# the QUALITY of VOCATIONAL EDUCATION

differing values, behaviour and policy

Margriet van der Sluis

# The Quality of Vocational Education

Differing values, behaviour and policy

Margriet van der Sluis

Cover design by Maaike Ebbinge.

ISBN 978 94 6159 398 6

Productie: Datawyse - Universitaire Pers Maastricht

# The Quality of Vocational Education

DISSERTATION

to obtain the degree of Doctor at
Maastricht University on the authority of the Rector
Magnificus, Prof. dr. L.L.G. Soete, in accordance with
the decision of the Board of Deans, to be defended in
public on Friday January 9, 2015, at 16:00 hours

by
Margriet Esther van der Sluis

UNIVERSITAIRE
PERS MAASTRICHT

**Supervisor**
Prof. dr. Lex Borghans

**Co-supervisor**
Dr. Gerry Reezigt (Inspectie van het Onderwijs, Utrecht)

**Assessment Committee**
Prof. dr. Hans Heijke (chairman)
Prof. dr. Edith Hooge (Tilburg University)
Prof. dr. Loek Nieuwenhuis (Open Universiteit Nederland)
Prof. dr. Inge de Wolf

# Contents

**Voorwoord** **9**

**1 Introduction** **13**
1.1 Aim . . . . . 14
1.2 Research Questions . . . . . 15
1.3 Approach . . . . . 16

**2 Quantifying Stakeholder Values of VET Provision in the Netherlands** **19**
2.1 Introduction . . . . . 19
2.2 Conjoint analysis . . . . . 22
2.3 The Identification of Significant Indicators of Quality of Dutch Vocational Programmes . . . . . 24
2.4 Setting up the conjoint study . . . . . 28
2.5 Participants and Procedures . . . . . 33
2.6 Statistical Model . . . . . 36
2.7 Findings . . . . . 37
2.8 Implications . . . . . 42

**3 Gender differences in the use of Likert scales in evaluations of educational quality** **47**
3.1 Introduction . . . . . 47
3.2 Theoretical Background . . . . . 50
3.3 Data . . . . . 53
3.4 Empirical strategy . . . . . 56
3.5 Results . . . . . 59

3.6 Conclusion . . . . . 65

**4 Determinants of Vocational School Choice 67**
4.1 Introduction . . . . . 67
4.2 The Dutch vocational education system . . . . . 70
4.3 Stated school preference and travelling time . . . . . 72
4.4 Data . . . . . 73
4.5 Empirical strategy . . . . . 79
4.6 Results . . . . . 81
4.7 Conclusion . . . . . 86

**5 The Challenge of Being Consistent: Implementing New Public Management in Educational Policy 89**
5.1 Introduction . . . . . 89
5.2 Method . . . . . 95
5.3 Annual Departmental Reports (2000-2010) . . . . . 98
5.4 Reports of the Inspectorate of Education in 2000-2010 . . . . . 101
5.5 Reports of the Dutch Education Council . . . . . 105
5.6 Policy focus and (dis)agreement . . . . . 107
5.7 Conclusions . . . . . 111

**6 Conclusions 115**
6.1 Main findings . . . . . 115
6.2 Valorisation . . . . . 117
6.3 Future research . . . . . 123
6.4 Personal note . . . . . 124

**Appendices 125**

**A Rating, ranking and choice 127**

**B Reduced vignette design: the attribute allocation model 129**

**C Power study 133**

**D Descriptive table of survey statements 137**

**E Histograms choice study** **141**

**Nederlandse Samenvatting** **155**

**Curriculum Vitae** **161**

# Voorwoord

Dit boek is mede tot stand gekomen dankzij de begeleiding en steun van een heleboel fantastische mensen.

Lex, wat heb ik de afgelopen jaren veel van je geleerd. Jij hebt me uitgedaagd om verder te denken, te fantaseren over wat er zou kunnen en mogelijkheden te zien in plaats van bezwaren. En terwijl ik me als onderwijskundige en buitenpromovenda soms een vreemde eend in de bijt voelde, gaf jij me altijd het vertrouwen dat ik dit mocht doen en dat het goed was wat ik deed. Ik heb onze gesprekken zeer gewaardeerd en vond het een van de leukste onderdelen van mijn promotietraject. Ik ga straks in mei graag met je wandelen in de 'Sjoene Grub'.

Gerry, ik betwijfel oprecht of ik het zonder jou had gekund. Je stond zonder uitzondering altijd voor me klaar en hebt me met je immer snelle en kordate reacties geholpen de vaart er in te houden. Je bent geweldig. Ik ga onze mailwisselingen over thuiswerken in joggingpak, drop en hazelnootschuimtaart nog missen. We zijn samen nog steeds verbaasd dat het af is. Maar hier ligt het bewijs. Dit werk is ook een beetje jouw werk.

Dan mijn collega's van de Inspectie van het Onderwijs. Bert, bedankt dat ik dit promotieonderzoek mocht doen. Zonder jouw positieve houding in het allereerste begin had ik hier nu niet gestaan. Inspectieleiding, bedankt dat jullie ruimte geven aan mensen die willen promoveren. Inge, je was erbij vanaf het begin, en nu ook weer. Jouw enthousiasme is aanstekelijk en helpt dingen in gang te zetten. Klaas, Geertje, Marianne en Karel, bedankt dat jullie me de ruimte hebben gegeven om mijn inspectiewerkzaamheden voor de bve-sector te combineren met dit promotieonderzoek. Evelien, bedankt voor je hulp bij

de literatuurverwijzingen. Alle collega's van de afdeling Kennis, en in het bijzonder mijn oud-kamergenoten, bedankt voor de prettige sfeer die ik altijd voel als ik het kantoor binnen stap. Mijke, je hebt je als stagiaire ongelooflijk ingezet voor mijn onderzoek. Samen hebben we de veldstudie voorbereid en uitgevoerd en samen stonden we voor zestig jongens van de bouw. Het was fijn en leuk om dit samen te doen.

Hans Heijke en Loek Nieuwenhuis, bedankt voor jullie deelname aan mijn leescommissie. Edith, met jou heb ik bij het Max Goote Kenniscentrum de eerste stapjes in het onderzoek gezet en vanaf toen ben je altijd een inspirerend voorbeeld voor me geweest. Van jou heb ik geleerd dat je niet moet vergeten te genieten. Ik zie ons nog zitten samen met Marlies op het dak van het hotel in New Orleans. Ik vind het heel bijzonder dat je nu in mijn commissie zit.

Studenten, docenten, werkplekbegeleiders, inspecteurs BVE en beleidsmedewerkers van het ministerie van Onderwijs, Cultuur en Wetenschap, bedankt voor deelname aan dit onderzoek.

Mijn collega's in Maastricht wil ik bedanken voor de goede ontvangst als ik weer eens over kwam waaien. Ulf, bedankt voor je spontaniteit, enthousiasme en het samenwerken aan het artikel. You are awesome. Tyas, Steffie, Sylvana, Trudie, Bart en andere collega's van de afdeling Algemene Economie bedankt voor jullie hulp en feedback, de onderwijslunches en de gezelligheid. Louise, dank je wel voor je feedback en vooral ook de kletsuurtjes, ik hoop dat we elkaar blijven zien.

Tenslotte wil ik mijn vrienden en familie bedanken. Kim en Maarten, mijn rotsen in de branding. Jullie hebben me iedere dag weer het gevoel gegeven dat ik goed bezig was en trots mocht zijn op wat ik deed. Jullie zijn schatten. Onze momentjes met z'n drieën op de bank zijn voor mij heel waardevol. Ik had ze voor geen goud willen missen. Ik ben blij dat jullie mijn paranimfen zijn. Roald, bedankt voor alle logeerpartijtjes in Maastricht, het samen koken en kletsen. Het was erg gezellig en hielp mij mijn plek te vinden in Maastricht. Wietske en Anneke, jullie zijn toppers. Bedankt voor de gezelligheid. Noortje, Moniek, Loes en Roos, fijn om jullie om me heen te hebben en de promotie-ervaringen te delen. Moonika en Flora, met jullie ben ik begonnen in de onderwijskunde, en kijk eens waar we alledrie staan, ik ben trots op ons. Boukje, bij jou mocht ik paranimf zijn, en nu zijn we allebei

*dottore*, wie had dat ooit gedacht. Ard en Frances, bedankt voor de heerlijke schrijfweken in Italië. Maaike, liefste achternicht van me, ik ben blij dat wij elkaar altijd weer vinden en opzoeken. Het verveelt nooit. Maaike, we kennen elkaar al bijna dertig jaar, bijzonder hè, op naar de volgende. Wouter en Luuk, geweldige vrienden van me, ik word altijd vrolijk van jullie. Aams, je weet, je bent de zus die ik nooit had. Tell mama's en Nicoline, bedankt voor al die jaren heerlijk zingen. Dat doet de mens goed.

Annemiek, je hebt zo vaak voor ons klaargestaan, zeker in het afgelopen jaar. Dankjewel daarvoor.

Pap, wat jammer dat je er niet meer bij bent, ik hoop dat je dit alles kunt zien vanaf je cloud. Mam, Erik en Mark. Ik ben heel blij met jullie en trots op wie we zijn en waar we nu staan met z'n vieren. Lieve Mattia, wat leuk dat je er bent. Je bent nu al zo lief, ik ben benieuwd wat er allemaal nog komt. Lieve Bolke, dankjewel voor je steun, je trots en de ruimte die je me hebt gegeven. Ze zeggen wel eens dat je promoveren een beetje met z'n tweeën doet. Dat geldt ook voor ons. Niet alleen heb je geholpen met de totstandkoming van dit boek en inhoudelijk bijgedragen aan de artikelen, je hebt ook geduld moeten opbrengen voor een toch wel lang traject. Gelukkig komt aan alles een eind en is er nu weer tijd voor andere dingen. Zanzibari!

# Chapter 1

# Introduction

The importance of vocational educational training (VET) is increasingly acknowledged. Countries need to compete in terms of the goods and services they provide and therefore need a highly skilled labour force, with a range of technical and professional skills complementary to those high-level skills associated with higher education (Cedefop, 2010). The OECD states that VET is central to economic growth and development (Field et al., 2009).

There are concerns about the quality of VET. Too many people in Europe's workforce have low levels of qualification. Unemployment, especially among young people, remains high while, at the same time, some countries and sectors lack skilled workers (Field et al., 2009). In the Netherlands, the Inspectorate of Education (Inspectie van het Onderwijs, 2014) states that vocational education in terms of quality of process, quality of examination and output, has remained at the same level over the past ten to fifteen years. Governments are therefore interested in stimulating the quality of vocational education and improving vocational programmes (Baethge et al., 2006; Seyfried, 2007; European Union, 2009).

