

The changing nature and role of vocational education and training in Europe

VET in higher education: Country Case Studies

AO/DSI/JP/Changing_Role_of_Vet/009/15

Case study focusing on Finland

prepared for CEDEFOP – European Centre for the Development of Vocational Training

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It has neither been revised nor edited by Cedefop.

The changing nature and role of vocational education and training – overall aims

The purpose of the Changing nature and role of VET-project is to improve our understanding of how VET is changing in the countries belonging to the European Union (as well as Iceland and Norway). Over a three-year period (2016-18) the project will analyse how vocationally oriented education and training has changed in the past two decades (1995-2015) and based on these results investigate the main challenges and opportunities facing the sector today and in the future. Work is divided into six separate but interlinked themes:

- (a) the changing definition and conceptualisation of VET;
- (b) the external drivers influencing VET developments;
- (c) the role of traditional VET at upper secondary level;
- (d) VET from a lifelong learning perspective;
- (e) the role of VET at higher education levels;
- (f) scenarios outlining alternative development paths for European VET in the 21st century.

The study takes as its starting point that vocationally oriented education and training is something more than the traditional VET delivered at upper secondary level (in the form of school-based education or training, apprenticeships, or combinations of these). Due to the requirements of lifelong learning, we are able to observe diversification of VET with new institutions and stakeholders involved. We also see an expansion of VET to higher education areas, partly through reform of existing institutions, partly through the emergence of new institutions. This has been caused by factors internal to the education and training system as well as by external pressures linked to demographic, technological and economic changes.

This particular case study, together with 9 other case studies, provides input to theme (b) of the project ('The external drivers influencing VET developments').

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Case study template

Country: Finland

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Title of the case study: Raising the national educational level

1. Introduction

Please provide a concise introduction that gives an overall indication of the change processes observed (during the last 20 years) related to VET at higher levels in terms of 'academic or vocational drift' or 'expansion of VET at higher levels (outside higher education)'.

The Finnish education system has been expanded and developed for decades. The primary motivations have been the equality of the people, the raising of the educational level in general and guaranteeing the supply of skilled labour to all segments of the Finnish economy.

To understand the trends in Finland, there are few things to keep in mind. Finland is very centrally led country. Formal degrees are licenced by the Finnish Ministry of Culture and Education. Universities have freedom to design curricula but the ministry has control over most of the degrees.

The Finnish educational system has two paths for further education for those who have a vocational upper secondary qualification. One is to go for specialist vocational qualification. The specialist qualification corresponds to EQF level 5.

The other path is to continue to a higher level educational institution. In this path there has been a major shift over the last two decades, especially in 1990's. The major reform was to transform former post-secondary level vocational colleges to the universities of applied sciences. At first, the former vocational colleges were called polytechnics but later they changed their translation to universities of applied science to underline the **academic drift**. In Finnish the name is *ammattikorkeakoulu* (for ins. Auvinen, 2004).

The purpose of the reform was to increase the general level of education in Finland. A goal was set that 70% of the population should obtain higher education. Later that goal was given up as too ambitious. The target had raised critical remarks already when introduced in the 1990's (for ins. Auvinen, 2004).

At the same time all secondary level vocational degrees were expanded to last three years. This was done to include more general studies, thus qualifying all graduates to apply for higher degrees (Ahola & Anttila, 2013).

For that reason, it can be said that in the 1990's the focus was strongly on the academic aspects. Meanwhile in the universities there was a minor counter trend when innovativeness

and industry–university relations became more important. Back then the trend was driven by the rise of the telecom industry in Finland. That created a demand for highly educated labour while innovation became a driving force in economic policy.

Even so, there was a really significant academic focus in the Finnish educational system in late 1990's. The most significant change was the transformation of the post-secondary vocational colleges to the universities of applied sciences. That upgraded those degrees to bachelor's degrees. The trend continued in 2005 when master's degrees were introduced to the universities of applied sciences.

Finnish system of higher education is defined by that binary system – professionally oriented universities of applied sciences and scientifically oriented universities. In the recent years these two kinds of universities have started to collaborate more and create new channels for mobility for the students.

2. VET at higher levels

Please briefly describe the current situation related to 'VET at higher levels' in your country and refer to the following questions:

*Which **types of vocationally oriented degrees/qualifications** are currently awarded at **EQF levels 5-8** and **since when**? Please include the titles of these types and their NQF/EQF level and **describe them briefly!** Please use the most commonly used English translation for the titles of qualification types and use these titles consistently! ⁽¹⁾ To which **educational segment** do they belong (e.g. higher education, post-secondary level VET, CVET)? What is the **'importance' of these types** (e.g. in terms of number of learners or graduates) compared to other types (such as number of students enrolled in academic HE programmes)? Are there any prevailing economic sectors?*

*Please include any **figures or diagrams** (time series), if possible!*

The Finnish education system is characterized by the binary model and mobility between the sectors. Speaking broadly, the universities of applied sciences are professionally aligned and the universities have a scientific alignment. Binarity means that there are both UAS and universities. That could be also understood that upper secondary VET and general upper secondary give same qualifications for further education.

There are mainly specialist vocational qualifications at EQF 5 level. These degrees are fully vocational and they require a secondary level vocational qualification and work experience. The aim of these studies is to deepen the skills in a specific occupational field. These specialist vocational qualifications are available in every field of study, enabling professional development for people with different educational backgrounds. The degrees are accomplished as apprenticeships so there are close ties to working life. These degrees are provided by

⁽¹⁾ If applicable, refer to the Cedefop NQF monitoring reports – see: <http://www.cedefop.europa.eu/en/events-and-projects/projects/national-qualifications-framework-nqf/european-inventory>

vocational colleges and they are significant for continuing the education of the adult/working population. ⁽²⁾.

The EQF level 6 degrees there are bachelor's degrees. They are available at both universities of applied science and universities. The universities of applied sciences are more professionally orientated. That is also reflected in their names in Finnish '*ammattikorkeakoulu*', which could be translated as 'professional or vocational university'. In Finnish language the term 'bachelor' is not used in the degree title and there is wide variation in naming degrees. The traditional one like nurse and engineer are called nurse (UAS) and engineer (UAS). Other degrees are typically based on Greek 'nomos'; 'tradenomi' for business, 'medianomi' for media, 'sosionomi' for social work etc.

The universities of applied sciences provide education in all major fields of education. The biggest fields are engineering and the name of the corresponding degree is bachelor of engineering, business administration with degrees labelled bachelor of business administration, and social and health care with bachelor degrees in nursery and social services. Beside these major fields, there are universities of applied sciences in art, culture, beauty service, defence, police etc.

For EQF level 7, there are professionally oriented master's degrees from universities of applied sciences (UAS). These have only existed since 2005 and new degrees have been gradually introduced. A difference between UAS and the universities master's degrees is that the former requires three years working experience before enrolment. Typically, the students also work while studying for the degree and carry out the assignments related to their degree for their employer.

