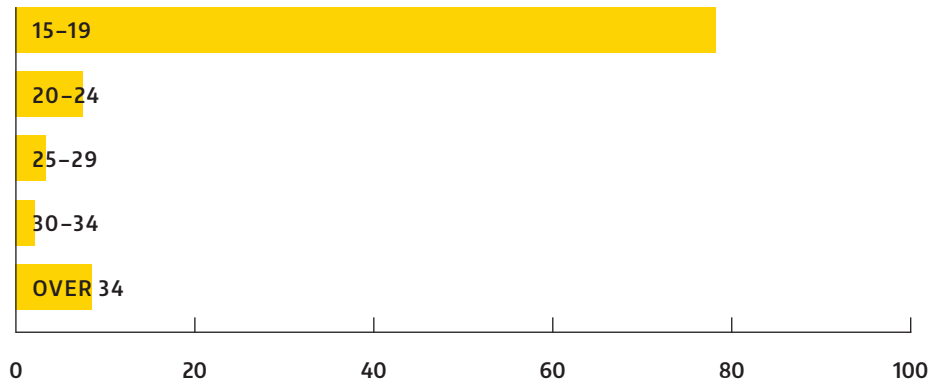
VET Student Survey

With students being the most impacted by changes to VET reform, it is vital that we listen to their views and opinions and gain a greater insight into how they see their VET education in Finland. HundrED developed a student survey to investigate what key areas they wish to see improved.

HundrED's student survey had 640 responses from VET students across 11 of the 16 institutions in this survey. These institutions spread across the entirety of Finland. The age of respondents was predominantly 15 to 19 years of age, hence the focus of this report on youth in VET. Interestingly the majority of respondents were male, which must be considered when looking at responses provided in this survey for potential bias. There were 487 student respondents who studied tech-nics, 80 students who study information and communication technology, 42 stu-dents who study in the field of services, 6 in the humanities and art, with all other respondents opting not to reply.

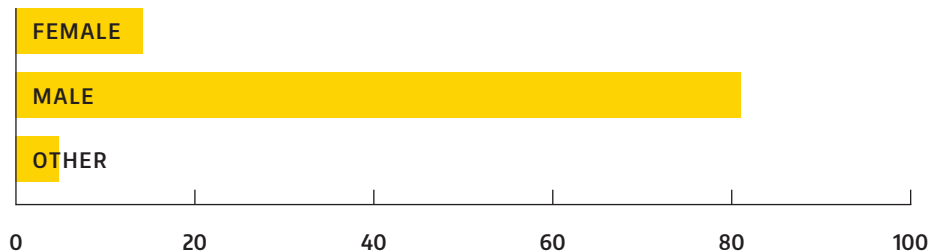
How old are you? (%)

Answered: 640
Skipped: 0



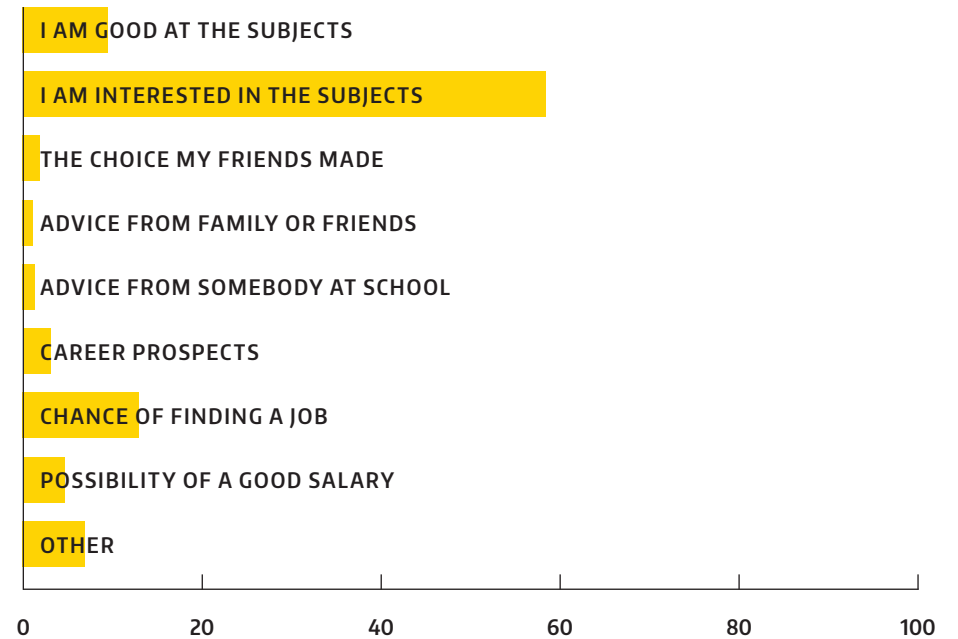
Gender (%)

Answered: 640
Skipped: 0



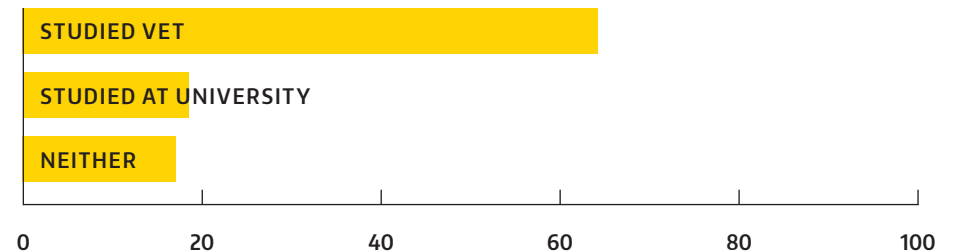
What motivated you to choose VET? (%)

Answered: 516
Skipped: 124



Have either of your parents...? (%)

Answered: 631
Skipped: 9

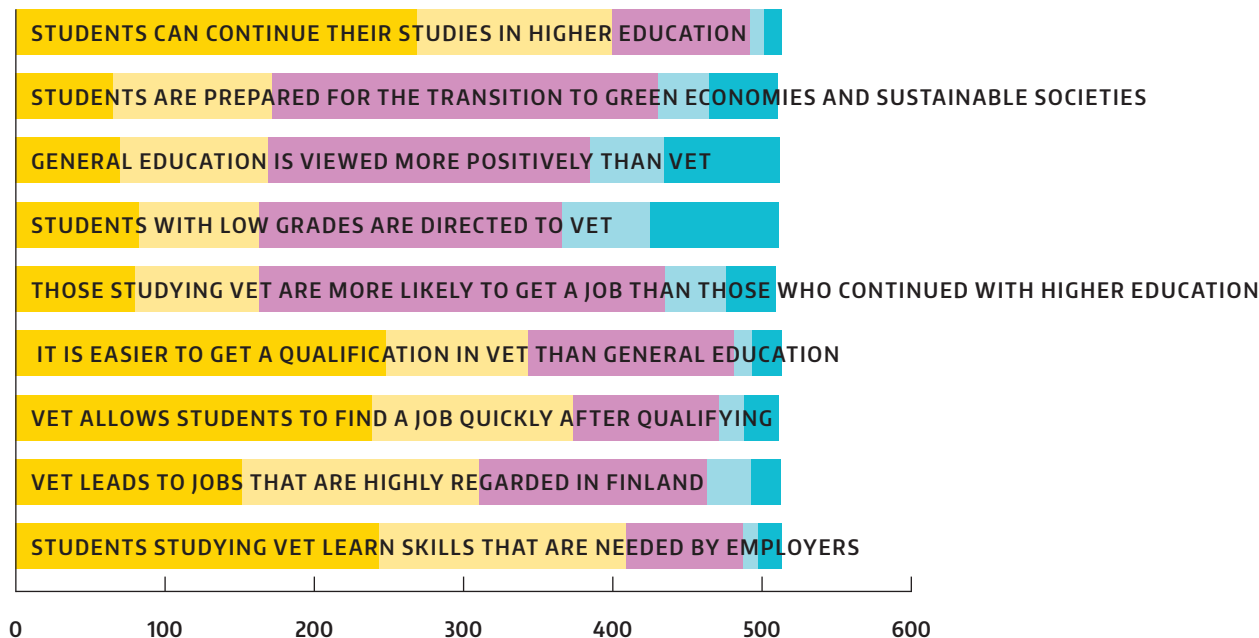


Do you agree or disagree with these statements:....?

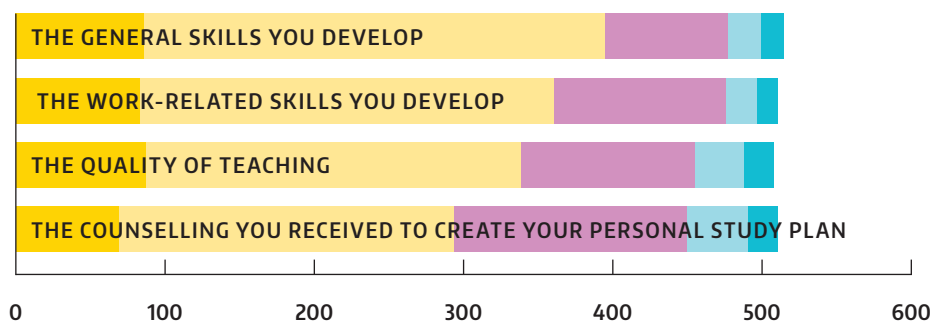


Interestingly, corresponding to the research literature, a high proportion of students who took this survey, also had parents who had studied VET. However, in a complete opposite to other survey research data explored in the previous chapter, it was found that the question 'What motivated you to choose VET?', found that parents and family had a very minimal input, with interest in the subject by far chosen as the most common reason.

Interestingly, students strongly agreed with the statements: that students can continue their studies in higher education, VET allows students to find a job quickly after qualifying, it is easier to get a qualification in VET than general education and students studying VET learn skills that are needed by employers. Students disagreed with the statement 'Students with low grades are directed to VET' the most, which is contrary to what is often cited in the research literature.



How satisfied are you with the following aspects....?



Students appeared to be generally satisfied with the general and work related skills they develop during their VET training, as well as the quality of their teaching. The counselling they received to create their own personal study plan, was also seen favourably; however, this is the one aspect of VET that more students were unsatisfied with. This corresponds with what was found in the state of the debate and other survey findings. Students seem to commonly feel like their career advice has not been of an adequate standard.

In answer to the question, 'How do you think VET is seen in Finland'? The most common theme that arose was that VET was generally seen as positive (almost half of respondents), with 65 respondents stating 'I don't know'. Interestingly, some students stated that VET gives students good employment opportunities and allows students to easily transfer into the labor market. In contrast, 20 students thought that VET could be improved and that it is viewed negatively, and another 20 students stating that VET is underrated and seen as a worse choice than high school. Despite this, 92.15 percent stated they would recommend VET to a friend. Students attributed this to VET being a good choice, and 'nice and casual'. Students also stated that VET gave them better employment opportunities and the opportunity to gain an occupation-specific qualification. Other common answers were: the practicality of the skills gained, with a few respondents believing it is because studying VET is easier than high school.

In response to, 'How do you hope that the VET reform will affect vocational education in Finland by 2023?', half of students stated that they 'didn't know', with the second most common response, being that students hope it will have a positive effect on VET. Interestingly, the third most common response, was that students did not want anything to change. Students also hoped that the reform would have an impact on the quality of VET education and teaching, including equipment available (especially technological ones) and facilities, pedagogical techniques and that students' voice is heard.

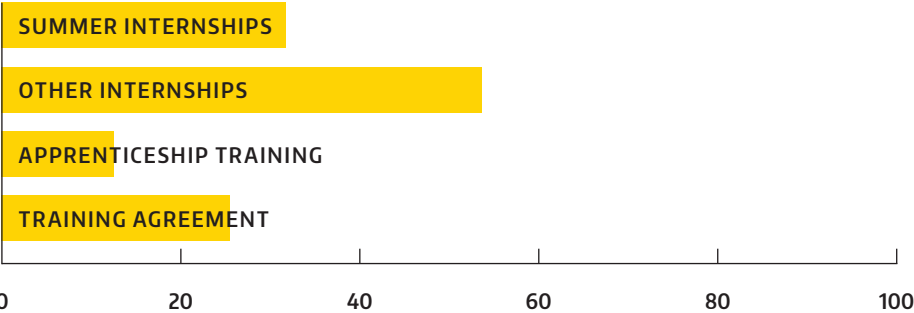
In answering 'How are you provided with feedback about your studies?', students generally stated that they get feedback verbally from their teacher and that they are given feedback in written form along with their grades. Students generally found feedback they received meaningful, and that it helped support their studies. In response to feedback from work experience opportunities during their studies, students most commonly responded that they 'didn't know' or had not had work experience yet. However, some students responded that they were given feedback from employees either in verbal or written form. With students again finding this feedback generally meaningful.

It was found that from the 255 students who answered 'Which collaboration methods with VET have you been using?', a majority of students take internships.

Students felt that attitude and being able to understand the various possibilities available with your qualification were the two most useful skills for a VET graduate. Interestingly, skills to work/operate in a multicultural environment and skills for sustainability and green economies were not deemed very useful to graduates. It would be interesting to see whether this is due to it being an area of the curriculum that is not developed as greatly as others, or whether during work experience/training, they have not found use for these skills. The other skills student noted as being useful to graduates were language skills (4 students), the ability to use important (technological) programs (2 students), that you have a degree and qualification (2 students), the experiences and knowledge from VET education is most useful (2 students), that practical skills are most useful (2 students).