Educational quality, however, is a relative concept: it is subjective to the user of the term and the circumstances in which it is involved (Harvey and D. Green, 1993). People differ in what they consider quality and what is important to one does not have to carry the same weight for someone else. Besides that, the actors in the field of education, such as students, teachers

and employers, have knowledge about the vocational education practice that the government does not have at its disposal. Governments need to give these actors room for manoeuvre. The ability of the government to regulate the quality of education is therefore restricted.

## 1.1 Aim

The overall aim guiding this dissertation is to get a better grip on the enhancement of VET quality from a government perspective, given the presence of a variety of stakeholders and their differing values. To achieve this we quantify and compare the values of VET stakeholders and relate this to policy and practice.

Since the late 80's, the Dutch government gradually changed its policy from a model of detailed and direct departmental interference with educational processes of schools to a much less prescriptive and more output-oriented model (Karsten and J. Meijer, 1999). This new model can be characterized as New Public Management (NPM), a reform that influenced many countries worldwide (Braun and Merrien, 1999; Leisytë and Kizniene, 2006; Byun, 2008; Christensen and Laegreid, 2007). NPM reforms aim to make the public sector more effective through a withdrawing government and the introduction of private sector aspects such as market mechanisms (Fusarelli and B. Johnson, 2004). In the Netherlands, one of the key features of NPM in education is the changing relationship between the government and schools. The Dutch government monitors quality by means of output indicators. Schools in their turn gain more autonomy and are free to decide how they want to design educational practice, as long as they meet the output criteria. Furthermore the Dutch government explores the potential stimulating effect of education market mechanisms on the quality of schools (Onderwijsraad, 2001a). One of those mechanisms is school choice. Hoxby (2002) argues and provides evidence for the fact that, if choice is free, the customers (parents or students) will choose the school that they value most, i.e. the school they consider to have the highest quality. School choice then gives schools an incentive to improve quality in order to maintain or increase student enrolment: if school quality

affects school choice behaviour, schools have incentives to provide high quality education in order to attract students and, consequently, funding.

A complicating factor to New Public Management is that the national goals the government wants to achieve do not necessarily equal the goals of individual students, schools or other stakeholders. All different actors in the vocational education arena have their own set of values and interests, which may sometimes be in conflict (Leney and A. Green, 2005; Clarke and Winch, 2007; Taylor, 2009; Cedefop, 2010). The government is therefore facing a trade-off between regulating education in order to increase quality and achieve national aims and on the other hand leaving room for the actors to act. Insights into the values that stakeholders attach to different aspects of education and the way these values are reflected in their behaviour can help the government to decide how to approach this trade-off.

## 1.2 Research Questions

For the purpose of this dissertation we define quality as the set of values the actors attach to different attributes of education and on which they base their (intuitive) judgements. We first want to know what these values are and how the values of different stakeholders relate to each other. In the chapter 2 of this thesis we therefore quantify a set of stakeholder values and investigate to what extent they differ. Since we expect the values to be interrelated, we use a conjoint approach for measuring values. In chapter 3 we compare and contrast this method to a more traditional Likert scale attitude approach.

In the second part of this thesis we investigate to what extent values towards aspects of education influence the behaviour of stakeholders. We hereby focus on students and their school choice behaviour, and elaborate on the potential of vocational school choice to stimulate the quality of schools through the education market it creates (chapter 4). Secondly, we investigate how the government has dealt with pursuing their own objectives while keeping their distance in the past (chapter 5). In the conclusion of this dissertation we provide implications of our findings for future policy and research.

The central question of this dissertation is:

*How can the government use stakeholder values and related behaviour to enhance and regulate the quality of VET?*

The research questions are: 1) How do different stakeholders value quality attributes of a VET programme; 2) To what extent are the values reflected in the actual choices students make and do these choices have the potential to increase school quality by means of market mechanisms; 3) Do Dutch vocational education policies reflect the aims of NPM (less prescriptive and output-oriented) and to what extent have these policies been responsive to the values of school representatives.

## 1.3 Approach

In order to answer our research questions, we conducted a field study in which we asked different stakeholders what they find important in a vocational programme. We used conjoint analysis, a method that uses trade-offs to elicit people's relative values towards attributes of a product or service. In our application of the conjoint technique, the respondents each valued fictitious vocational programmes and (by that) implicitly weighted different attributes of education quality.

Chapter 2 presents the results of the conjoint study and shows how students, teachers, workplace training supervisors and policymakers value quality attributes of VET and to what extent they differ. The nine attributes are 'employers' appreciation of students', 'graduation rate', 'obtained language skills of students', 'mentoring hours in workplace learning', 'challenge', 'structure of the programme', 'students' appreciation of teachers', 'schooling hours', and 'attention to civic education'. We find much variation across stakeholders in the value assigned to these attributes. Teachers focus on the attributes they can connect to in their own classroom activities such as a challenging curriculum and structure whereas policymakers emphasize the outcomes of education such as the graduation rate. The extent to which the stakeholders agree on the importance is very different for each attribute: the appreciation of employers and challenge are highly valued by all stakeholders, whereas other attributes, such as the graduation rate and structure, point to conflicting interests.

In Chapter 3, we link the weights that the students attached to the conjoint attributes to their scores on a set of Likert scale survey statements that was also part of the field study. Our assumption is that the conjoint scores reflect students' values better than the survey because it uses concrete attributes and realistic situations. The conjoint scores therefore function as anchors in our study to evaluate the use of the Likert scale. We investigate whether a gender difference we found in the survey was a true difference in attitude or mere a result of a different use of the response scale. We find that the intervals between the grades of a Likert scale that are implicitly used in the process of answering a question have different sizes for male and female students. Female students with a positive attitude towards graduation often choose generously, their share of grade 5 is higher than that of the male students with a positive attitude. Male students with a negative attitude towards graduation tend to emphasize this and make a faster transition to the lower scores. Our findings suggest that researchers should be careful drawing conclusions from gender differences in the outcomes of studies with Likert scale questions.

In chapter 4 we investigate how the values of students are reflected in the actual choices students make and to what extent these choices have the potential to increase school quality by means of market demand. We use enrolment data to investigate determinants of school choice in Dutch vocational education. We find that schools scoring high in student satisfaction scores attract more students. Higher graduation rates, on the other hand, are related to a lower probability of enrolment. This reverse effect deserves attention, particularly since graduation rate is an important indicator for the government to monitor the quality of vocational programmes. We further find that school preferences are heterogeneous across different fields of studies and socio-economic backgrounds, indicating that, while vocational schools might have an incentive to improve their quality, these incentives may be more salient for some programmes and socio-economic groups than for others.

In chapter 5, we consider Dutch policy against the background of the new public management (NPM) steering concept and investigate to what extent the Dutch government actually incorporated aspects of NPM in its vocational education policy We use a comprehensive review of policy documents from the period 2000-2010. Furthermore we use the field study to compare the answers

of the government (policy makers) and representatives of the schools (teachers) and investigate on what points there are agreements or conflicts of interest. We find that the influence of NPM is evident in vocational education policy in the Netherlands. Several policy documents reflect attempts of the government to create more distance and leave more autonomy to the schools, and there is a strong tendency towards output measures. We also see inconsistencies. The government is ambiguous because it introduces policy programmes that focus explicitly on educational processes or on topics that are already highly valued by schools themselves, regardless of their performance on output indicators. We put forward that a better distinction of policy progra1ms that strengthen or hinder the NPM features can help to more effectively stimulate the quality of education.

In chapter 6 we distinguish different ways for the government to use the insights into the values of stakeholders. 1) The government can broaden its definition of quality with indicators that are highly valued by other actors in the field and that are not yet part of their monitoring system. 2) The government can pay focused attention to subjects that display tensions or resistance in order to be more effective in pursuing its goals. 3) The government can step back when actors in the field share the national interests. We further conclude that the conjoint technique provides a good complement to existing methods that evaluate educational quality. The measurement of the relative value of different attributes offers a different perspective on education: education as a compromise resulting of different trade-offs instead of education as a sum of requirements.

# Chapter 2

# Quantifying Stakeholder Values of VET Provision in the Netherlands[1]

## 2.1 Introduction

Vocational education and training has many stakeholders, each with their own values and interests. While the role of each of these stakeholders for the quality of VET is unquestioned, their values and interests are likely to be distinct, and sometimes at conflict (Taylor, 2009; Leney and A. Green, 2005; Clarke and Winch, 2007; Cedefop, 2010). This can cause tensions and imbalances that ultimately hamper the quality of education. The aim of this study is to make the diversity of the values and interests within and across groups of stakeholders more tangible, first by quantifying the value that stakeholders assign to several quality attributes of VET, and second by investigating to what extent VET stakeholders differ in these values.

Besides providing students with the theoretical and practical tools necessary to execute their jobs, Dutch law also expects VET to contribute to

[1] An earlier version of this chapter was published as a journal article in *Vocations and Learning* (Sluis, Reezigt, and Borghans, 2014).

students' basic skills and civic functioning. There may be general consensus regarding the aspects that play a role in these goals, and thus in the quality of vocational education, but significant differences of opinion can occur when it comes to ranking these aspects. What could be an improvement to one goal could potentially be harmful for one or more other goals. VET provision, therefore, represents a compromise resulting of different trade- offs. In order to establish a successful and effective VET programme, it is important to know how stakeholders value different aspects of VET quality and to what extent their opinions differ.

In order to quantify stakeholder values, we applied a conjoint approach based on vignettes, in which respondents were asked to rank sets of four hypothetical programmes. Each programme is described by one vignette, which centres on nine values; one for each of nine attributes we selected as VET quality measures. The respondents - students, teachers, workplace training supervisors and policymakers - had to rank the four programmes in order of perceived quality. This way, they had to make an explicit trade-off between different attributes of the quality of vocational education. By means of the respondents ranking the vignettes, we were able to identify the relative importance of the attributes. The values that were assigned to the attributes 'a challenging curriculum' and 'employers' appreciation of students' were similar across the four groups of stakeholders, yet the values that were assigned to the remaining attributes differed substantially between stakeholders. We hold that the Dutch government as well as VET colleges can benefit from the quantification of values to effectively regulate VET.

This study contributes to the existing literature on the role of stakeholders in VET quality. In his framework for the evaluation of VET, Fretwell (2003) discusses various aspects that play a role in VET quality. He mentions a wide range of aspects that contribute to VET quality and distinguishes aspects concerning the economic impact, international standards, social outcomes and educational inputs of VET. However, he also indicates that the goals and objectives of different stakeholders vary, and that their needs can therefore diverge. For example, for a student, one of the preferred outcomes of a VET programme could be a broad range of competencies for lifelong learning, whereas for an employer it could be the delivery of employable workers on the short-term.

Clarke and Winch (2007) mention the possible tension that can arise when the needs and goals of stakeholders diverge, and Westerhuis (2007) describes this as a matter of multi-ownership that vocational education is faced by: the plurality of goals is reflected by the plurality of stakeholders. Vocational institutes therefore become the arenas where conflicting interests come to the fore and as a result, these institutes must define a modus operandi in order to deal with the variety of stakeholders and their interests. To be able to do this, vocational institutes need information about the values and interests of their stakeholders. This study quantifies these values and interests.