In universities there are some master degrees that qualify the student for a specific profession. These are teachers, social workers, speech therapists and psychologists for instance. There are corresponding bachelor's degrees also, but typically the university bachelor's degrees don't qualify for any profession. The only exceptions are pharmacists and kindergarten teachers. In this study these are mainly regarded as academic. The kindergarten teachers would be interesting topic from academic and vocational drift perspective since the qualifications have altered through the time. Now the profession is open also for UAS graduates from social service degree if the person has also studied pedagogical studies at the university level.

The EQF level 8 consists of licentiate and PhD degrees which are practically always academically oriented and offered at universities. Physicians' degrees are at that level, and those degrees have strong professional orientation in addition to their academic focus. The medical sciences are in any case also strongly academic degree and in that sense, it is reasonable to consider them more as academic. At EQF 8 level it is anyway important to realize that UAS don't provide PhD or similar degrees in Finland.

⁽²⁾ In addition, the Sub-Officer Qualification (Fire and Rescue Services) and the Vocational Qualification in Air Traffic Control are linked to level 5. However, these are exceptions and are therefore not treated further in this case study. http://www.oph.fi/english/curricula_and_qualifications/qualifications_frameworks

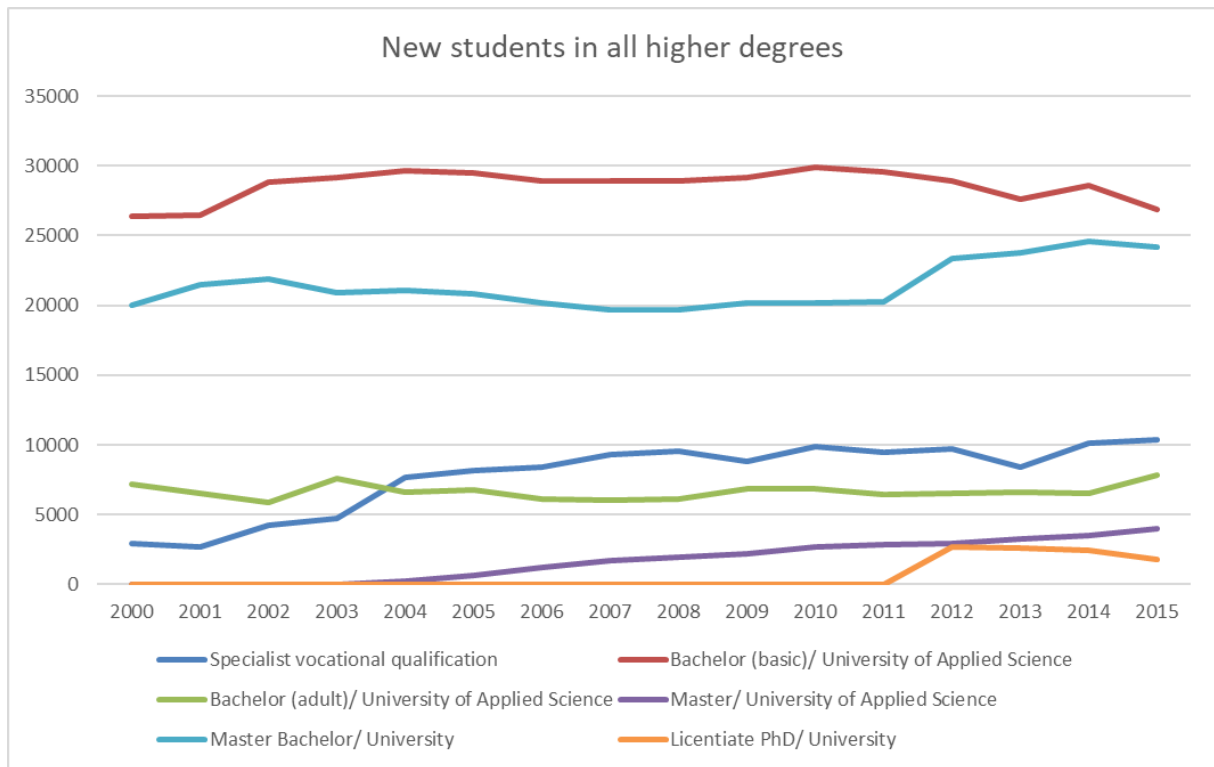


Figure 1 new students in all higher degrees

Figure 1 shows the number of new students at higher level. At the university level bachelors and masters are counted together since in Finland university students get right to study for master degree and for that reason bachelor and master student cannot be separated at the university.

The number of the new licentiate and PhD students is not correct before 2011. That is because the way of collecting statistics has changed.

All in all, the UAS bachelor are the most common degrees. In all the figures the adult and basic degrees are separated. The basic degrees are more school based while

