

The reform of vocational upper secondary education

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1. Introduction

The reform of vocational upper secondary education will update the entire vocational education and training (VET) by the year 2018. The purpose of the reform is to make vocational education more competence based and customer oriented in order to meet the changing needs of work-life now and in the future. This is done by for example reforming the qualifications, giving each student an individual study plan and adding more learning in workplaces. The financing system of vocational education will also be reformed to grant more funding based on performance and effectiveness. The reform is one of the key projects of Prime Minister Sipilä's government.

The new financing model may support the goal of meeting the needs of work-life better by encouraging the schools to work more closely with employers and to focus their resources to fields with better employment which may also be reflected in increased youth employment. The individual study paths may also help meet the needs of students better and allow for faster graduation.

There may also be some downsides to be considered in parts of the reform. We argue that the new financing model could create unwanted incentives for the schools, resulting in the decrease of criteria for completing qualifications and the tightening of criteria for new students. This would decrease the quality of vocational qualifications, impair the position of youths at risk of social exclusion and harm the objective of educating the entire age cohort. We also argue that increasing learning in workplaces could harm the graduates' chances of employment later in the life-cycle and chances of enrolling in higher education, which has already become more difficult for vocational upper secondary school graduates relative to general upper secondary education graduates.

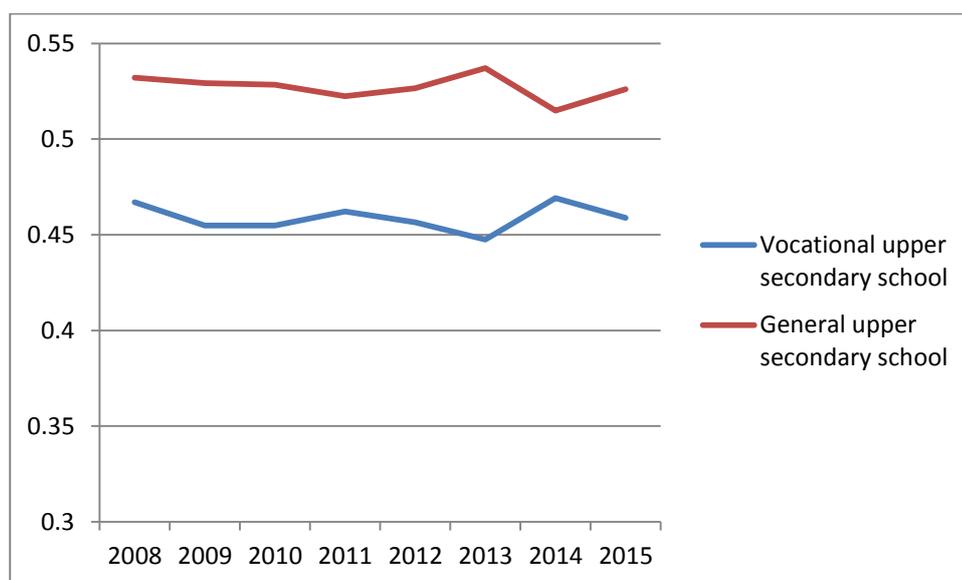
2. Vocational upper secondary education in Finland

This section gives a brief overview of vocational upper secondary education in Finland. The statistics presented here show that the popularity as opposed to general upper secondary education of vocational upper secondary education has grown in the 2000's. The role of vocational schools as providers of adult education has also become more significant, with the number of students outside the age cohort 15-19 having grown.

Figure 1 shows the share of students who apply to general and vocational upper secondary school as their first choice the same year as graduating from comprehensive school. Figure 2 shows the share of students who enroll in general and vocational upper secondary school the same year as graduating from comprehensive school. Due to unavailability of data, figure 1 only covers the years 2008-2015 whereas figure 2 covers the years 2000-2015.

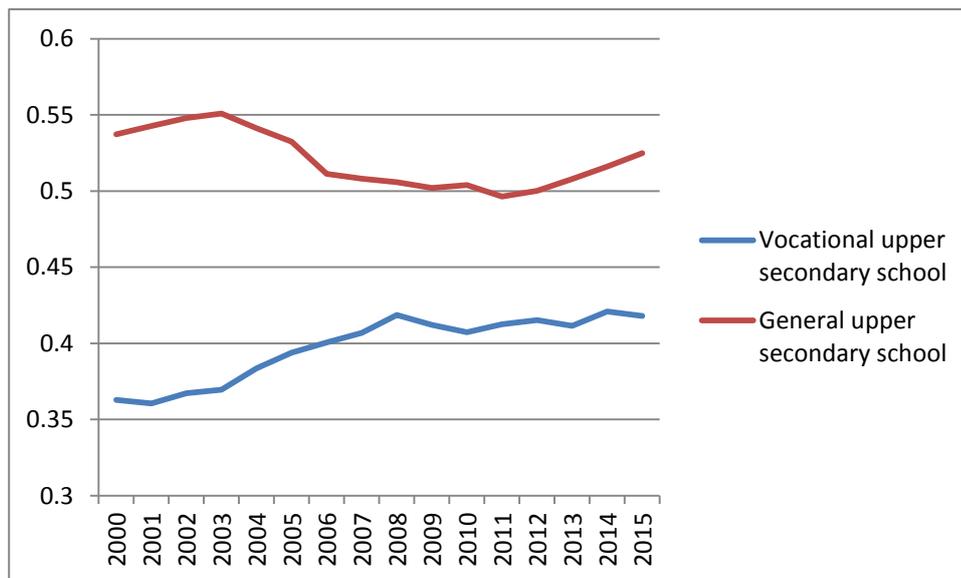
As seen from figure 1, the shares of students applying to vocational and general upper secondary education as their first preference have remained somewhat steady from 2008 to 2015. General upper secondary education has been the more popular of the options with an average of 53 per cent of students applying there as their first preference between 2008 and 2015. The average share of students applying to vocational upper secondary education was on average about 46 per cent between 2008 and 2015.

Figure 1: The share of comprehensive school graduates applying to vocational upper secondary and general upper secondary school as their first preference in the graduation year.



Source: Statistics Finland.

Figure 2: The share of comprehensive school graduates enrolling in vocational upper secondary and general upper secondary school in the graduation year.



