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Changing patterns of transition to VET and from VET to higher education: the on-going Finnish VET reform

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Abstract: Since the 1990s participation in the Finnish vocational education and training (VET) increased by 10%, i.e. it became more attractive choice for young and altogether 42% of them chose it as their post-compulsory education by the first decade of millennium. Thus Finnish VET seemed to be a success story in contrast to many other European countries. At present the Finnish VET is going through extensive multi-level reform efforts. The reform aims not only to change national qualification requirements, but also legislation, administration and regulation. The reformed model of VET should be implemented in 2018. At the same time the funding for VET education providers has been at stake due to recession since 2008.

The aim of this mainly descriptive paper is to discuss the on-going reform's possible effects on progress of studies and patterns of transitions in Finnish VET (and from VET to HE), as well as to discuss the reform initiatives and effects of societal context for outcomes of the reform. In accordance, the paper explores transitions and compares how VET entrants of the year 2012 have progressed by 2015 compared to earlier cohort who studied in 2004-2007 in order to picture the situation before reform. The effects of the reform are discussed on broad terms utilising the approach of institutionalisation theory.

Keywords: vocational education and training, transitions, higher education, reform.

Bibliographical notes:

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1 Introduction: The present conditions of Finnish VET reform in 2015-2018

The present Finnish government has set a goal to renew all vocational education and training (VET). The reform concerns youth, adult and specialist vocational education (targeted for those who have already completed initial VET qualifications). In addition, the reform concerns funding, administration, regulation, qualification structure, models for organizing education and providers of education (Prime Minister's Office [Valtioneuvoston kanslia], 2015; Ministry of education and Culture, 2016). Since, in Finland, VET is mostly funded by the state, this means in practice that a thoroughgoing

multi-level change is targeted (see Rauhala, 2013; Stenström & Virolainen, 2014a, p.10). The new, reformed model of VET should be in its place and adopted in 2018.

This reform of initial VET education is one of the so-called spear-head initiatives that standing Government has set for the target area “Competences and education”¹ (Prime Minister's Office [Valtioneuvoston kanslia] 2015). The aim is to “renew VET in order to make it competence-based and client-oriented and increase its efficiency. In addition the amount of on-the-job learning will be increased and access to individual learning pathways enhanced. Regulations and overlapping education will be reduced” (Prime Minister's Office [Valtioneuvoston kanslia] 2015, p.13).

The on-going Finnish VET reform is structured by three main factors. *First*, how new national basis for vocational qualification (in the following alternatively referred to as curriculum reform, or qualification requirements) will be adopted on the level of education providers (educational institutions) regionally and locally. *Second*, how proposal for new legislation for IVET and adult VET (combined) will be addressed in parliament's discussions, and if it will be eventually approved as such or in a modified form. *Third*, the outcomes of the reform depend on how funding for VET effects implementation of the reform on institutional level, including both the renewed curriculum and new legislation. In the following I describe these aspects and their background in more detail, one by one.

2 Reform and reorganisation of the Finnish VET as an institution

The effects of the Finnish VET reform may be analysed with the help of institutionalisation theory. In order to get a deeper understanding of the reforms' effects I draw on a classic of institutionalization theory, Scott (1995). While more novel approaches to study education system's institutionalization do exist, the classic approach enables sufficient, robust recognition of the reform's major dimensions and its depth (c.f. Busemeyer 2015; Streeck & Thelen 2005; Mahoney & Thelen 2010).

According to Scott (1995) institutions are constituted in principal by three pillars, which support and create continuation for institutions. The three pillars are the regulative, normative and cognitive pillar of an institution. Each of these pillars has cultural aspects, social constructions of its own and becomes represented in everyday routines in different ways. The *regulative aspects* of institutions become culturally evident in Laws and Acts. The laws and acts give legitimacy to power structures and state bureaucracy and they are reflected in the regular ways of taking care about things, when proceeding with organisation's actions. The *normative aspects of an institutions' culture* are reflected in actors' values and expectations. The norms are adopted by networks of experts who are officially acknowledged and in power to fulfill the duties given to them by their position in the organisation. The routines are played out in the uniform ways which the actors conduct their duties. The *cognitive aspects* of an institution are represented in the categories, knowledge and interpretation of an organisation's actions and their meanings. In social structures the cognitive aspects of an institution appear as a resource for identification. The cognitive aspects of an institutions create continuity for it,