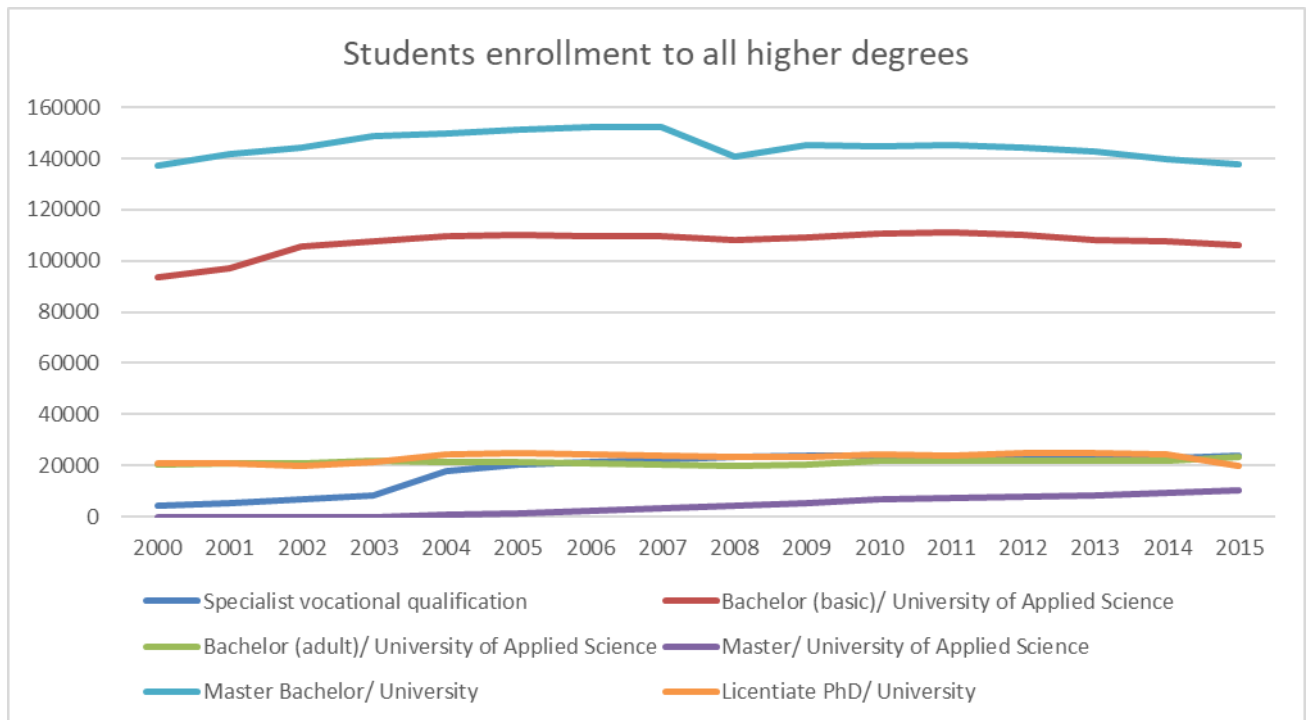


Figure 2 Student enrolment to all higher degrees

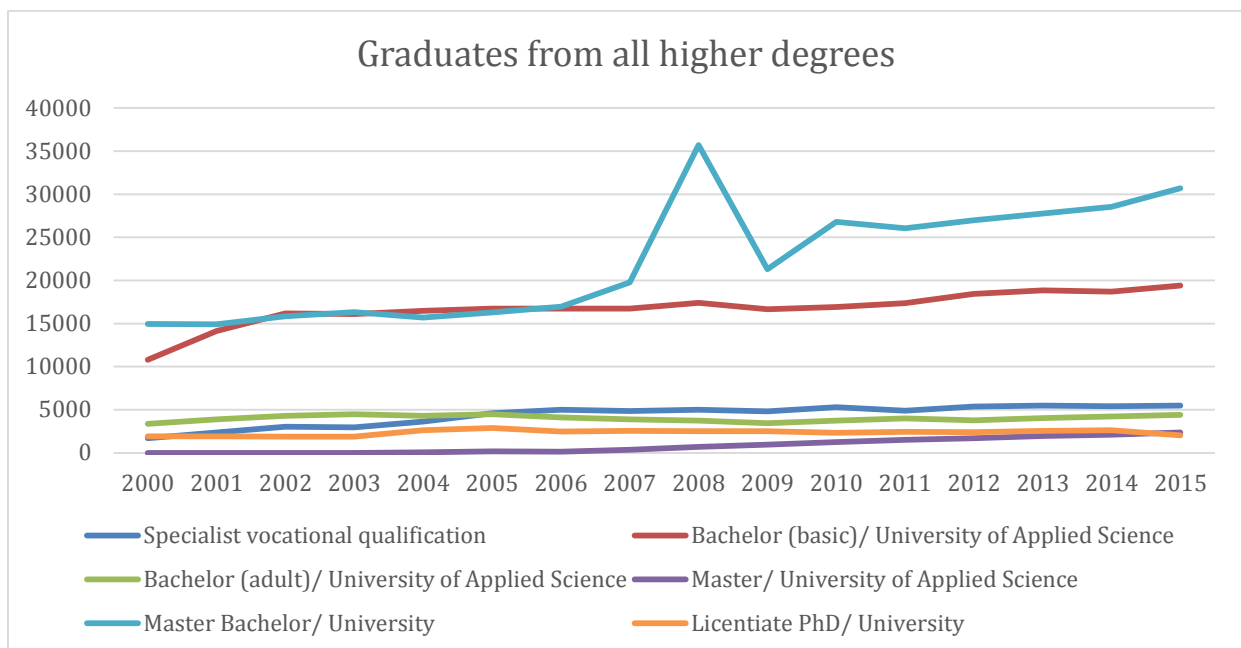


Figure 3 Graduates from all higher degree

There is a peak in the university graduation in 2008. That is because of reform in the curriculum which hurried up the graduation of those who did not want to shift to new curriculum. That would have required extra work for most of the students. After 2008, the university and UAS graduation figures are not fully comparable. That is because the students are mainly studying for the master degree but they have to do also bachelor degree. For that reason, the same student graduates two times without applying and entering the school two times.

3. Change processes during the last 20 years - educational system perspective

One of the unique features of this study is the emphasis given to the historical development of VET systems. In this section, the focus is on the change processes that have taken place during the last 20 years related to VET at higher levels in terms of 'academic or vocational drift' or 'expansion of VET at higher levels (outside higher education)' from the perspective of the educational system.

Depending upon the situation in your country, relevant developments might have started already before the 1990s. In other cases, there may be no need to take such long-term perspective, but at the very least the commentary should go back to the middle of the 1990s.

Please describe first these change processes and their impact on the overall system (3.1), before presenting characteristics of VET offered at higher levels from the perspective of the educational system (3.2). Please clearly distinguish between the different objects and contexts of change, respectively the different types of VET qualifications/programmes offered at higher education levels.

Please refer to the "Characteristics and indicators of 'academic drift', 'vocational drift' and 'expansion of VET at higher levels (outside HE)'" (presented in Table 2 of the guidance note; the relevant aspects are included in each section here below): Please reflect whether any of these characteristics and indicators can also be identified in your country and which ones – identified in your country - should be added.

The Finnish educational systems went through significant reforms in 1990's. One of these reforms was the reforming IVET. That brought the upper secondary vocational college graduates to the same level with those who had passed the matriculation examination. Previously the process has been different. The IVET graduated could apply for the post-secondary VET studies in their fields and after those they could continue to the university in the same field.

The second reform was the UAS reform. That expanded the higher education when former post-secondary VET college became university level. That eased naturally the access of IVET graduate to higher educations but also increased the attractiveness of UAS among those graduated from general upper secondary education.

There Finnish reform was partly related to the Europe-wide Bologna process. That created for instance the master's level programs in the Finnish universities. That increased the flexibility in the different study paths since the UAS graduates have sometimes gained direct access to the university level master's studies. The UAS and the universities are becoming closer and they may for instance have joint courses and the credits have become more transferable. (Arene, 2007).

3.1. Change processes and their impact on the system

The Finnish educational system has gone through systematic change that can be described as **academic drift**. The official goals have been to increase the education level of the Finnish people and to remove barriers in the study paths.

That has led to the introduction of the universities of applied sciences which replaced the post-secondary level vocational colleges. That change also increased the appeal of those schools in the eyes of high school graduates. The former colleges emphasized previous

working experience and for a few decades it was a requirement. Later it was changed to just be one of the ways to attain entry points (Auvinen, 2004).

That could be considered a difference between universities and UAS in that the universities do not typically credit working experience in their admission processes.