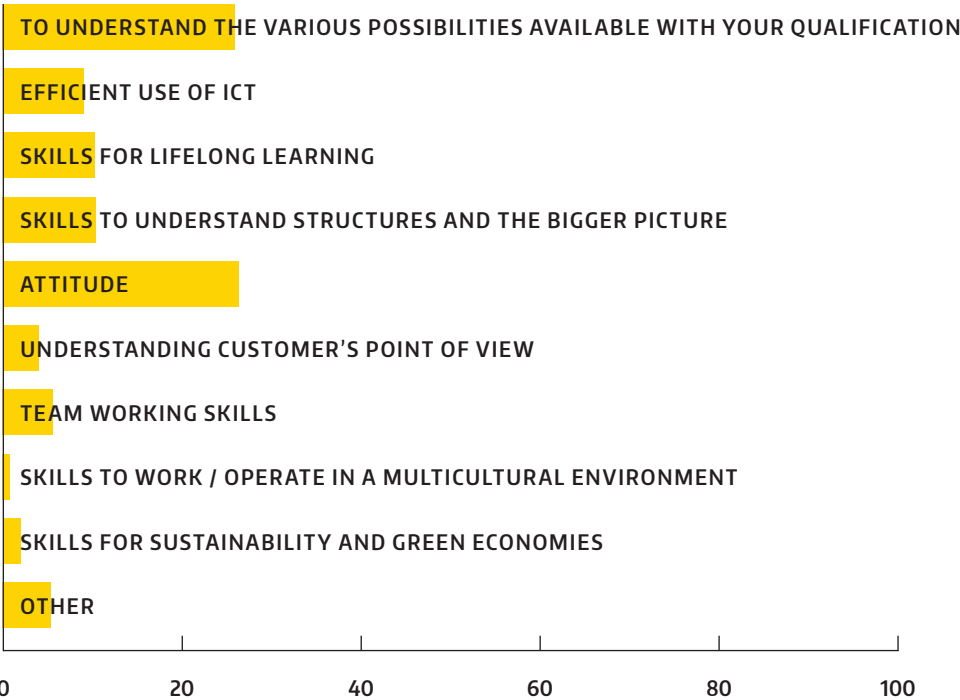
Which collaboration methods with VET have you been using? (%)

Answered: 255
Skipped: 385



Which skills do you believe are most useful after you graduate? (%)

Answered: 497
Skipped: 143



Older students prioritised different needs to their younger counterparts. They had a need for more flexible learning opportunities, as well as more personalized learning to meet their more complex needs – for example, they were working hard to juggle working life, studying and family life.

The majority of students found that their studies had met their expectations. In answer to the question 'What could be done in Basic Education to promote VET?', students commonly stated by giving more information about VET education, e.g. what you do there, different study fields, education structure and 'get to know' VET days. Students also said that VET should be introduced to basic education students by telling about work life: employment opportunities, work tasks and salaries. Students also hoped that VET students could go to schools and tell to younger students about their experiences in VET. A few respondents hoped that VET teachers or people who work in the field would go to basic education to tell about VET and its' possibilities.

Students stated that to improve the needs of VET students and their futures, practical learning and learning in workplaces should be increased. Students also hoped that there would be connections to employers, good training at workplaces when studying and good opportunities to get a job after graduation. Students also hope that there is adequate, skilled teachers/personnel in VET institutions and that teaching is high of a quality. Students also stated that training should prepare the students with essential skills that they really need in the future and working life and that the education is up to date. Surprisingly, it did not appear that students were concerned with their voices being heard, other than in a few examples. There were also rare (yet important) comments about parents' involvement and making further education opportunities easier for VET students.

It must also be noted that older students prioritised different needs to their younger counterparts. Older students had a need for more flexible learning opportunities, as well as more personalized learning to meet their more complex needs – for example, they were working hard to juggle working life, studying and family life. Some older students were returning to study VET and change their career path, after having already completed a degree.

In conclusion, it can be seen that there are common themes that students view as important when considering the whole of VET, e.g. the need for more information during basic education, and better connections between institutions and employers. It was interesting to find that students prioritised the role of parents and families far less than what was found in the research literature.



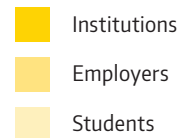
Discussion

Interestingly, it was found that institution leaders, employers and VET students responded similarly to many aspects of HundrED's VET survey. The table below looks at the 5 key questions that each stakeholder was asked and their top responses.

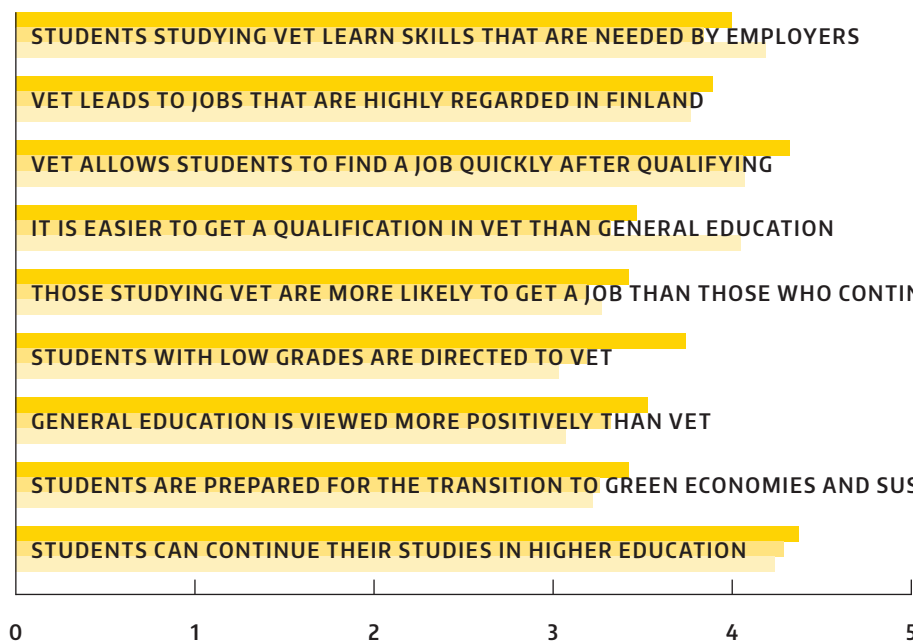
Through greater cooperation between institutions and employers, it will be possible to give students an accurate portrayal of what the various fields of study offer.

	How do you hope that the VET reform will affect vocational education in Finland by 2023?	What do you think motivates students to choose VET?	Which skills do you believe are most useful for students after their graduation?	What could be done in Basic Education to promote VET?	How do you believe VET can be improved to meet the needs of students and their futures?
Institutions	That work-based learning and close co-operation between companies and VET institutions would increase.	'They are interested in the subjects', followed by 'advice from family or friends' and 'chance of finding a job'.	Student's 'attitude', ability 'to understand the various possibilities available with their qualification', 'skills for lifelong learning' and 'team working skills'.	Elicited a wide range of responses, e.g. getting to know VET days/weeks. Having practical experience of VET (E.g. experience repairing a car). Visits from both current and past VET students to basic education schools to share about their experiences.	'By having more collaborations with employers and working life'. Some respondents also hoped that there would be 'more practical learning/projects in jobs', 'that teachers should be committed, inspirational, motivated and encouraging' and 'that facilities and equipment should be updated'.
Employers	To get more employees to their companies, followed by employers also thinking that the reform will increase work-based learning.	'They are interested in the subjects', followed by 'chance of finding a job', 'the choice their friends made' and 'advice from family or friends'.	'Attitude' was seen as a key skill. This was followed by 'to understand the various possibilities available with their qualification', 'skills to understand structures and the bigger picture', 'understanding customer's point of view' and 'team working skills'.	A realistic and honest portrayal of VET should be promoted in basic education. Employers also believed that they should be more involved in going to schools and explaining in-depth about the type of work and skills VET involves. 	Improving the cooperation between employers and VET institutions was vital, and that students should be given more opportunities to learn on the job.
Students	The majority of students replied 'I don't know', followed by students who hoped it will have a positive effect on VET.	'Interest in the subject', was by far chosen as the most common reason.	Students felt that 'attitude' and 'being able to understand the various possibilities available with your qualification' were the two most useful skills.	That more information about VET was needed, e.g. what you do there, different study fields, education structure, as well as having 'get to know' VET days.	That practical learning and learning in the workplace should be increased. Students also hoped that there would be connections to employers.

Do you agree or disagree with these statements:...?



The table above highlights how institutions and employers hope that the new reform will increase work based learning opportunities, as well as increasing the co-operation between VET institutions and employers. Students appeared to be far less aware and engaged with the new reform, indicating that they have not been spoken to about the upcoming changes and that their views may not have been involved in its development. Arguably, students would be far more engaged with the new VET reform, if their views and opinions had been addressed. Interestingly, all three stakeholders prioritised 'Interest in the subject' as the main reason as to what motivates students to choose VET. However, where as institutions and employers also believed that family and friends were motivating factors, this was not selected as a motivating factor by students. In answer to the question: 'Which skills do you believe are most useful for students after their graduation?' all three stakeholders chose a positive 'attitude' as a vital trait in students. The fact that 'attitude' was selected as the most valuable attribute, despite arguably it not being something that is easily taught in VET, shows that ensuring students motivation and passion



! for their field of study is vital. All three stakeholders, again agreed that in order to promote VET in basic education, it is necessary to portray VET realistically, offering students 'real world' insights through current/past students and employers visiting schools. In answer to the question 'How do you believe VET can be improved to meet the needs of students and their futures?', again all three stakeholders noted the value in improving the relationships between VET providers and employers. HundrED's survey of three key VET stakeholders, has shown that they interestingly all have similar ideas on what is valued and what needs to be improved upon. Increasing partnerships between these stakeholders is key if improvements are to be made.

It is interesting to compare how institutions, employers and students felt about nine statements about VET (seen in this graph). Responses across the three stakeholders were relatively similar across the nine statements, with all three stakeholders agreeing that 'Students can continue their studies in higher education'. Interestingly, in response to the statement 'It is easier to get a qualification in VET

Representatives of VET institutions, employers and students all noted the value in improving the relationships between VET providers and employers in order to meet the needs of students and their futures.

than general education', students agreed with this far more than institutions and employers. All stakeholders undervalued skills in sustainability and greener economies. In a research report carried out by Plan International in 'Green Skills for Rural Youth', it was found that "Teacher training is a significant gap, with the majority of teachers feeling ill-equipped to deliver training in green skills."¹⁹⁹ Despite this report focussing on rural youth in South East Asia, it is interesting to find that they have similar findings to the International Labour Force's report on 'Skills for Green Jobs: A Global View' written three years earlier. This report looked at 21 countries and the skills need for greener economies. It found that skills for transitioning to green economies are under prioritised in many countries, despite the potential of green skills to boost employment and productivity.²⁰⁰

! When looking at feedback opportunities, it quickly became apparent that this is a key area for improvement. Institutions appear to be portraying a far more 'rose-tinted' view on the feedback they provide, with students feeling that this is an area that needs improving. Institutions also appeared to value employer feedback more than the students themselves. Feedback is a valuable aspect of improving VET for all stakeholders, therefore, it is integral that this process is streamlined and improved, so that students, employers and institutions can improve their practice. This is also reiterated by the research literature. The Confederation of Finnish Industries EK in their 2018 report 'Work based learning in Finland: Finland's new VET system from the companies perspective', state that "students and employers feedback is key to develop [the] VET system."²⁰¹

It was interesting to find that 82.4 percent of employers recognized a shortage of skills in students, with 40 percent of employers unsure as to whether VET institution training was meeting the requirements of the workplace. The notion of a skills mismatch has been consistently noted throughout the research literature, and is clearly a key barrier that needs to be addressed. By developing communication and feedback opportunities between institutions and employers, it will ensure that both stakeholders are having their needs addressed.

! In conclusion, it can be seen that all stakeholders in VET need to begin collaborating more openly with one another, if they are to begin addressing the various barriers affecting VET. Through greater cooperation between institutions and employers, it will be possible to give students an accurate portrayal of what the various fields of study offer, as well as ensuring that students are learning key skills both in the workplace and whilst studying at institutions. Despite student voice only being discussed minimally across all three surveys, HundrED believes that students having the opportunity to openly express their views and opinions to both institutions and employers is vital.²⁰²



Stakeholders

There are a variety of stakeholders which need to be considered when researching TVET. The views and opinions of institutions, employers and students have already been explored in great depth, however, for the purpose of this study, it is also necessary to look at the views of parents and educators. Each stakeholder has their own priorities, aims and barriers, which must be taken into consideration when looking at potential bias.

It has been discussed consistently throughout this report, how the extent to which parents engage with their child's education plays a pivotal role in whether students choose to study TVET. Despite HundrED's own student survey findings being contrary to this, parents are still seen as an instrumental factor across numerous reports, and therefore deemed important to explore further.

It has been found that students whose parents have not had an academic education, are more dominant in VET programs.²⁰³ With CEDEFOP stating that: "Parental education appears to have a strong influence on the education choices of young Europeans..."²⁰⁴ In HundrED's own student survey, it was also found that students who are currently studying VET predominantly had parents who had also studied VET. Albæk et al., found that school success and therefore labour market outcomes for students were closely related to their family background.²⁰⁵ Therefore, it could be argued that parents who have not studied VET do not have the background or information to encourage their children to study VET, even if it may be the better option for their child.

There has been research on the impact that parents can have on breaking down gender barriers in the choice of VET areas their children choose to study.²⁰⁶ It is therefore vital, that parents are educated around and encouraged to break down these gender norms, ensuring that their children understand that they can study the field that interests them most despite their gender.

HundrED's own research report 'Every Child to Flourish' found that parents and carers focused heavily on themselves as a stakeholder, with 44.67 percent of their focus drawn to what their role can be in relation to education, highlighting how isolated they may feel from current opportunities. Parents were also found to be concerned over how prepared young people are after they finish basic education.²⁰⁷ It is therefore imperative, that parents, families and carers are made to feel involved in their child's future and current vocational education, and that they are given reliable information to help their children make informed choices.