¹ Altogether, the target area “Competences and education” consists of six initiatives: New learning environments and digital materials for compulsory education; VET reform; Fast transitions to the world of work; Better access to arts and culture; HE institutions and employers enhanced collaboration for commercializing innovations; and reform of Youth guarantee. The Governments other target areas on the side of “Competences and Education” are Employment and competitiveness; Health and welfare; Biotechnology and clean solutions; Digitalization, experiments and reducing norms (working methods); Reforms and Governments other ground-laying initiatives.

when categories are generalised and they are taken as a resource for understanding the meaning of the organisation and its actions. The cognitive aspects of an organisation are routinized in action plans, and manuscripts, which have been produced for the organisation's actors. (Scott 1995)

The multi-level nature of the Finnish VET reform is apparent in how it concerns all three pillars of the institution: Laws are renewed (regulative pillar), norms are changed when curriculum are rewritten (normative pillar) and also the cognitive understanding of the meaning of VET is redefined, when curriculum are recategorised as more competence oriented (cognitive pillar). In the following the three main factors of the reform (see section 1) are discussed, with respect to how they change the institutionalisation of VET and its regulative, normative and cognitive pillars in Finland.

3 New national basis for VET curriculum adopted in 2016

3.1 National basis for qualifications

In Finland, National Board of Education is the administrative body which takes care of preparing the national guidelines for qualifications, i.e. national basis for vocational curriculum (qualification requirements). Individual education providers follow these guidelines as a basis for their own curriculum, which they prepare on institutional level to guide their teaching and learning. The national qualification requirements have been renewed in 2016 toward a more competence based approach.

In general, the national basis for curriculum is prepared for each individual VET qualifications in collaboration with tripartite advisory bodies, which are The National Education and Training Committees. They are appointed by the Ministry of Education and Culture to support contacts between education and the world of work nationally (see National Board of Education 2010; Stenström & Virolainen, 2014a, p. 10).

The curriculum reform adopted in 2016 can be seen as a continuation of ongoing development of national qualification requirements for VET but also as a break to previous development of VET qualifications in some respects. In the following, it is first explained, what are the continuing characteristics in the curriculum reform 2016.

Officials from National Board of Education have pointed out that working life-orientation and competence-based approach have been targeted already for twenty years in Finnish VET (Kärki, 2014). When the national basis for curriculum was renewed in 1993-94, the individual study subjects and modules were replaced in the national basis for qualifications. Curricula were to be defined starting from competence areas (taken from the world of work), related goals and assessment criteria (Kärki, 2014). It meant a shift from subject- and science-based, scholarly division of curriculum content to hours and classes toward organization of vocational learning on the basis of working life activities.

On the side of the reformed upper secondary VET, a system for competence based qualifications was created, targeted to adults in the 1990s. All Finnish VET qualifications (i.e. upper secondary, further and specialist vocational qualifications) have been available also as competence based qualifications since then (see Stenström & Virolainen, 2014a, p. 19). There has been a shift in the presentation of the national qualification requirements though; while national basis for qualifications (national requirements) were provided as separate booklets for adult and youth education by National Board of Education in 1990s, they are now presented as one united whole to be used as a basis for both youth and adult

initial vocational qualifications and competence based qualifications (Nylund & Virolainen 2017).

The change toward competence-based approach in the national qualification requirements has meant a shift in teachers' role. This shift from subject-based division of curriculum contents toward competence based approach has been given following reasons (Kärki, 2014, p. 7):

- demand for increased working life orientation and sharing a common language between the world of work and educational institutions in the curriculum goals;
- demand to express both to students and to the world of work what students should be able to complete after finishing their vocational qualifications;
- demand to create a clear basis for assessment of learning outcomes;
- demand to increase efficiency of the education system and improve quality of education underlining the importance of learning outcomes;
- need to shift the focus of learning contents to learning outcomes, and what student is actually able to do after completed qualification;
- need to shift from teacher centered approach to learning centered approach;
- need to enhance student orientation and to bring students as subjects of learning and assessment procedures- emphasis on socio-constructive approach to learning;
- increased variance of learning environments, increase of learning at work and learning at other learning environments (than school classes);
- increased meaning of accreditation of prior learning; and
- move away from classes, lessons and contents specified in advance toward acknowledging students' existing competences as a starting point for the accreditation of prior learning, and certifying competences.