The reformation of universities of applied sciences began already in 1991 when the first post-secondary vocational colleges started a temporary trial as universities of applied sciences. Gradually all former colleges were upgraded to UAS by the end of the decade. In 2003, the UAS got the same rights and internal autonomy as the universities and in 2005, first UAS master's degrees were launched (Auvinen, 2004; Ojala, 2017). From the overall higher education point of view, that is mainly **vocational drift**. That is mainly because it opened more vocational pathways to the master degree. From UAS point of view, the drift is only weakly academic since the UAS masters are studied in close cooperation with employers with clear working life development objects.

An important change at secondary level VET was that all those degrees were extended to last three years and qualify for access to a higher level. The intention behind that shift was increase the attractiveness of vocational education compared to general upper secondary education. Also, this change emphasized the academic drift while increasing the importance of general and theoretical studies in the whole system and opening new paths to higher degrees (Ahola & Anttila, 2013).

All in all, the 1990's was a decade of rapid development of vocational education at all levels. That started the development of the binary system of higher education in Finland.

From the vocational point of the view, the development of the university sector is of some importance as well. In the universities there was a reform to explicitly distinguish bachelor's degrees from master's degrees. That was due to the Bologna process and to make the Finnish system more comparable with the European one. That process also increased mobility from UAS to universities since UAS bachelors could apply directly to the master level at universities. This route is however not always open for UAS bachelors. So far there has not been an exhaustive evaluation on what kind of entry requirements universities typically have for UAS graduates. In some cases, the requirements may include, for instance bridge studies, if it is considered that UAS graduates are lacking some academic skills.

When resources have been tightened the UAS and the universities have increased collaboration like joint courses or teaching facilities. All these processes are decreasing the differences of the two sub-systems of higher education. That can be considered **both vocational drift for the universities and academic for UAS**. For time being, the joint courses are more with practical orientation but in the future, it will be seen what kind of forms the collaboration will take place.

The changes over the last 20 years in specialist vocational qualifications have not been significant. The major change has been that skills demonstration examination was introduced in vocational education in 1998. That opened more flexible way to study also the specialist degree and that increased the degrees' popularity.

3.2 Changes related to characteristics of 'VET at higher levels'

3.2.1 Changes related to governance and institutional structures of 'VET at higher levels'

There have been administrative changes in Finnish higher education. Previously it used to be that universities were owned by the state and vocational institutions were owned by the municipalities. That included also UAS's.

Recently over few last years the UAS's have adopted an organization structure of companies. The major shareholders are still the municipalities but the ltd structure enables new kinds of ownership and funding channels – for example, a UAS has more freedom to sell its services to public markets including continuing education (Mikkola et al., 2017).

The vocational colleges are going through the same change and becoming companies while some of them are still owned and managed by municipalities or a consortium of municipalities. There are also private companies that provide secondary vocational degrees including the specialist vocational qualification (EQF 5). The secondary and post-secondary VET is expanding more to the private sector after the on-going reform in the secondary VET that makes private educational institutes more equal to public ones.

Universities are state owned but with wide autonomy. They are mainly institution governed by public law and two of them are foundation the main source of funding is still public but the universities like other schools have developed other sources of funding and they are encouraged to do so (Mikkola et al., 2017).

Despite the changes, the whole Finnish educational system is still centrally led. Finnish Ministry of Education and Culture approves the degrees and guide all the educational institutes. The educational institutes have the freedom to decide the content of the degrees to some extent. For instance, each faculty at the university may decide whether internship is a compulsory part of the degree or not. That means that educational institutes have some freedom on where they place themselves on the academic and vocational axis. Finnish Education Evaluation Centre evaluates and assess the different educational institutes to maintain quality (Finnish Education Evaluation Centre, 2016).

The collaboration with industry and the educational institutions, both UAS and universities has grown over the last years. In the Finnish system the funding of the education is public and so is the planning of the programs. The industry representatives may have access to the board of the educational institutes and they may have an impact on the decisions made also in the content of the education. The educational programs are not tailored directly for company needs. The industry is not funding directly the education to a large extent. In principal, the degree orientated education is funded by government. To a smaller extent the industry may sponsor professorships or there may be similar small-scale funding. This is done to guarantee the important research and education for the companies. That is not anyway a primary source of the funding.

In continuing VET and adult education, privately funded education is more common. Continuing education is typically organized by a company which may be owned by universities, and is paid for completely by private funding or supported by the government. In Finland, degree education is always free of charge, including specialist vocational qualifications etc. For that reason privately funded education does not qualify in any specific degree, even though there could be certificated programs.

According to the Finnish ministry of Culture and Education (2015) UAS are meant to be kept publicly funded and 79 % of public UAS funding is based on educational indicators while 15 % is based on RDI related indicators. The specific allocation of the budget is done by each UAS but the funding is based on both – the indicators of the UAS activity and negotiated contracts between the ministry and the UAS.

The key providers of the VET kind of education at higher levels are UAS and to a smaller extent they are universities. The vocational colleges provide the specialist qualifications. Generally, each level of the educational system is responsible for its own degrees and continuing education for those who have graduated from that level. The mobility in between the different educational institutes has increased in continuing education.

3.2.2 Changes related to the target groups of 'VET at higher levels'

The major trend has been to equalize the entry requirements so that people with different educational backgrounds may apply for different programs. That reform was started in the 1990's when upper secondary vocational graduates became qualified to apply to all higher degrees (Meriläinen, 2011). The changes have brought more vocationally orientated people to the higher level educational institutes and later on graduates with both vocational and academic competences. From the point of view of the whole educational systems, that was more academic shift, because it increased general studies in all vocational degrees.

The entry requirements depend on the study path. For the UAS, the only entry requirement is the accomplishment of upper secondary level education. Working experience gives extra points in student selection. That may be critical in some fields, where there is more competition like some healthcare related degrees. The approach is still quite academic, previous studies and the entrance exam matter the most. There are multiform programs combining self-studies and less contact hours aimed for adult students. That approach is driven mainly by the fact that people already in working life cannot participate in the school training (Arene, 2017).

The entry requirements have changed for UAS compared what they used to be for post-secondary vocational colleges. The emphasis of working experience has declined and grades from previous education and entrance examination weigh more in the entry requirements. That development started earlier than in 1990's. This is obvious **academic drift** in UAS/ post-secondary vocational college education.

The UAS master's programs are different in that respect. Three years relevant (after bachelor's degree) working experience is required and the master's programs are designed so that they can be accomplished while working. Those degrees are for adults and they are more professionally oriented than any other degrees in the Finnish educational system (Arene, 2017).

The specialist vocational qualifications are also considered higher qualification. Those typically require the IVET in the same field. The special qualifications are typically accomplished as apprenticeships where working experience is also required. That qualification path is fully vocational and those doing the degree are identified as employees. The target group has been same since 1980's when most of the degrees were introduced.