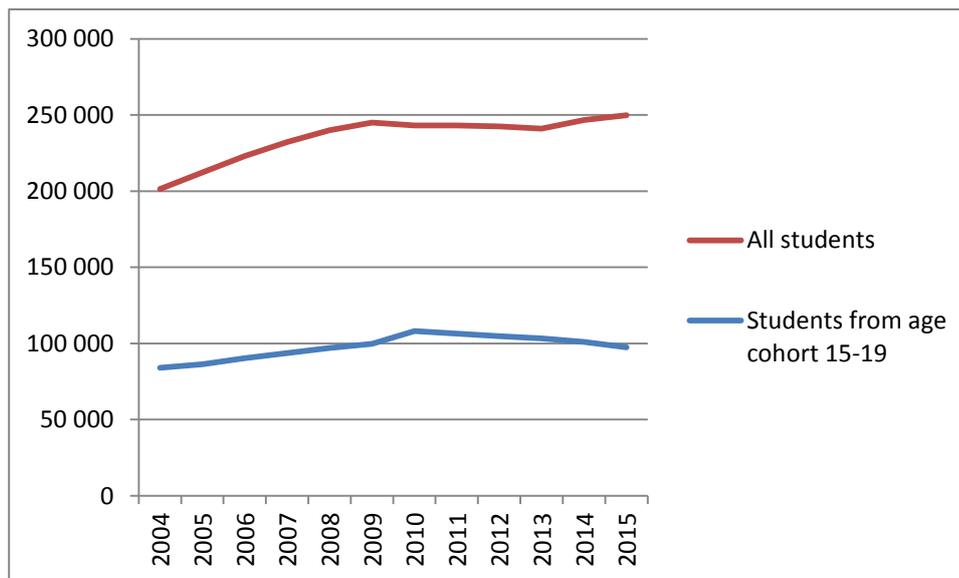
Source: Statistics Finland.

The data on enrollment, which are available from a longer time period from Statistics Finland, show a rise in the share of students enrolling in vocational upper secondary school after comprehensive school from the early 2000's to 2015. The share of students enrolling in vocational upper secondary school rose from 36 per cent in the year 2000 to about 42 per cent in the year 2008, after which it has remained stable. The share of students enrolling in general upper secondary school after graduating from comprehensive school slightly increased from 2000 to 2003. The share of students enrolling in general upper secondary school decreased from 55 per cent in 2003 to slightly below 50 per cent in 2011 after which it has again increased.

Figure 3 shows the importance of vocational education as a provider of adult education. The growth in the number of students from 2004 to 2015 has mainly come from students older than 15 to 19. The total number of students in vocational upper secondary education has grown from 200 000 in 2004 to 250 000 in 2015. The number of students from the age cohort 15-19 has only grown by some 13 000 in the same period.

The statistics presented in this section add to the significance of the reform of vocational upper secondary education. With a larger share of comprehensive school graduates having chosen vocational instead of general upper secondary education it is important that the quality of education in vocational schools does not suffer compared to general education. Also, with the growing number of adult students in vocational upper secondary education, the reforms impact on labour markets could be significant.

Figure 3: Number of students in vocational upper secondary education



Source: Vipunen.

3. Reform of vocational upper secondary education

The reform of vocational upper secondary education updates the entire vocational education and training (VET) by the year 2018. The objective of the reform is to make VET more responsive to the changes in work life now and in the future and to adopt a more customer oriented and competence based approach (Government proposal 39/2017). Since the reform makes multiple changes to the current VET, in this report we cover only the aspects of the reform we feel are the most central. In the next sections we discuss the new financing model introduced by the reform, the increase in the amount of workplace learning, the qualification system reform as well as the impact of the reform on the students' pursuit of higher education.

3.1. Financing model and budget cuts

Currently, the funding to vocational upper secondary education organisers is distributed based the number of students and the unit prices determined by the government. The unit prices vary across different fields and organisers in VET but the average unit price in 2016 was 10 465.32 euros. Figure 4 shows the average unit price over the years in 2016 prices. For

much of the 2000's the unit prices have increased, but since 2012 they have decreased to the point that the average unit price in 2016 is nearly equal to the average unit price in 2002.

From 2017 on, the funding of vocational upper secondary education will be decreased by 190 million euros (Government proposal 177/2016). The budget cut will be implemented by decreasing the number of students as the basis of funding by 12.44 per cent. According a survey in the government proposal (177/2016), the organisers of vocational education don't plan on limiting the number of students or the availability of education significantly. Figure 5 shows that the size of the age cohort 15-19 is expected to start growing from 2017 forward. Unless the demand for vocational education from over 19 year-olds falls, it is likely that demand for vocational education will grow. If the number of students is not limited, the budget cuts could have a negative impact on the quality of education in vocational schools with fewer resources available per student. This could be especially worrisome for the students' eligibility for higher education which, as we will discuss in the next section, has already weakened since the early 2000's.

Figure 4: Average unit price of vocational upper secondary education, 2016 prices (Price index of basic municipal services)

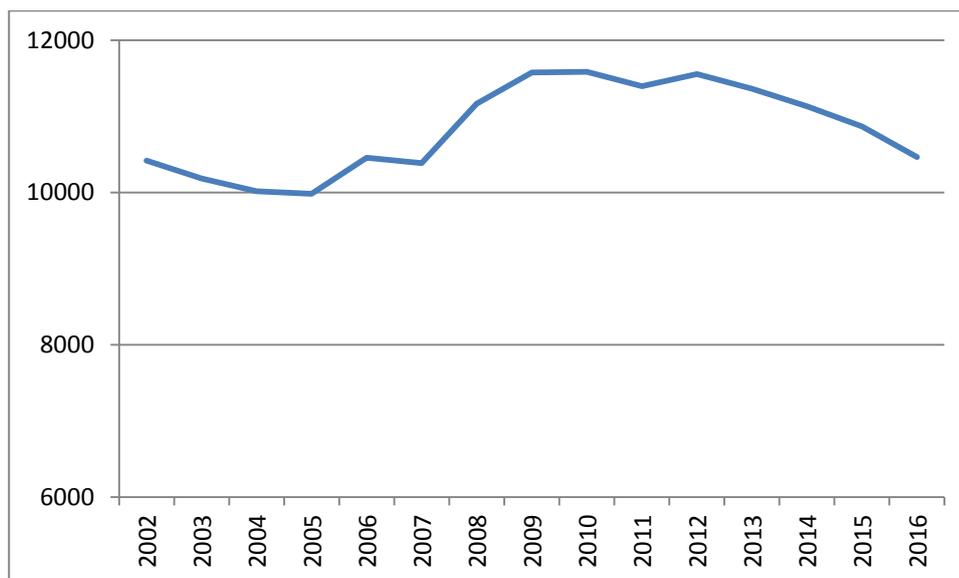
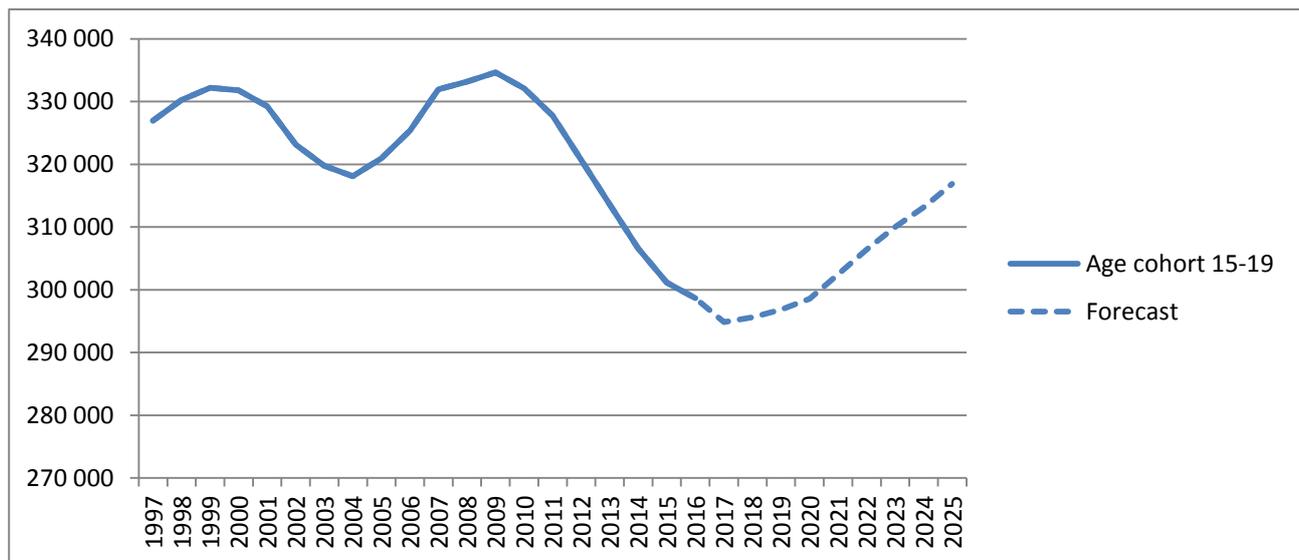