The reasons given for the curriculum reform seem to emphasize needs of adult education while they underline accreditation of prior learning and acknowledgment of various learning environments as places for adopting competences. The increased emphasis for adult learning is probably justified by the changes at the world of work and accelerating speed of change, which has increased demand for adult learning and provision of adult education.

This shift which pertains Law and Acts on VET, also concerns the cognitive categories which define the context where law on VET is applied. The speed of change at the labour market seems to justify an emphasis on adults' needs in law which also regulates youth education.

The role of general subjects which has been very important for young VET graduates eligibility to HE is somewhat weakened in the new national qualification requirements adopted since 2016 in comparison to VET requirements in the 1990s. There are less, common, general subjects defined and demanded in the national basis for curriculum (qualification requirements), but student may choose more of them (than demanded in the minimum) based on their individual study goals and learning pathways (Nylund and Virolainen, 2017). More specifically the amount of general subjects has been reduced from around one fourth ($\frac{1}{4}$) of curriculum to around one fifth ($\frac{1}{5}$) of curriculum (Nylund & Virolainen, 2017). At the same time individual progress and individual study plans are given a special priority in the reform to compensate for this shift. Their fulfillment is dependent on education provider's resources and funding in two ways, at least. First, it will be seen if students can really make individual study plans based on their own aspirations and will they receive enough guidance for that. Second, is learning and teaching organized in a way that allows completion of individual study plans enabling

progress to higher education. Of course, these two aspects depend on one another on the level of individual education providers, i.e. VET schools regionally. The fulfillment of individual study plans is dependent on how individual VET providers utilize their resources (funding) to organize guidance to students and what kind of values (norms) they adopt in interpreting this regulative side of their work.

The shift in the definition of national basis for qualifications is related to more general European changes in curriculum frameworks like described in the Nord-VET report 1c (Virolainen & Stenström, 2015, p.11-12). Even though there are some major characteristics in the reform which raise concern about young VET graduates' abilities to proceed in HE in future, Finnish competence-based approach to define curriculum aims is still in many ways different from British outcomes based approach. The differences depend not least on Finnish long, school based tradition of organizing VET but also due to traditions of vocational teacher education, funding schemes (state funded VET) and commitment to equal education in educational policy. The British VET and its outcomes based approach has been critiqued for instrumentalism, lack of flexibility and anti-educationalism. Therefore it does not seem to be a very attractive example of organizing VET through outcomes-based model (e.g. Avis, 2012; Clegg & Ashworth, 2004; Raggatt & Williams, 1999; Wolf, 1995, 2011).

3.2 Change of qualification structure

In addition to the renewal of each and every national qualification requirement and thus VET qualification's contents), which are specific to the fields of production and particular industries, and changes in their activities, *the whole qualification structure* (number of educational fields, their qualifications and their relations to further and specialist qualifications) has been reformed from time to time in order to reflect changes in the world of work, national economy and goals for educational policy (see Stenström & Virolainen, 2016). Accordingly, the reform shatters the cognitive pillars of the Finnish VET as an institution.

Still the change is not quite as dramatic, as it may sound, since ongoing VET reform has been preceded by national projects which focused on developing qualification structure, so called TUTKE-projects (Ministry of Education and Culture 2010 a, b & Haltia & al. 2010). The needs for renewing VET have been to some extent described already in these project reports. Changes that are introduced to the whole of the qualification structure in the reform are reflected in the relations of youth and adult education, specialist vocational qualifications and number of individual specifications. The official aim is to reduce the number of specifications from 351 to 164 (Ministry of Education 2017a). This extent of the change in number of qualifications may however be somewhat misleading since it includes also further and specialist qualifications (c.f. Stenström & Virolainen 2016). Still this change in the categorization of VET is thoroughgoing, as it restructures the competences promoted, provided and delivered by VET education system.