Generally, there is a drift to an academic direction, emphasizing the access of people with different backgrounds. Even though the young are the main target group, there are more flexible study paths like multiform studies. Multiform studies require less on-the-school training and they consist of more individual projects, e-learning and other methods which require less contact teaching. Those are made to ensure that adult students are also able to upgrade their degrees or to re-educate themselves. The increased flexibility enables the possibility to work while studying.

3.2.3 Changes related to the main purposes and functions of 'VET at higher levels'

The UAS reform strengthened the professional status of the graduates compared to the previous colleges. At the same time, some more technical qualification like technician were removed, leaving engineer as the only higher level technical qualification (Lahtinen, 2013). The target was to bring all post-secondary vocational degrees to the same professional level. The technician degree was typically between vocational specialist and engineering degree, and it was intended that engineers could cover also those tasks carried out by technician.

The UAS inherited the professional qualification from the previous post-secondary level VET colleges. The professional qualifications are the strictest in social and health care sectors. The qualifications include for instance nurse, midwife, and physiotherapist. Most of the titles of UAS degrees are the same as the previous colleges and the degrees give typically at least the same qualifications as previous colleges. To some extent the UAS reform has opened the public posts for the graduates (Aro, 2014).

The qualification issue is troublesome after all the reforms. Even though the UAS graduates do not gain only the same professions than previous colleges, the UAS graduates are more qualified than holders of the previous qualifications. That means that some people who graduated before the UAS reform are not fully qualified to their professions anymore. Typically, that doesn't affect the people who already have an existing job contact but finding new work may be challenging if the qualification is not updated. That has left a kind of grey area in those professions in which qualifications matter.

In business or technical professions, the qualification has not changed that much. There is no researched evidence, but some expert views found that UAS degrees are more helpful for one's career than previous post-secondary vocational degrees. The UAS master's degrees have not had the same effect. It seems that it takes time before the status of the new degrees is recognized in the labour markets (Ojala, 2017).

One main target of the reform was to increase the attractiveness of the vocational path of education compared to academic degrees and enable more mobility between different professions and study paths. To some extent that goal has been reached but at higher levels the academic degrees are slightly more valued and especially the UAS master's degrees are not acknowledged that well.

3.2.4 Changes related to the perception of 'VET at higher levels'

The UAS degrees aim to strengthen the vocational path to make it equal to the university degrees. Nowadays UAS degrees are officially equal to university bachelor's degrees and the master's degrees are comparable, at least in theory.

Even so, the two universities are not fully found equal. There is confusion in the names of the degrees in the Finnish language. In English translations the UAS degrees are called bachelor's and master's degrees whereas in Finnish those terms are not used. These titles are reserved for the university degree. There are some historical titles as well as new titles for new degrees, like people with engineering degrees are just called engineers and nurse degree graduates are nurses. When they accomplished the master's degree, they are just referred as engineer higher UAS, not masters.

That labelling blurs the level of the qualifications, especially in the higher degrees. UAS would like to start using the master (maisteri in Finnish) also for the Finnish names for the degrees but that is objected to by the universities. All in all, there is this kind of dispute between universities and UAS which make it difficult to gain the full recognition for the UAS degrees (Arene, 2016).

All in all, the UAS path should be comparable to the university path but this is not always the factual case. The university degrees have higher status. The university students mainly study for the master's degree while UAS graduates always obtain the bachelor's degree first. That serves to maintain the view that UAS degrees are lower than the university degrees.

The vocational specialist degrees perception has not changed that much over time. They are still a path to strengthen one's vocational skills. The popularity of the degrees has grown and they are important part of Finnish adult education. Some degrees, like managerial vocational specialist qualification has gained popularity also among those who have qualification at higher level. It is also open for people with different educational background unlike many other specialist vocational degrees. One main target of the reform was to increase the attractiveness of the vocational path of education compared to academic degrees and enable more mobility between different professions and study paths. To some extent that goal has been reached but at higher levels the academic degrees are slightly more valued and especially the UAS master's degrees are not acknowledged that well.

4. Impact on content and delivery of qualifications and programmes - the epistemological or pedagogical perspective

The UAS reform has been multidimensional and it has affected the content of all the degrees. New degrees were also introduced through the reform. That was partly due to the process of homogenizing the Finnish educational system. For instance, in the media sector Finnish national broadcasting company Yle was educating media personnel in its own school. That school was closed and new media degrees were established at two upper-secondary colleges which were later transformed into UAS. Later, similar degrees were launched in several UAS. Similar process has been going on in Finland when UAS have absorbed previously private post-secondary colleges and incorporated their degrees with new UAS degrees.

4.1 Changes in relation to content and profile

There are two major paths in the higher VET. Those are the vocational specialist qualifications and the UAS degrees.

The vocational specialist degrees are fully vocationally based mainly on on-the-job-learning and to a smaller extent on-the-school theory learning. The specialist degrees are aimed for people who have a solid working background. These degrees are important for continuing education for those in the working life. Even so, the changes in the content are not well documented.

These special qualifications are somewhat reactive to meet the needs of the labour market demand. The content of the degrees varies and some of them emphasise management skills with the idea that experienced professionals could become team leaders. There is also special qualification specifically for management. That has become popular among quite many who have been promoted to a managerial position. That is not limited to those having vocational qualification, but that degree is also popular among people with university level qualifications. The qualification is a flexible way to acquire managerial skills and the qualification can be combined with whole time working. (Kåla, 2015).

The most significant shift was the UAS reform. That made the obvious **academic shift** for all former post-secondary colleges. The form of the shift has varied from field to field, but **theory-based learning has increased** in every field.

An example of that is that a **thesis** has become compulsory in every degree. Similar academic study methods have become more popular in the UAS. During the 2000's, **RDI activities** became an integrated part of the UAS programmes, increasing the emphasis of innovativeness and research orientation in all the degrees.

The process has not been linear in any way. There have been arguments that abstraction of the UAS has gone too far, creating a demand for more working life orientated degrees. Bologna process has changed the direction from 2008 onwards. That increased the orientation towards work life needs in UAS education. That has emerged especially in engineering degrees.

There is balancing between profession specific and more universal learning outcomes. There are degrees that qualify to certain profession which can be strictly regulated like health care professions. Even though a nurse's education is intended to give a good general foundation, the education must meet the requirements to become a professional nurse.

At UAS level there are vocational teachers' qualifications. That is additional qualification for those who wants to qualify as a teacher at the secondary VET level. It can be studied by both UAS and university graduates.

The engineering degrees for instance have fluctuated from strictly professional to more academic and back to professional oriented again. That means for instance that the amount of compulsory mathematics and physics has been reduced. Those subjects have been an obstacle for IVET graduates to successfully complete the engineering degrees. That is partly a resource problem. Earlier the upper secondary graduates and IVET graduates had different lines at UAS. That meant that upper secondary graduates had more vocational studies while IVET graduates could be supported more in mathematical subject and language studies.