Figure 5: Size of age cohort 15-19 with forecast.



Source: Statistics Finland.

The reform of vocational upper secondary education introduces a new financing model. In the new model, the funding will consist of core funding, performance funding and effectiveness funding with shares of 50, 35 and 15 per cent from total funding, respectively. Core funding is based on the number of students and unit prices. Performance funding will be based on the completed qualifications and modules. Finally, the effectiveness funding granted based on the graduates' employment and enrollment in higher education as well as on feedback from students.

The core funding is meant to ensure that education in all fields and for all students would be available and the performance funding is meant to incentivise the organisers to increase their performance and to take into account each individual student's needs by offering individual study paths. The government also hopes that the performance funding will shorten graduation times and reduce drop-out rates. The effectiveness funding will incentivise the organisers to shift their focus into fields which have higher employment and to encourage the students to apply into higher education. The incentives created by the model may, however, be dampened by the fact, that the funding is not granted directly to the individual school which produces the good result but instead to the organiser of the education (e.g. municipality or joint municipal authority).

There is also some risk that the new financing model will create wrong types of incentives for the organisers. Since the organisers are given more funding for each qualification and module completed, this could cause them to grant qualification and modules with lower criteria. The organisers could also devote more of their resources on completing qualifications and modules, for example at the cost of employment services, since a larger share of total funding

is based performance than effectiveness. According to a survey referred to in the government proposal (39/2017), some organisers did in fact see this as a possible outcome.

Another concern related to the new financing model is the possible tightening of student selection criteria. The model does not encourage the schools to take in less gifted student's, since they are less likely to complete their modules and qualifications. According to the survey referred to in the government proposal (39/2017), 82 per cent of the organisers said agreed that this is a possibility, and a little less than half of the organisers were going to tighten their student selection criteria. This could have a negative impact on the young people at the risk of social exclusion and could harm the objective of education the entire age cohort.

3.2. Learning in the workplace

One of the biggest changes made by the reform to VET is the increased learning in the workplace. In practice, this is done by introducing a new "training contract" -model to replace the old model of non-employment based workplace learning and by encouraging the use of apprenticeship contracts. Unlike in an apprenticeship, in a training contract the students are not employees and thus receive no compensation unless the employer wishes to compensate the student. The employers will receive no compensation either, unless if a large part of the guidance in the workplace falls upon the employer. Both a training contract and an apprenticeship contract can be made per a single module of the qualification but only the apprenticeship contract can be used to complete an entire qualification. In the new model students may flexibly change from a training contract to an apprenticeship.

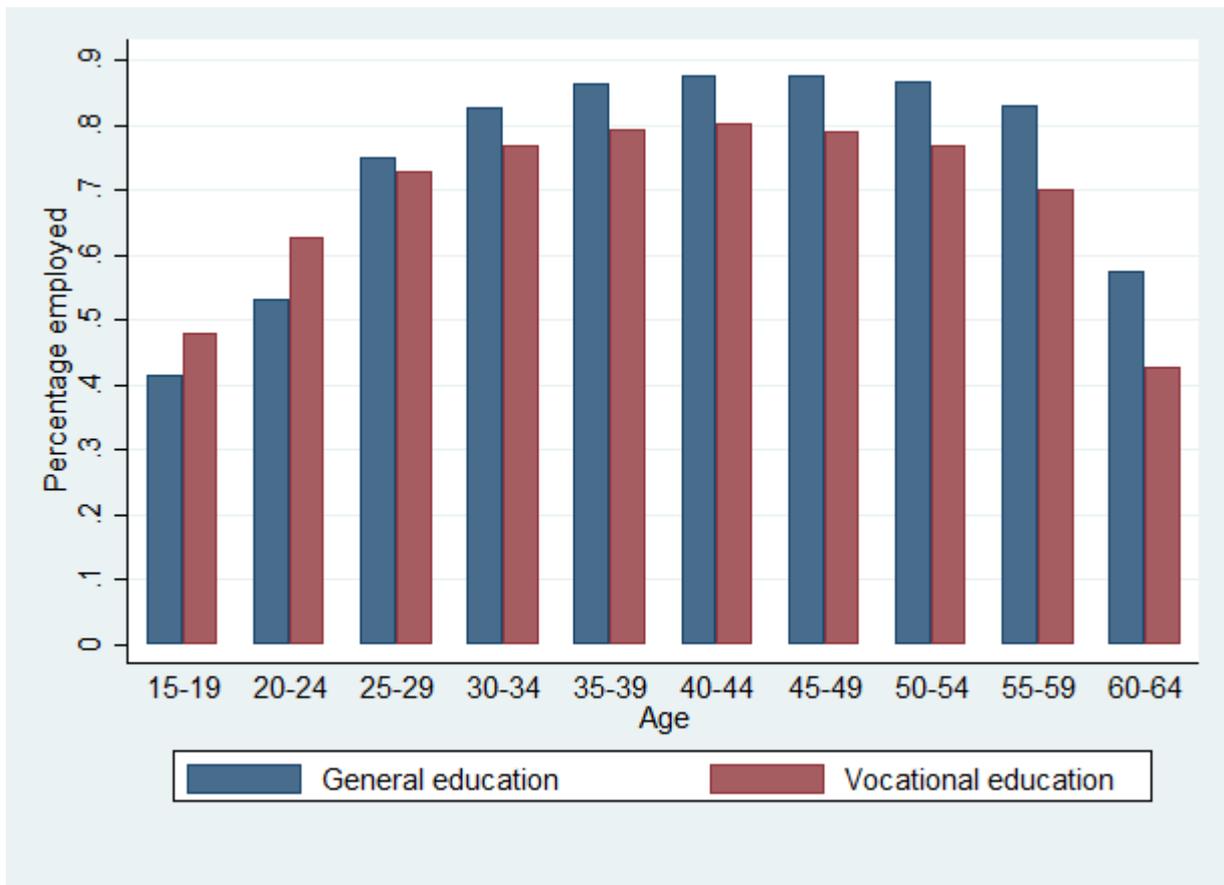
It is assumed in the government proposal that the amount of work based learning would double after the reform. The proposal doesn't contain any rationale as to why businesses would have incentives to support such an increase. The Finnish Education Evaluation Centre (2010) noted that for some qualifications there are difficulties in providing work based learning and that in the capital region, the amount of workplace learning has begun to burden the businesses. They also found that on average 67 per cent of workplaces didn't have a qualified counselor for the students.