The positions and power of different stakeholders can vary greatly between countries. While in some countries students are educated locally within companies (e.g. in the USA, UK, Australia) and in other countries within national educational institutes (e.g. in France, Sweden, Finland), the Dutch system is based on a mixed model. There is a public system of educational institutes, with a large influence of social partners in the labour market, and apprenticeships are a central part of the schooling system (Akkerman and Bakker, 2011). Yet another example is Germany, where VET is organized primarily as an apprenticeship system, in which students work as professionals in an organization while they learn in school for one day a week. The way VET is embedded in a country inevitably has an effect on the values and needs of stakeholders. Yet, the notion of stakeholders with legitimate but sometimes conflicting values is relevant for many different national systems. Taylor (2009) for example finds that Canadian school-work-transition partnerships often reflect tensions among stakeholders that must be addressed in order to improve the learning affordances of youth. Seyfried (2007) argues that the involvement of stakeholders and knowledge of their particular goals and objectives are preconditions for determining VET quality in all European VET systems. He further suggests that it would be useful to compare different models for stakeholder involvement and to define quality criteria for stakeholder participation. In conclusion, the involvement of stakeholders and their possibly conflicting values is a recognised aspect in discus- sions on VET quality. This study uncovers conflicting values regarding certain attributes of VET quality, which should be taken into account by the government and VET colleges in the regulation and the design of VET provision.

This chapter is structured as follows. We begin by introducing conjoint analysis. We continue with identifying significant indicators of Dutch vocational programmes, and briefly discuss the three different goals of VET that were used to determine which attributes were to be included in our study. Next, the method, the design of the study, the construction of the vignettes and the statistical approach are described. We then present the results of this study. This chapter concludes with a discussion on the study's implications.

## 2.2 Conjoint analysis

> *Imagine you are buying a new car. You probably have a rough idea of what you want to pay for the car. When you see the options, however, there is a car that exceeds the price you had in mind, but which has some really nice features. Perhaps you are willing to pay a bit more now that you have seen the extra features you did not know about in advance?*

Conjoint analysis (Batsell and Louviere, 1991; Neil, 1992; Leslie, Ettenson, and Cumsille, 2000; Wolf, 2000; Jeffries and Maeder, 2005; Biesma et al., 2007), an analytic framework popular in marketing and consumer behaviour research, is based on the assumption that decision-making involves the simultaneous evaluation and combination of information in product attributes. The conjoint approach models the decision environment by confronting a respondent with choices that are close to real-life choices. As such, the conjoint approach is thought to model decision-making more realistically than the more traditional survey methods (P. E. Green and Srinivasan, 1990). "Just like in the real world, no product or service contains all of the best or the worst characteristics, and it is the respondent who decides which characteristics are important and which are not" (Biesma et al., 2007, p. 377).

The example above shows that one feature of a product's price may interact with the other features. Conjoint technique takes these interactions into account and estimates the importance of each separate feature, in interaction with the other features. The features the respondent is easily willing to give up get the lower weights and the features that are important to the respondent get the higher weights. Some people never give up on a feature (always

a Toyota, no matter what) or will, for example, never exceed their maximum expenditure. In this case the weight of this feature will be very high. Conjoint analysis thus transforms subjective responses to the product as a whole into estimated parameters of each feature of the product.

The foundations of conjoint analysis are rooted in the area of mathematical psychology, in which information processing and complex decision-making are studied. It became a widely applied technique for consumer research, as it is a useful method for testing customer behaviour towards new products (P. E. Green and Srinivasan, 1978). P. E. Green and Srinivasan (1978) for example asked respondent to choose among different tires, taking into account brand, lifetime, colour and price. In the health care sector conjoint analysis is used to study the importance of quality-, access- or price-attributes of health care services (Hill et al., 2005; Leslie, Ettenson, and Cumsille, 2000; Pavlova, Groot, and Merode, 2004; Ryan, 1999). Examples of the use of conjoint analysis in the education sector can be found mostly in the area of the labour market. Beek, Koopmans, and Praag (1997) conducted a survey in which employers in the Netherlands were asked to select applicants. The survey uses descriptions of fictitious lower skilled job seekers. (Biesma et al., 2007) used conjoint analysis to estimate employers' preferences for key competencies of master level Dutch graduates entering the public health field. Özmen, Yasit, and Sezgin (2006) used conjoint analysis to determine the preferences for MBA programs, varying universities, program specifications and tuitions.

In a conjoint study, a hypothetical product or service is defined in terms of a few important attributes. It is then assumed that a respondents' decision about such a product or service is based on a trade-off among these attributes. Instead of valuing the attributes separately, the respondent simultaneously evaluates and combines the information on multiple product-service attributes. The simultaneous valuation of characteristics allows interpretation of the results in terms of their relative importance (Biesma et al., 2007). It is therefore possible that a low value on some attribute can be compensated for by a high value on some attribute (P. E. Green and Srinivasan, 1978). The researcher can not obtain this information when the attributes are being evaluated one at the time.

Another special feature of the conjoint technique is that respondents perceive the conjoint approach as less obtrusive than direct questions. M. Shamir and J. Shamir (1995) replaced product attributes with values, and asked their respondents to express preferences among different scenarios that embodied different value combinations. Because of their sensitive subject (the Israeli-Arab conflict) they chose a conjoint approach in where respondents were not forced to choose among the values or rank or rate the separate values, and could continue to appreciate all values equally.

In this study we focus on the trade-off between different educational goals. The objective of conjoint analysis is to determine which attributes are most influential in decision- making processes. Accordingly, we utilised conjoint analysis here to understand respondents' implicit definitions of education quality. In the application of conjoint analysis in this study, participants were presented with a series of VET programmes (the vignettes), between which they had to choose. A vignette is a short description of a hypothetical character or product to which the interviewee is invited to respond. Researchers and educators have found vignettes to be very effective because they provide a useful focus and stimulus for discussion and they reflect real-life contexts and problems (Jeffries and Maeder, 2005). Because VET faces a multi-ownership of education, we presented the vignettes to different VET stakeholders, to compare their values.

## 2.3 The Identification of Significant Indicators of Quality of Dutch Vocational Programmes

In order to create the vignettes, it was first necessary to identify an extensive set of aspects that might affect the quality of a vocational programme. In the Netherlands, senior secondary vocational education and training is organised within 70 vocational colleges and agricultural colleges. These colleges offer study programmes at four educational levels of increasing difficulty. The lowest level is assistant training (1) and the highest level is middle management and specialist training (4). Level 4 prepares students either for working or

studying in higher professional education and it is equivalent to the European Qualification Framework level 4/5 (Sturing et al., 2011). In 2010, more than 485,000 students aged sixteen and older were enrolled in a vocational study programme. Students can choose between a school-based learning route and a work-based route in which work and study are combined. The colleges offer programmes in three sectors: technology, commerce/administration, services/health and agriculture. In the past years, Dutch vocational colleges, following government policy, gradually adopted a competence-based qualification structure (H. Biemans et al., 2004). This changed a lot in the design of the curricula and instructional methods for vocational study programmes. The transition sparked discussions on the quality of VET, especially because the transition to competence-based education did not go smoothly in the Netherlands (Sturing et al., 2011).

The Dutch vocational education act distinguishes several aims of VET (Adult and Vocational Education Act 1995, article 1.2.1) and also in political documents different aims of VET recur. For this study we identified three of these aims that concern individual learners as well as the national system. A first aim of VET is to meet the demands of the labour market; in other words, equipping students with the theoretical and practical tools needed to function within their various occupations (Clarke and Winch, 2007; Westerhuis, 2007). For most of its history, vocational learning has been an on-the-job activity, largely integrated in the labour market. Gradually, vocational learning became absorbed into formal education systems (Hager, 2007). Today, in several countries, VET colleges serve both the purpose of preparing students for working life and the purpose of preparing them to face the challenges of the labour market. Since competence-based education and training is increasingly widespread, the focus of VET shifted towards the skill sets necessary to function in a specific work environment (Arguelles and Gonczi, 2000; Brockmann et al., 2008; Cedefop, 2010). Which skills have the highest returns and therefore warrant the most attention within the vocational curriculum, is subject to debate. Some scholars emphasise the importance of vocational competencies, referring to the specific skills needed in an occupation, whereas others emphasise the importance of generic competences, such as problem-solving, communication and the ability to work in teams, or basic skills such as read-

ing, writing and mathematics (Mane, 1999; Stasz, 2001; Hayward and Fernandez, 2004; Heijke, Meng, and Ris, 2003; Carneiro, Crawford, and Goodman, 2006; Gonon, 2008). Furthermore, it is widely believed that the transition from theory to professional practice is improved when students already have some practical experience (Klink, 1999; Wesselink, Jong, and H. J. a. Biemans, 2009). At VET colleges, workplace learning periods often replaced on-the-job learning as part of the vocational programme.

A second aim of VET is to improve the national educational performance. Governments increasingly regard VET as an important determinant in the positioning of their countries in an internationally comparative perspective, rather than merely as access into the labour market (Shaw, 1999; OECD, 2009; Leney and A. Green, 2005). This has several consequences for VET colleges. Indicators such as completion rates and unemployment rates are used to assess the quality of VET systems (European Parliament and Council 2009). These indicators stimulate national VET systems to incorporate international performance levels in their VET curricula. In order to reach a high level of education performance, VET colleges must educate students to their fullest potential, making sure that students complete the programme and obtain qualifications. Vocational colleges are required to meet an increasing number of requirements regarding the organisation of programmes (Clarke and Winch, 2007; Westerhuis, 2007) and the professional development of VET teaching (Shaw, 1999; Stanton and Bailey, 2001; Cort, Härkönen, and Volmari, 2004, see,for example, ). Finally, utilising international assessment programmes such as the Programme for International Student Assessment (PISA) can lead to an increased focus on standards of literacy and numeracy in vocational education (OECD, 2001).

A third aim ascribed to VET is to prepare students for society, in education literature often referred to as civic education. Civic education focuses on the awareness and knowledge of rights and duties in society and is related to civic values such as democracy and human rights, equality, participation, partnership, social cohesion, solidarity, tolerance of diversity and social justice. In the late 1980s, political leaders across the world came to realise that changes in vocational education were required to prepare young people for a changing society (Torney-Purta et al., 2001). The concept of civic education is now

increasingly widespread, and has even resulted in the publishing of a series of recommendations that have been adopted by the member states of the Council of Europe (Eurydice, 2005). In the Netherlands, the contribution of education to citizenship has always had great value. One of the major arguments for including vocational education in a national education system was that vocational education is about personal development, as well as social change and occupational mobility. The ways in which education should contribute to citizenship and what role the state should take, however, is an ongoing dispute (Westerhuis, 2007).