Later, these lines were merged leading to the situation where IVET graduates started to have problems with mathematical subjects.

All in all, there has been a strong **academic drift** in the **late nineties** when UAS degrees replaced the former post-secondary degrees. The academic orientation was strengthened when RDI operation became an integrated part of the UAS in early 2000's. The shift has been in a more **vocational direction 2008** onwards partly due to the Bologna process and more skill-based curriculums. All the UAS degrees are a combination of both professional and academic knowledge, some having a more professional and some a more general focus. All the UAS degrees contain at-the-job learning and the intern period varies from ½ - 1 year. Typically, part of these internship periods can be accomplished during the summer breaks.

The vocational drift in the recent years has been driven by two different factors. One is the **multiform studies** for those adults willing to study while working. Multiform requires less contact or on-the-job learning and is concluded more on e-learning, individual project work and assignments etc. The other is the **recognition** of the acquired skills and knowhow. The latter means that UAS gives credits for those skills the student has acquired in the working life, sometimes even in their spare time. That helps the students to get a degree when he or she has had a long working history or to finish interrupted studies.

4.2 Changes in relation to the delivery

The UAS bachelor degrees are strongly on-the-school learning with compulsory internship periods. The internship periods vary from degree to degree but in total they last for from half year to a year.

The main learning site for a UAS bachelor's degree is the school/classroom. That is to some extent challenged in the multiform studies for adults. Popularity of internet-courses is increasing as well. That does not change the fact that the learning at the higher level is school oriented (Arene, 2007).

UAS are not strongly science oriented but RDI activities are an integrated part of UAS activities. The aim of the studies is to give qualifications for research, development and innovation at work. The development projects are an important part of the studies in many degrees. These are carried out for real companies and there is plenty of the companies/other employer – UAS interaction. All in all, the **project work** – different from internship – is not strictly work-based learning. The difference is that the goals of the projects are given by the school and the work is not typically done at the company's premises. The aim is naturally that both benefit from the project – the company and the student. Typically, the different project works are presented at the school and graded according to the school's requirements.

The development projects are also carried out as multidisciplinary projects that bring together students from different fields like engineering and nurses working together with health care technologies. Most of the UAS are multidisciplinary and they have emerged through several merges of former colleges. That helps to facilitate the multidisciplinary approach in many cases.

There are increasing opportunities for part-time and multiform studies. Those are tailored to enable both working and studying at the same time. The multiform emphasizes individual learning work and methods of e-learning are used widely (Kiviniemi et al., 2013).

The UAS masters' degrees emphasize work-based-learning. The thesis constitutes a major part of the degree and that is made typically for the employer of the student. It is important to notice that UAS master's students are not interns but the degrees are aimed for those in the working life and most of the students have permanent jobs. The idea is that the master's students can develop their expertise while working and the employer benefits from the development work (Ojala, 2017).

The teachers have at the UAS academic degrees. The minimum is a master's degree from the university, teacher's qualification and a minimum of 3 years of relevant working experience. The UAS value PhDs or licentiate degrees which are required from senior faculty. More than 20% of the faculty have PhDs at the UAS.

Industry merit is typically valued over academic merit and that is one difference between the universities and the UAS. While university faculty is typically recruited based on academic merits like publications, the UAS faculty usually have a long working history in the field they will be teaching. After the UAS reform the qualification criteria changed. Even though only senior faculty is required PhD or licentiate, higher degrees are valued in recruitments. Finland has also invested in PhD education and there is a growing number of graduating PhD's. For that reason, UAS has managed also recruit them. The UAS requirements for teachers can be considered as part of the academic drift that took place when post-secondary VET colleges were transformed to UAS.

To be fully qualified for a senior teacher's position, it is required to have a PhD or licentiate degree, 3 years working experience and teacher's pedagogical qualifications. It is natural that not too many candidates meet all these requirements. For that reason, it is common that the most feasible candidate can study the pedagogical studies while working.

The interesting requirements are for those who teach healthcare. There the teachers must first study the healthcare degree at the UAS (like nurse or physiotherapist), then they can continue their studies at the university for nursing or health science and then they can qualify for healthcare teachers at UAS. That is the only qualification which requires both UAS and university studies.

The teaching faculty are typically full-time at the UAS, but visiting lecturers are used as well. There are also some specific courses that can be held by outside experts. There are no statistics how common those are. Typically, the outsiders' expert requirements are not that strict. The arrangements are typically that someone from permanent staff is responsible for the course or grading and the visitors to part of the teaching.

5. The context of change: rationale and drivers for change or persistence

The aspiration in the Finnish educational policy has been for many decades the inclusion of all people, meaning that the education should be available for all. The Finnish educational system is centrally led so reforming it is in that sense straightforward. Of course, the political landscape has affected the choices made but historically the path has been to increase both the level of education and equality between citizens. The development of VET (both IVET and higher VET) was based on two major drivers (Kalenius, 2014).

First of them was the acknowledgement that Finland was internationally lacking behind in the higher education and the educational base had to be expanded. The reform took place at the same time as the 1990's recession and its aftermath with rapid growth of the Finnish telecom sector. That created the demand for skilled labour while creating trust that higher level education and innovation is the key for economic success.

Back in those days the goal was set that 70% of the population should reach higher education. The target was questioned in the beginning but that drove the expansion of the UAS system through the country. The UAS reform did not happen without criticism. One of the points of the criticism was that previously work orientated degrees were transformed into too theoretical studies and they didn't meet the requirements of the working life that well any more.

The second driver was the rationale for the life-long learning. That meant also more flexibility to made changes in one's educational paths. That was significant especially for the people with secondary vocational degrees. The reform opened higher studies for everyone and made the vocational path of studies equal to academic paths. When before 1990's reform people with vocational degree could continue their studies only in the same field, nowadays they are free to apply to any field of studies at higher level.

From the economic point of view the rationale was to support economic growth and welfare. There was a strong view that education, equality and innovation are the Finnish competitive advantages.

Equality is also an underlying factor behind the reform. It is not typically emphasized but it is a fact that expanding higher education gives more people equal access to it. Finland is also a country of relatively equal distribution of income and its believed that investments in education helps to keep the situation like that.

The process of reforms has shaped the higher VET mostly in the 1990's. Later the Bologna process has started to affect the Finnish educational system as well. There have been two major effects for higher VET.

First of them was that harmonization of degrees separated bachelor's and master's degrees. Typically, the university students in Finland studied for the master's degree and in some fields the bachelor's degree didn't even exist. When the two were separated, basic UAS degrees became comparable with the bachelor's degrees and the UAS gradates sometimes got the opportunity to apply for the master's programs at the universities. UAS master's degrees became comparable to the university master's degrees. The process is still on-going and Finnish terms for master's and bachelor's degrees are not used when speaking of UAS degrees in Finnish, even though they are used in English translations of the degree names.