If learning in the workplace does indeed increase, there is a possible downside to be considered. Recent studies (Hanushek, Schwerdt, Wössmann & Zhang, 2017; Hampf & Wössmann, 2016) have found that while vocational education does result in increased employment in the young age compared to general education, this pattern is reversed later on in the life-cycle. So, while it seems that vocational education can ease the transition from school to work-life better than general education, it can also harm the adaptability to structural and technological changes in the economy.

Furthermore, the studies also found that this effect on employment over the life-cycle becomes even more pronounced in countries with more apprenticeship-based vocational education (e.g. Germany). The employment of young people with vocational education is higher in the apprenticeship countries than in countries with school-based vocational education (e.g. Finland). On the other hand, in the apprenticeship countries the employment of vocational graduates later in the life-cycle is lower than in the countries with school-based vocational education. This trade-off should be considered when increasing the amount of learning in the workplace in the Finnish upper secondary education.

A similar pattern to that found in the studies of Hanushek et al. (2017) and Hampf & Wössmann (2016) seems to exist in Finland as well. Figure 6 shows the employment rates of different age groups in 2014 by whether the person has a degree from a vocational or a general upper secondary education. Those who have a degree from both are included in general education. From figure 6, it can be seen that for the age groups 15-19 and 20-24 vocational education has a higher employment rate than general education. For the age group 20-24 the difference in employment rates is about 10 percentage points in favour of vocational education. This difference is explained by the fact that a large number of people with general education in these age groups are students. Already from the age group 25-29 onwards, the employment rates for general education are higher than vocational education's and the difference continues to grow with age until. At the ages 60 to 64 the difference is about 15 percentage points.

Figure 6: Employment rates in 2014 for general and vocational upper secondary education by age.



Source: Statistics Finland administrative register data.

According to the government proposal, the motivation behind the reform is to make VET more responsive to the changes in work life. Based on the studies of Hanushek et al. (2017) and Hampf & Wössmann (2016), increasing learning in the workplace may not be the optimal way to achieve this goal, especially if the increased learning in the workplace reduces the amount of general education in vocational schools. If the differences in employment between general and vocational education over the life-cycle are caused by the depreciation of skills with age as the studies suggest, it is important that vocational education provides the necessary basic skills to adapt to structural and technological changes in the economy.

3.3. Qualification system reform and individual study paths

The reform of vocational upper secondary education will reduce the number of qualifications in VET and make them broader and more competence-based, in order to better meet the needs of work-life. The needs and prior skills of the student will also be taken into account by giving each student an individual study path. By recognising prior skills, the students can focus on the skills they are missing from the qualification and the graduation times can be shortened.

In this sense, the current reform of vocational upper secondary education is very similar to that implemented between 1999 and 2001. That reform also updated the qualifications to better meet the needs of work-life, added individual study paths and made it possible to recognise prior skills. The reform also made all vocational qualifications eligible for higher education.

Unfortunately, there have been no studies done on the reform which assess, for example, the impact it had on employment, enrollment in higher education or drop-out rates. However, a report by the Finnish National Agency for Education (2004) found that the schools had difficulty implementing the new curricula and offering the individual study paths in practice. The options for studies were often just courses within the student's own school or a local general upper secondary school. Also, often the only prior studies that shortened the graduation time were a matriculation examination.

A report by the Finnish National Agency for Education (2017) found that individual study paths were effective in reducing drop-out rates and in increasing the completion of courses. Thus, the inclusion of individual study paths into the reform of vocational upper secondary education may be beneficial. However, it is important to keep in mind that the previous reform also had similar goals but it is unclear what the effect of the reform was. In the report by the Finnish National Agency for Education (2004), it was stated the schools had trouble implementing the individual study paths and new curricula in practice. With similar changes being made to the VET this time as well, it is worth deliberating how the schools will manage this time, especially with the recent budget cuts.

3.4. Eligibility for higher education

The purpose of this section is to evaluate the impact of the reform of vocational upper secondary education on the eligibility and enrollment of students into higher education. To this end, we will discuss why the reform may harm students' chances of enrolling in higher education and describe vocational upper secondary education as a pathway into higher education using administrative register data from Statistics Finland.

Since the reform of vocational upper secondary education implemented between 1999 and 2001 it has been possible to apply to higher education with all vocational upper secondary qualifications. Before the reform, the students had a choice between a two-year and a three-year education, with only the three-year education giving eligibility to higher education. There are aspects of the current reform which may harm the students' actual chances of enrolling in higher education after their graduation from vocational upper secondary school. Our concern is that the increased workplace learning and the decreases in funding decided in 2016 may reduce the amount and quality of contact teaching and general education in vocational upper secondary schools which in turn would impact the students' readiness for higher education