4 New legislation for IVET and adult VET

In Finland government specifies education policies and its regulations (i.e. laws, decrees and acts). The present legislation guiding organization of initial VET and adult VET was

given in 1998 (Law on initial vocational education and training 630/1998; Law on adults' vocational education and training 631/1998). The Law for initial VET adopted then has been modified and changed several times. This has taken place on several occasions to some extent, for example in 2011, and in 2014 (Law on changing the law on vocational education and training 951/2011; 787/2014). Since the present legal framework was adopted in 1998 and the law has been amended partially every now and then, the law text as such has become somewhat fragmented due the amendments. Also the Laws for vocational youth education and adult education have been separate entities earlier (Law on initial vocational education and training 630/1998; Law on adults' vocational education and training 631/1998). The government seeks to cut costs of education by reorganizing youth and adult education altogether to be at least partially and more and more organized by the same institutions. The change of law for VET is seen also as a prerequisite for this reorganisation.

The proposal for new legislation suggests that all VET students would have individual study plans, based on their previous competences (Government's proposal for parliament for the new law on Vocational education and training 2016). Accordingly, it seems that goal is that students would only study those parts of qualifications which they do not have enough competences for in order to pass skills demonstrations (in the minimum, criteria given in national qualification requirements). Assessment of students' learning would be based on skills demonstrations and become independent from where and how their competences have been achieved. The aim is that skills demonstrations would take place in authentic work life situations mostly (Ministry of Education 2017b). The education providers should organize provision of education and guide students in making their individual study plans, so that it is possible to take advantage of a variety of learning environments (at school and on-the-job) and pedagogical approaches.

In particular, the replacement of on-the-job learning with "education contracts" and new assessment procedures in the proposal for legislation, have raised public discussion. For example, the aim is that the existing model of on-the job learning as part of the vocational qualifications (minimum around half a year in three years qualification at present) would be replaced by so called "educational contract" [koulutussopimus in Finnish]. According to the new "educational contract" model, students would not have contract of employment with the employer, employer would not pay the student and the employer would not receive compensation for the guidance they have given students (Governments proposal...2016). The learning within "educational contract" could be combined with other types of learning in different learning environments.

The shift toward "educational contract" model would not necessarily make much change in some educational fields where compensations for employers have been unknown already and work contracts after on-the-job learning periods are rare, but the law has been criticized to be too inaccurate. The problem brought up by various interest groups is that in the proposal it is not clear enough how educational contract for apprenticeship training and VET qualifications would differ. The new (proposed) law does not define a minimum or maximum amount for learning at work organized within "educational contract" (Liiten, 2017). The policy aim is that amount of learning at work in VET qualifications would be increased and might be continued with apprenticeship training.

Also the change of assessment, which has been proposed has been speculated. According to proposal for new law, assesment is expected to be taking place in authentic working life situations. The real opportunities for this has been questioned: is the world of work ready to take students in for assesment in authentic working life situations for parts or wholes of qualifications to the degree and amount of students that exits. In the existing

model for skills demonstration, it has only been possible to organise skills demonstrations at the workplace partly. The amount of skills demonstrations organised at the workplace has depended on the field, on the region and the module in question. In the national assessments of qualifications concerning Vocational Qualification in Business Information Technology and Vocational Qualification in Vehicle Technology slightly more than half of skills demonstrations were completed at the workplace and participated by a representative of employers (Ruuskanen & Kilpeläinen 2016; Kilpeläinen 2016). The officials from the Ministry of Education and Culture have responded to the criticism enhanced workplace learning stating that it is not the aim of the law proposal to increase on-the-job learning radically, but rather to allow more flexibility (Liiten, 2017).

In addition to change in the participative bodies roles with respect to VET the reform also suggests changes in the regulative bodies as such. The proposal for legislation suggests that existing collaborative bodies between educational institutions and the world of work would be reorganized, i.e. existing multi-level system for Education and Training committees and Qualifications committees would be decreased and to some extent replaced and by working life committees and project work for forecasts of labour market needs (Ministry of education and Culture, 2016, p. 142).