Educators also play a vital role in vocational education, and are often those who can face the most criticism for students not meeting expected targets, as well facing the impact of constantly changing curriculums, policies and reforms.²⁰⁸ Misra, an academic looking at the role of VET teachers in Europe, found that teachers are often neglected as a stakeholder in discussions around VET. Misra notes that VET teachers have not been paid enough attention, with their professional development needs being neglected, and as a result impacting VET students. She argues that we should: "...make every effort for continuous professional development of VET teachers that in turn will help them to constantly produce qualified VET workforce for a better world and strong economy."²⁰⁹ Lahelma et al., through in depth interviews with vocational teachers, looked at how the role of vocational teachers as being more than purely educational, is often overlooked. They argue that students are often missing out on the 'care' element, an aspect that teachers felt untrained to help provide, with the conclusion that this is an area that needs to be encouraged both in vocational teacher training and professional development. They suggest that developing this element of vocational teaching will improve

dropout rates for students.²¹⁰ Career counsellors are another stakeholder, that tend to be even more neglected in academic research around vocational education. UNESCO in a recent conference on how the image of TVET can be improved, stated that educators and careers counsellors need to be enhancing the image of TVET in the way they teach and discuss future career paths. The report on this conference notes how the University of the West Indies, has developed a program to specifically encourage training for TVET in educators and school leadership. Educators and careers counsellors are often not trained in the skills needed or provided with reliable information to impart on their students. The OECD in a report on the 'The Relationship of Career Guidance to VET', note the important role career advisers have in informing the choices their students make. They conclude with the recommendations that careers guidance should be provided that is accessible to all, which is informed by labor market outcomes both before entering a VET program, and during. As well as the fact that, "...VET systems, [should] provide young people with the generic, transferable skills to support occupational mobility and lifelong learning, and with the occupationally-specific skills that meet employers immediate needs." This report was written in 2009, and it is clear that the recommendations are still yet to be addressed.²¹¹

Rintala et al., analysed the twitter social media postings of vocational education stakeholders in response to the new reform in Finland. They found that, "The topics were related to cooperation between education and work, teachership and learning and skills."²¹² These reiterate common themes that have been discussed in both this reports 'State of the Debate' and Surveys.

In conclusion, it can be seen that there are multiple stakeholders in vocational education, with this research report only touching upon a select few. It has become apparent however, that a multistakeholder collaborative approach to vocational education is needed, and there is much room for improved research into the various different vocational education stakeholders and the potential they offer to improve the image of TVET.²¹³



Dong-Seob Lee / FINLAND

Dong-Seob Lee who originates from South Korea, worked up until recently as an international advisor for TVET in Korea and Finland to aid in the design and implementation of new teaching and learning methods, as well as global on-the-job learning in multiple sectors of vocational education. Dong-Seob's first experience in the field of TVET was working as an expert in the 'World Skills Competition Organization Committee' in Seoul in 2001. Since then, he has continuously been developing his practice-oriented research and part-time teaching at Tampere University and vocational schools in Finland. One of his most valuable experiences was working as an expert with experienced practitioners from Omnia, Keuda, Salpaus, and Varia in KoreaTechnet consortium. This was partly funded by the Finnish National Agency for Education, for the purpose of improving student and staff mobility, and mapping the competence-based curricular in the automobile, automation technology, and mechanics

sectors between the two countries. Dong-Seob's main research area is comparative education policies and practices, with a specific interest in improving the quality of teaching and learning.

HOW DO YOU THINK TVET IS SEEN IN FINLAND?

TVET in Finland is still considered to be for students who are lagging behind in their studies and are from lower socio-economic backgrounds. Motivation, as well as the field of study options available, and the locality of the school can have a big impact on TVET attractiveness. Despite the stigma of TVET, there is a growing tendency for students to go back into TVET from higher education or to study vocationally alongside general studies.

The recent Finnish vocational education reform is closely aligned with the national fiscal austerity policy. The Juha Sipilä's government aims to accelerate the entry into the labor market, and to increase the employability of young people by shortening the study period as much as possible. There is currently a shift from 'school-based and teacher-centered' learning to a 'work-based and learner-centered' style of learning.

WHAT DO YOU BELIEVE ARE THE GREATEST STRENGTHS OF THE FINNISH TVET SYSTEM?

The greatest strength of the Finnish TVET system, is the different values permeated and

how different stakeholders are cooperating, interacting and discussing together. However, there is always room for improvement, and there is an increasing disconnect between the wishes of students and teachers. Therefore, continuous professional development of educators, improving the role of career counselors, and listening to student feedback is vital.

WHAT AREAS DO YOU THINK COULD BE MOST IMPROVED ON IN TVET IN FINLAND?

In Finland, the total budget for TVET (2018–2019) decreased by more than 15 percent compared to the previous year, where as the number of students to teachers increased significantly. There has been a significant decrease in the number of TVET teachers, with many teachers being expected to work overtime to meet the demand. Without innovation and development of teaching and learning, it is difficult to guarantee the quality of teaching.

Due to the length of on-the-job learning increasing, whilst time spent in schools is decreasing, teachers have found that they are struggling to deliver the relevant content knowledge and professional skills in the limited time frame they are given. They therefore find themselves working for example in the capacity of career counselors. This clearly indicated a mismatch in terms of supply and demand, with more careers counselors being urgently needed.

TO WHAT EXTENT ARE YOUTH VOICES HEARD IN FINLAND, AND HOW ARE THEIR EXPECTATIONS AND FUTURE GOALS BEING MET?

The National Union of Vocational Students in Finland (SAKKI) and the Finnish National Union for Students (OSKU) play an important role in voicing the opinions of youth who are in upper-secondary school. The youth parliament also gives young people the opportunity to become politically involved and voice their concerns. However, there are not enough opportunities to reflect the voices of young people from marginalized backgrounds. For example, educators should include students in the development of curricula. This has been shown to enhance the participation of students and increase their sense of belonging in the school community. This offers all students the opportunity to have their voice heard and work together in collaboration with other students and teachers. Opportunities for students to provide feedback on their education is vital.

WHAT IS BEING DONE TO RETAIN STUDENTS IN TVET IN FINLAND?

One of the biggest challenges in Finnish TVET, is that the dropout-rate is relatively high. As a solution, an institution in the southern part of Finland adopted a module-based system for the students to be able to flexibly plan their own schedules, balancing general subjects as well as working with employers. It is also important to

increase student motivation, if the levels of drop out are to be curbed.

In one TVET school, the students' opinions are reflected weekly to enhance the satisfaction of school life and their enjoyment of learning. Student committee members receive 11 weekly tasks during their Monday morning meetings and their learning environments then reflect their opinions. Each team created a small booth at the center of their campus hall, posting selected assignments and creating a support class where senior students can help the lower grade student during breaks.

DO YOU HAVE ANY OTHER COMMENTS YOU WOULD LIKE TO SHARE?

By developing innovation in TVET, we will be able to create a concrete, tested, attractable and marketable product. The strength of Finland's TVET sector, is that all stakeholders within TVET are working towards improving the future labor force and the quality of life for students. However, the system is only working well on a regional level, and if we wish to change TVET nationally, we need to begin improving the cooperation of stakeholders between regions.

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What is being done to retain students in TVET globally?

TVET research (like the majority of educational research) is influenced by international comparison.²¹⁴ It is impossible in this case, due to time and funding restraints, to explore every country globally and the way in which their TVET policies differ. For the purpose of this research spotlight, we have created short case studies on TVET in Estonia, Denmark, England, Canada, Australia and Germany. These case studies will be followed by 'Advisory Profiles', wherein an International Advisory Board member from the country will provide insights into TVET in their country and the work that is being done to ensure TVET is seen as a more attractive option to students. This section will also include 'Policy Insights' to provide a snapshot of a recent development in that country that has been aiming to improve the state of TVET.

Estonia Case Study

Estonia's education system is traditionally viewed very highly, with the share of citizens who have a low qualification or none at all is the sixth lowest in the EU. Its education system is decentralised, and relatively small, which allows for flexibility. Responsibilities are divided between the State, local governments and schools. VET is predominantly provided at upper secondary and post-secondary levels; however, VET programmes are also made available to those who have not completed basic education.²¹⁵

"Vocational education serves the purpose of fostering the knowledge, skills and attitudes, occupational know-how and the social readiness required for working, participating in social life and participating in the lifelong learning process."²¹⁶

– REPUBLIC OF ESTONIA MINISTRY OF EDUCATION AND RESEARCH, 2018

With Estonia's relatively recent change (the early 1990s) from a Soviet system to a market economy, VET underwent relatively radical reforms. Over the last decade, Estonia has seen a lot of change in its VET, a reflection of both changing needs in the labor market, and demographic trends. The work that has gone into Estonia's VET system has been to raise its efficiency, with smaller providers being merged

into bigger regional centres, so as to offer a wider number of qualifications. Nearly 80 percent of VET schools in Estonia are owned by the state, with the other 20 percent being made up of private and municipal VET schools. Estonia's 'Lifelong Learning Strategy 2020' helps to support learning opportunities, and career services that are of a high quality and take account of labour market needs. One of its key aims, is to ensure that a greater number of people have vocational and professional qualifications across all regions and age groups. Since 2003, the economic ministry in Estonia have annually forecasted labour market needs. The data produced, shows demands for employees by sector and level of qualification. In 2015, the education ministry launched a new forecasting system, known by its acronym 'OSKA' (see 'Policy Insight' box below). Oska develops evidence and intelligence for all stakeholders in education and the business world, providing VET institutions and future students with invaluable information in a user friendly format.²¹⁷

Similar to the findings of this report's 'State of the Debate', Estonia also struggles with high levels of youth unemployment. CEDEFOP in their VET profile on Estonia note how: *"In 2016, the unemployment rate of people with medium-level qualifications, including most VET graduates (ISCED levels 3 and 4) is still higher than in the pre-crisis years. The employment rate of recent VET graduates increased from 79.6% in 2014 to 82.1% in 2016."*²¹⁸ Despite improvements, the dropout rate for VET in Estonia is high (In 2015/16 it was 19.2%), with VET providers struggling to retain vulnerable learners (those with low grades in basic education), especially during the first year, when the risk of dropping out is at its highest.²¹⁹

Estonia has been working hard to make VET a more attractive option. Estonia named 2017 'The Year of Skills', which links with one of its Presidency priorities, to take forward the EU Skills Agenda. By 2020, Estonia aims to increase the number of students participating in VET after completing basic education, to 35 percent (in 2016 the percentage being 26.2). This is an ambitious aim, given that currently only around 25 percent of learners enrol in VET. CEDEFOP argue that there will need to be a big shift in mindset to meet this aim. The Estonian Government plans to make VET a more attractive option by improving its image and raising awareness through national skills competitions and creating a list of incentives. Estonia is also focused on encouraging employers to be more involved in VET education, as well as promoting apprenticeships. As a part of Estonia's 'Lifelong Learning Strategy 2020', it clarifies its priorities in developing initiatives in education and training. As mentioned before, a key priority is to increase the number of citizens completing a vocational qualification, and a plan of action has been devised accordingly:

- preventing early leaving
- efficient use of OSKA

Estonia has seen a lot of change in its VET, a reflection of both changing needs in the labor market, and demographic trends.

- Year of Skills 2017
- Flexible learning pathways (encouraging partnerships between general education and VET providers to offer learners more opportunities)
- developing digital competences
- promote Estonian as a second language and foreign language²²⁰

In conclusion, it can be seen that Estonia has and continues to prioritise and value the importance of VET. Estonia's 'Lifelong Learning Strategy 2020', as well as the use of OSKA to forecast labour market needs shows a proactive approach in addressing barriers to VET in Estonia. Estonia similarly to Finland, and many other countries, suffers from high youth unemployment and high drop-out rates from VET; however, their proactive approach and ambitious goals demonstrate an understanding of the value VET can have in Estonia, and it will be interesting to see the impact of OSKA and whether Estonia's 'Lifelong Learning Strategy 2020' meets its goals in the next few years.



POLICY INSIGHT: ESTONIA

Estonia began a skills anticipation system in 2015 called 'OSKA' to ensure that students are learning the most relevant skills for the Estonian labour market. They analyze the current employment situation in each sector, and forecast the future of the Estonian labour market.²²¹ These insights provide all stakeholders in Estonia with an overview of which skills students should be focussing on in order to meet job market needs, as well as allowing educators, institutions and government officials to develop curriculum and course spaces dependent on need. A professor at Tallinn University, Unt, looks at the impact of OSKA on policy in Estonia, she states that OSKA "Aims to support policy making with regard to assessing demand for education and training provision, labour market policy, career guidance."²²² She states that OSKA has strong political support due to their desire to make informed policy decisions and stakeholder interest in successfully predicting job market trends.²²³ CEDEFOP also comment on how OSKA successfully engage all stakeholders in the anticipation of skill needs and comment on the potential success of OSKA due to its holistic approach, ensuring that the data generated can be utilized by more stakeholders.²²⁴

"OSKA analyses the needs for labour and skills necessary for Estonia's economic development over the next 10 years."²²⁵

Liisi Kruusimägil / ESTONIA

Liisi Kruusimägil has worked in a variety of Estonian TVET schools since 2007, focussing predominantly on the area of project and development. Her most recent position was as a project manager in Pärnumaa Vocational Education Centre in Estonia.

HOW DO YOU THINK TVET IS SEEN IN YOUR COUNTRY?

I think the reputation of vocational education in Estonia has increased annually, since the Estonian Ministry of Education and Research began the program "Popularizing vocational education" (2007–2013).

WHAT DO YOU BELIEVE ARE THE GREATEST STRENGTHS OF ESTONIA'S TVET SYSTEM?

I believe that the greatest strengths of Estonia's TVET system, is the high proportion of practical training in real companies.

WHAT THREE AREAS DO YOU THINK COULD BE MOST IMPROVED ON IN TVET IN ESTONIA?

1. Systematic development of entrepreneurship education in Estonian TVET schools.
2. International cooperation development.
3. Changed learning concepts e.g. more focus on teamwork, subject knowledge development together with practical skills, developing students confidence in how to learn effectively and self-management skills.

TO WHAT EXTENT ARE YOUTH VOICES HEARD IN ESTONIA, AND HOW ARE THEIR EXPECTATIONS AND FUTURE GOALS BEING MET?

I think, that youth voices in Estonia are quite well heard. Youth expectations and future goals are fulfilled through the Estonian Student Union, which cooperates with the Estonian Ministry of Education and Research, the Ministry of Social Affairs and various youth associations and organizations promote education at both Estonian and international level.



WHAT IS BEING DONE TO RETAIN STUDENTS IN TVET IN ESTONIA?

In Estonia, the Ministry of Education and Research plans to do the following:

- cooperate with educational institutions, including primary schools and employers' representatives;
- encourage professional associations to raise awareness amongst potential vocational students and their parents about career choices (while avoiding gender stereotyping);
- prepare students for vocational training and entry into the labor market.