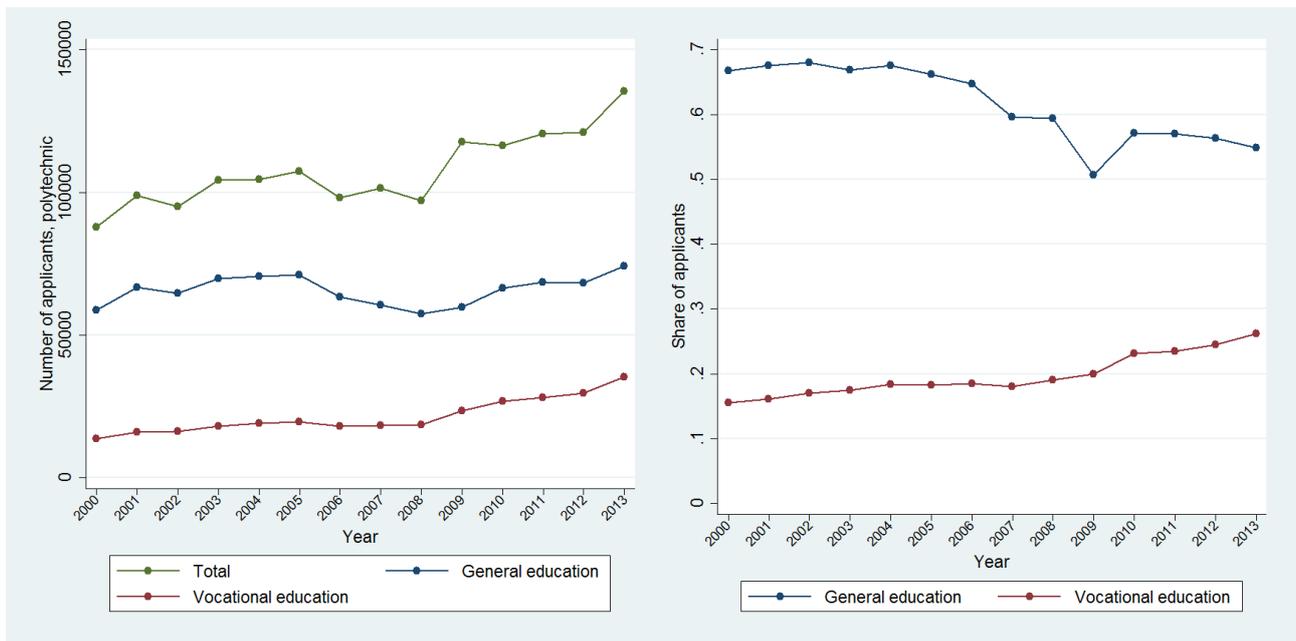
negatively. Even if these concerns are unwarranted, other than possibly the effectiveness of funding, there don't seem to be any aspects of the reform which would improve the students' readiness for higher education studies which can be shown to have weakened in the 21st century, if a percentage of applicants accepted is used as a measure of readiness for higher education.

In this report we focus our attention mainly on polytechnic university studies when discussing higher education. The reason for this is that the share of university students or applicants with only a VET qualification is very small when compared to polytechnic university. For example in 2013 only about 3000 of the 80 000 university applicants (or roughly 4 per cent) had just a VET qualification and out of the 12 000 accepted applicants only about 140 (1.2 per cent) had just a VET qualification. In comparison, from the 135 000 polytechnic university applicants in 2013 there were about 35 000 applicants (26 per cent) with just a VET qualification. Out of the 39 000 accepted 7700 (20 per cent) had just a VET qualification. Even though it should formally be possible to go on to study at a university with any vocational upper secondary school qualification, in practice this happens very rarely. In this regard the readiness for higher education given by VET qualifications should be called into question.

Figures 7 and 8 show the number of applicants and new students in polytechnic universities as well as the shares of the applicants and new students with general or vocational education. From here on we define persons with a matriculation examination as students with general education and persons with an upper secondary school qualification, a further vocational qualification or a specialist vocational qualification as persons with vocational education. If a person has both general and vocational education they are defined as having general education and if a person has completed a higher degree at the time of application, they are ruled out of both groups.

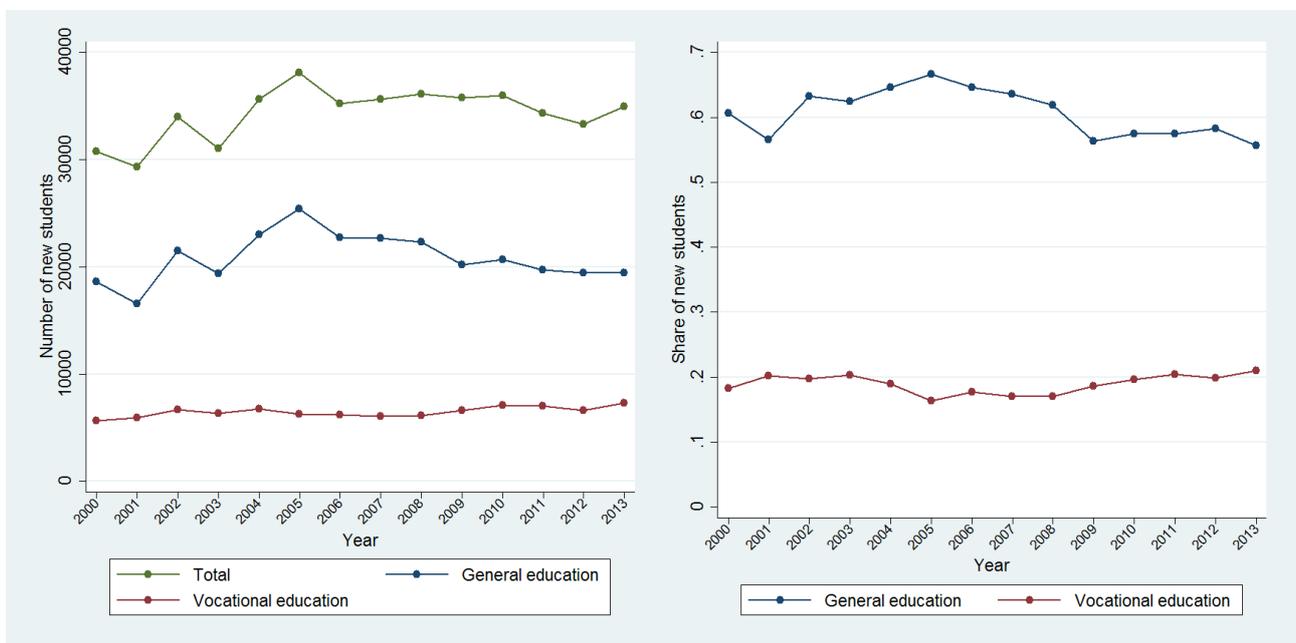
The left side of figure 7 shows that the number of applicants to polytechnic universities has risen from around 90 000 in 2000 to around 135 000 in 2013. It is worth noting that the number of applicants rose sharply from 2008 to 2009 likely due to the Great Recession. This increase seems to have largely come from applicants who had higher than upper secondary degrees. The left side of the figure 7 also shows that the number of applicants with vocational education has risen from 2000 to 2013. Meanwhile, the number of applicants with general education has remained somewhat stable. This is also reflected on the right side of the figure 7 with the share of applicants with vocational education increasing and the share of applicants with general education decreasing.

Figure 7: Number and share of applicants to polytechnic university with general or vocational upper secondary education by year.



Source: Statistics Finland administrative register data.

Figure 8: Number and share of new polytechnic university students with general or vocational upper secondary education by year.



Source: Statistics Finland administrative register data.