These three aims focus on the outcomes of VET, but they also imply certain educational processes that lead to these outcomes. Schools are partially obliged to implement certain educational processes, but also partially free to organise and design their VET curriculum. The ideas of different stakeholders about what comprises a good curriculum can, however, be distinct and even conflicting. Dutch VET programmes therefore represent a compromise between different aims and different stakeholder values. The vignette-based conjoint approach explicitly addresses this compromise and it is therefore an interesting method to give insights into these processes.

This study is embedded within a Dutch context, and as many other authors have argued, the approach to and development of VET tends to be society-specific (extensively described in: Vocational Education. International approaches, developments and systems, 2007). The vignette attributes that were specifically designed for the Dutch context may therefore be insignificant or have a very different meaning in other countries and VET systems. Furthermore, the examination of different stake- holder views on the attributes of vocational education is explicitly relevant to the Netherlands, because the Dutch government takes a supervisory and moderating role, leaving room for other actors to perform (Westerhuis, 2007). In the United Kingdom, for example, vocational education is organised largely without state involvement and it is the concern of companies and individuals involved (Pilz, 2009). Many companies restrict themselves to providing partial training for tasks specific to the company. The position of the British stakeholders in VET and their capacity to influence is therefore completely different, and not centred around vocational colleges, as is the case in the Netherlands. Yet, many countries see

VET as a means of improving competitiveness, employment levels and growth as well as raising levels of education and social cohesion more generally (Leney and A. Green, 2005). Achieving these goals requires the commitment of various groups affiliated with education, each with their own interests. We therefore believe that quantifying stakeholder values is relevant for other countries too.

## 2.4 Setting up the conjoint study

Three steps were followed to set up the vignette-based conjoint study:

1. The operationalisation of a set of indicators into vignette attributes
2. The assignment of levels to the vignette attributes
3. The construction of the vignettes

In the following section we describe each step.

### 2.4.1 The Operationalisation of the Indicators into Vignette Attributes

Based on the three aims of VET, we selected nine attributes that are significant to the quality of VET programmes. Both the outcomes as well as the processes are of great relevance to stakeholders when asked to decide on preferred educational programmes. Therefore, in addition to product attributes, we selected process attributes that are both relevant in today's Dutch VET and also reflect the aims of VET. The final selection led to a set of three product attributes and six process attributes. Naturally there are many more potentially relevant attributes of VET than reflected by the set listed below. However, the vignette approach works best with a limited set of attributes. If the respondents are exposed to numerous different attributes for them to evaluate, there is a definite risk that they will become weary of the task and that this will prevent them from completing the task correctly (Alriksson and Oberg, 2008). In a pre-study among Dutch VET students, the size and content of the vignettes were considered manageable.

## Outcome Attributes

### Employers' Appreciation of Students

The first and most prominent aim of Dutch VET is to meet the demands of the labour market. VET colleges are responsible for this but work in close collaboration with companies. A direct way to monitor whether companies are indeed satisfied with the students that complete VET is to ask them (Hövels, K. Meijer, and Hoogendijk, 2011). We operationalised this outcome in the satisfaction of employers with students' competencies.

### Graduation

In the Netherlands, a diploma is considered an important outcome of vocational education. It is an explicit requirement for schools to reach high levels of graduation: the Dutch Education Inspectorate visits vocational colleges that do not reach the minimum levels of graduation. In 2010, 70 % of all Dutch vocational students got a diploma by the end of their studies (Inspectie van het Onderwijs, 2011a).

### Language Skills

In 2010, the Dutch government introduced a law that contains reference levels for literacy and numeracy through primary, secondary and vocational education, as well as central examinations at the end of certain VET programmes. Because of the limited choice of attributes we included only literacy in the study. We operationalised the language skills as the hypothetical average mark that is reached by students of a VET programme.

## Process attributes

### Civic Education

The third outcome concerns civic competencies. Since 2006, civic education has been part of the vocational curriculum. However, it is at the time of this study still unclear how it should be incorporated into the vocational curriculum and what knowledge a student should have at the completion of a programme

regarding civic education. Therefore, although civic education is often referred to as an outcome of VET, we included it in this study as a process attribute. This enabled us to find out whether groups actually regard this attribute an indispensable element of the vocational curriculum.

**Schooling Hours**

Although the law prescribes a minimum number of schooling hours for VET programmes, not all schools provide enough hours of schooling for their students (Inspectie van het Onderwijs, 2010a). Students complain about the low number of schooling hours. Only half of the students that participated in a large survey were satisfied about the number of hours they spent at school on average (JOB, 2010). The average number of hours spent at school is 20 h per week.

**Challenge**

In vocational education, as opposed to academic education, creating challenging tasks for students is not a common notion. A topic in the Dutch education debate is that education in the Netherlands should be more challenging (Onderwijsraad, 2007). One in five VET students say in a survey that looking back, the level of difficulty of their VET programme was too low (Meng and Thor, 2010). We therefore incorporated challenging tasks as part of the vocational curriculum, as opposed to simple tasks.

**Structure**

In an evaluation of the introduction of competence-based education in the Netherlands, (Meijden et al., 2010) identified some problems as well as positive effects. One of the attributes regarded as crucial was the structure of the programmes, referring to, for example, clear timetables and transparent summaries of lesson content. Allowing students too much freedom was not seen as stimulating. We used the notions 'structure' and 'freedom' as opposites relating to the organisation of the programme.

#### Guidance by School in Workplace Learning

In the Netherlands, apprenticeships are a central part of the vocational schooling system (Akkerman and Bakker, 2011). A study on the effectiveness of workplace learning in Dutch vocational education revealed that the guidance that schools provide during the periods of workplace learning was often insufficient (Algemene Rekenkamer, 2008). We therefore operationalised this attribute into hours spent by the school on the mentoring of workplace learning.

#### Student Appreciation of Teachers

Teachers inevitably are a determining factor in the quality of a VET programme. Dutch vocational students evaluate their teachers biannually in a national survey. The opinion of students is gradually gaining importance and is used for the evaluation of VET colleges and programmes. One of the questions in the survey is, 'Do you appreciate your teachers' (JOB, 2010). We operationalised student appreciation of teachers with a mark.

### 2.4.2 The Assignment of Levels to the Vignette Attributes

A following step in the vignette study was the assignment of levels to the different attributes. The levels of the attributes had to be realistic and informative, and the range of levels had to provide enough variation while remaining narrow enough to make competitive choices (Biesma et al., 2007). The vignettes consist of a combination of attribute levels. Each extra value therefore means a doubling of the number of possible vignettes and a decrease in the power of the method. As we opted for a relatively high number of attributes, we kept the number of levels low. Each attribute in the vignette study therefore has two levels, with the exception of three attributes: 'graduation rate', 'schooling hours' and 'mentoring hours provided by school in workplace learning'. Because these attributes are used in detail in the quality assurance of schools, we were interested in the consequences of the different steps for the prioritising done by the respondents. For example, is the transition from 15 to 20 schooling hours per week as important as the transition from 20 to 25 h?

The strategy behind setting levels is to select levels that realistically mirror what exists in educational practice, while still representing meaningful differences to the participants. In the numeric cases we chose the levels by investigating practice. The average and deviations of the number of schooling hours, for example, was derived from a survey that was carried out by vocational students (JOB, 2010) and the graduation rate was based on the national averages of VET students (Inspectie van het Onderwijs, 2011a). Table 2.1 shows the nine programme attributes and corresponding levels.

### Try out study among students

In order to verify whether the vignettes were understood correctly, we performed a try-out study among Dutch vocational students. Eleven students from the programme 'social services' participated in the pilot study. After the students were informed about the aim of the study, we asked them to finish the conjoint task and to complete the survey. Consequently we had a group-discussion about the survey. This discussion made clear that the vignette assignment was manageable for the students. The students even thought it was 'a fun experience'. Students also reported to have liked the variation in the survey.

Table 2.1: The programme attributes and levels

| | | Level 1 | In between value | Level 2 |
|---|---|---|---|---|
| O1 | Employers' appreciation of students | 6.5 | - | 8.0 |
| O2 | Graduation Rate | 6 out of 10 | 7 out of 10 | 8 out of 10 |
| O3 | Language skills obtained by students | 6.5 | - | 8.0 |
| P4 | Attention to civic education | No | - | Yes |
| P5 | Schooling hours | 15 | 20 | 25 |
| P6 | Challenge (description of the task) | Easy | - | Challenging |
| P7 | Structure (description of the programme) | Freedom | - | Structure |
| P8 | Mentoring hours provided by school in workplace learning | 1 hour | 5 hours | 10 hours |
| P9 | Students' apprecation of teachers | 6.5 | - | 8 |

Note. O = outcome and P = process

### 2.4.3 The Construction of the Vignettes

The levels were assigned to the vignettes according to pre-set rules, which maximised variation in each set. Appendix B provides an overview of this value allocation model. The attributes of each first vignette were assigned randomly and formed the base for the second, third and fourth vignette.

The size of the choice set (the number of vignettes presented to the respondent per ranking task) ideally mimics actual choice situations as closely as possible. Incorporating four to six vignettes is considered feasible for a choice experiment (Batsell and Louviere, 1991). The respondents had to rank the four programmes in order of perceived quality. Other elicitation method in conjoint analysis are rating and choice. We selected ranking, since this challenges respondents to make an explicit trade-off between different attributes of the quality of vocational education. In rating it is still possible to value two vignettes equally, in ranking the respondent really has to prefer one vignette above the other. Choice also implies a trade-off but yields less data than the other two options. More information about the three elicitation options in conjoint analysis can be found in appendix A. In order to increase the chance on significant results we conducted a power analysis for different sample size scenarios. The power analysis can be found in appendix C.

Figure 2.1 shows an example of the vignettes that the participants saw on their computer screens. The question above reads: 'Which programme matches most with your idea of quality? Rank the programmes according to your preferences'. On the left, the nine attributes are shown. Participants were shown four sets of four vignettes each on their screens. The respondents were asked to rank the vocational programmes using the bottom four blocks with options ranging from 1 (the best) to 4 (the worst).

