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Research rich reform: the introduction of vocational course work placements in Finland

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The Finnish education system invests heavily in research, but what impact has this investment returned to the ecosystem as a whole?

Finland has one of the most successful vocational education and training systems in the world. The Finnish Ministry of Education and Culture emphasises the importance of research in all its strategic planning documents. In its 2010 outline of 'Vocational Education and Training in Finland' the Finnish National Board of Education (FNBE) notes that '[v]ocational education and training is continuously improved by means of national development projects' (FNBE, 2010).

Extended work placements or on-the job-training as an element of 'school'-based vocational education and training (VET) were introduced in Finland at the turn of the century. Subsequent research into the effectiveness of this model highlights the outcomes and impact on students and employers, and a number of critical success factors.

Key features of the Finnish education system

Basic education starts at age seven and lasts for nine years. It is preceded by a compulsory pre-primary year. At 15, students choose to continue into either general or vocational upper secondary education. Both routes can lead to higher education in either a research-based university or university of applied science which focuses on labour market needs (Finnish National Agency for Education, 2016).

At the end of compulsory or basic education students are able to opt to do an additional year or 'tenth grade' to improve upon their school certificate results and support progression. Approximately 2% of students take this option (OECD, 2013).

Adult education is popular; 26% of adults engage in some form of informal education in comparison with an EU 28 average of 10.8% (Finnish National Agency for Education, 2016). Adult skills are high; in 2013, 86% of 25 to 64-year-olds had completed at least upper secondary education, over 10% higher than the EU28 average (Koukku et al, 2014).

OECD (Organisation for Economic Co-operation and Development) sources note that education in Finland is based on the principle that all people must have equal access to education and training and that

there should be no barriers preventing progression to higher levels of education (OECD, 2013). Outcomes differ little across the country; 9% variance against an OCED average of 30% (Finnish National Agency for Education, 2016). Socio-economic background has little impact in the Finnish education system, though there is some evidence that students from immigrant backgrounds fare less well than other groups.

There is high social and political agreement on the value of education, which has provided stability in both the structure and key features of the system. Importance is placed on education and teachers as professionals. All teachers are educated to degree level or above with modules on research and practice-based studies (OCED, 2015). Vocational teachers are required to hold tertiary education degrees. There is little external accountability and there are no national tests until the age of 18. Evaluation takes place through a system of self-assessment.

Governance is shared between central government and local authorities. Government defines and sets priorities, including the national core curricula, every four years within an education and research development plan. Local authorities set local educational priorities and curricula, and maintain and support schools (Finnish National Agency for Education, 2017).

Careers guidance and counselling is provided at all levels of education. It is undertaken by both guidance counsellors and teachers, for whom it is a key part of their role (Koukku et al, 2014). Guidance counsellors are also responsible for ensuring that all students have a destination and apply for a place through the national online application system (Koukku et al, 2014).

Key features of Vocational education and training (VET)

Finland has one of the highest enrolment rates in upper secondary vocational education in OECD countries. In 2014 30% of Finns aged 15 to 19 were on vocational programmes, 2% above the OECD EU 22 average. At 20 to 24, 15% of Finns are on vocational programmes, the highest of any country and 9% above the EU 22 average (OECD, 2016).

Vocational education is funded at a rate of €11,500 per student per year; more than any other level of pre-university education and 33% higher than general upper secondary education (Finnish National Agency for Education, 2017).

Vocational education is provided in a 'school'-based (training provider) route, work-based or apprenticeship route and additionally a competence based qualification system for adults (Koukku et al, 2014). Upper secondary vocational education underwent fundamental reform between 1998 and 2001 (Strenström & Virolainen, 2014) to introduce a consistent model of three-year study programmes, allowing access to higher education on completion, based on occupational sectors and fields. It is now divided into eight routes or pathways:

- humanities and education
- culture
- social sciences, business and administration
- natural sciences
- technology communications and transport
- natural resources and the environment
- social services, health and sports
- tourism, catering and domestic services

The most popular subject areas are technology, communications and transport, social services, health and sport (Koukku et al, 2014). These routes are further divided into over 100 study programmes covered by more than 50 qualifications.

Qualifications are developed in co-operation with employers and other key stakeholders to ensure they meet labour market needs. Employers are active in all parts of vocational education design and work placement assessment. The national board of education is tasked with anticipating educational and skills needs, but providers are also required to consider labour market needs and respond accordingly (Koukku et al, 2014). General and vocational upper secondary providers are legally obliged to cooperate within their region to meet student needs and labour demands (Lasonen, 2000).

Vocational courses in Finland are currently being reformed as part of the Vocational Reform Act, 2015, to strengthen learning outcomes and focus on competencies for work and life; communication and interaction; mathematics and science; society and the world of work; social and cultural competencies (FNBE, 2016). Courses will continue to be three years in duration. The overall structure remains the same; including work placement.