Second impact of the Bologna process is that the curriculum are changed to be more skill-based. That **has partly turned the trend of academic drift to a more vocational direction**. There is a constantly ongoing process balancing between the demand from labour markets and more academic or general goals.

In the bigger picture, there are wider societal drivers for the change. Over the last years, since the beginning of the financial crisis, Finland has suffered from high unemployment and a public budget deficit. That has led to significant cuts in the public spending on education at all the levels. That naturally has affected also UAS and other forms of the education. Because of prolonged unemployment, the employability of different programs was evaluated

more carefully and for that reason especially programs in both culture and the arts were closed. Access to employment has become a more crucial issue, at the same time when education should be provided at a lower cost. That has put the pressure to create new models of collaboration with working life and the education providers.

In recent years it has observed that Finland is lagging in the number of graduates in higher learning compared to other OECD countries (OECD, 2017). That has raised concerns about Finnish economic competitiveness. That is combined with other worrisome signals like falling PISA-results (Jyväskylän yliopisto, 2016). It is not clear so far to which direction these concerns would take the Finnish educational system. It is obvious anyway that these issues create pressure to develop the educational system further.

6. Zooming in on nursing and engineering

The Finnish educational structures are centrally led and for that reason the development has been relatively simultaneous. Naturally there are some differences.

a) Nursing

When zooming in on nursing, it is important to note that in the health care sector the formal qualifications are important. For that reason, the qualifications systems are much less flexible than in other disciplines.

The nursing education has a long history dating back to the 19th century in Finland. Throughout the history of the profession, nursing has been strengthened as a profession and the education has been broadened. That has created a relatively independent profession for Finnish nurses. (Haho, 2006).

Nowadays there are nursing degrees at secondary vocational level, at the UAS and in some forms at the university level. The actual nurse degrees are at UAS level.

Even though upper secondary level vocational education is out of the scope of this study, it is essential to understand the development that took place at that level. Until 1992 – 1993 there were several secondary level degrees in nursery like assistance nurse, home care qualification etc. These degrees varied from one year to two years and they did not qualify one to apply for higher level education. For that reason, nurses typically had a high school background (Hakala and Tahvainen, 2009).

In the 1992 – 1993 the secondary level education was reformed and the older degrees were merged into one degree covering more than the previous degrees. The new degree was named practical nurse and it lasts 3 years. Like all the other 3 years' degrees, it also qualifies the students to apply for higher levels. The practical nurse is the basic degree for both health care and social sector. The practical nurses could work in assisting roles in hospitals, basic care in rest home or domiciliary care or at kindergarten. The degree has different fields of specialization but in principle it gives very wide qualification to work in different roles in health care and social sector.

For higher education, the practical nurses can continue to study in further vocational qualification and special vocational qualification. The special vocational qualification is equal to EQF level 5. The qualification includes for example team leader skills. The specialist qualification is studied typically as apprenticeship while working.

According to expert interviews, there is a strong view that especially the public sector does not acknowledge the specialist qualifications for team managers but in private rest homes that is sometimes accepted for lower managerial positions. That is a very typical situation in health care where qualification is strictly regulated. The idea is that practical nurses do the basic jobs and nurses or senior nurses are in the leading position. To some extent that means that the specialist qualification does not change the content of the job compared to those having only IVET. That is a significant difference compared to most other fields where the further qualifications open new career prospects.

The nurse qualification changed also in the 1990's when the university of applied sciences reform took place. There was an **academic drift** in nurse education. For instance, nurses needed to do thesis for their degrees and overall there was more theoretical education. That reform upgraded the nurse training to UAS level and nurse qualification became equal with a bachelor's degree.

The UAS reform led to dissolution of special nurse degrees. In the previous system the nurses could continue their studies in the specialization studies but that option is not available any more. The UAS provide similar courses but they do not lead to formal qualification. The dissolution of the special nurse degrees some extent made it more difficult for nurses to advance in their careers based on acquired skills. There is on-going work to create a model on how to recognize acquired skills in promoting nurses career development.

The nurses have many ways to specialize further and that is required for senior positions. The typical path is to continue one's studies at the university, obtaining a master's degree in nursing science. That is typically required for senior positions. Since the mid-2000's there has also been UAS master's degrees which are more professionally oriented. That master's degree requires three years working experience and a relevant bachelor's degree.

Many of the UAS masters are targeted for management. Even so they are not always sufficient to qualify for senior positions. That is the typical challenge for UAM masters. They are not fully recognized at the same level with university master's degrees. That is common for UAS masters since they have been available only for a while and they are not widely recognized.

b) Engineering

Engineering qualification have developed to a more **academic direction**. The academic drift started already in the 1970's. Until the 1970's all engineering degrees required relevant working experience for eligible candidates. The path to the studies were through lower secondary education and working experience.

That pattern started to change in 1972 when the first classes for general upper secondary school graduates were created in electrical engineering. That was followed by the reduction of working experience requirements. Finally, the 1980's reforms in secondary education removed the working experience requirements and since 1986 there were separated programs for secondary VET graduates and general upper secondary graduates.

Later, the engineering degrees were reformed in the UAS reform so that the post-secondary VET colleges became the universities of applied sciences. That also led to the merging of

the different programs for secondary VET and general upper secondary graduates (TAMK, 2003).

The engineering degrees like other all other UAS degrees award points for working experience in their admissions criteria. Their importance has been reduced over time and especially in engineering degrees that is not a requirement anymore. That's particularly because of the number of the engineering students have grown over decades making the admission easier.

An interesting aspect of the Finnish higher technical vocational education was the technician training. It was between engineering degrees and secondary VET. The degree always required working experience and it was mainly aimed for site management. Similar degree between secondary VET and post-secondary VET college/UAS degrees did not exist in the other fields.

The technician degree was discontinued in the UAS reform in the 1990's. The idea was that engineers could carry out the task the technician used to do. There has been an on-going debate ever since whether there is a need for practice oriented higher vocational degree for site management and similar initiatives. The industry has complained that there is lack of professional site management when old technicians are retiring. The engineering degrees last for four years and there are views that that is unnecessarily long for many tasks available in the industry.

The problem was most urgent in the construction industry. That finally lead to launching a similar degree again in 2007. The new degree is at the same level as engineering degree i.e. it is comparable to bachelor's degree. It lasts a bit less at only 3,5 years while engineering degree is 4 years. The degree is translated now as bachelors of construction management. The main difference compared to the engineering degrees is that it lacks a lot of the theoretical studies and the focus is on work site management, logistics etc. (Stenius, 2016).