## 2.5 Participants and Procedures

The study was carried out in the Dutch vocational system. Four groups were selected as the main actors in this system: students, teachers, workplace training supervisors[2] and policymakers (as representatives of the state). Students,

[2]By this we mean supervisors from the companies, not from the schools


Which course matches most with your idea of quality? Rank the courses according to your preferences.

| | Course 5 | Course 6 | Course 7 | Course 8 |
|---|---|---|---|---|
| **Attention to civic education** | Yes | No | No | No |
| **Schooling hours** | 20 | 15 | 25 | 25 |
| **Description of the tasks** | Easy | Easy | Challenging | Challenging |
| **Diploma result** | 7 out of 10 | 6 out of 10 | 8 out of 10 | 6 out of 10 |
| **Description of the course** | With a lot of freedom | With a lot of structure | With a lot of freedom | With a lot of structure |
| **Guidance hours in workplace learning** | 1 hour | 10 hours | 10 hours | 5 hours |
| **Language skills students** | 8.1 | 8.1 | 7.9 | 6.4 |
| **Students' grades for teachers** | 6.5 | 6.5 | 8.1 | 7.9 |
| **Employers' grades for students** | 7.9 | 6.6 | 8.0 | 8.0 |
| **Your choice:** | ○ 1 - The best<br>○ 2<br>○ 3<br>○ 4 - The worst | ○ 1 - The best<br>○ 2<br>○ 3<br>○ 4 - The worst | ○ 1 - The best<br>○ 2<br>○ 3<br>○ 4 - The worst | ○ 1 - The best<br>○ 2<br>○ 3<br>○ 4 - The worst |

Figure 2.1: Original example of four vignettes that participants saw simultaneously on their screens

workplace training supervisors and the state are often explicitly considered stakeholders of VET (F. D. Vijlder and Westerhuis, 2002; Westerhuis, 2007; Hooge, Sluis, and F. d. Vijlder, 2004). Teachers are less often considered to be official stakeholders but as shapers of VET quality instead and therefore regarded extremely important actors (Cort, Härkönen, and Volmari, 2004). Each group has a different viewpoint on VET quality; students are the receivers of education, teachers are responsible for working towards the goals set for the students, workplace training supervisors need well-educated employees and VET policymakers construct the framework for VET.

It is expected that the groups described above take different views of the attributes described above. Dutch colleges for vocational education and training offer occupations in three sectors: business, technology, agriculture and service/healthcare[3]. In each sector, we selected one of the more mainstream programmes (with a large student population) at level 4. Level 4 is the largest educational level in Dutch VET. In 2010, more than half of the VET students had had their education at level 4. Furthermore, it is the level where we expect the highest evaluative capacity from the students. A level 4 programme can be described as a training programme for a skilled worker at middle-management level. The duration of a programme at level 4 is 3 to 4 years. Finally we took into account the gender of the programme population. These conditions led to the selection of the following three VET programmes:

- Social pedagogical studies (Service/health care sector, mainly female)
- Administrative studies (Commerce/administration sector, mixed)
- Construction studies (Technology sector, mainly male)

We gathered data at five vocational colleges. Each programme was visited at three different colleges resulting in nine programmes in the study. Per programme around 35 students, depending on class size, all teachers and at least 10 employers were approached. VET policymakers were approached separately. In total, 334 students, 66 teachers, 77 employers and 54 policymakers[4] participated in this study. The sample is not representative for Dutch VET

[3]The agricultural colleges were not included in this study

[4]18 employees of the Department of Education and 36 vocational education inspectors of the Inspectorate of Education

practice. Table 2.2 summarises the number of respondents per stakeholder group who participated in the study.

A school visit was planned for each programme in the study. Firstly, the schools were asked to schedule one or two hours in a computer room with students (at least 30) of the programme in question. Secondly, the schools were asked to prepare a list of 10 workplace training supervisors that could be contacted. The teachers could participate regardless of their subject of teaching. During the scheduled hours at school, the research team gave students a general introduction to the character of the study and they were asked to complete the task immediately. Teachers and workplace training supervisors were approached by e-mail or letter, which included the web address of the survey and a unique login code. A few workplace training supervisors were contacted by telephone because they had not provided an e-mail address. The school visits took place in April and May 2010. Workplace training supervisors and policymakers were contacted in May and June 2010.

Table 2.2: Sample demographics

| Programme type | Students | Teachers | Workplace training supervisors | Policy makers |
|---|---|---|---|---|
| Social pedagogical studies in % | 30 | 32 | 51 | - |
| Administrative studies in % | 37 | 41 | 26 | - |
| Construction studies in % | 33 | 27 | 23 | - |
| Total | 334 | 66 | 77 | 54 |

## 2.6 Statistical Model

To identify the values that the respondents attached to the programme attributes, we used rank-ordered logistic regression (Marden, 1995). Estimates were obtained using Stata 10's rologit function (see Stata Manual for Rologit). This model interprets the 4x4 rankings assigned to the programmes by our respondents as a rank ordering of choices from a given choice set. The model assumes that respondents rank programmes with a preferred combination of attribute levels higher than programmes with a less favourable combination of attribute levels. For instance, suppose that a respondent faces four vignettes,

vignette A, B, C and D. If he ranks alternative B highest, alternative C lowest and prefers alternatives D over alternative A, then:

$$Q_b > Q_d > Q_a > Q_c \tag{2.1}$$

The model furthermore assumes that the latent quality $Q_x$ of a programme $_x$ is determined by the weight $\alpha$ respondents implicitly add to different levels of the nine attributes, here represented as $O_1$ to $P_9$. As shown in 2.1, the nine attributes used in the study have two or three different values. These levels were valued with 0 and 1, and in case of the three attributes with an in-between value 0.5. For example, for attribute $P_4$ (mentoring hours provided by school in workplace learning), the first value (1 h) was coded 0, the in-between value (5 h) was coded 0.5 and the second value was coded 1. $\epsilon$ represents the random part of the valuation that is not accounted for by the observed attributes.

$$Q_x = \alpha_1 O_1 + \alpha_2 O_2 + \alpha_3 O_3 + \alpha_4 P_4 + \alpha_5 P_5 + \alpha_6 P_6 + \alpha_7 P_7 + \alpha_8 P_8 + \alpha_9 P_9 + \epsilon_x \tag{2.2}$$

The regression analysis leads to estimates of the parameters of attributes $O_1$ to $P_9$. The coefficients indicate, for each group separately, the relative ranking of each quality attribute in the valuation. The higher the coefficient, the greater the importance of this particular attribute to the respondent group.

## 2.7 Findings

### 2.7.1 How do VET Stakeholders Value Quality Attributes of a VET programme?

Table 2.3 displays the results of the study per respondent group. The coefficients represent the importance of the nine programme attributes to each group. The table shows that there are differences in the values that the groups assign to the attributes. For the first group, the students, 'graduation rate' (.50) is the most important attribute. This means that in most cases they ranked programmes with a high graduation rate higher than programmes with a low graduation rate. Another important attribute for students is 'employ-

ers' appreciation of students'(.32). Across the other attributes there is less difference, ranging from .14 to .19 for less important attributes and .23 to .25 for the medium important attributes. The attributes 'schooling hours' and 'mentoring hours provided by the school in workplace learning' are of minor importance to the students. In conclusion, students primarily aim to obtain a diploma and are less clear-cut about other attributes. Furthermore, they focus more on outcome attributes than on the process attributes, indicating that they are very much aware of the goals that a programme should have and that this is important to them.

Teachers attach high value to the attribute 'structure', with a coefficient of .81; this is the highest coefficient in their range. From the teachers' perception, the quality of a VET programme is thus highly influenced by its structure, whereas programmes that lack structure, described as programmes with high levels of freedom, are less highly assessed. Furthermore, teachers highly value the attribute 'employers' appreciation of students' (.66). However, the other outcome attributes 'graduation rate' and 'obtained language skills' are ranked significantly lower in their perception of quality. Teachers focus on the attributes they can connect to in their own classroom activities such as 'a challenging curriculum', 'structure', 'attention to civic education' and 'schooling hours' and less on the scholastic outcomes of their activities. However, they do acknowledge the 'employers' appreciation of their students'. The attribute 'students' appreciation of teachers' is insignificant to teachers.

To the third group, the workplace training supervisors, the attribute 'employers' appreciation of students' (.80) is highly important. This is not surprising: from their position one would expect that a VET programme delivers graduates that live up to the needs of the employer. Equally as important as the attribute 'employers' appreciation of students' is the attribute 'a challenging curriculum' (.80). Workplace training supervisors prefer a VET programme that challenges students and consider this an important factor in the quality of a VET programme. But there are more process attributes that attract the attention of workplace training supervisors. They explicitly value the attributes 'attention to civic education' and 'schooling hours', indicating that they consider civic education to be a valuable addition to vocational education and schooling hours to be useful.

And finally, the group of policymakers has three priorities: 'employers' appreciation of students' (1.13), 'graduation rate' (.94) and 'a challenging curriculum' (.93). These attributes played a dominant role in the ranking assignment. Clearly, the outcomes are important for policymakers: a programme should deliver students that meet the demands of the labour market and the students should leave with a diploma. Across the process attributes, the only attribute that is highly valued is 'a challenging curriculum'. Apparently this is seen as one of the keys to quality. The other coefficients range from .28 to 43, and all have a significant impact on the quality perception of policymakers, albeit smaller.

### 2.7.2 To What Extent do VET Stakeholders Differ in their Values?

Figure 2.2 focuses on the differences between the groups. The bars, representing the coefficients, show that the values of the groups differ considerably per attribute. Students, teachers, workplace training supervisors and policymakers have different priorities when it comes to vocational education quality. Chi-square tests proved the values of the groups to be significantly different.

The largest disagreement between groups is found with respect to 'graduation rate'. While students and policymakers attach high value to this attribute, teachers and workplace training supervisors value this as a relatively unimportant attribute. The same pattern is detectable with the attribute 'students' appreciation of teachers'. Students and policymakers do highly value this attribute, whereas teachers and workplace training supervisors do not. A third attribute that had a different impact across the respondent groups is the attribute 'structure'. For teachers this is most highly valued attribute. Students, teachers and workplace training supervisors, how- ever, rank this attribute relatively low. Not each attribute provokes different choices. The bars show that there is one outcome attribute that all groups find important: 'employers' appreciation of students'. Without exception, this is either the most or the second most important attribute. In this sense, the first goal of VET, meeting the demands of the labour market, is highly recognised across the groups. Another highly valued process attribute is 'a challenging curriculum'. The respondents clearly prefer challenging tasks to easy tasks. For workplace

Table 2.3: Importance of nine programme attributes to students, teachers, workplace training supervisors and policy makers, after ranking vocational programmes according to their idea of quality. Estimates from a rank-ordered logit model

| | Attributes | (1) Students N=334 | (2) Teachers N=66 | (3) Workplace training supervisors N=77 | (4) Policy makers N=54 |
|---|---|---|---|---|---|
| O1 | Employers' appreciation of students | 0.32** | 0.66** | 0.80** | 1.13** |
| O2 | Graduation Rate | 0.50** | 0.16 | 0.22** | 0.94** |
| O3 | Language skills obtained by students | 0.25** | 0.23* | 0.32** | 0.33** |
| P4 | Attention to civic education | 0.19** | 0.41** | 0.51** | 0.35** |
| P5 | Schooling hours | 0.17** | 0.54** | 0.52** | 0.40** |
| P6 | Challenge (description of the task) | 0.24** | 0.61** | 0.80** | 0.93** |
| P7 | Structure (description of the programme) | 0.14** | 0.81** | 0.40** | 0.33** |
| P8 | Mentoring hours provided by school in workplace learning | 0.23** | 0.21* | 0.46** | 0.28** |
| P9 | Students' apprecation of teachers | 0.25** | 0.00 | 0.03 | 0.43** |