For TVET to have a good reputation, it will require a joint effort by employers and the educational sphere.

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Denmark Case Study

The Danish have one of the highest levels of education in the EU.²²⁶ Students typically stay in basic education between the ages of six to sixteen.²²⁷ In comparison to many other countries, Denmark has seen a reduction in youth unemployment.²²⁸ Denmark, similarly to its Nordic counterparts (Norway, Sweden & Finland) is highly regarded for its education system.

! The highest level of qualification amongst 30–69 year olds in Denmark, was most frequently a vocational education, at 37 percent.²²⁹ Denmark's TVET system had a reform in 2014, which established the minimum entry requirements for students and strengthened requirements for teachers. Between 2006 and 2016, the number of students choosing TVET rose by nine percent.²³⁰ TVET in Denmark offers 100 different types of vocational education, with the majority of the training in approved companies and organizations. The Danish TVET system begins with students taking a 'basic programme', which finishes with an examination, and then taking the 'main programme', which is very similar to the Dual System, in that students alternate between school and an apprenticeship. Denmark, similarly to Finland allows all students to access further education. The Danish TVET systems requires that students have completed basic education, and a minimum 2.0 grade in Danish and math.²³¹ On the 22nd November 2018, the Danish Government announced a new proposal to boost VET, with the aim to attract more young people to take the vocational education pathway. The proposal recommends 55 initiatives across primary, secondary and vocational schools to inspire young people to pursue an education

in practical as well as theoretical training. The proposal also addresses the need for vocational education providers to improve their quality. This plan will be in effect between 2019 and 2022.²³²

The Danish Government's new proposal for vocational education indicates a desire to improve the attractiveness of TVET, addressing a barrier that the Danish Government wishes to prioritize. The OECD notes that two of the main barriers that face the Danish TVET system, are the high drop out rate of migrant students and the lack of opportunities for teachers to develop their professional skills.²³³ A key goal for Denmark's TVET system, is to increase the completion rates of TVET, which stood at 52 percent in 2012, and which they would like to see rise to 67 percent by 2025.²³⁴ The OECD in response to highlighting the key barriers facing TVET in Denmark, also provided recommendations. They noted that Denmark should increase access to language support for immigrant students and that teachers should be given more opportunities to work flexibly so that they can access professional development, given incentives to regularly update their vocational skills, as well as providing a framework for teachers that allows them to regularly spend time in a company or institution within their professional field.²³⁵

Therefore, it can be seen that although Denmark, similarly to Finland, is highly regarded for its education system, there are still areas that need improving, particularly in respect to vocational education. The access of TVET for migrant students is seen as a key barrier, as well as opportunities for teachers to develop their skills. These are recurring barriers internationally identified in the research literature and key areas for vocational education goals. Improving the attractiveness of TVET is also of international concern, and it will be interesting to follow the Danish Government's new proposals to address this.

Denmark's TVET system had a reform in 2014, which established the minimum entry requirements for students and strengthened requirements for teachers.



England Case Study

Education in England is compulsory for all young people between the ages of 5 to 16, with students then having to stay in either full time education or start an apprenticeship/traineeship till they are 18.²³⁶ The OECD in their yearly global comparison of industrialised education systems (looking at the United Kingdom, not specifically England), notes how the UK has one of the highest up takes of preschool, and a high proportion of young people going to university, with spending for primary and secondary education, per pupil, above the OECD average. The report also showed that there is a distinct correlation between education and employment in the UK, with UK graduates having one of the lowest unemployment rates amongst OECD countries. However, for those with poor qualifications, particularly women, many are likely to be unemployed. The OECD report also highlighted that there is a mismatch between skills and jobs in the UK, with figures in 2012 indicating that many graduates are overqualified for their jobs.²³⁷

“Vocational skills and technical education have been long standing weaknesses in England’s education system.”

– SEAN COUGHLAN, EDUCATION CORRESPONDENT ²³⁸

A skills mismatch in England, as well as high levels of NEET, have led to vocational and technical education in England being prioritised. The unknown impact of 'Brexit' on the job market, means that the government is currently focussed on 'upskilling' young people to prepare them for a post-Brexit economy. There is a push to ensure TVET routes are seen as on par with more traditional academic routes. In 2017 a review of technical education was carried out by Lord Sainsbury, where he stated: "Targeted investment of this type makes economic sense – our international competitors recognised long ago that investing in technical education is essential to enhancing national productivity. But it is also essential if we are to equip people with the knowledge and skills they need to obtain rewarding and skilled employment in the future." However, like in many countries education and funding is a constant political battle ground, with the Labour Party stating that any new funding to TVET is welcome, but that the negative situation it is currently in, is due to Conservative neglect.²³⁹

The majority of research focussed on British VET has been concerned with problems which can be broadly categorised under two headings: concerns with Britain's social class system, and the government's laissez faire attitude towards economics.²⁴⁰ This is reflected in the number of articles published across national newspapers, which focus on how TVET is only pushed on those from low socio-economic backgrounds, and the consistent struggles TVET providers have with funding.²⁴¹ England (and the United Kingdom as a whole), has been consistently focussed on the impact of technological change on the labor market, and how students can be best trained to meet the demands of a continuously evolving job market. Entwistle in his work 'Education, Work and Leisure' was concerned with the impact that technological change offered.²⁴² Despite writing in 1970, Entwistle saw the necessity in ensuring workers could meet the demands of a rapidly changing technological society. Entwistle saw the value in continuous professional development for those who had undertaken apprenticeships, believing that: "The concept of an apprenticeship served in a man's teens which will enable him to pursue a sharply defined occupation for the rest of his working life is bound to become increasingly unrealistic."

Winch, writing in 2012, highlights how Entwistle saw technological change, not as a threat to employment, but as an opportunity, proposing a broad-based vocational education as opposed to training.²⁴³ It is worth highlighting that Entwistle writing in the 1970s, "a man's teens", clearly has a gender bias when writing about technology based vocational skills, and that currently there is a key focus on engaging women in this male dominated sector. England is currently introducing T-Levels, a revolutionary reform to technical education that will begin in 2020 (see 'Policy Insight' box). T-levels mark a major shift in addressing some of the key barriers to vocational education and technical training, so that young people are given every opportunity to gain the skills and knowledge needed for a fast changing global economy.²⁴⁴

! Currently one of the key goals for TVET providers in England is to tackle youth unemployment,²⁴⁵ and to ensure that young people are learning the skills and knowledge to meet industry needs. For the first time, England recently gave media coverage to those who completed a vocational qualification, in an attempt to increase the attractiveness and legitimacy of vocational qualifications. Every year in August, national media coverage is given to students who have completed their A-levels (traditionally academic qualifications for those 16–18 years old), this proved more challenging when attempting to cover vocational qualifications, as most are not released on a specific date like A-levels. However, the BBC (a British news channel) ensured for the first time that those who gained vocational qualifications were given the same media attention.²⁴⁶

In conclusion, it can be seen that the fact that England's education system has made it compulsory for young people to stay in education till they are eighteen, means that high quality vocational education options are more important than ever. This alongside an increasingly complicated post-Brexit economy, highlights a need for young people and those returning to TVET, to be provided with transferable skills and knowledge to meet the needs of an unknown future. It will be interesting to see whether the much anticipated T-Levels have the desired impact everyone is hoping for.

POLICY INSIGHT: ENGLAND

England is currently undergoing a revolutionary reform to technical education. T-Levels will be introduced in September 2020 as a new two year course which will follow GCSE's (end of basic education examinations).²⁴⁷ The new qualifications were created in collaboration with expert panels of employers to ensure that young people are acquiring the skills and knowledge needed and they include a three month compulsory industry placement, so that students gain experience and develop wider skills ready for the world of work. Importantly, the development of T-Levels also sought the opinions of young people themselves.²⁴⁸ Seventy-eight industry experts are being consulted, in an attempt to bridge the gaps between stakeholders.²⁴⁹ Alongside a technical qualification (core theory, concepts and skills for an industry area and specialist knowledge and skills for an occupation or career), and an industry placement, students will also qualify with a minimum standard in maths and english.²⁵⁰

"New T Levels mark a revolution in technical education."²⁵¹

– GOV. UK, 2018

"T Levels represent a once in a lifetime opportunity to reform technical education in this country so we can rival the world's best performing systems. For too long young people have not had a genuine choice about their future aged 16. Whilst A levels provide a world class academic qualification, many technical education courses are undervalued by employers and don't always provide students with the skills they need to secure a good job – that has to change...Technology and the world economy are fast-changing, and we need to make sure our young people have the skills they need to get the jobs of tomorrow. This is at the heart of our modern Industrial Strategy."

– EDUCATION SECRETARY DAMIAN HINDS²⁵²

The goal was to ensure that students gain experience and develop wider skills ready for the world of work. Importantly, the development of T-Levels also sought the opinions of young people themselves.

Sarah Scanlan / ENGLAND

Sarah Scanlan is currently Head of Participation at Salford City Council, which is in the North West part of England. The area suffers from high levels of deprivation and low social mobility. Young people do not achieve the required standard of education they should, with approximately 50 percent not achieving the satisfactory GCSE grades (national secondary education exams taken aged 15/16) to move onto the next level of education. Part of her role is to influence the education and training offered, much of which means supporting further education and training providers to provide provision that is closer aligned to industry. The vocational offer is quite broad and accessible, but often does not include the industry links that many need to understand the world of work.

HOW DO YOU THINK TVET IS SEEN IN YOUR COUNTRY?

It has a high regard in certain parts of England, more so where there are lower attainment levels of secondary school education, therefore the need is greater for a vocational offer rather than the purely academic offer. The national economic strategy has set out plans to introduce 'T-Levels (Technical Levels) in order for the UK to be able to compete on an international scale when it comes to skills and skills gaps. The introduction of these will see vocational education move up a gear to offer tangible and meaningful employer encounters, including specific hours to complete

formal work experience linked to their programme of study. This is a positive move for the country and should help to raise the profile of vocational education as a route to high level skills and opportunities in the future.

WHAT DO YOU BELIEVE ARE THE GREATEST STRENGTHS OF ENGLAND'S TVET SYSTEM?

New T-levels will offer the tangible links with industry that have been needed for some time. Employers, businesses and industries are keen to support this and hoping to take advantage of the talent this will produce

There is already a broad range of programmes on offer, which makes the T-levels hopefully easier to implement and market to young people, who perhaps would have usually chosen a purely academic pathway

WHAT THREE AREAS DO YOU THINK COULD BE MOST IMPROVED ON IN TVET IN ENGLAND?

Business/Industry engagement to be broad enough to meet the full range of T-levels and current vocational programme offer

Education with parents for them to understand the positive pathway vocational education can give, which can often mean an alternative route to higher education and traditional university

where appropriate. There is still a perception that vocational education is second best.

WHAT IS BEING DONE TO RETAIN STUDENTS IN TVET IN ENGLAND?

There is a full complement of programme pathways across our further education institutions, at all different levels depending on a young person's academic ability. They are usually broad enough to allow a young person to explore a range of skills and occupational areas before making firm decisions on their next steps. Young people can move from one programme level to another as they progress academically. There is careers advice on hand when a young person is unsure about next steps either before starting a programme or during.

CAN YOU DISCUSS A TVET INITIATIVE IN ENGLAND THAT YOU BELIEVE IS DOING GREAT WORK.

T-Levels will be the biggest shake up around vocational education due to the work related experience offer. Clearly this is only about to start so impact will be monitored locally and nationally.

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Cassandra Haskey / ENGLAND

Cassandra Haskey is a careers adviser with sixteen years experience working with young people, of different abilities and needs, from ages 14 to 25 offering CEIAG (Careers, Education, Information, Advice and Guidance). She supports young people to look at their post 16 options, offering support with the application and help accessing the relevant options, dependent on their choices, abilities, and provision availability. This includes support in completing applications/CV's and covering letters, registering on employment websites, interview techniques and finally supporting for interviews, enrolling young people at college and escorting them to college on their first days.

HOW DO YOU THINK TVET IS SEEN IN ENGLAND?

I feel this is dependent on where in England TVET is being accessed, and the types of educational establishment myself and other careers advisers may work in. As part of my caseload I work in two very different schools in two different areas in the North West of England. The first is a mainstream school; whose students are predominantly from ethnic minority areas, the experience I have had is: of that – the parents like/expect their children to follow a more “Traditional” route of A-levels to access more academic careers such as Doctors/ Dentist/Teachers, expecting progression into Higher Education, rather than vocational routes.

However, my second school is a special needs school where generally young people are from

a lower ability range with additional needs such as MLD (Moderate Learning Difficulties), SLD (Specific Learning Difficulties), mental health Issues, involvement with other agencies such as Youth Offending and Social Care Services, and may not be able or capable of achieving the qualifications needed to achieve the academic levels required for the more “traditional routes”. Some of these young people may also be from 1st/2nd/3rd generation of unemployment and have no aspirations to move in to any form of education or training.

From the experiences I have gained within the school environment, there are some members of the teaching staff that are unaware of everything that is available post 16 to young people and what the entry requirements maybe, this can lead to young people asking to apply for study programs that they do not have the qualifications for. As an example, 90 percent of Apprenticeships now require GCSE at grade 4 (old C grade) or above and so inaccessible to some young people straight away. Parents are also generally unaware of the advancements of vocational training and how much it has changed and is still changing, and that young people can achieve a degree or even post graduate degree by completing the vocational route.

Being an independent careers adviser, it is my role to ensure all young people are aware of all their options, from both the traditional and vocational route dependent on their choices/academic level. I advocate all colleges and training providers to the young people and encourage the learners to apply to as many options as possible.

There is currently a change happening in England within the college training standards and vocational training will be changed to technical training, this has arisen as young people have been struggling to find employment following completion of college qualifications, as they have not achieved the technical side or had the work experience element to make them “Work ready”. As part of the new technical qualifications there is a requirement to complete a certain amount of work experience as part of the course, this will also help to bridge the gap. There has also been shifts in LMI (Labor Market Information) and work trends are changing dependent on the area the young people live in, warehousing and health and social care are two growing sectors.

WHAT DO YOU BELIEVE ARE THE GREATEST STRENGTHS OF ENGLAND'S TVET SYSTEM?