The Education research landscape in Finland

Research is central to all reform in sectors throughout Finland. In the early 1990s the combined effect of global recession and the demise of the Soviet Union, which had traditionally been a major trading

partner, forced Finland to review its reliance on natural resources. This resulted in a move towards an economy based on information and knowledge. In 1991 only five in every 1,000 workers were involved in research; by 2003 this had risen to 22, three times the OCED average (OCED, 2010). Pasi Sahlberg (2009) refers to the high research investment in Finland. The 2014 Finnish research infrastructure committee report, 'Finland's strategy and roadmap for research infrastructures 2014–2020' emphasises the centrality of a research infrastructure ecosystem to underpin industrial development and success.

Educational research is no different. The first field studies in schools were undertaken in 1945 (OCED, 2010). Jouni Välijärvi (2012) notes that research has been embedded within the Finnish education system since at least the 1960s. In the 1980s and 1990s research was pivotal to all national development projects. However, in contrast to the general investment in research and development, noted above, Välijärvi comments that the recession of the mid-1990s curtailed national projects and much current educational development takes place at a local level. The Finnish Ministry of Education and Culture does still finance national development projects in priority topic areas. In February 2017 it announced it was working towards a new vision for higher education and research for 2030 to continue to raise levels of education and competence. However, research is already an integral part of the education development partnership and teacher and leadership development (Finnish National Agency for Education, 2016).

As noted above teacher education in Finland places a great amount of emphasis on research. Teachers are required to write research-based dissertations as a final requirement for a Masters degree and are required to spend time on research throughout their careers. This is reflected in the education of young people at school too; students are required to undertake research as part of their studies (OCED, 2010).

Välijärvi (2012) comments on the frank and open relationship between education, research and the ministry. This is underlined by the FNBE *Learning and Competence strategy 2020,* which highlights the synergy between research, policy and practice where 'steering and support provided by the Finnish National Board of Education (FNBE) for education providers is based on national and international benchmarking and research data'. Research informs policy such as the determination of the Government not to introduce high stakes external testing in contrast to many other countries (Sahlberg, 2009).

This is also true in vocational education. The FNBE publication 'Vocational education and training in Finland' highlights the importance of both quantitative and qualitative data in planning to meet labour demands and skills needs.

Both national and international educational research in Finland is based in the Finnish Institute for Educational Research (FIER). Founded in 1968, this multi-disciplinary centre for educational research, assessment and development is based at the University of Jyväskylä. The purpose of FIER is to investigate, assess and develop the educational system from pre-school to higher education including links between vocational education and the world of work. The centre works in co-operation with education, employers, policy-makers and the media in order to increase the effectiveness of its research findings.

FIER has an annual budget of €6.6 million, 57% of which is external funding, supported by the Ministry of Education and Culture, the EU, municipalities and the Academy of Finland among others. The centre has a team of researchers including project and data managers, students and senior staff. The centre also trains researchers and develops research methods.

Development of work placements as integral to Finnish Vocational Education and Training

One area of vocational education in Finland which has been the subject of substantial research is that of work placement or 'on-the-job learning' as part of a primarily 'school'-based course.

Prior to the vocational education reforms of 1998 to 2000, upper secondary vocational education in Finland was mainly in the form of two-year provider-based programmes and, with the exception of health care (Numminen, 2000), had few links with employers (Strenström & Virolainen, 2014). Any placements that were in place were based on a behaviouristic or neo-behaviouristic model where the purpoe was to practise what had been learnt at school (Strenström and Virolainen, 2014) This 'academic drift' (Virolainen & Strensöm, 2014) led to a lack of connectivity with the work place and employer requirements. Education and qualifications had developed separately from the world of work. It was perceived that provider based facilities did not provide an 'authentic' experience and could, in turn, lead to poor transitions to work and consequently high youth unemployment. These issues, coupled with employer concerns that

the baby-boom generation were approaching retirement and the dawn of new occupations, meant that there would be skills gaps unless action was taken (Lasonen, 2000).

The turn of the century saw six-month on-the-job-learning introduced to all vocational study programmes to help address the concerns above. The aim was to ensure that the theory of vocational education was integrated with practice, more responsive to employer needs (Virtanen & Tynjälä, 2008) and encouraged flexible and efficient transition of students into the workplace (Koukku et al, 2012). To accommodate placements, study programmes were extended from two to three years. Placements involve no employment contract and students are not paid (Strenström & Virolainen, 2014).

The on-the-job learning model was initiated in the national education and research plan for 1995 to 2000. The Bridge Pilot Project, the largest work-based learning project involving education and research ran from January 1998 to December 2001. Between 1998 and 1999, 16 regional pilots were established involving 60 providers, nearly 3,000 students, 2,000 teachers and 1,000 businesses involving all vocational sectors within the Finnish system. 44% of the companies involved employed fewer than 11 staff, 12 employed more than 1,000 and 12 were sole proprietors. The project had two main aims: to find forms of high-quality work placement that could be extended nationally and would be financially viable, and to explore the changes that would need to be made to regulations and agreements (Lasonen, 2000).