Note. Asterisks indicate significance (*>=.05, **>=.01)

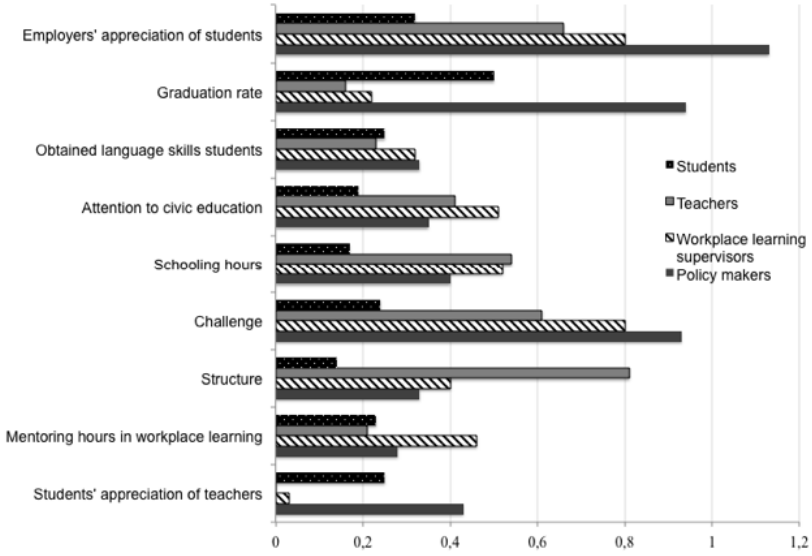



Figure 2.2: Bar chart with the importance of nine programme attributes for students, teachers, workplace training supervisors and policymakers of VET

training supervisors this even has the same value as the attribute 'employers' appreciation of students'. The respondents seem to indicate that a challenging environment highly contributes to the quality of education. There are also attributes that all groups find roughly equally unimportant, such as 'obtained language skills'. The attribute is not zero, indicating that groups do prefer a higher grade for the obtained language skills to a lower grade. However, it is almost always ranked in the bottom group. This attribute is not a point of special interest for most respondents. For students, whose coefficients are a bit lower on average, it is slightly more important than for the other groups.

All groups valued both product and process attributes. Noteworthy is that a product attribute has the highest coefficient for three of the four groups. Only teachers gave the highest priority to a process attribute. Furthermore, process attributes constitute the lowest coefficients of all of the four groups. In general, the product attributes thus seem to be higher valued than the process attributes. With regard to the three aims of VET used in the study, meeting the needs of the labour market is highly valued and entails little disagreement.

National educational performance, especially in the case of the graduation rate, evokes both very high and very low coefficients. Civic education is never top priority, but never low either.

Besides different priorities, Figure 2.2 shows a difference between the choice patterns of the students versus those of the teachers, workplace training supervisors and policymakers. Students find most attributes of relatively equal importance, with the exception of 'graduation rate', while the other groups tend to opt more explicitly for certain attributes. Furthermore, students assigned lower rankings in general; the highest student coefficient is .50; for teachers, workplace training supervisors and policymakers this is .81, .80 and 1.13 respectively. A further exploration of the data shows that students as a group show greater variance between the students as well as individually than respondents within other groups. Students thus are less consistent in prioritising between the quality attributes. Teachers, workplace training supervisors and policymakers all have two or three major priorities, but not always the same priorities; teachers, for example, attach the highest value to the attribute 'structure', which is not the case for the other groups.

## 2.8 Implications

This study identifies the value that students, teachers, workplace training supervisors and policymakers assign to various attributes of education quality. We use a vignette study design that compels respondents to make trade-offs between attributes, which is a key aspect of real life education choices. While certain attributes are valued similarly across these groups of stakeholders, most attributes are valued differently by the different stakeholders. These insights are valuable both for Dutch government and VET colleges.

We found that the application of the vignette method was successful. A vignette describes an education programme by listing its values on each of nine quality attributes. In ranking sets of programmes, respondents are forced to make trade- offs. For example, if both 'graduation rate' and 'a challenging curriculum' are deemed important, but not equally represented in every programme, stating a preference over a set of programmes allows us to determine the relative value of these two attributes. By creating the vignettes in

such a way that they were understandable and relevant to students, teachers, policymakers and the workplace supervisors, we were able to use the same vignettes for all groups. This enabled us to measure values for each group on the same scale and to compare values across groups. We found much variation both within and across stakeholder groups in the value assigned to different attributes, which points to the necessity to analyse stakeholder values per attribute and not as one consistent whole. This observation is consistent with Mitroff (1983)'s view that the relationship between organisations and stakeholders should be seen in the light of a particular problem or subject.

The first party that can benefit from these insights is the government. When considering stakeholder values per attribute, the Dutch government can face different situations. The first is a situation where stakeholder agreement is reached (Gregory and Keeney, 1994). In this situation, all groups, including the government, agree on the importance of an educational attribute. In this case the government does not have much to worry about. When all stakeholders agree on the importance of an attribute, it is probable that it will be prioritised and that the government can avoid taking responsibility. The same situation would apply to subjects of agreed unimportance. This however, did not occur within the framework of this study. The second situation that can be faced is one of conflicting values (Clarke and Winch, 2007). In this case the government values an attribute highly, but at least one of the stakeholders assesses this same attribute with a significantly lower value. An example of unequal priorities that we came across in this study can be seen in the attribute 'graduation rate'. Even though the government may be convinced of the importance of a certain attribute, they can still be aware of existing differences in priorities and therefore of possible tensions, or resistance to the subject. People in the field are more likely to put effort into something that they acknowledge and agree on. The same accounts for a situation in which stakeholders value something that the government does not consider valuable or, considerably less valuable.

The second group that can benefit from the insights are the VET colleges. As noticed before, vocational colleges operate in an arena full of stakeholders with various expectations. Schools require knowledge of their stakeholders to ascertain what educational quality means to them. The visualisation of

different preferences in actual choice situations such as have been incorporated in the present study can therefore help vocational colleges to better understand stakeholders and their expectations, and ultimately improve the educational process. In order to effectively provide good quality education, schools will need to identify what their stakeholders deem the most important elements of educational quality, and then design curricula responsive to those characteristics. If, for example, employers' appreciation of students is seen as an important characteristic of vocational education, school boards can ask themselves whether they sufficiently employ this as an indicator of quality or even measure this indicator. Insight into the preferences of stakeholders also presents an opportunity to discuss the characteristics that are important to a certain group. For example, the high importance that teachers assigned to 'structure' can be a stimulus to instigate a conversation on this matter.

A potential limitation of the method employed arises from having made a selection of attributes. The set of nine programme attributes is a limited set, on which the respondents did not have any influence. We do not know, therefore, what other attributes students, teachers, workplace training supervisors and policymakers find important, and it is possible that the provision of additional or other attributes would alter the relative magnitude of the nine attributes manipulated here. Likewise, and perhaps more importantly, different attribute levels (even for the same nine attributes) would lead to different consequences for the participants' decision making. Nonetheless, because this study examined quality attributes in relation to each other and all participants responded to the same programme attributes, the relative importance of attributes and the group differences revealed in this study remain unchanged.

This study is not a representative sample of Dutch VET education. While the groups were carefully chosen from three different sectors and different populations, the participants only comprised of students, teachers and workplace training super- visors involved in level 4 of the VET programmes. Therefore, we do not know whether the priorities indicated by respondents from other levels would be different.

In order to obtain a more general picture of VET, the number of participants should be increased. It would also be possible to include other groups, such as parents or school board members, as it is presumable that those groups

hold yet other views on the subject of VET quality. Furthermore, our vignettes have been specifically designed for the Dutch situation. The outcomes of this study can therefore only draw conclusions from that social, institutional, policy and national context.

The analysis left us with some questions that require further exploration. Why do the students' choice patterns differ so strongly from those of the other groups? A possible explanation is that students, more than the other groups, are at the centre of the educational process: each characteristic affects them in one way or another. As a group they appointed the graduation rate as the most important characteristic; the other characteristics, however, were not distinguished from each other because they were assigned high values. Policymakers and workplace training supervisors related less to the attributes and might therefore more easily express their preferences. However, to truly understand the students' choices, it is necessary to know more about their argumentation. In further research it would therefore be interesting to add in-depth interviews with some participants during - or after - the vignette tasks to the research design to find out more about the reasoning behind the ranking of the vignettes. Furthermore, it might be interesting to investigate in more detail the coalitions of stakeholders that exist per attribute and the consequences of these coalitions for VET practice.

In conclusion, this study provides valuable information concerning the attributes that are important to different stakeholder groups in Dutch VET. Expanding our knowledge about the particular objectives and preferences of stakeholders is extremely relevant for the quality of VET, both in the Netherlands and abroad. On the one hand, the insights into stakeholder values for any particular attribute of VET can be used to address tensions between different stakeholders, and on the other hand they can help improve the quality of VET programmes. In a rapidly changing social and economic environment, alignment on what vocational education should comprise and how it should be organised is extremely relevant. Stakeholders play an increasingly important role in this process.

# Chapter 3

# Gender differences in the use of Likert scales in evaluations of educational quality[1]

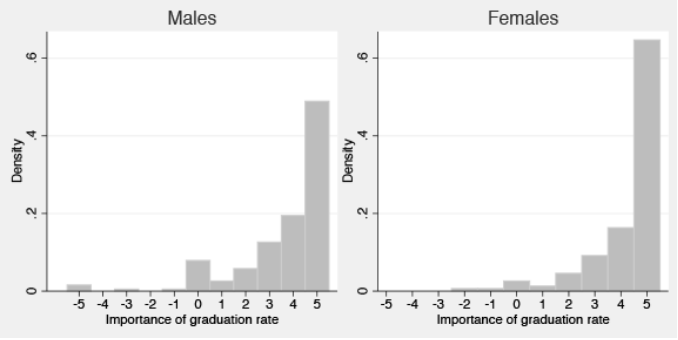
## 3.1 Introduction

Likert scales are often used to evaluate the opinions of students about education. Consider e.g. figure 3.1. It contains the answers of Dutch vocational students to the question how important it is to them to get a diploma after their studies. The figure tells us that getting a diploma is more important for female students than for male students. Females have a considerable higher share of Likert grades 4 and 5. On average their score is 0.6 points higher than the score of males; a significant difference between the genders. Could this figure entail an explanation of why female students are 7% more likely than male students to graduate in the vocational education sector in the Netherlands - they are simply more motivated? Or, are we looking at a gender difference that is a result of a different approach to answering an attitude question. In the

[1]This chapter is based on joint work with Lex Borghans

following document we will study several answers of these students in detail to answer this question.

Figure 3.1: The importance of the graduation rate of a vocational programme for male and female students, measured with a Likert scale from -5 to 5.