Not all young people are academic or able to achieve the required grades for the more traditional education routes or they may even not be interested in those subjects. For this reason many colleges have the VET system, this can start at entry level qualifications, accessible to young people who may have no qualifications or very few qualifications through to degree courses through the apprenticeship teams. Therefore, it caters for all young people and can be used as a stepping stone and progression route. There is also an array of subjects that young people can access dependent on their interests, support is also available if required to help them to maintain their placements in college/training.

WHAT THREE AREAS DO YOU THINK COULD BE MOST IMPROVED ON IN TVET IN ENGLAND?

Bridging the financial gap between college/traineeships and apprenticeships. College bursaries are only around £10 per week dependent on attendance, traineeships pay anything between £20 and £40 dependent on the provider, whereas the apprenticeship wage on average can be £170. From experience some young people can earn more money by other means and will refuse to attend traineeships for the money on offer.

! Young people having access to a mentor for the transition from education to training, to help prepare them for the world of work. This could include text/phone calls reminding them to be up and ready for work, to contact employers when ill and to support with emotional health and wellbeing.

I feel that although there are ample vocational training options there is still a gap for some young people who are unable to reach the entry requirements. Those who are unable to achieve this are unable to access these training options and I feel this needs addressing, especially as all young people need to be in some form of education or training until they are 18 years old in England. Many young people in this category are not suitable for the lower level training at college or may not wish to access these options.

TO WHAT EXTENT ARE YOUTH VOICES HEARD IN ENGLAND, AND HOW ARE THEIR EXPECTATIONS AND FUTURE GOALS BEING MET?

Due to the new Gatsby Benchmark (Government initiative), students should have the chance to have an independent careers interview before they leave school in year 11 to look at their options. It has also put more emphasis on young people having meaningful interactions with employers on an annual basis and schools are being monitored on this. As far as I am aware other than this there is no official forum for young people to air their views locally.

WHAT IS BEING DONE TO RETAIN STUDENTS IN TVET IN ENGLAND?

Most areas in England have some form of careers service and they complete a tracking system to ensure young people are accessing education or training, schools are also targeted and expected to track the young people who leave year 11 to ensure every young person has an offer of education. There is a guarantee system online with this to ensure young people have an offer and all schools need to contact their local councils with a list of young people who are at risk of NEET (Not in Education, Employment or training), these young people are followed up more closely and can be referred for additional support.

Careers services work closely with local training providers and colleges to identify starters and leavers, and complete joint home visits. They have individual caseloads who they offer ongoing support to, including CV's and covering letters, completing application forms, supporting on training provider visits, job vacancies and emotional health and wellbeing.

CAN YOU DISCUSS A VET INITIATIVE IN ENGLAND THAT YOU BELIEVE IS DOING GREAT WORK.

Over the last two years as part of my caseload I have worked on a CEIAG ESF funded project working with year 11 young people the school feel at Risk of NEET. As part of this process I complete an Action Plan with the young people, capturing their current situation, their hopes for the future and a plan to get there including setting targets. This is ongoing support on a minimum of one contact every 28 days from sign up until they progress and are settled in education or training. This helps to build relationships with the young people, so they feel able to trust and from experience come back to ask for help if required instead of staying on courses that they are really not enjoying or may have additional needs that need addressing.

DO YOU HAVE ANY OTHER COMMENTS YOU WOULD LIKE TO SHARE?

I have 25 years of experience working with young people either in a residential childcare setting or as a careers adviser, and I have regularly attended and updated any training opportunities available within different colleges and training providers. I feel it is important to provide the right information to the young people as early as possible to help them to progress and achieve in all areas of life including work and higher education.

Disclaimer: views and opinions expressed are those of the authors and do not necessarily reflect the official policy or position of any other agency, organization, employer or company.



Canada Case Study

Canada is at the top of OECD rankings, scoring highly in reading, science and maths.²⁵³ Canada also has the world's highest proportion of working age adults who have been through higher education. Canada's education system is decentralised with autonomous provinces being in control. Canada has high levels of migration, with over a third of young adults being from families where both parents are from another country, but is one of few countries where migrant students achieve at a level similar to their non-migrant counterparts. Interestingly, if breaking down Canada's PISA scores by region, three of their provinces would be in the top five places in the world for science, above Finland and Hong Kong. The OECD's education director Andreas Schleicher, puts this down to the fact that despite the lack of national education policy, each province has committed to giving students an equal chance in school. Canada has very little difference in the attainment of students from different socioeconomic backgrounds, again highlighting the equal access students have to quality education.²⁵⁴ However, Robson a Canadian researcher focused on academic achievement and at-risk youth, argues that these figures are not truly representative, as they do not take into account race and the problematic figures on migrants and the socioeconomic background of students: "we blindly assume we are doing OK as we do not have any evidence to the contrary – because we haven't taken the time to collect it." She states that Canada's points based immigration system favours those who speak one of Canada's official languages, who have job skills and are educated. She also discusses the lack of discussion around the gap in educational attainment between indigenous and non-indigenous students.²⁵⁵

TVET in Canada is often claimed to be a more cost-effective solution than general education courses, with courses regularly being updated to ensure that students have the skills to enter the job market, and that there are far more funding options for students who want to pursue vocational careers.²⁵⁶ Randstad Canada, recently released a report, noting the 15 most in-demand jobs for 2019. The jobs span a variety of sectors, from tech related roles to jobs in the retail industry. Canada also has concerns over the impact of automation on future job demand, but was pleased to find in Randstad's report, that many roles still remain in demand. Interestingly, the report also looks at the top 10 emerging jobs in Canada, which includes a number of positions that did not exist until very recently. These are Randstad's top 10 emerging jobs (not ranked): Blockchain developer, Automation engineer, Artificial intelligence researcher, Chief experience officer, Live chat agent, DevOps engineer, Environmental engineer, Cyber security specialist, Data scientist and 3D architect. These top emerging professions, clearly indicate a large shift in the need for technical skills, with the majority of the positions falling in the technology sector.²⁵⁷

As has been consistently noted internationally, Canada also struggles with a high youth unemployment rate, with young people struggling to adapt to the current job market.²⁵⁸ The OECD notes that in Canada overall, 12 percent of 15 to 19 year olds are NEET, which is below the OECD average of 13 percent. However, this varies considerably between provinces and territories, from 10 percent in Quebec to 36 percent in Nunavut.²⁵⁹ This again reflects the findings of this report's 'State of the Debate' on the impact of regional education, and Robson's concerns over a gap between indigenous and non-indigenous students, with Nunavut a predominantly indigenous province.²⁶⁰ Canada similar to its international counterparts, also sees a divide in attractiveness and perceptions between academic and vocational courses. Alison Taylor has focused predominantly on policies and practice related to vocational education and education reform in Canada. Taylor states that Canada has a similar academic and vocational division to the UK, which "serves no students well."²⁶¹

Canada expects to see a lot more job opportunities opening up over the next few years, with two thirds of jobs between 2015 and 2024 requiring at least some apprenticeship training. However, it is also noted that a key goal for Canada is to ensure that students who are pursuing a vocational career are researching the job market in the area that they live or intend to work.²⁶² The report of the Jobs and Prosperity Council noted that Canada must improve its skilled trades if it wants to strengthen its competitiveness in the manufacturing and resource sectors.²⁶³ Taylor argues that students need a deep and rich vocational education which prepares them with both practical and theoretical knowledge. She believes that this will help students to develop their skills and adapt to new settings and circumstances, encouraging lifelong learning.²⁶⁴

In conclusion, it can be seen that despite the lack of national education policy, in recent years Canada has been ranked highly for the education it provides to young people. However, it is also important to remember in the case of Canada and all countries, that looking at one set of figures does not necessarily reflect an accurate portrayal of education in that country. It is noted that vocational education lacks the same positive image of general education, and there is currently a big push to increase the number of students choosing the vocational route. There is also a big move towards training students to meet the needs of an expanding technology sector, so that they have the relevant skills and knowledge for a changing labor market.



Australia Case Study

Australia's education system ranges from preschool to senior secondary school (or college) and is compulsory for all children between the ages of six and sixteen/seventeen (dependent on the State or Territory).²⁶⁵ Australia's education system has a national qualification system, that ranges across schools, vocational education and training and higher education, although similar to Canada, Australia's states and territories are responsible for the delivery of school education.²⁶⁶ Australia traditionally ranks well internationally for its educational outcomes,²⁶⁷ however, in recent years, the OECD has noted a decline in performance.²⁶⁸

"Australia needs a workforce with a new set of skills and the flexibility and capacity to adapt to even more change. Vocational education can deliver this workforce, but for this to happen the sector needs to be given autonomy and political trust."²⁶⁹

– SHUBERT, R., GOEDEGEBUURE, L., 2018

Australia sees its vocational education and training sector as a key solution to it facing major global challenges: "An effective vocational education and training sector will be required to increase participation in the workforce, help companies ex-

exploit new technologies, and drive productivity improvements across the economy. The dividends are significant for institutions and economies that respond early and effectively.²⁷⁰ With just over 24 percent of Australia's population aged between 16 and 64 years being actively engaged in vocational education every year, and 46 percent of 15 to 19 year olds, the vocational education system in Australia is catering to a large proportion of the population, and needs to ensure that it is meeting the demands of the 21st century labor market.²⁷¹ The OECD although writing in 2011, state that Australia has a well developed VET system, with strong engagement from employers, a well established national qualification system, a flexible VET system allowing for autonomy and that data and research on VET across Australia is good.²⁷²

Shubert and Goedegebuure, from the University of Melbourne, comment on how Australia's vocational education system was regarded as one of the top in the world around 20 years ago, but how in recent years when compared to countries such as Canada, Germany, the Netherlands and China, this is no longer the case. They attribute this to chronic underfunding, political ideology, jurisdiction control, high level of policy confusion, and piecemeal reforms. They also comment on the fact that there is an abundance of research on VET already available, and that spending further time and funding on collecting more data is unnecessary, and that what Australia needs is action.²⁷³ Australia's VET providers see the key barriers as being an uncertain job market, more demanding students and fiercer competition, and name the three major challenges for Australia, as well as global providers, as being:

“a changing and broadening learner base, increased competition from other providers, weaker signals of demand from industry.”²⁷⁴ The Mitchell Institute, who research the entirety of Australia's education system, wrote in 2017 that VET expenditure in Australia reached its lowest point in over a decade.²⁷⁵ The Foundation for Young Australians' (FYA) New Work Order research series was launched in 2015. It currently comprises 6 reports, which have analysed how disruption to the world of work has significant implications for young Australians. FYA commented most recently on how the full-time education to full-time work transition is becoming increasingly uncertain, with their latest research showing that of the 14,000 young people they have followed over the last decade, half of the 25 year olds were unable to secure full-time employment, despite 60 percent holding post-school qualifications.²⁷⁶ The OECD also highlight how the responsibilities of Commonwealth and State/Territory governments is unclear, there is unclear funding, that skills forecasting has created some difficulties, apprenticeships are rigid and focus more on length of study than competence, the ageing of the teaching labor force is seen as a serious problem.²⁷⁷

An aspect neglected in general discussions around Australian vocational education research (there are specific research papers just on indigenous TVET), is how indigenous students engage with TVET. It is well researched that indigenous peoples face a large educational attainment and employment gap compared to their non-indigenous counterparts. This often coincides with the barriers many rural students face in Australia, where many indigenous Australians live. Indigenous students have

always been more likely to participate in vocational education than higher education; attributed to the lower level of entry requirement, possibility to 'earn as you learn' and the geographical availability.²⁷⁸ However, despite an increase in numbers of indigenous students participating in vocational education, qualification completion rates are low and employment rates do not appear to be improving: "Of real concern is that vocational training is not demonstrably translating into employment for many remote community learners."²⁷⁹ This clearly demonstrates shortfalls in Australia's inclusive TVET practices.

Shubert and Goedegebuure state that "...reports suggest a new focus on technical and enterprise skills as being of equal importance."²⁸⁰ They give clear points on how they believe Australia's vocational education can be improved:

- to identify comprehensive, mature, low risk providers and give them independence from government control, and operational autonomy so that they can lead the change.
- providers should be given long term equitable funding, based on an agreed framework of measurable and clear performance outcomes. They should also be given self-accrediting status, so that they can quickly respond to changes in skills required by new and existing employees.

As Shubert and Goedegebuure state, "It's this group of providers that will change the system and provide the service that business, communities and students need. Creating this new status of provider will enable education that delivers educational services across an increasingly blurry and arguably artificial divide between vocational education and higher education, with a focus on applied and work-inte-

grated learning, and problem solving."²⁸¹ The most recent FYA report identifies four key factors that can help young people transition from full-time education to full-time work; an education that builds enterprise skills, participating in relevant paid work experience, finding paid employment in a sector that is growing and an optimistic mindset. FYA stating that having an optimistic mindset is a key factor, is also reflected in HundrED's VET survey, which found that attitude was one of the key skills deemed valuable for graduates. FYA's 2017 report analysed over 20 billion hours of work completed by 12 million Australian workers each year, to gain a deeper understanding of which skills will matter most in 2030. This is a similar idea to Estonia's OSKA skills forecast system. FYA's 2016 report analysed 2.7 million job advertisements, which showed that jobs are more closely related and have more transferable skills than previously thought. They state that when a young person trains for one job, they acquire skills that will help them get 13 jobs, therefore, students should not be focussing on a 'dream job' but on a 'dream cluster' of jobs which is based on their interests and skills. FYA's earlier 2016 report analysed 4.2 million job adverts since 2012 and found that the demand for digital skills has risen by 200 percent, critical thinking by more than 150 percent, creativity by 60 percent and presentation skills by 25 percent.²⁸²

In conclusion, it can be seen that there is a vast amount of research in Australia around vocational education and the future of work for young Australians. There are also numerous researchers, international organizations and internal groups focused on improving vocational education in Australia who have detailed numerous recommendations. However, Australia like most countries has not been successful in putting this research into practice and struggles with who is responsible for the quality provision and funding of vocational education.