5 Funding of VET in Finland

Finnish national economy has not recovered from global economic crisis and recession which hit the national economy in 2008 (OECD 2016). For the Finnish state economy, the decline of the electronics, paper industries and the Russian recession have been in particular problematic, since there has been traditionally a lot of export to neighboring Russia. In Finland, education is funded mostly by state and free (no tuitions, free or subsidized meals, supported housing and travelling for students). When state has been looking for ways to reduce budgets, educational sector has been one loser. While the beginning of 2000s was relatively favourable to all educational sectors considering the development of resources, and public funding increased until 2012, the growth in VET budgets was mostly a result of rising number of students (Rauhala, 2013; see also Table 1, adopted from Stenström & Virolainen, 2014 p. 13). When the Finnish Government planned to initiate funding reforms already a couple of years ago, it was expected that funding for all educational sectors would fall (Rauhala, 2014).

The Finnish Association for the Development of Vocational Education and Training (Ammattiosaamisen kehittämissyhdystys AMKE ry in Finnish) has calculated that funding for VET sector has been cut by 17% since 2012. The biggest targeted decrease in annual VET funding amounts to 190 000 000€ which is the amount to be saved in the year 2017. The head of the Association (AMKE) has stated that this equals to more than 10% of state-based funding for the 2/3 of education providers in the sector (Ammattiosaamisen kehittämissyhdystys 2017a). The education providers have prepared themselves to these decreases in budgets by firing vocational teachers. The teacher union OAJ (The voice of teachers, in English) has reported that altogether 648 teachers have been fired from vocational institutions due to the budget cuts in 2016 and in 2017, and altogether 102 vocational institutions have completed employee cooperation negotiations in order to find ways to meet the decreased budgets (Nurmi, 2017). While the amount of vocational institutions was 120 in total in 2013 it is clear that the effect on VET sector has been remarkable (Stenström & Virolainen 2014b, Table 2).

The teachers' union has suggested in its feedback to the law proposal for example that a student/teacher ratio and student and a student/guidance counsellor ratio should be settled (Opetusalan ammattijärjestö /The Voice of Teachers 2016). According to the Association for the Development of Vocational Education and Training, the interest of young to apply for VET studies has decreased in recent years. The total amount of young applying for post-compulsory education in VET was 39700 this spring, which was 3500 less than last year (see Table 3 to compare to the size of age cohort). Altogether 43600 entrant's study place were available in VET, and thus all of them did not become fulfilled. In parallel, the number of students who applied to general upper secondary schools as their primary option was 33750 in 2017 (Ammattiosaamisen kehittämissyhdystys 2017b).

The parties in opposition in the Parliament has presented an interpolation to the Government on the funding of VET on 15. 3. 2016. According to what was reported in the news, the Minister of Education, Ms. Sanni Grahn-Laasonen, responded to the opposition for example that there are enough study places reserved for 76% of each age cohort in the VET sector (Liiten 2017b).

6 How will reform change patterns of study progress and transitions to higher education?

The ongoing VET reform may change patterns of transition in several ways. The official views of policy-makers and realized outcomes of the reform may be somewhat different, but remain to be seen eventually in 2020s. First, transitions from compulsory education to post-compulsory education are expected to change. The standing government has recently set as its explicit goal to increase participation to general upper secondary education (Luukka, 2017). Second, progress of studies should according to official goals become more effective and individualised due to competence-base approach and adoption of personalized study plans. Third, transitions to higher education are officially expected to continue to exist, as they are, but may actually decrease due to less general studies in the national basis of qualifications and education providers' choices. From research perspective it seems important to hypothesize also that if education providers decrease their provision of general studies the transitions to higher education may decrease. The outcome may be similar, if education providers do not have enough resources (i.e. funding and teachers) to support planning and fulfillment of individual study plans. Furthermore, the image-loss of VET may also contribute decreased participation.