The aim of this chapter is to investigate whether male and female students use a Likert scale differently and whether this gender difference varies between the aspects that have to be judged. It is common practice to use Likert scales in comparing students' judgments with respect to aspects of education quality. A potential problem in the use of Likert scales is that various groups might use these scales differently. Based on the same underlying judgment about an aspect the scores that are typically given could be different. If males would use Likert scales in another way than females this could bias the comparison between studies with different gender compositions.

We apply a conjoint approach in addition to a standard battery of Likert scale items to anchor the answers of 334 male and female students in a survey about vocational education in the Netherlands. The structure of the conjoint approach leads to an interval scale that is comparable between groups. We use ordered probit models to connect the answers on the Likert scale items to the scores on the conjoint attributes. We firstly find that male students answer more negatively than their female counterparts, given the weight they attached to different aspects of education quality in the conjoint task. Secondly we find that this transformation is not linear: the lower the judgment as deduced from the conjoint approach the larger the difference between males and females. A conversion that allows the steps between the grades in the Likert scale to be

of different sizes effectively captures the gender differences. Our third finding is that this conversion is consistent for different questions in the survey. These findings indicate that the results of figure 3.1 are indeed subject to a gender bias: it is not the attitude itself that differs between male and female students, but the response strategy that makes them decide which grade to choose.

Firstly this study contributes to the literature that critically evaluates the Likert scale in the light of interpersonal incomparability. Likert scales are widely used in different areas for attitude measurement, e.g., in psychology, sociology, health care, education and marketing. Popular applications are in the assessment of customers' quality perceptions or expectations, and of subjective well-being. In the field of education Likert scales are used to evaluate, analyse and improve the quality of teaching and schools (see for example OECD (2010) and IES (2012)). Looking at the scores of different subgroups in the sample, such as gender but also educational level and age, is common in such analyses. Analyses of the attitudinal data that Likert scales produce, generally ignore the issue of interpersonal differences in response style. There is however a growing body of literature pointing to the pitfalls of comparisons of different subgroups (Buckley, 2009; Schwartz et al., 2008; Göb, McCollin, and Ramalhoto, 2007; Sen, 2002; Baumgartner and Steenkamp, 2013; Greenleaf, 1992; T. Smith, 1992; Bachman and O' Malley, 1984). These studies show that the process of answering a question can change as a function of respondents' background and characteristics. In this paper we focus on gender differences in the use of the Likert scale.

Secondly this study contributes to literature that uses design that can detect interpersonal incomparability. This is needed, because the question whether the process of answering a question is indeed influenced by the features of a respondent is not always easy to answer, as we need to be sure that it is not an actual difference in attitude or ability that is measured. In order to investigate real differences an anchoring scale is needed. This can be found in the survey itself, for example by using the overall ability of a person to look for items that display interpersonal incomparability (Johanson, 1997; Dodeen and Johanson, 2003). Another way is to look for anchors (Kapteyn, J. A. P. Smith, and Soest, 2007; King et al., 2004; Phillips, F. R. Johnson, and Maddala, 2002). In these studies an additional measure is used to measure the answers

of different groups on another scale. Our paper uses a similarly technique, by using vignettes in a survey to anchor students values towards aspects of education quality.

The remainder of this paper is organized as follows. In the next section, we start with the theoretical background of our study. After that we introduce the dataset that we used for this study. The empirical part of the article begins with the description of the data of the survey and the conjoint study separately, then the connection between the two datasets and ends with the research results. We conclude with some thoughts on the implications of this study and suggestions for further research.

## 3.2 Theoretical Background

### 3.2.1 The Likert scale and the problem of interpersonal incomparability

Rensis Likert (1932) introduced a scale and technique for attitude measurement. In this scale the individual is confronted with statements that are essentially value judgments. The value judgments may concern the individual's reflections of reality or the individual's psychic dispositions as feelings, needs and desires. The individual is invited to define his attitude towards each statement by choosing a grade on the Likert scale. Most popular are five-grade and seven-grade Likert scales. The grades are ordered in ascending order of agreement or approval of the individual with respect to the value statement. In case of a five-grade Likert scale, the grades are often interpreted by strongly disagree, disagree, neutral, agree, strongly agree. In order to interpret the outcomes correctly, the attitude measurement has to satisfy the criterion of interpersonal comparability: responses from different individuals can be compared on the scale (Göb, McCollin, and Ramalhoto, 2007). There are however many examples in which this criterion is not met.

Several researchers describe problems of interpersonal incomparability. Often, cultural differences are subject to these studies. In a study in nationally representative surveys of high school youth in America, Bachman and O' Malley (1984) found substantial differences between black and white high school

seniors in their patterns of responding to Likert-type questions. Black high school seniors are more likely than whites to agree in response to agree/disagree items, and to use the extreme ends of response scales. Buckley (2009) studied the PISA 2006 student data and observed several cross-cultural heterogeneities in response style. Greenleaf (1992) investigated items from a survey administered in 1975 and 1987 to large samples of U.S. adults and shows that response style is related to age, education level, and household income. In the international handbook of survey methodology, Schwartz et al. (2008) explain how the process of answering a question can change as a function of respondents' age and culture. They distinguish several parts of the answering process: understanding the question, recalling information, forming a judgment, formatting the judgment to fit the response alternatives, and editing the final answer. The respondents' performance at each of these steps is highly context dependent, resulting in differential context effects that can hinder straightforward comparisons across cohorts and cultures. According to Göb, McCollin, and Ramalhoto (2007), one of the problems behind the Likert scale is deciding about the scale type and appropriate methods of analysis. For a Likert scale, the alternative is between an ordinal and an interval scale type. The ordinal type allows a rank order (1st, 2nd, 3rd, etc.) by which data can be sorted. The ordinal scale type does not provide a measure for the distance between two scale values. Interval measure scales on the other hand express magnitudes. Differences between scale values are meaningful. An example of an interval scale is temperature. In methodological considerations it is generally acknowledged that attitude measuring scales should be considered as ordinal. Nevertheless, many studies use interval statistics as sample means, sample variances, t-tests to analyse attitude data. Interval interpretations, however, involve considerable assumptions to guarantee comparability (Göb, McCollin, and Ramalhoto, 2007). In this study we consider the assumption of the Likert scale as an interval scale as a potential problem of gender differences. We therefore include different methods to interpret the scale intervals.

### 3.2.2 Using anchors to overcome problems of interpersonal incomparability in attitude research

A possible approach to detecting and solving interpersonal incomparability problems in attitude research is to identify anchors that can be used to attach the answers of different individuals to the same standard scale. A vignette is a short description of a hypothetical character or product to which the interviewee is invited to respond. Instead of measuring values, beliefs or behaviour of people on several separate aspects, vignettes confront respondents with realistic situations. Because the situations are concrete the assumption is that they are interpreted in the same way by all respondents. King et al. (2004) applied a method of directly measuring the incomparability of responses to survey items and then correcting for it. They asked respondents for self-assessments of the concept being measured along with the assessments, on the same scale, of each of several hypothetical individuals described by short vignettes. They show how response incomparability can drastically mislead survey researchers and how his approach can alleviate this problem. Kapteyn, J. A. P. Smith, and Soest (2007) similarly use vignettes complementary to self-reports in their study of work disability. They chose for this option because in their study about work disability they found that a large part of observed differences in reported work disability stem from the fact that residents of the two countries use different response scales in answering standard questions on work disability. The vignettes appeared to be a useful tool in helping to understand the differences between countries with regard to disability. They provide an opportunity to directly analyse scale differences and correct for them.

Similarly to vignettes, conjoint analysis uses respondents' values on hypothetical situations. The combination of conjoint analysis and a traditional survey in one research design can give important insights. Phillips, F. R. Johnson, and Maddala (2002) developed a survey in which they examined both attitudes and preferences about HIV tests. Although the overall findings for attitudes and preferences were similar, the two approaches resulted in some different conclusions. The attribute 'price', for example, had a higher valuation in the conjoint analysis than in the survey. Based only on the attitude survey results, one might conclude that price was relatively unimportant be-

cause it was among the four lowest ranking attributes. However, the findings from the conjoint analysis results indicated that price actually was a relatively important factor in determining choice. Focus group participants furthermore reported that they found the conjoint analysis tasks to be useful in forcing them to think more deeply, and they felt that the results better reflected how they would actually behave (Phillips, F. R. Johnson, and Maddala, 2002). In the present study we also combine conjoint analysis with survey questions. Since the answering scale of the conjoint analysis is much more concrete, we assume that it is less sensitive for interpretation differences than the survey. We therefore use the conjoint scores as anchors.

## 3.3 Data

In chapter 2 we introduced the conjoint study. In addition to the ranking assignments, the questionnaire of this study also comprises a set of 37 survey statements[2] about vocational education quality aspects to which the students had to respond. Nine statements correspond to the set of attributes used in de vignette task. For this study we selected only these nine statements. Respondents were asked to value the statements on a 11 point scale, in which 5 indicated 'I find this very important', 0 'neutral' , and -5 ' I'd rather not have this'. The statements are presented to the students in random order. The survey scores were analysed by calculating the mean.

For the present study we combined the answers of students on the conjoint study with their answers on the corresponding statements in the survey. Table 3.1 summarises the sample demographics of the students with regard to gender and VET programme, table 3.2 shows the 9 conjoint attributes and the corresponding survey statements and table 3.3 presents the coefficients of the survey and conjoint for each aspect.

It is important to note that the survey and conjoint analysis are different in their theoretical framework and methods used to elicit valuations. Two differences are especially relevant here. First, in conjoint analysis, respondents are asked to make a choice within a resource constraint. Whereas in the survey the students can rate all attributes as very important, in the conjoint analysis

[2]In appendix D the complete list of survey statements is displayed

Table 3.1: Sample demographics

| | | Students (N=334) |
|---|---|---|
| Average age | | 18.7 |
| Women (%) | | 44 |
| Course type | Social pedagogical studies (%) | 30 |
| | Administrative studies (%) | 37 |
| | Construction studies (%) | 34 |

Table 3.2: The 9 conjoint attributes and the corresponding survey statements

| Conjoint attribute | Survey statement | Likert scale |
|---|---|---|
| Employers | Employers appreciate graduates of this course | -5...0...5 |
| Graduation | Many students of the course graduate | -5...0...5 |
| Language | The course pays attention to the Dutch language | -5...0...5 |
| Civic education | The course pays attention to civic education | -5...0...5 |
| Hours | The course has many hours per week | -5...0...5 |
| Challenge | The students are offered challenging assignments during the course | -5...0...5 |
| Structure | The program offers a lot of structure | -5...0...5 |
| Workplace learning | Students are mentored sufficiently during the workplace learning period | -5...0...5 |
| Teachers | The teachers have good teaching skills | -5...0...5 |

that is not possible because a trade-off has to be made. Note for example that the satisfaction of employers and graduation are valued almost equally by the students in the survey (3.8 versus 3.9), while in the conjoint analysis graduation scores much higher than employers. Second, in conjoint analysis respondents evaluate scenarios composed of attribute levels, with each level explicitly stated (e.g., attribute levels for schooling hours are 15 hours - 20 hours - 25 hours). Thus, the method allows estimating utility for each concrete attribute level. In contrast, the survey just asks for a general judgment without explicitly stating the level or categories that a student should think of. The findings in table 3.3 show that while the survey ratings are generally consistent between male and female students, conjoint scores are not. Both male and female students rate civic education rather low in the survey. In the conjoint analysis however, the aspect 'civic education' appears to be a lot more important to females than to males. Based only on the survey results, one might conclude that 'civic education' was relatively unimportant to females because it was among the lowest ratings in the survey. However, the findings from the conjoint analysis results indicate that civic education actually is a relatively important factor in determining choice.