Engineering like other higher degrees have always needed to balance between theory and practice. In the late 1990's the trend in engineering studies was more theoretical and the degree included plenty of mathematics and physics. That was partly a reason why upper VET graduates had problems completing the degree. In general, the Finnish engineering schools were complaining that too few students master sufficient mathematical skills for the studies. The university programs had the same problem.

Since 2008, the engineering degrees' curriculum started to develop in a more practically oriented direction. The amount of mathematics and physics was reduced and ICT skills was increased. That was partly because IT software had been developed to solve mathematical problems. The process partly supported the upper secondary VET students to continue their path to UAS.

The engineering degree reflects in good way the challenges in the Finnish 'dual' system. The general upper secondary and vocational upper secondary qualifications both qualify the student to apply to the higher education. There are plenty of the students who have gone the vocational path but there is always the challenge that the two paths mean the students start in different places at the higher level. At secondary VET there is much less mathematics, languages etc. That may be a problem at higher level. In the same way the general upper secondary graduates lack vocational skills. Both used to have separated programs to facilitate that problem but now the programs have been merged.

There are also professional oriented UAS master's degrees available for the engineering people. Since UAS bachelor is 4 years, relatively long one, the master degree is only a year. For that reason, the whole UAS master degree could be studied in 5 years plus the 3 years working experience required for master's.

UAS masters are not very well established in Finnish educational system. Engineering degrees have even more problems since they only last a year. In the international comparison they are not truly valid master's degrees even though together with Finnish UAS engineering bachelor's degree they are valid for international comparison since UAS engineering degrees are broader than typical bachelor's degrees.

All in all, the **engineering degree has developed from professionally oriented to academic direction, and now the trend has slightly changed** again. The next trend could be to adapt the international frameworks. Meanwhile, the engineering degrees need to balance with academic goals, working life requirements and creating feasible study paths for the different student groups i.e. vocational and general upper secondary VET graduates, the young and adults etc.

7. Current debates and future perspectives

The Finnish educational system is under development in many ways. To understand the impacts on the higher VET degrees, it is important to understand the bigger picture. In particular, changes at the secondary level will be reflected to the higher levels as well.

One major theme in public debate are the concerns that Finland is lagging in higher education graduates compared to OECD average (OECD, 2017). There is a firm belief that -level know-how, education and innovation are the Finnish competitive advantages. Meanwhile studies and statistics indicate that Finland is not doing that well anymore. Even though still excellent, PISA – scores are falling, less young people have higher degrees and number of school drop-outs is growing.

The Finnish governments have made budget cuts in the education at all levels from the upper secondary VET to universities. For that reason, there have been lay-offs in many educational institutes, schools have been merged and many study programs have been discontinued.

That paints the wider picture of Finnish educational framework. The downsizing of the educational systems coincidence with worries of the competitiveness and social inclusion through education.

That has raised the question of how the educational system can create more with less resources.

There is an on-going reform in the upper secondary level VET. The aim of the reform is to individualize study paths and make the study paths more flexible. The structure of the degrees is being made more modular so that each student can choose the modules for his/her own study path.

The reform decreases the number of the IVET, further VET and specialist VET degrees by merging former degrees. The idea is that each degree is wider and there could be individual variation within each qualification.

From the higher VET point of view there are two hot topics. The first one is that will the reform affect the vocational path from upper secondary VET to UAS and universities. The reform will cut the general studies and that will potentially **weaken the IVET graduate's abilities to study** at the higher level. The challenge is the admission. When applicants can have backgrounds in general or vocational upper secondary, there are difficulties putting them on the same line when giving points for the admission.

From the UAS point of view, the critical question is their status. The UAS are promoting that they should be more recognised as equal with the universities. One debate is about the title of UAS master's degree. In Finnish language the title master (maisteri) is not used but the degrees are referred as 'higher UAS' ⁽³⁾.

The debate has been going on since the establishment of the UAS system. There are still prevailing opinions that universities are higher and UAS are lower level universities even though they should be on the same level. The universities are defending their position strongly.

The next step in the development could be naturally introducing the doctoral programs for UAS and improving the path from UAS master's degree to the university doctoral programs. Nowadays the access of the UAS master for university doctoral programs is case by case. The universities may choose their students and they have not been willing to open their degrees for UAS students. Some universities have opened more their master degrees to UAS bachelors than others.

An important trend is the increasing collaboration between the universities and UAS. There are on-going processes in which UAS and the universities seek to merge. That naturally raises the question what the distinguishing difference between these two school of higher education will be. That affects especially engineering and to some extent business studies. In those two fields the degrees are already overlapping.

The nursing degrees have been debated for two major reason. First of them is that health care sector is lacking employees and there is a need to educate more nurses. So far that has not affected nursing training that much.

The second factor is the financial pressure on health care system in general. That has created a need that nurses' job descriptions should be broadened. That could be writing prescriptions in some cases or writing documentations for sick leaves etc. That means some basic jobs now done by physician could be done by nurses. The driver for that development is that because of the lower salaries, nurses are less expensive and health care cost could be reduced in that way. That anyway raises the question about continuing education of the nurses. The debate is linked to the question of how the nurses can develop their professional skills, how the skills are recognized and how that would affect career prospects, salaries etc.

⁽³⁾ The Finnish term is ylempi ammattikorkeakoulututkinto that could be translated higher university of applied science qualification, abbreviation yamk where y=ylempi higher, amk= uas.

8. Overview

This table should provide an overview of what types of changes due to ‘academic or vocational drift’ or ‘expansion of VET at higher levels (outside higher education)’ can actually be observed in the country.

Please indicate the main processes and phenomena identified during the last 20 years in the table below – referring to the direction of change, the object of change, the context of change (or target area of change), the key processes observed and the results of these processes as well as their time frame and indicate the sections in which they are presented! Examples of key processes/results are presented in table 1 of the guidance note.

Table 1 Overview

Direction of change	Object of change	Context/target area	Key processes observed / results	Timeframe	Section
Academic drift	Higher Education	professionally-oriented HE	Including RDI activities to UAS responsibilities Requirement of PhD or licentiate degree for senior teachers	Early 2000's onward In UAS reform 1990's	4.1 4.2
		traditional (or academic) HE programmes	Tenure track to some universities to straighten academic careers	2000's	
	VET (outside HE)	VET transformed to HE	The post-secondary VET colleges transformed to UAS	1992 – 2000	3.1
		VET offered at higher levels outside HE			
Vocational drift	Higher Education	professionally oriented HE	UAS: balancing between academic requirements and working life requirements	On-going	4.1
		traditional (or academic) HE programmes	Universities: Increasing internships etc. Professors of practice position established	On-going 2014 -	
Expansion of VET at higher levels (outside HE)	VET at higher levels (or ‘higher VET’) offered outside HE		Only higher degree outside of HE is specialist vocational qualification. There is ongoing reform on the vocational education. For the academic/ vocational changes are too early to estimate.		

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