The statistics concerning prior transition patterns to VET and from VET allow describing 1) transitions from post-compulsory education to upper secondary education, and 2) from general upper secondary education to further studies, as well as 3) progress of VET studies in 2004-2008 in contrast to 2012-2015. Furthermore, 4) the amount of transitions from VET to HE has been recently studied (Hintsanen & al. 2016).

First of all, the data from Statistics Finland concerning transitions from post-compulsory education to upper secondary education has reveals that transition patterns have been quite stable in the period 2005-2014 (Statistics Finland, 2017a). While the share of post-compulsory leavers choosing general upper secondary studies has decreased from 53,3% to 51,6%, the share of young choosing VET has increased from 39,4% to 42,1% during the same period (Statistics Finland, 2017a). At the same time the share of those who have not continued their studies immediately after compulsory education has been around 7,3%-6,3%(Statistics Finland, 2017a).

Secondly, transitions from general upper secondary education to further education have become somewhat slowed during the same time. While the share of the young general upper secondary graduates who did not continue to studies leading to a qualification or a degree was 58% in 2005, it had increased to 67% by 2014 (Statistics Finland 2017b). The increase is probably a combined outcome of changes in student allowances, increased youth and general unemployment and privileged position of first time applicants. Altogether these changes have made it more risky for students to enter any study place instead of the study-place of their primary interest.

Thirdly, the data and comparison on VET students' progress in their studies in 2004-2008 (Figure 1) vs. 2012-2015 seems to suggest that completion of VET programmes has become stronger: around 5% more students graduate from studies in the programme where they started in the first place and there are also more students who have chosen to continue in another programmes. This finding seems to suggest that several efforts to increase efficiency and completion of VET studies has succeeded.

Fourthly, the share of applicants with VET background to universities of applied sciences has been among young 27% (in 2013); and adults 44% (in 2013) (Hintsanen & al. 2016). The share of entrants with VET background in the universities of applied sciences has varied from field to field in between 17-80%. In traditional science universities the share of VET graduates has been 0-13% depending on the field. (Hintsanen & al. 2016).

Nordic comparison of VET graduates progress to HE has revealed the differences between Nordic countries. While Finland and Sweden enable progress to HE to almost two thirds of VET graduates, the pathways to HE from VET in Norway and Denmark are more rare. Also the provision of HE varies of lot and makes the routes of progress to HE quite specific field by field in each country. The variance between educational fields is the characteristic which is shared by all Nordic countries (see also Virolainen & Stenström, 2014; Virolainen & PerssonThunqvist, 2017).

The outcomes of the on-going reform efforts will be seen in the beginning of the 2020s. It seems quite important that they would be compared to the present situation in order to understand the effects of the reform on the whole. The latest developments in educational policy statements concerning efforts to increase participation in general upper secondary education (see Luukka 2017) suggest, that Finnish upper secondary education as a whole is moving towards the Danish model with more emphasis on provision of general education as a route to HE. Accordingly it seems that the earlier commitment in Finnish educational policy to promote faster routes from post-compulsory education to employment has been somewhat given up or the effects of attractiveness of VET route are not understood.