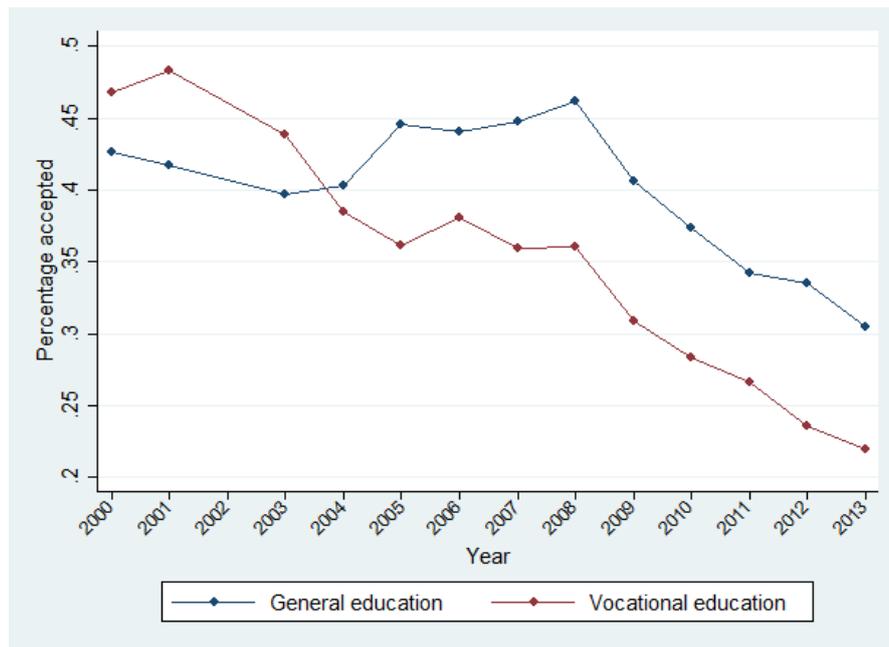
Figure 8 shows the number and share of new polytechnic university students with vocational education. The number and share of new students with vocational education have been considerably lower than with general education. However, since 2005 the number and share

of new students with general education have shown a slight downward trend whereas the opposite is true for vocational education.

Comparison of the shares of applicants from figure 7 and the shares of new students from figure 8 shows an interesting trend. Between 2000 and 2004 the share of applicants with vocational education has been lower than the share of new students with vocational education with the former at 20 per cent and the latter below it. From there on the opposite seems to be the case with the share of applicants with vocational education greater than the share of new students with vocational education. The opposite seems true for those with general education. In the early 2000's their share of applicants was greater than the share of new students whereas in the later years of the data this pattern is reversed. These results would suggest that in the early 2000's, it was relatively easier for applicants with vocational education to get accepted into polytechnic universities than for applicants with general education. The opposite has been the case in recent years.

Figure 9 shows the percentage of polytechnic university applicants accepted from 2000 to 2013. 2002 however is excluded due to missing data on whether or not the applicant was accepted. In figure 9, an applicant is considered accepted if they were accepted into any of the polytechnic university programs that they applied for that year. Figure 9 confirms the fact that the chances of an applicant with vocational education getting accepted into a polytechnic university have indeed weakened relative to an applicant with general education. In the early 2000's, the acceptance rates of applicants with vocational education were about 5 percentage points higher on average than the acceptance rates of applicants with general education. However, from 2004 on this pattern has reversed and applicants with general education have had higher chances of getting accepted with the difference in the acceptance rates being in some years as high as 10 percentage points. Even though the acceptance rates for both vocational and general education have gone down since 2008 because of an increased number of applicants (see figure 7), the difference between general and vocational education has endured.

Figure 9: Percentage of polytechnic university applicants accepted by year.



Source: Statistics Finland administrative register data. (Note: 2002 is excluded because of missing data)

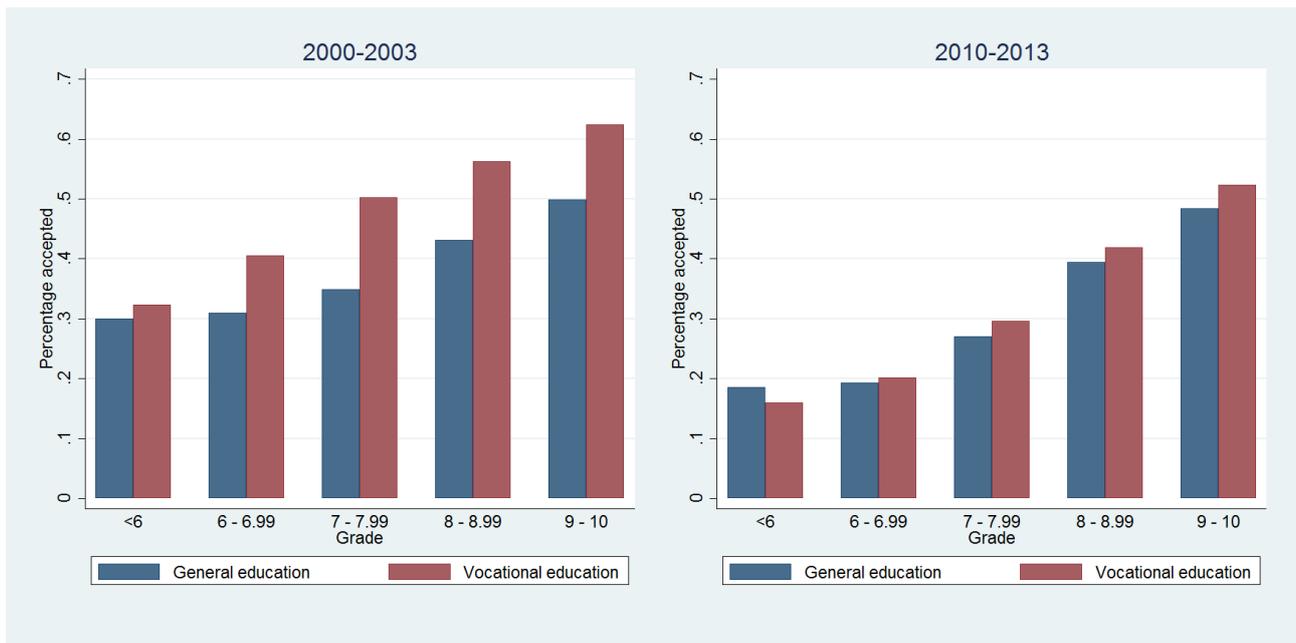
One explanation for the falling acceptance rates of applicants with vocational education compared to applicants with general education might be that there have been changes in the selectivity into upper secondary and vocational upper secondary education. For example, if the number of more gifted students enrolling in upper secondary instead of vocational upper secondary has grown since the early 2000's, this could cause the acceptance rate for vocational education relative to general education to fall since the more gifted students would do better in the entrance examinations, regardless of their secondary education.

To account for the possible selection bias, in figure 10 the polytechnic university acceptance rates of applicants with vocational and general education are further divided into groups based on the applicants average grade of theoretical subjects in the 9th grade of comprehensive school. Figure 10 is divided into two parts with the first one for the years 2000-2003 and the second for the years 2010-2013. However, the year 2002 is again excluded from the first part of figure 10 due to missing data. Figure 10 shows that with the exception of a grade below 6, in the years 2000 to 2003 the acceptance rates of applicants with vocational education were on average over ten percentage points higher than those of applicants with general education. The acceptance rates for both general and vocational education are increasing with the average grade of theoretical subjects in the 9th grade.