An evaluative study of the project was undertaken in 1999 to assess the effectiveness of businesses as learning environments. The research concluded that overall on-the-job training or work placements improved co-operation between employers and providers, did not add to employer workload and that students benefitted from being able to use their initiative, practical and teamwork skills, build greater self-confidence, develop thinking skills and see the bigger picture. (Lasonen, 2000). However, the study also indicated that there should be greater clarity concerning guidance for students on work placements and that assessment models needed to be clarified. Moreover, students were not always motivated to undertake unpaid work, placements added additional pressures to provider teaching staff and smaller companies, and that workplace supervisors sometimes failed to attend training that had been set up to support them in their role (Lasonen, 2000).

Since 2000 work placements have been extended to all Finnish VET programmes. Teachers were given national and regional level training on effective delivery involving dissemination from the initial pilot phase (Numminen, 2000).

Subsequent research has focused both on the implications and outcomes or impact of work placements as summarised by Strenström and Virolainen (2014). The introduction of work placements, has meant radical changes in attitudes and organisation for providers and employers. Agreements between employers and providers regarding roles and responsibilities, especially guidance and assessment, are essential. Employers and providers must agree on the aims and content of work placements, their length and timing.

Perhaps most significantly the introduction of greater co-operation between providers and employers has led to new types of assessment in the form of vocational skills demonstrations at stages throughout the course. These may be practical demonstrations of competency in certain skills or practical assignments overseen by both provider and employer staff, which has resulted in new types of learning agreement and documentation (Strenström & Virolainen, 2014). There are also legal requirements in place to ensure that providers work in co-operation with employers (Virtanen & Tynjälä, 2008).

Work placements in Finland are therefore now based on a 'connective' model (Virtanen & Tynjälä, 2008), which is seen as the most effective system as it is the most integrated; connecting formal learning in the provider with informal learning in the workplace. In this model, the provider and employer work together to create environments for learning, which ensure that the student has clear guidance about what will be required, and clear goals about what will be achieved during the placement. The provider prepares the student for placement and the employer provides a workplace trainer to support and give feedback to the student while on placement. This can be supported by assignments, projects, learning diaries, portfolios and discussion. Compulsory, guided and assessed work placements have worked well by allowing students the opportunity to mix theory and practice and learn new skills including self-regulation (Virtanen & Tynjälä, 2008).

Outcomes and impact on students have been largely positive; a declining trend on drop-out from 13% in 2000/01 to 9% in 2011/13 and positive student feedback (Strenström & Virolainen, 2014). Research shows that vocational students continue to be more motivated to learn, feel more independent, self-confident and able to

use initiative (Strenström & Virolainen, 2014) as a result of work placements. Increased connectivity with the workplace is also perceived to be one of the reasons for the improved status of vocational education. In 1992, 32% of students continued their upper secondary education on a vocational programme; in 2012 this had risen to 42% (Strenström & Virolainen, 2014).

However, teachers have found finding placements and their variance challenging and the experience in different sectors differ considerably. Studies have focused on the success of health and social care placements in comparison with those in technology and transport. As noted in the Bridge Project, study placements in some sectors were more successful than others (Lasonen, 2000). For example, students needed to be more active in ensuring that they gained positively from a placement in transport and technology than in health and social care. As noted in the Bridge Project study, health and social care programmes have an established history of placements which may well explain the differences in student experience (Strenström & Virolainen, 2014).

Conclusions

Research has long been at the centre of educational development in Finland as reflected in its well-established strategic education and research documents. This strategic relationship has undoubtedly played its part in making the Finnish model as successful as it is today. The Bridge Project and subsequent studies are reflective of the importance given to in depth research as a springboard for, and an evaluator of, educational reform in Finland. The Bridge Project highlighted the importance of processes being in place to ensure that students gained the optimum experience from on-the-job-learning.

On-the-job learning based on the 'connective' model requires greater guidance for students in the work place. This in term has implications for assessment. The change in emphasis to on-the-job learning required a new system of assessment; a system of workplace assessment or vocational skill demonstrations was introduced in 2006 (OECD, 2013).

Research has also focused on evaluating the student experience. It has indicted the positive impact on student motivation and retention, and increased co-operation between employers and vocational education providers. This would all point to money well-spent and an effective ecosystem of action-based research.

However, there seems to be little, if any, recent research on the variance in work place learning between sectors and whether this is still the challenge that it was when identified in the Bridge Project study. To ensure there is consistency in the student experience across sectors is vital to all stakeholders and the system that this is revisited.

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