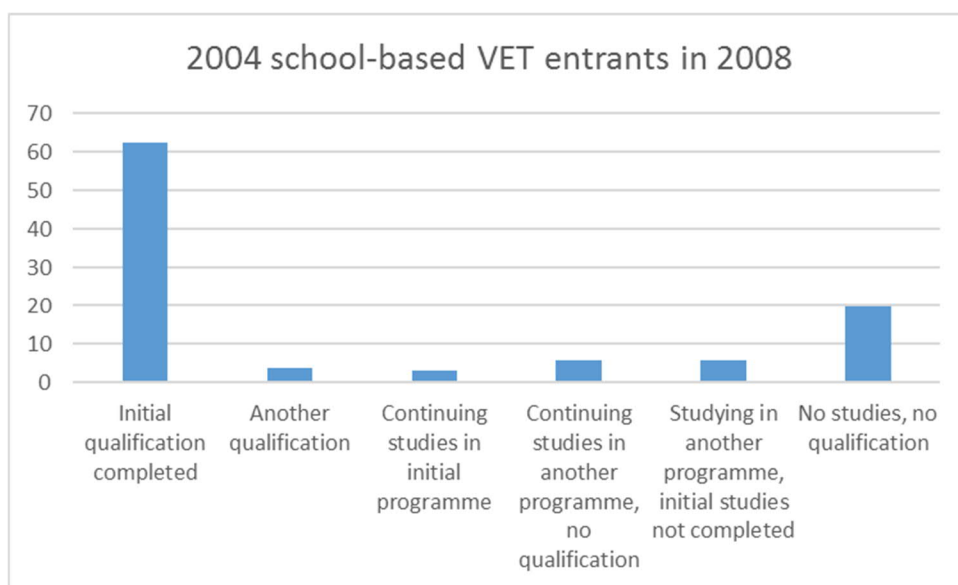


Figure 1. Progress of studies 2004-2008 (adopted from Stenström & Valkonen, 2012)

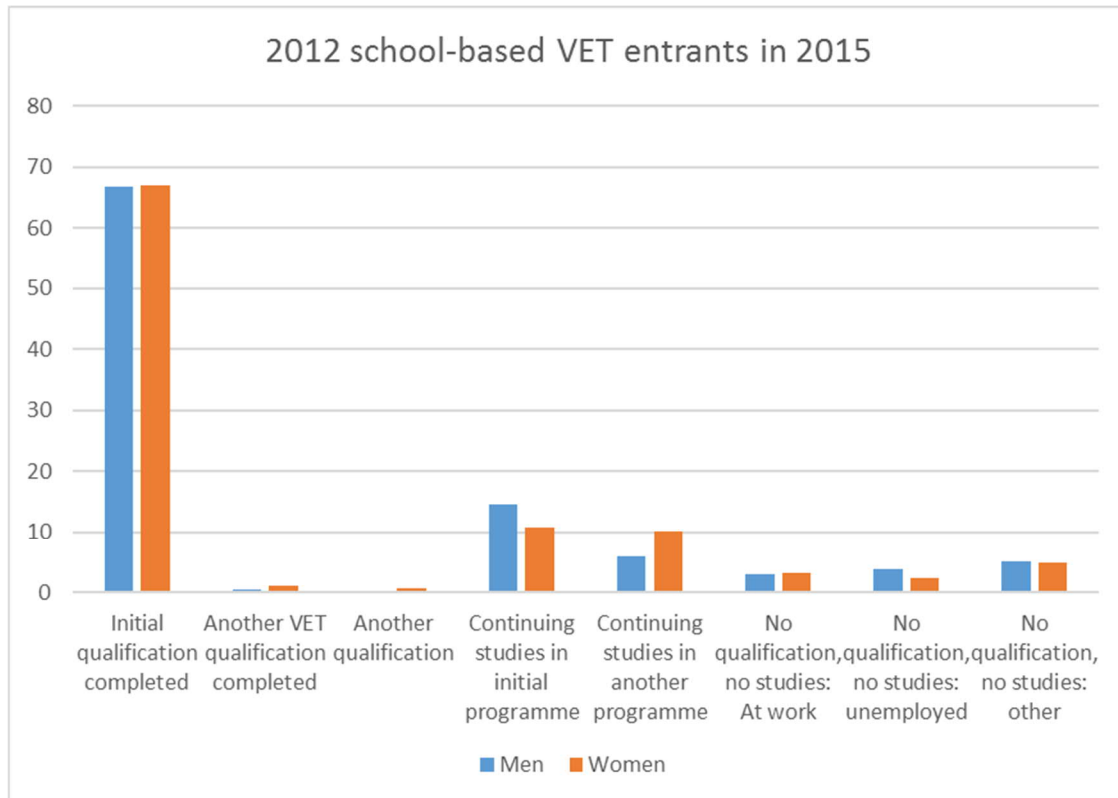


Figure 2. Progress of studies 2012-2015 (Statistics Finland, 2017c)

6 Conclusions and suggestions for further research

The needs for VET reform in Finland and elsewhere in Europe are multifold. They include the accelerating speed of change in the labour market and need to make education system more flexible, dynamic and responsive to these changes. In Finland, also the former, fragmented law texts as such have become an obstacle and they demand rewriting. Extensive background work has been done to prepare the proposal for new legislation. The reform proposes institutional change that from the perspective of theories of institutionalization can be understood to infiltrate all pillars of VET as an institution: its regulations, its norms and how it is understood and categorised. Accordingly, many aspects of the reform have raised societal discussion and controversial opinions. These include the proposal for new legislation, and its suggestion that there would be more flexibility in learning environments, and that employers would in principal take more responsibility on youth education. Also how the organization of student assessment in the future would take place and what would be the role of new suggested, working life committees, seems to demand refining in the planning.