The right side of figure 10 shows that the percentages of accepted applicants are significantly lower for both vocational and general education in the years 2010-2013 than in the years 2000-2003. This is due to an increased number of applicants as seen in figure 7. However, as is to be expected based on figure 9, the decrease in the acceptance rates has been greater for

vocational education than for general education. In 2000-2003 the acceptance rates for applicants with vocational education were over ten percentage points higher than those of applicants with general education. This difference in 2010-2013 had reduced to just a few percentage points for all but the very lowest grades. In fact, for an average grade below 6, general education has a slightly higher percentage of applicants accepted than vocational education.

Figure 10: Share of polytechnic university applicants accepted by education and average grade of theoretical subjects in the 9th grade of comprehensive school



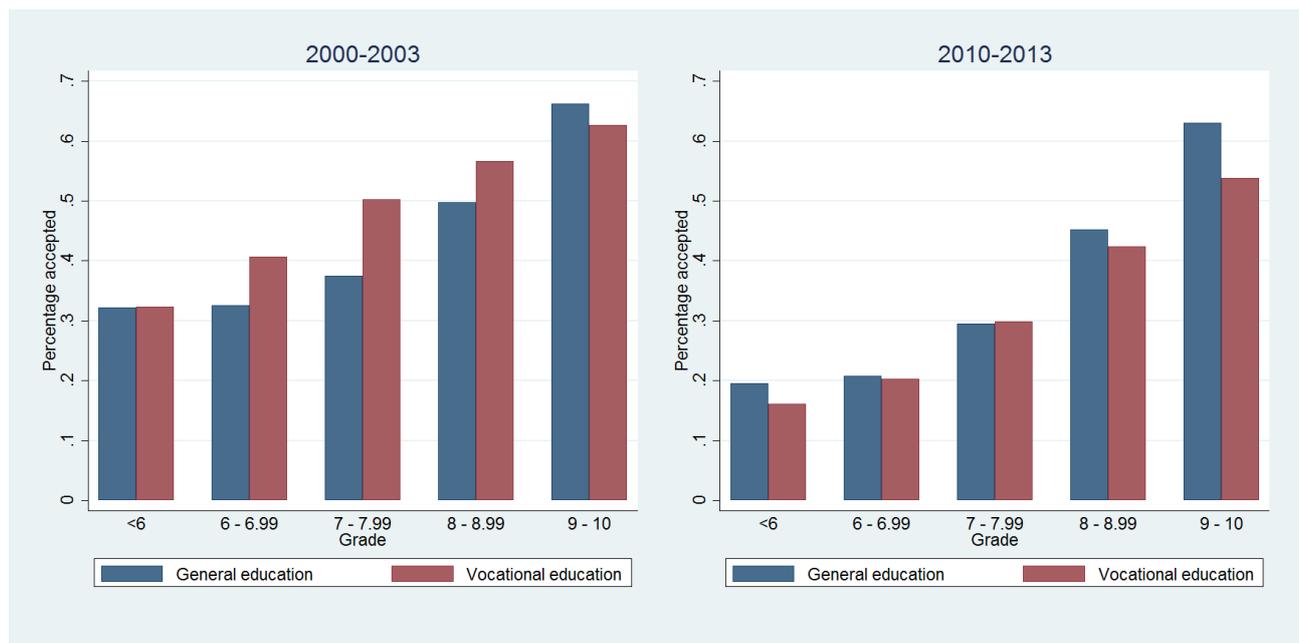
Source: Statistics Finland administrative register data. (Note: 2002 is excluded due to missing data.)

A comparison of figures 9 and 10 would at first suggest opposing results. Whereas figure 10 shows that in the time period 2010-2013 the acceptance rates for all but the very lowest grades are greater for vocational than general education, in figure 9 the acceptance rate overall is higher for general education. This is simply explained by the fact that the grades for applicants with general education are on average slightly above 8, whereas for applicants with vocational education they are slightly above 7. This means that in figure 10 most of the applicants with vocational education fall into to the groups with grades from 6 to 8 while most of the applicants with general education fall into the groups with grades from 8 to 10. This explains the contradiction at first glance between the figures 9 and 10.

The problem with figure 10 is that it may give a biased image of the percentages of applicants accepted, since it is possible that some of the applicants have simultaneously applied to universities as well. If the polytechnic university is not the applicant's first choice, they may not put as great an effort into the entrance examination as they would for their first choice. This is likely to cause bias only to the acceptance rates of applicants with general education,

since, as mentioned in the beginning of this section, the number of university applicants with only vocational education is very small. From the application data it is only possible to observe the applicant's preferences for polytechnic universities, but it is not possible to tell whether or not a university was preferred over these. However, it is still possible to observe whether or not the applicant applied to a university.

Figure 11: Share of applicants who applied to both polytechnic university and university accepted by education and average grade of theoretical subjects in the 9th grade of comprehensive school



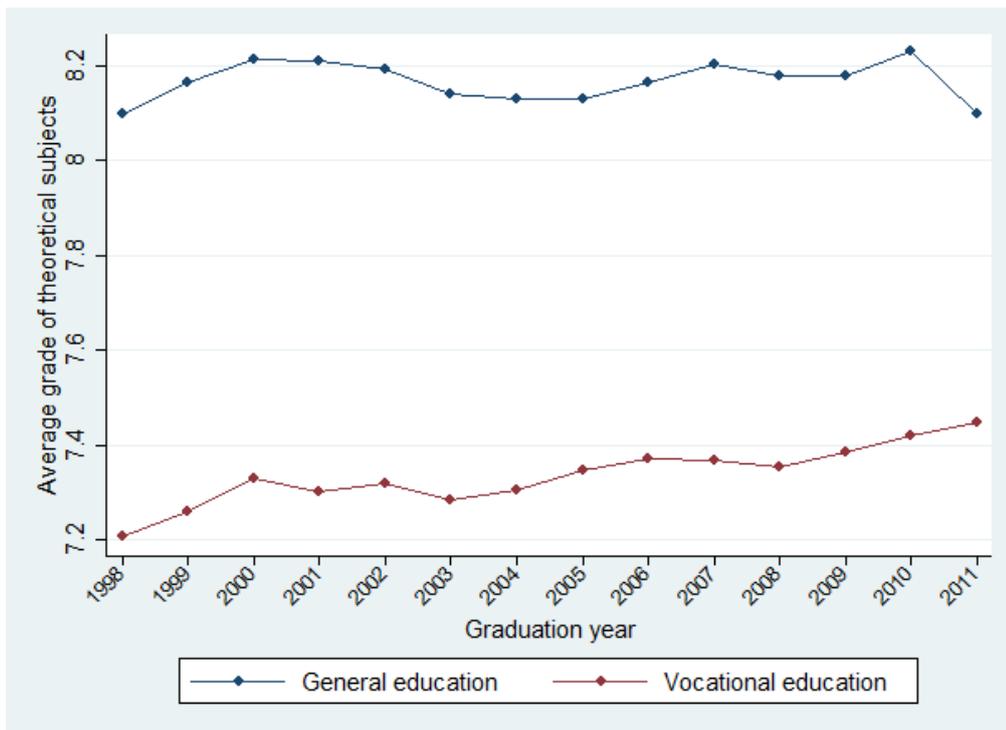
Source: Statistics Finland administrative register data. (Note: 2002 is excluded due to missing data.)