Katherine Nicholson / AUSTRALIA

BA (Communication), Grad Dip Adult Education and Training, Grad Dip Public Administration Australia

Katherine has been a practitioner in the TAFE (Technical and Further Education) Sector in Australia since 1992. She has also been an organizer and an activist for the union that represents TAFE teachers and is still active in the www.stoptafecuts.com.au campaign (twitter @tafedefender). In 2018 she was made redundant by TAFE during another restructure. Subsequently she started her own consultancy: Nicholson Professional Consulting.

HOW DO YOU THINK TVET IS SEEN IN AUSTRALIA?

Since the 2000s when government policy decisions changed vocational education from being a public education right to an individual asset to be purchased from a 'pseudo-market', perceptions of vocational education have fallen. Some of this may be explained by opportunist profiteers who cherry picked the sector for enormous profits and some of it may be explained by a greater focus (and funding) of the university sector in Australia.

WHAT DO YOU BELIEVE ARE THE GREATEST STRENGTHS OF AUSTRALIA'S TVET SYSTEM?

I don't think our TVET system has strengths but our badly damaged public TAFE system still

has considerable strength including a national footprint including in rural areas, highly skilled practitioners especially related to key apprenticeship domains, excellent student support services and great community linkages.

WHAT THREE AREAS DO YOU THINK COULD BE MOST IMPROVED ON IN TVET IN AUSTRALIA?

- Removal of taxpayer funds from private organizations involved in TVET. If these businesses are good, they will survive.
- Recurrent funding returned to the public TAFE sector and investment in TAFE infrastructure and workforce, including professional education of teachers.
- Return from narrow reductionist industry training packages to comprehensive curriculum developed in partnership between educators and industry, including emerging industries.

TO WHAT EXTENT ARE YOUTH VOICES HEARD IN AUSTRALIA, AND HOW ARE THEIR EXPECTATIONS AND FUTURE GOALS BEING MET?

Since the privatization of funding for vocational education in Australia, students have been reframed as 'customers' and considered sources of revenue. Youth voices have been lost in this process.



WHAT IS BEING DONE TO RETAIN STUDENTS IN TVET IN AUSTRALIA?

In the public TAFE system so many teachers' posts have been cut that follow up of students is difficult. However, some effort is made via student engagement, counsellors and disability support officers to retain students.

DO YOU HAVE ANY OTHER COMMENTS YOU WOULD LIKE TO SHARE?

In Australia vocational education has become a political issue. I am hoping for a TAFE led recovery of TVET.

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Germany Case Study

Germany's federal system government, means that its 16 states largely have autonomy over the education they provide. The Federal Ministry of Education has a role in financial aid, funding and the regulation of vocational education and entry requirements in the professions; with individual states largely having authority over most other aspects of education. Compulsory education starts at age six, which in most states lasts for nine years. Almost all German students complete 'Grundschule', which is 'foundation school', before students move on to different types of secondary education. Students are then assigned to secondary schools based on their academic ability, ending up in either the vocational or university-preparatory track. These tracks are no longer as rigid as they used to be, with students having the opportunity to move between tracks.²⁸³

VET in Germany is internationally held in high regard, as a successful system.²⁸⁴ With 52 percent of young Germans graduating from a Dual VET apprenticeship, many countries turn to Germany to help improve their own systems.²⁸⁵ Germany's dual VET system is most often attributed for its success and why Germany has one of the lowest youth unemployment rates in Europe (around eight percent).²⁸⁶

- ! The Dual system combines apprenticeships with formal schooling, with multiple stakeholders having input to ensure that the work and teaching are matched. Both the government and businesses contribute to funding the dual system, ensuring that both have equal stakes as both benefit from a well trained workforce. It is often noted, that Germany's VET system belongs to all its stakeholders, not just

the government, which is often the case, such as in England.²⁸⁷ Students typically spend three to four days a week training in a business, and one to two days learning at school over an average of three years (depending on the occupation/program).²⁸⁸ Time spent on the job training, is led by an appropriately qualified trainer on the employers staff, who has been approved by the local chamber or commerce.

“...the main point to take away from Germany is that finding ways to help and support employers to act collectively in relation to the co-design of, co-investment in, and co-production of VET is critical to success.”

– EWART KEEP, DIRECTOR OF SKOPE, OXFORD UNIVERSITY²⁸⁹

In contrast to many countries, the attractiveness of Germany's VET system, means that a lot of focus goes on developing the attractiveness of VET to employers, so that there is an increase in the number of training contracts available. CEDEFOP note that: “Two main target groups for measures to improve attractiveness in the German context can be identified: young people who have difficulties in gaining a place in dual system training; and high achievers who decide between IVET and a route that leads to higher education.”²⁹⁰ Both OECD and CEDEFOP comment on the impact of Germany's declining cohort numbers due to demographic change, which is creating a challenge.^{291,292} This has led to the closure of VET providers, with some students struggling to access VET education in their vicinity, which has particularly impacted East Germany.²⁹³ It has also been highlighted, that despite the positive figures of Germany's youth unemployment rates, it is not without its faults, with some areas of East Germany suffering from high youth unemployment and dropout rates.²⁹⁴ The German VET system is also sometimes criticised for being too slow to adapt to new skill requirements, due to its rigorous stability.²⁹⁵

CEDEFOP note how the key goals for Germany's VET system currently, are to ensure good cooperation between companies and vocational schools, so as to improve teaching quality, as well as to help with the fast technological developments in trade and industry. They also note how recruiting teachers for technical occupations is particularly difficult, and that staff shortages need to be addressed, as well as professional development opportunities, thereby enhancing the attractiveness of VET teaching again.

In conclusion, it can be seen that Germany continues to be heralded for its Dual VET system, with the amount of time spent in employment arguably a key factor in its success. Interestingly, from data collected in 2016, it was found that in Finland stu-

dents who had studied in the field of technology who were institution based, 50.4 percent were employed in full-time work one year after graduation.²⁹⁶ However, for those students who had been work-based, 79.1 percent of students were in full time work one year after graduation.²⁹⁷ Like any education system that is highly regarded, it is not without its flaws. The need to improve VET attractiveness to those on the 'edges' of vocational training (those with low qualifications or very high) and those in East Germany, as well as ensuring continued cooperation between companies and vocational schools and are seen as key priorities. It will be interesting to see how the changing nature of Germany's youth demographic impacts its VET sector, and whether Germany is able to embrace this challenge successfully.

Germany continues to be heralded for its Dual VET system, with the amount of time spent in employment arguably a key factor in its success.



Discussion

In this section, it has been shown that TVET, as can be expected, differs internationally. However, there are also evidently areas in which many countries face the same barriers and are attempting to address these with similar goals. The case studies reinforce many aspects of this report's 'State of the Debate'. It also showcases the need for further international research on successful measures that are being introduced to target barriers to TVET, as well as the need for research to be more easily accessible to the general public. The number of research recommendations over the years which have not been acted upon or utilized, highlight a disconnect between research and practice.

Our 'Advisory Board Profiles' have given an insight into personal experiences in various countries' TVET systems. At times there appears to be a disconnect between research findings and personal viewpoints. This is understandable, given the emotive impact education can have on a person's livelihood. It has however provided a valuable insight into the need for more multi stakeholder research in TVET, so that a number of different viewpoints and insights can be expanded upon and taken into account.



Innovation in TVET

Why innovation?

It is often questioned as to why education needs innovation. In HundrED's 'Every Child to Flourish' report, this question was explored in great depth: "In order to be successful, education should be continuously evolving, recognised as a dynamic system to meet the needs of all students globally. The latest research highlights that one way to do this is through innovation." (please read HundrED's report for a more in-depth overview).²⁹⁸ Therefore, as it has been shown throughout this report, TVET as a sector is in need of innovation as a way in which to address the barriers and goals explored. As Ali and Caulier-Grice state, "incremental reforms are not enough – innovation is need to reshape the services around the learners and employers..."²⁹⁹ The incorporation of student voice and employer opinions through HundrED's in-depth surveys, have provided an insight into the issues which these two stakeholders have highlighted as areas of concern. These surveys, as well as the input of TVET specialists from around the world, and research findings have led us to find TVET innovations globally, that we believe (once they have been adapted to context) will help TVET institutions in Finland address their barriers and meet their goals.

Research has shown that there are multi-factor approaches needed to overcome the various barriers to successful TVET shown in this report. These are some of the key factors noted as having the potential to address the various barriers to TVET:

- Improving the attractiveness of TVET
- Increasing understanding on how to minimise the skills mismatch
- Improving stakeholder cooperation
- Improving youth unemployment rates and TVET retention
- Improving the information and guidance given during basic education
- Encouraging regular professional development for TVET educators
- Improving feedback opportunities
- Improving flexible and personalized learning opportunities
- Inviting parents/carers in and involving them
- Encouraging a holistic approach to TVET education

International research, demonstrated in both this report's 'State of the Debate' and 'Country Case Studies', has shown that there are consistent recommendations being made on how TVET can be improved. However, as mentioned, many of these recommendations are either never accessed by TVET stakeholders, or fail to be implemented successfully. There appears to be a disconnect between research and practice. In this research report, HundrED and Technical Institutes of Finland will attempt to make recommendations, that are shown to be effective through innovative practices, as well as making this research freely available to all stakeholders in a variety of formats. Through media articles, social media posts, talks at international education events and free access to the report online, it is hoped that the information in this report will be accessible for all stakeholders in TVET.

"The vocational education and training sector continued evolution and relevance hinges on its responsiveness to new demands from industry, learners and the broader community. Organisations that provide training will need to adapt in fundamental ways, and across both administration and training/learning. Specifically, they will need to become more: flexible in managing costs, responsive to new learner requirements and industry, collaborative with other sectors, industry and learners, innovative across all aspects of the student lifecycle."³⁰⁰

– CISCO, GLOBAL TRENDS IN VOCATIONAL EDUCATION AND TRAINING, 2011. P. 5



Trends and Gaps in TVET Innovations

When researching innovations related to TVET, clear patterns of trends and gaps emerged. These will be explored in greater detail in this section.

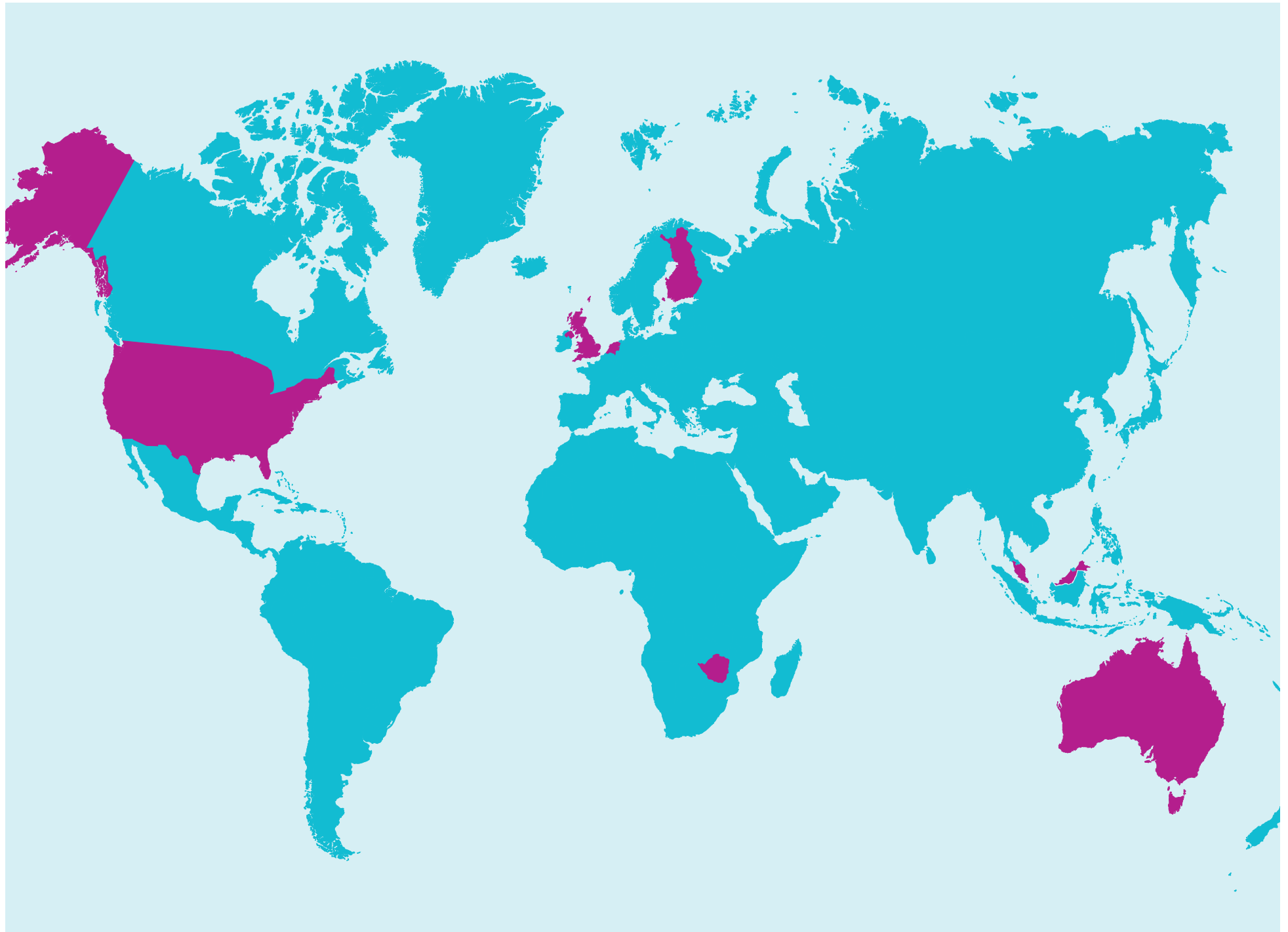
During HundrED's search for TVET innovations, and innovations that can be adapted to meet the needs of TVET stakeholders, it was found that there seems to be many case studies looking at changes to policy and the frameworks TVET providers are using. The value of 'Skills Competitions' is also frequently discussed, and does indeed have a valuable impact on TVET attractiveness. However, these competitions are already well established, and making valuable impact, therefore these will not be explored in greater depth. Many initiatives tend to focus on promoting TVET amongst students who are still in basic education, and there are different ways in which these initiatives approach this. Most commonly, a multistakeholder approach is utilized to engage students in what TVET has to offer their futures. Despite these initiatives having impact, they are often only working within a regional capacity and are tailored to the needs of their local students. The benefits of this are numerous in that students are given advice and the opportunity to engage with TVET employers and providers from their own area. However, many students on a national basis could benefit from these initiatives if they had the opportunity, with regional providers ensuring that each is adapted to meet the needs of their students. The OECD comment on how both education and production are no longer confined by national borders, and therefore countries can work together to design education and training programs that improve skills.³⁰¹

There appeared to be very few initiatives aimed at improving the image of TVET through changing public perception e.g. parents. Parents were found to be a large contributing factor as to whether students chose to pursue TVET, therefore, it is vital to capitalise on this. Improving the general public opinion of TVET, as well as attracting students themselves is vital. There was also a distinct lack of TVET innovations addressing barriers such as gender and rurality in the Global North, with the predominance of these projects being small scale and based across the Global South, despite these being international concerns. There was also a lack of initiatives looking at how the holistic wellbeing of TVET students can be positively addressed. Arguably, improving students overall well-being would improve retention and the attractiveness of TVET.