From the perspective of equality the Finnish VET's parity of esteem in comparison to general upper secondary education is one major concern in the future. The participation rate in Finnish VET has increased since 1990s in contrast to other Nordic countries (Virolainen & Stenström, 2014). The increased students' interest in VET in Finland has been primarily based on enhanced on-the-job learning and eligibility to higher education, which has made VET a competitive route on the side of general upper secondary

education (Stenström & Virolainen, 2016). Even though it is only minority of VET graduates, who continue to HE education, the opportunity to continue studies in HE has been important motivation for students to choose VET. The recent announcement by the government to increase participation in general upper secondary education will probably decrease VET graduates opportunities to participate in HE since they will be in relatively weaker position as entrants. Therefore following suggested and/or implemented reformative changes in relation to students' readiness to continue in HE raise concern in particular. These are:

- individual study plans and guidance for them
- decrease in the amount of general subjects in the national core curriculum, (national basis for qualifications)
- assessment procedures. All these deserve investigation and follow-up in the future.

Already some universities of applied sciences have introduced entrance examinations for VET graduates, due to changes in their funding formula and their interest to get more competent students. The education providers' problems in funding create an obstacle for student's individualized study plans. The ability of education providers to offer sufficient teaching, training and guidance for students to plan and complete individual study plans may be compromised due to reduced personnel resources. Accordingly, it seems that a lot of developmental work, for example utilizing digital methods will be needed in this area, to support students' guidance and learning.

From research perspective the on-going reform also suggests a laboratory for institutional change and demand to develop deeper understanding of the multi-level development of education systems in national and international societal context (see Streeck & Thelen 2005; Mahoney & Thelen 2010).

Table 1. Current expenditure on regular education system (adopted from Stenström & Virolainen 2014, p. 13).

Type of expenditure	Year					
	1995	2000	2005	2010	2011	2012
	EUR million	EUR million	EUR million	EUR million	EUR million	EUR million
Pre-primary education 1)	..	94	269	312	323	342
Comprehensive school education 2)	2 379	2 734	3 413	4 120	4 231	4 363
Upper secondary general education 2)	429	503	600	695	713	727
Vocational education 3)	1 161	925	1 183	1 614	1 695	1 736
Apprenticeship training	32	96	132	177	170	171
Polytechnic education 3)	145	525	704	896	921	928
University education and research 4)	945	1 364	1 671	2 162	2 330	2 340
Other education 5)	265	298	361	442	462	478
Administration	143	161	190	242	238	227
Financial aid for students	614	648	732	871	847	837
Total	6 113	7 348	9 253	11 532	11 930	12 149
Current expenditure as a percentage of GDP, %	6.4	5.6	5.9	6.5	6.3	6.3

Table 2. The change in the numbers of VET institutions (adopted from Stentström & Virolainen 2014b, p. 70)

Ownership ¹	Vocational institutes	Special needs vocational institutes	Specialised vocational institutes	Vocational adult education centres
2005				
Private	30	7	37	15
State	0	5	2	0
Municipality	29	0	1	6
Federation of Municipalities	117	1	0	17
County of Åland	6	0	0	0
Total	182	13	40	38
2010				
Private	30	6	32	11
State	2	0	2	0
Municipality	13	0	0	3
Federation of Municipalities	81	0	0	11
County of Åland	6	0	0	0
Total	132	6	34	25
2013				
Private	30	6	32	12
State	2	0	2	0
Municipality	8	0	0	3
Federation of Municipalities	79	0	0	10
County of Åland	1	0	0	0
Total	120	6	34	25

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