Figure 11 combines application data for both universities and polytechnic universities and reports the application rates for applicants who applied to both within the same school year. Applicants who applied only to a university are then excluded from the sample. A comparison of figures 10 and 11 suggests that the acceptance rates for applicants with general education in figure 10 were biased downwards. For both time periods the acceptance rates in figure 10 are lower for general education than in figure 11. As was to be expected, the acceptance rates for vocational education are unaffected. In figure 11, a familiar pattern still emerges. From the time period 2000-2003 to the time period 2010-2013, the acceptance rates of vocational education have decreased relatively more than the acceptance rates of general education. For all but the highest grades the difference between vocational and general education graduates has either disappeared almost completely, or reversed to favour general education.

Since figures 10 and 11 suggest that the acceptance rates are increasing in the average grade of the theoretical subjects in the 9th grade, could the decrease in the acceptance rates of vocational education be explained by lower grades of applicants? The average grade of

graduates over time (figure 12) would suggest that this is not the case. In fact, for vocational education graduates there is a slight upward trend in the grades whereas the grades of general education graduates have been somewhat stable. There is also no significant change in the grades of applicants over the time period for either general or vocational education to be observed from the data.

Figure 12: Average grade of theoretical subjects in the 9th grade of comprehensive school of general and vocational upper secondary education graduates



. Source: Statistics Finland administrative register data.

Another explanation for the falling acceptance rates could be that following the Great Recession people who have graduated a long time ago have decided to re-educate themselves and their share of the applicants has increased. If the applicants who have graduated a long time ago would have more difficulty passing the entrance examination, this could cause the acceptance rates to fall. In this case, the acceptance rate would be an invalid measure of readiness for higher education. To get rid of this possible bias, the sample was restricted to include just those applicants who had graduated at most three years prior. Even with this sample, the conclusion remained the same, so the results are not driven by the increase of applicants for whom more time has passed since their graduation.

The readiness for higher education in this section was only defined as the share of applicants accepted to polytechnic universities. It would also have been possible to look into how the graduation times of polytechnic university students with vocational education have evolved compared to students with general education. Due to time constraints, this type of investigation was omitted.

The results discussed in this section suggest that the readiness of vocational upper secondary school graduates for higher education studies has weakened since the early 2000's. We feel that this trend would merit more attention in the reform of vocational upper secondary education. While it is stated in the government proposal that the reform will maintain the students' eligibility for higher education, the reform doesn't have any aspects that would directly improve the students' actual readiness for higher education. On the contrary, the increased amount of learning in the workplace and the decreases in funding would more likely have a negative than a positive effect on the students' readiness for higher education. This in turn will make the decision on whether to pursue general or vocational school after comprehensive school more significant for one's future.

3.5. Conclusion

The role of vocational education has grown in recent years, as shown by a larger share of comprehensive school graduates choosing vocational instead of general upper secondary school and by a growing number of students in vocational education. This adds to the significance of the reform of vocational upper secondary education. One of the aims of the reform is to make vocational education more responsive to the changes in work-life now and in the future. We feel, however, that some aspects of the reform may not support this objective.

The new financing model could encourage the schools to lower their criteria for granting qualifications and modules, thus harming the quality of education. The financing model might also cause the schools to tighten their criteria for new students, which in turn could reflect negatively on the youths at risk of social exclusion.

The reform also increases the amount of learning in workplaces to better meet the needs of work-life. Recent studies (Hanushek et al., 2017 and Hampf & Wössmann, 2016) suggest that while shifting vocational education closer to an apprenticeship could improve the graduates' employment at a young age, this could come at a cost of lower employment at older ages. The studies argue that, as opposed to general education, vocational education doesn't provide adequate skills to adapt to technological and structural changes in the economy. They also claim that this effect is even more pronounced in an apprenticeship system than in school-based vocational education.

The role of vocational education as a pathway into higher education is given little attention in the reform. With the popularity of vocational education having grown, it is now a more important path into higher education than before. The data on enrollment in higher education show that it has become relatively more difficult to get into higher education through vocational education than general education, which could imply that the readiness for higher education given by vocational education has weakened since the early 2000's. While the

change does not appear to be massive, it is unlikely that budget cuts and increased learning in workplaces would reverse this and could actually end up worsening it. This could make the decision on whether to pursue general or vocational school after comprehensive school more decisive in the future.

If the eligibility for higher education given by vocational education is indeed lacking, it could be remedied in the same way as the possible negative effects of vocational education on employment later in the life-cycle; by ensuring that vocational education provides more general education as well. Adding more theoretical education into vocational schools could harm the motivation of the students who chose vocational education instead general education for the very reason that it is more practical instead of theoretical. It could potentially even increase the dropout rates among these students. But in the least, since the reform adds the individual study paths, it should be ensured that for the students who are motivated, there is a possibility of more theoretical studies as well.

References

Finnish Education Evaluation Centre. 2010. Työssäoppimisen arvioinnin seuranta, Koulutuksen arviointineuvoston julkaisuja 44.

Finnish National Agency for Education. 2004. Ammatillisen peruskoulutuksen tutkinto- ja opetussuunnitelmauudistuksen toteutuminen.

Finnish National Agency for Education. 2017. Läpäisyn edistäminen ammatillisessa peruskoulutuksessa. OPH-640-2017.

Hampf, F., & Woessmann, L. 2016. Vocational vs. General Education and Employment over the Life-Cycle: New Evidence from PIAAC. IZA Discussion Paper No. 10298.

Hanushek, E. A., Schwerdt, G., Woessmann, L., & Zhang, L. 2017. General Education, Vocational Education, and Labor-Market Outcomes over the Lifecycle. *Journal of Human Resources* 52(1), 48-87.

Government proposal 177/2016. Hallituksen esitys eduskunnalle laeiksi opetus- ja kulttuuritoimen rahoituksesta annetun lain muuttamisesta ja väliaikaisesta muuttamisesta sekä vapaasta sivistystyöstä annetun lain muuttamisesta.

Government proposal 39/2017. Hallituksen esitys eduskunnalle laiksi ammatillisesta koulutuksesta ja eräksi siihen liittyviksi laeiksi.