Encouraging student voice, is an integral part of HundrED's work, therefore, it was deemed important to look into whether students themselves are creating initiatives to tackle the challenges they are facing in TVET. After a cursory search, there did not appear to be any TVET innovations initiated by students. However, it must be acknowledged that these initiatives are most likely happening at a grass roots level and are either not incorporated in research or do not feel the need to create a visible platform such as a website.

When looking at scaling innovations to new countries and contexts, it is important to stay mindful of the implicit difficulties of taking a successful initiative from one location and unsuccessfully adapting it to a new context. HundrED has taken extra care to ensure that the innovations that have been chosen to be piloted across TVET institutions in Finland, are working closely with the schools to ensure they meet the needs of their students.

After a cursory search,
there did not appear to be
any TVET innovations
initiated by students.



Proposed Innovations

In the search for TVET initiatives, HundrED researched 45 innovations in depth, spanning across 15 countries. Our International Advisory Board, made up of TVET experts from Finland, Estonia, England and Australia, then assessed 10 of these initiatives that we believed fitted the criteria best. They assessed each initiative based on the following questions:

1. Based on your expertise and experience, are there any reasons why we should not include any of the ten innovations that you can identify?
2. (Based on each of the 3 selected innovations) Can you identify the main strengths of this innovation and explain your reasons for this judgement? Can you identify the main challenges and barriers in the adoption of this innovation and explain your reasons for this judgement?
3. Do you have any other comments you would like to share?

A brief overview of the 10 innovations which were assessed by our International Advisory Board, can be seen in the table below. This process allowed us to collaboratively choose three initiatives that we believed would have the greatest impact on improving TVET. These three initiatives are showcased in greater detail next.

“It is interesting that there are some quite similar models across the world around giving young people experiences that would not normally get through the classroom curriculum. This should be showcased at a much higher level internationally to help shape governments to broaden what the expect schools to deliver, that actually meets the needs of all young people, not just a few. It would be interesting to see what the plans are to ensure this vocational approach is delivered as part of teacher training, this surely should be a fundamental part of training teachers so that it is given the level of importance and buy-in it requires to then become embedded within a whole school approach to learning. In my experience, often teachers see this kind of work as ‘nice to do’ or ‘not that important’ but it is and times need to change to reflect this.”

– SARAH SCANLAN, INTERNATIONAL ADVISORY BOARD MEMBER, ENGLAND

Innovation	Country of Origin	Brief Description
Ammatit tutuksi yläkoululaisille	Finland	Ammatit tutuksi yläkoululaisille is based on the simple idea that we need to tell young people about different occupations, career paths and work life. However, Ammatit tutuksi yläkoululaisille is innovative in that it works closely with engaging parents, with the intention that parents can introduce their professions to young people.
CommunityShare	USA	CommunityShare transforms cities into human libraries through an online platform that matches local expertise and knowledge with the needs and goals of students and teachers. Since launching in 2015, CommunityShare has connected nearly 7,000 students and teachers with community partners who have served as volunteer mentors, project collaborators, guest speakers, internship hosts, and more.
Edge Future Learning	UK	Edge Future Learning is an initiative by the charity the Edge Foundation who are working to shape the future of education. Edge believes that a coherent, unified and holistic education system can support social equity and enable all young people to fulfil their potential. Edge's research shows that a broad and balanced curriculum, including creative and technical subjects, rich employer engagement, teacher autonomy and interactive pedagogy, can help to bring learning alive and prepare students for more than just a set of exams. All of Edge's work, from the classroom to the Commons has the same aim – to ensure young people take away more from their education than just grades; equipped with the skills for 21 st century careers and for life.
ForeAmmatti	Finland	ForeAmmat is a digital everyday assistant that adapts to your work situation. It supports career guidance, job search, mapping your skills, and serving your municipality's employment management, to name a few.
leerKRACHT	Netherlands	The leerKRACHT foundation believes in the quality of all teachers, and wishes to give ownership of education back to the teachers. It aims to achieve this through helping schools to promote a continuous improvement culture, wherein teachers work together to improve their teaching, with school leadership being role models in the improvement process.

Mobile Outreach Training	Zimbabwe	In response to the growing demand for TVET and employability programmes among disadvantaged young people in marginalised, remote and outlying areas, YA Zimbabwe has been implementing an outreach TVET programme where a mobile unit comprising equipment, trainers and training consumables moves from one remote site to the other delivering 12 week-long TVET programmes, fully integrated with entrepreneurship development and Life Skills education. After training, students undertake an attachment and, where necessary, YA offers post-training support such as linking graduates with micro-financing institutions.
Teach the Teacher	Australia	Written and developed by students, Teach the Teacher is a student-led professional learning program for teachers that empowers students to address issues affecting them. This program creates an inclusive culture where students lead collaborative conversations with teachers and principals in a constructive and judgement free environment.
The Careers and Enterprise Company	UK	The Careers and Enterprise Company is a national network that connects schools and colleges with employers and careers programme providers and supports them to work together to provide young people with effective and high-quality encounters with the world of work. They use a multi-faceted approach through Enterprise Coordinators and Enterprise Advisers to deliver the Gatsby Benchmarks.
Worlds of Work	Australia	WOW is a free Australian initiative that equips young people with the enterprise skills and careers management skills to be prepared for the future of work.
Youth Made Initiative	Malaysia	Youth Made Initiative is a collaboration of education and industry to help to try and contextualize Design & Technology for students. Local companies agree to help schools on a range of things – visits, work experience, live design briefs etc to help contextualize STEM education and up-skill staff and students with relevant and modern skills and knowledge required for the world of work.



We are putting the “public” back into public education by creating real-world learning opportunities through community partnerships

CommunityShare

Arizona, USA

CommunityShare transforms cities into human libraries through an online platform that matches local expertise and knowledge with the needs and goals of students and teachers. Since launching in 2015, CommunityShare has connected nearly 7,000 students and teachers with community partners who have served as volunteer mentors, project collaborators, guest speakers, internship hosts, and more.

“CommunityShare gives my students and me access to professional resources in Tucson that make what they learn in school more meaningful, relevant, and memorable.”

– BRETT G., PRINCIPAL

As achievement gaps and inequality continue to grow in our education system, we must find solutions that actively engage and prepare all students, regardless of their socioeconomic background, for the careers of the future. With 40–60% of students chronically disengaged in school, this is a significant challenge. The top reason students cite for disengaging and dropping out of high school is lack of interest because school is not relevant to their lives and career aspirations. Not surprisingly, 95% of teenagers believe more real-world learning opportunities would improve school.

CommunityShare is working to address two barriers by reimagining the relationship between communities and schools. Our goal is to create a more equitable learning ecosystem by creating a “public cloud” of social, cultural, creative, and intellectual capital that any teacher can access.

Our innovative, research-based model includes two key components: an online “matching” platform and “offline” education programming. CommunityShare’s online platform serves as a human library of regional wisdom and expertise, or as the Christian Science Monitor recently described, a “Craigslist for public education.” Community members – including artists, scientists, parents, retirees, and business leaders – register and create online profiles to indicate the expertise that they would like to share with teachers and students. Classroom educators then search online for community members whose real-world expertise matches the needs and interests of their students and the goals of their curriculum. Community members matched with classrooms can serve as volunteer mentors, project collaborators, content area experts, internship hosts, guest speakers, and more.

Our offline programming helps schools and communities build a culture and practice of community-engaged, real-world learning. We offer educator-driven professional development workshops, school-based artist residencies, grants to support and community partnerships, facilitated professional learning 113 communities for visionary educators, and multimedia storytelling workshops that celebrate the impact of real-world learning.

INTENDED OUTCOMES

Increase student engagement through real-world learning experiences based on students' interests

Increase community and family engagement in education

Deepen the public's understanding of public education

Increase teachers and students access to social, intellectual, creative, and cultural capital

Increase student understanding of career and academic pathways

Heighten student ownership of their own learning

Builds community support for public education

Provides the public with a practical way they can directly impact the quality of education

Demonstrate the diversity of ways students can contribute to their communities

1–18

AGE GROUP

2015

ESTABLISHED

CONNECT WITH THE INNOVATOR

Josh Schachter

josh@communityshare.us

Tucson, Arizona

<https://www.communityshare.us/>



What does it take
to succeed in life and work?

Worlds of Work

Australia

WOW is a FREE Australian initiative that equips young people with the enterprise skills and careers management skills to be prepared for the future of work.

“It made me realise how serious having a career is, and what I must do to get where I want to be in the future.”

– PARTICIPANT

Work has long been important for the livelihood, dignity, and happiness of humankind. We know that work helps us meet our most basic and complex needs, providing a path towards financial security, mental and physical health and personal dignity and meaning. For the past century, the prospect of a good job that pays a fair wage has been part of Australia's promise to our young people. By many measures, Australia has continued to deliver on its promise. We have enjoyed relatively strong economic growth, high wages and low levels of unemployment. However, the way we work is starting to drastically change.

Many young people struggle with challenging pathways into work and around Australia, nearly one in three young people are currently unemployed or underemployed. In addition to this issue, the pace of innovation and automation sweeping through our workplaces has prompted thought leaders and policy makers to argue that young people need more “21st century” or “transferable” skills that can be used across multiple roles and occupations. There is evidence that employers are already asking for these skills yet many young people are leaving school or further education unprepared for what employers are demanding

Developed by The Foundation for Young Australians, WOW stands for Worlds of Work. It's a careers education resource for all teachers of secondary students that does things differently. It seeks to connect all Australian secondary school students with life beyond school through their own investigation into what it takes to succeed in the world of work...Here's the kicker: while they learn about the world of work they'll actively develop and reflect on the skills and aptitudes required to succeed in it. WOW also engages parents and carers so that they have the knowledge and understanding required to support their child in the transition beyond school so that Australian kids have the best chance to succeed in life and work.

WOW HELPS STUDENTS TO BETTER UNDERSTAND:

- Themselves in the context of work.
- Transferable enterprise/21st century skills, why they're important and how to develop and demonstrate these skills.
- The impact of the changing nature of the workplace with a focus on current and future industry trends.
- The value of community networks in helping to navigate careers information and pathways.

THE WOW VISION IS THAT:

- Careers education is informed by Australia's competitive strengths in the future
- Young people will be able to make better choices about study and work
- Adults are well equipped to provide guidance and support to young people.

WOW is packed full of hilarious content videos, dynamic classroom activities and opportunities for students to engage with their local community while diving into the inquiry question: “what does it take to succeed in life and work?”

INTENDED OUTCOMES

Teachers will be able to seek to engage with parents local community and workplaces to support careers learning

Teachers will be able to deliver a careers program at juniormiddle secondary school level

Students will understand the value of networks in navigating career information and pathways

Students will learn and explore the use of transferable enterprise skills

Students will develop an understanding of themselves in the context of work

Students will gain insight into the current and future rapidly changing world of work

12–18

AGE GROUP

2011

ESTABLISHED

CONNECT WITH THE INNOVATOR

World of Works

wow@fya.org.au

Australia

<https://www.fya.org.au/programs/worlds-of-work/ut>



Education and Industry working together
to promote, nurture and celebrate
Design & Manufacturing

Youth Made Initiative

Malaysia

'Youth Made Initiative' is a collaboration of education and industry to help to try and contextualize Design & Technology for students. Local companies agree to help schools on a range of things – visits, work experience, live design briefs etc to help contextualize STEM education and up-skill staff and students with relevant and modern skills and knowledge required for the world of work.

"Youth Made Malaysia offers students the opportunity to work on exciting D&T projects, supported by leading business and industry partners. It offers students unique access to work with leading global brands to develop their skills and knowledge and prepare them for future undergraduate studies and employment."

– EDUCATION IS GREAT – BRITISH HIGH COMMISSION CAMPAIGN

'Youth Made Initiative' is a collaboration of education and industry to help to try and contextualize Design & Technology for students. It began in Malaysia (see www.youthmademalaysia.com) just over 12 months ago and it has now grown to 3 countries. Basically companies agree to help schools on a range of things – visits, work experience, live design briefs, competitions, training, whatever they can, whenever they can. It is all completely free and with no formal commitment from schools or companies. In Malaysia there are now 30 companies and 15 schools working together, impacting thousands of students. Local STEM and design events are posted on the website and students and parents sign up to get notifications of these direct to their inbox.

After an exciting year and building up case studies and examples, teachers in Dubai and Singapore heard about the idea and it is being implemented there too.

It seems obvious to learn from industry. Technology curriculums are out-of-date as soon as they get to the classroom, never mind when they go through such long government validation processes. Whilst the core examination courses remain, teachers have the opportunity to link projects with real companies to show students why they are learning what they are, and what future pathways are open to them.

INTENDED OUTCOMES

To promote Design Technology skills in our young people

To promote Design Manufacturing in the local areas

To make DT education relevant and real

To nurture the passion in design technology in students

4–18

AGE GROUP

2016

ESTABLISHED

CONNECT WITH THE INNOVATOR

Ryan Ball

youthmadeinitiative@gmail.com

Malaysia

<https://www.youthmadeinitiative.com/>

Recommendations & Concluding Remarks

10 suggestions for improvement

Having explored three innovations that we believe have the potential to address numerous barriers facing TVET in Finland, it is now worth looking at further areas for recommendation based on our research findings. This section will highlight the ten areas that we believe are key to address when discussing how to improve TVET in Finland.

1. IMPROVING THE ATTRACTIVENESS OF TVET

This report has consistently discussed the need to improve the attractiveness of TVET. The 'State of the Debate' found that the majority of countries struggle to portray TVET as highly as general education. HundrED's employer survey, concluded that improving the publicity and marketing around TVET was one solution in attempting to bridge this gap.

2. INCREASING UNDERSTANDING ON HOW TO MINIMISE THE SKILLS MISMATCH

Providing students with transferable skills to access numerous professions, whilst also ensuring that they have the skilled knowledge needed to access specific jobs is hard to balance. Further research in this area is needed.

3. IMPROVING STAKEHOLDER COOPERATION

All three stakeholders surveyed in this report, noted the value in improving the relationships between TVET providers and employers. This will give students an accurate portrayal of what the various fields of study offer, as well as ensuring that students are learning key skills.

4. IMPROVING YOUTH UNEMPLOYMENT RATES AND TVET RETENTION

It has been suggested that improved career guidance during basic education, improving teacher support for students studying TVET (from a holistic perspective), creating a community environment and increasing opportunities for flexible and personalized learning will positively impact the dropout and youth unemployment figures.

5. IMPROVING THE INFORMATION AND GUIDANCE GIVEN DURING BASIC EDUCATION

By ensuring that all careers counsellors are well informed on TVET and the various routes and sectors, students will be able to make informed choices about their future. It is also important that vocational skills and attributes are promoted throughout basic education.

6. ENCOURAGING REGULAR PROFESSIONAL DEVELOPMENT FOR TVET EDUCATORS

TVET educators, like educators in all sectors, struggle due to strict time constraints and a heavy workload. Regular professional development for educators, as well as time spent within industry need to be made a priority. With an increasingly fast changing labor market and global economy, it is not just students who need to be prepared, but also educators and employers to help their professional knowledge meet the demand.

All three stakeholders surveyed in this report, noted the value in improving the relationships between TVET providers and employers.

7. IMPROVING FEEDBACK OPPORTUNITIES

Feedback is crucial in encouraging better cooperation between TVET stakeholders. Students do not currently feel like their feedback opportunities are as beneficial as they could be. Students need to know that their feedback is taken seriously, and has the potential to facilitate change. Feedback between institutions and employers is also essential to ensure for all parties to maintain a positive relationship and that they are in agreement on what is being taught, and that the skills are matching demand.

8. IMPROVING FLEXIBLE AND PERSONALIZED LEARNING OPPORTUNITIES

Students studying TVET, especially adult learners, need to be given the option to have flexible learning pathways. A factor in student dropout rates, is the difficulty some students have 'juggling' all the different requirements between, working life, family life and their studies.

9. INVITING PARENTS/CARERS IN AND INVOLVING THEM

Despite HundrED's student survey portraying the opposite, it was largely found in the research literature, that parents and carers are a key factor in the choices their children make. Therefore, involving parents in vocational education discussions, and encouraging their participation in careers talks, as well as sharing their own experience have the potential to positively impact the number of students choosing TVET.

10. ENCOURAGING A HOLISTIC APPROACH TO TVET EDUCATION

Ensuring that educators are trained to address students' wellbeing, and that institutional and employment environments are conducive to students feeling welcome is vital.

TVET students need to
be given the option to have
flexible learning pathways.

Positive wellbeing whilst studying, as well as taking these positive practices into employment and future career paths have the potential to enhance engagement.

This report has provided an extensive overview of TVET internationally. Due to time constraints and the vast number of countries and research spanning TVET, it has been impossible to provide an in-depth analysis of all aspects of vocational education. However, this report has provided a snapshot of the current situation of TVET globally, with a more focussed look at Finland; highlighting key barriers and goals. Through three surveys, it was possible to gain a deeper insight into how institutions, employers and students in Finland currently feel about TVET, and which areas the new Finnish VET Reform needs to be addressing. The country case studies, advisory profiles and policy insights have provided a brief but more in-depth view of TVET in Estonia, Denmark, England, Canada, Australia and Germany. It is hoped that the TVET initiatives highlighted in this report, as well as the ten areas for recommendation will help to provide guidance on possible solutions to the barriers that became clear in the research, and that these will be freely available and easily accessible for all TVET stakeholders.

Appendices

Appendix 1

INSTITUTIONS

Appendix 2

EMPLOYERS

Appendix 3

STUDENTS

1. Basic Information

This information will be used for creating a HundrED Research Report about Vocational Education and Training (VET). Please do not share any critical or confidential data which can't be published as a part of the research. The final research report will be published by HundrED and Technology Industries of Finland.

More information about the survey:

Lasse Leponiemi, Head of Operations, HundrED
lasse@hundred.org

1. What is your job role?

* 2. What is the name of your institution?

* 3. What is the size of the area in which your institution's main campus lies?

- ☐ less than 30.000 inhabitants
- ☐ between 30.000-80.000 inhabitants
- ☐ more than 80.000 inhabitants

* 4. How many VET students does your institution have?

* 5. How many technology VET students does your institution have?

* 6. What are your gender ratios among technology VET students?

Female

Male

Other

* 7. What is the ratio of technology VET students whose native language is something other than Finnish or Swedish?

* 8. How do you hope that the VET reform will affect vocational education in Finland by 2023?

* 9. What do you think motivates students to choose VET?

- ☐ they are good at the subjects ☐ advice from somebody at school
- ☐ they are interested in the subjects ☐ career prospects
- ☐ the choice their friends made ☐ chance of finding a job
- ☐ advice from family or friends ☐ possibility of a good salary
- ☐ Other (please specify)

* 10. Do you agree or disagree with these statements...?

	Disagree			Neutral			Agree
Students studying VET learn skills that are needed by employers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
VET leads to jobs that are highly regarded in Finland	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
VET allows students to find a job quickly after qualifying	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is easier to get a qualification in VET than general education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Those studying VET are more likely to get a job than those who continued with higher education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students with low grades are directed to VET	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
General education is viewed more positively than VET	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students are prepared for the transition to green economies and sustainable societies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students can continue their studies in higher education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. How do students provide feedback about their studies?

12. How meaningful is the feedback seen among personnel?

Not meaningful					Extremely meaningful	N/A
☆	☆	☆	☆	☆	☆	○

13. How do partner employers for technology VET students provide feedback about learning at the workplace?

14. How meaningful is the feedback seen among personnel?

Not meaningful					Extremely meaningful	N/A
☆	☆	☆	☆	☆	☆	○

15. How meaningful is the feedback seen among students?

Not meaningful					Extremely meaningful	N/A
☆	☆	☆	☆	☆	☆	○

* 16. Which skills do you believe are most useful for students after their graduation?

- ☐ to understand the various possibilities available with their qualification
 ☐ understanding customer's point of view
- ☐ efficient use of ICT
 ☐ team working skills
- ☐ skills for lifelong learning
 ☐ skills to work / operate in a multicultural environment
- ☐ skills to understand structures and the bigger picture
 ☐ skills for sustainability and green economies
- ☐ attitude
- ☐ Other (please specify)

* 17. How quickly are your students from technology programs employed after graduating?

- ☐ within six months
- ☐ within one year
- ☐ over one year

18. What proportion of your students from technology programs are employed to their own career after graduating?

10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	N/A
😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	○

19. How good are the employment opportunities for technology VET students in your region?

None at all					Lots of opportunities	N/A
						<input type="radio"/>

* 20. How well do the studying experiences in your technology programs match the expectations of students?

Not at all					Fully	N/A
						<input type="radio"/>

21. What could be done in Basic Education to promote VET?

22. How do you believe VET can be improved to meet the needs of students and their futures?

23. With funding becoming linked to VET student employment rates, what changes do you foresee being necessary in order to ensure your institution still receives adequate funding?

* 24. How difficult it is to become enrolled in your technology programs?

It is difficult to get the necessary amount of students	Most of the study places are filled	All study places are filled	All study places are filled, slightly more demand	All study places are filled, a lot more demand

Other (please specify)

25. List 1-3 actions which are important to keep the current student enrollment rates?

26. List 1-3 actions you are planning to do to improve your student enrollment rates and quality?

* 27. Would you be happy for us to contact you about organizing a more in depth interview?

☐ Yes
☐ No

* 28. Contact information

Name	<input type="text"/>
Email Address	<input type="text"/>
Phone Number	<input type="text"/>

29. Is there anything else you'd like to add on the subject of VET in Finland and the role of institutions?

1. Basic Information

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More information about the survey:

Lasse Leponiemi, Head of Operations, HundrED
lasse@hundred.org

1. What is your job role?

* 2. What is the name of your organization?

* 3. What is the scale/size of your organization?

- ☐ Small scale - Local
- ☐ Medium scale - National
- ☐ Large scale - Global

* 4. How many VET students do you have?

* 5. How many technology VET students do you have?

* 6. How do you hope that the VET reform will affect vocational education in Finland by 2023?

* 7. What do you think motivates students to choose VET?

- ☐ they are good at the subjects
- ☐ they are interested in the subjects
- ☐ the choice their friends made
- ☐ advice from family or friends
- ☐ Other (please specify)
- ☐ advice from somebody at school
- ☐ career prospects
- ☐ chance of finding a job
- ☐ possibility of a good salary

* 8. Do you agree or disagree with these statements...?

	Disagree		Neutral		Agree
Students studying VET learn skills that are needed by employers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
VET leads to jobs that are highly regarded in Finland	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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General education is viewed more positively than VET	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students are prepared for the transition to green economies and sustainable societies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students can continue their studies in higher education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. How do students provide feedback to you?

10. How meaningfully is the feedback seen among personnel?

Not meaningful				Extremely meaningful	N/A
☆	☆	☆	☆	☆	○

* 11. Which skills do you believe are most useful for students after their graduation?

- | | |
|--|---|
| <input type="radio"/> to understand the various possibilities available with their qualification | <input type="radio"/> understanding customer's point of view |
| <input type="radio"/> efficient use of ICT | <input type="radio"/> team working skills |
| <input type="radio"/> skills for lifelong learning | <input type="radio"/> skills to work / operate in a multicultural environment |
| <input type="radio"/> skills to understand structures and the bigger picture | <input type="radio"/> skills for sustainability and green economies |
| <input type="radio"/> attitude | |
| <input type="radio"/> Other (please specify) | |

* 12. Has your organization noticed a shortage in the skills you are looking for amongst candidates?

- ☐ Yes
☐ No

13. Why?

* 14. Do you think that VET institutions are training students to meet the requirements of the workplace?

- ☐ Yes
☐ No

15. Why?

16. How good are the employment opportunities for technology VET students in your region?

None at all				Lots of opportunities	N/A
👍	👍	👍	👍	👍	○

17. What could be done in Basic Education to promote VET?

18. How do you believe VET can be improved to meet the needs of students and their futures?

* 19. What skills do you want to see being encouraged amongst future workers?

20. How do you think organizations like yourselves could best engage with VET institutions?

21. Is there anything else you'd like to add on the subject of VET in Finland and role of employers?

1. Basic Information

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More information about the survey:

Lasse Leponiemi, Head of Operations, HundrED
lasse@hundred.org

* 1. What is the name of your institution?

2. What field of study you are in?

* 3. How old are you?

- ☐ 15-19
☐ 20-24
☐ 25-29
☐ 30-34
☐ Over 34

* 4. Gender

- ☐ Female
☐ Male
☐ Other (please specify)

5. Have either of your parents..?

- ☐ studied VET
☐ studied at university
☐ neither

6. How do you think VET is seen in Finland?

* 7. How do you hope that the VET reform will affect vocational education in Finland by 2023?

* 8. What motivated you to choose VET?

- ☐ I am good at the subjects
☐ I am interested in the subjects
☐ the choice my friends made
☐ advice from family or friends
☐ Other (please specify)
☐ advice from somebody at school
☐ career prospects
☐ chance of finding a job
☐ possibility of a good salary

* 9. Do you agree or disagree with these statements..?

	Disagree		Neutral		Agree
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It is easier to get a qualification in VET than general education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Those studying VET are more likely to get a job than those who continued with higher education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students with low grades are directed to VET	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
General education is viewed more positively than VET	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Students are prepared for the transition to green economies and sustainable societies

Students can continue their studies in higher education

* 10. How satisfied are you with the following aspects...?

	very unsatisfied	unsatisfied	neutral	satisfied	Very satisfied
the general skills you develop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
the work-related skills you develop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
the quality of teaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
the counselling you received to create your personal study plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. How do you provide feedback about your studies?

12. How meaningful do you find the feedback opportunity?

Not meaningful					Extremely meaningful	N/A
☆	☆	☆	☆	☆	☆	<input type="radio"/>

13. How do you provide feedback about your work experience?

14. How meaningful do you find the feedback opportunity?

Not meaningful					Extremely meaningful	N/A
☆	☆	☆	☆	☆	☆	<input type="radio"/>

15. Which collaboration methods with VET have you been using?

- ☐ summer internships
- ☐ other internships
- ☐ apprenticeship training
- ☐ training agreement

16. Would you recommend VET to your friend?

- ☐ Yes
- ☐ No

17. Why?

* 18. Which skills do you believe are most useful after you graduate?

- ☐ to understand the various possibilities available with your qualification
- ☐ understanding customer's point of view
- ☐ team working skills
- ☐ efficient use of ICT
- ☐ skills to work / operate in a multicultural environment
- ☐ skills for lifelong learning
- ☐ skills for sustainability and green economies
- ☐ skills to understand structures and the bigger picture
- ☐ attitude
- ☐ Other (please specify)

* 19. Have your studies met your expectations of VET?

Not at all					Fully	N/A
👍	👍	👍	👍	👍	👍	<input type="radio"/>

20. What could be done in Basic Education to promote VET?

21. How do you believe VET can be improved to meet the needs of students and their futures?

22. Is there anything else you'd like to add on the subject of VET in Finland?

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