Table 3.3: Importance of nine programme attributes for students based on 1) survey items with ordinal scale and 2) conjoint task

| | SURVEY | | | CONJOINT* | | |
|---|---|---|---|---|---|---|
| | Total (N=334) | Male (N=188) | Female (N=146) | Total (N=334) | Male (N=188) | Female (N=146) |
| Aspects | Mean SD | Mean SD | Mean SD | Coefficient | Coefficient | Coefficient |
| Employers | 3.8 [1.6] | 3.6 [1.8] | 4.1 [1.2] | 0.32 (0.04) | 0.37 (0.05) | 0.25 (0.06) |
| Graduation | 3.9 (1.8] | 3.6 [2.0] | 4.2 [1.4] | 0.50 (0.04) | 0.45 (0.06) | 0.55 (0.07) |
| Language | 2.3 [2.5] | 1.9 [2.6] | 2.8 [2.1] | 0.25 (0.04) | 0.26 (0.05) | 0.23 (0.06) |
| Civic education | 0.8 [2.9] | 0.2 [3.1] | 1.5 [2.5] | 0.19 (0.04) | 0.06 (0.05) | 0.37 (0.06) |
| Schooling hours | 0.4 [2.8] | 0.2 [2.9] | 0.8 [2.7] | 0.17 (0.04) | 0.22 (0.06) | 0.11 (0.07) |
| Challenge | 2.8 [1.8] | 2.7 [1.9] | 2.9 [1.8] | 0.24 (0.04) | 0.23 (0.05) | 0.26 (0.06) |
| Structure | 2.9 [2.1] | 2.8 [2.1] | 3.1 [2.0] | 0.14 (0.04) | 0.18 (0.05) | 0.08 (0.06) |
| Workplace learning | 3.7 [1.8] | 3.5 [1.9] | 4.0 [1.7] | 0.23 (0.04) | 0.18 (0.06) | 0.31 (0.06) |
| Teachers | 4.1 [1.8] | 3.9 [1.9] | 4.2 [1.6] | 0.25 (0.04) | 0.25 (0.05) | 0.25 (0.06) |

Standard deviations in brackets. Standard errors in parentheses. *Estimates of a rank-ordered logit model; coefficients represent the relative importance of an attribute to the participants.

The wordings in the conjoint questions are not the same as the wordings used for the likert scales. It is therefore possible that the different phrases do not capture the same concepts in the mind of the students. In order to allow a fair comparison between conjoint and likert we therefore examined the correlation between survey and conjoint for each aspect. With linear regression we modelled the relationship between the conjoint attribute coefficients and the survey scores on the corresponding attributes. For the three aspects; workplace learning, language and teachers, the correlation is not significant. We therefore exclude them in the further analyses (table 3.4). When investigating the phrasing and presentation of the survey item in relation to the corresponding conjoint attribute, it appeared that the three attributes that showed a weaker linear relationship are also the ones that show less consistency in the way the items are formulated.

Table 3.4: Inclusion and exclusion of aspects. Based on lineair regression.

| | Regression 1<br>Only 1 aspect | Regression 2<br>All aspects |
|---|---|---|
| *Included aspects* | | |
| Employers | 2.02** | 1.73 |
| Graduation | 3.18** | 2.32* |
| Civic education | 7.99** | 7.18** |
| Schooling hours | 6.28** | 6.08** |
| Challenge | 4.38** | 3.95** |
| Structure | 5.74** | 5.98** |
| *Excluded aspects* | | |
| Workplace learning | 1.26 | 0.15 |
| Language | 0.89 | 0.34 |
| Teachers | 0.00 | 0.36 |

Note. Asterisks indicate significance (* p<.05) (** p<.01). Likert score on the survey was the dependent variable, the conjoint score the independent variable. In regression 2, all the conjoint scores were included in the regression

## 3.4 Empirical strategy

We apply an ordered probit model to compare the survey items with the outcomes of the conjoint scores. In statistics, ordered probit is a type of regression that is used in cases when there are more than two outcomes of an ordinal dependent variable. The purpose of this model is to estimate the

probability that an observation with particular characteristics will fall into a specific one of the categories. We use this model in two ways: linear (A) and non-linear (B). In the linear model the scores on the Likert scales are implicitly treated as interval measures, i.e. the intervals between each value are equally split. This method can be compared with standardizing the scores of males and females. The non-linear model on the other hand explicitly acknowledges that distance between the values of the Likert scale might vary in distance for the user of the scale. The models are estimated using Maximum Likelihood. Both models link the scores on aspect a in the conjoint analysis C to the scores on aspect a in the Likert scale of survey S.

### 3.4.1 Three estimations

In both models we compare three estimations. In the first estimation (1) each measure on the conjoint analysis C of aspect a links differently into the Likert scale of aspect a in the survey S, but these links are identical for men and women. The different mapping per aspect a is needed since conjoint response scales cannot be assumed equal (consider table 2.1, the programme attributes and levels: cut-off points of 1 hour versus 5 hours cannot be assumed the same as the cut-off points for yes and no). In the second estimation (2) the score on the conjoint analyses of male students map differently into the Likert scales than scores of female students. This gender-specific transformation (f) is, however, equal for all attributes. In the third estimation (3) the gender specific beta's are attribute-specific. In other words, every aspect has a different interaction with gender.

If estimation 2 explains the data better than estimation 1 that would mean that we have to interpret answers on a Likert-scale differently for males and females differently, but this difference would be the same across items. If estimation 3 improves estimation 2 significantly, it would mean that male students answer in an other way than female students, but this different answer style would vary across items. In that case there is no general rule how male and female students differ in their way of answering.

In the following section we apply the three estimations to model A and B.

### 3.4.2 A The linear model

In model A we interpret the Likert scale of the survey $S$ as the reflection of a latent variable $Z$, where every value on the Likert scale indicates that the value of $Z$ is between two cut-off points. The distance between all cut-off points is equal. For that reason it is called the linear model.

In the first estimation, the cut-off points $g$ are scaled as $g1 = -4.5*\Delta, g2 = -3.5 * \Delta, g3 = -2.5 * \Delta, g4 = -1.5 * \Delta, g5 = -0.5 * \Delta, g6 = 0.5 * \Delta, g7 = 1.5 * \Delta, g8 = 2.5 * \Delta, g9 = 3.5 * \Delta, g10 = 4.5 * \Delta$, such that $S = 1$ if $Z < g1$, $S = 2$ if $g1 <= Z < g2$, ..., $S = 11$ if $Z >= g10$

Conjoint analysis $C$ of aspect $a$ links differently the latent variable $Z$ for aspect $a$ of the Likert scale in the survey $S$. Thus, we can write

$$Z_a = \alpha 0_a + \alpha 1_a * C_t \tag{A1}$$

In the second estimation the score on the conjoint analyses of male students map differently into the Likert scales than scores of female students. That means that $g1 = -4.5 * \Delta f$, $g2 = -3.5 * \Delta f$, ..., $g10 = 4.5 * \Delta f$ for females and $g1 = -4.5 * \Delta m$, ..., $g10 = 4.5 * \Delta m$ for males, and:

$$Z_a = \beta_{0f} + (\alpha 0_a + \alpha 1_a * C_a) * (1 + \beta_{1f}) \tag{A2}$$

In the third estimation the gender specific beta's are attribute-specific. In other words, every aspect has a different interaction with gender. Therefore, $\beta_{0f}$ and $\beta_{1f}$ become $\beta_{0fa}$ and $\beta_{1fa}$.

$$Z_a = \beta_{0fa} + (\alpha 0_a + \alpha 1_a * C_t) * (1 + \beta_{1fa}) \tag{A3}$$

### 3.4.3 B The non-linear model

In model B the Likert scale is not treated as interval measure, but is allowed to vary in distance between the steps. This is translated in latent variable Z, that has 10 cut-off points. These cut-off points describe how respondents transform their latent answer into one of the ten categories . The cut-off points are $g1 \ldots g10$, such that $S = 1$ if $Z < g1$, $S = 2$ if $g1 <= Z < g2$, ..., $S = 11$ if $Z >= g10$. Typically, these models are normalized assuming the variance

of the error term to equal 1 and one of the constants to equal 0. Here we replace the normalization by the assumption that g5=-g6. That implies that 0 is always in the middle of the middle interval.

In the first estimation conjoint analysis C of aspect a links differently into the latent variable $Z$, that is the Likert scale with varying distance between the steps.

$$Z_a = \alpha 0_a + \alpha 1_a * C_a \tag{B1}$$

In the second estimation we use the same latent variable but now allow the transformation into the ten categories to be different for male and female students, i.e. there are gender specific cut-off points. The normalization g5=-g6 only holds for women, allowing the scaling for males to shift relative to the scaling of females.

$$Z_a = \beta_{0f} + (\alpha 0_t + \alpha 1_a * C_a) * (1 + \beta_{1f}) \tag{B2}$$

In the third estimation the parameters in the model for the latent variable are gender specific.

$$Z_a = \beta_{0fa} + (\alpha 0_t + \alpha 1_a * C_a) * (1 + \beta_{1fa}) \tag{B3}$$

## 3.5 Results

Table 3.5 shows the estimates we obtain from the ordered probit estimations for model A. The displayed coefficients $\alpha_0$ and $\alpha_1$ represent the intercept and slope of the regression for each quality aspect. Delta is the size of the interval between the values. In A1 the delta is the same for every student (0.39). This is the basic model. In A2 a gender specific delta is added. Furthermore a shift is added which is an addition for the male students. If male and female students do not differ in the transition from conjoint to survey scores, these coefficients should be small and insignificant. The final two rows in the second model however show that there are considerable differences. Delta f and delta m have different values (0.43 and 0.38) and also the shift is significant. This is the first indication that there is a difference between male and female students in the

use of the Likert scale as opposed to the conjoint analysis. In A3 the gender specific beta's are added to the estimation. These gender specific addition are attribute- dependent. In other words, this model allows the gender effect to take different forms for each different attribute measurement. This estimation shows that since $\beta_{0f}$ and $\beta_{1f}$ are not equal to zero, there are indeed differences in gender effects between the attributes. They are however not significant.

Table 3.5: Three estimations for the linear transition of conjoint scores to the Likert scores. Intervals between the Likert scale values are equal for male and female students. Estimates from an ordered probit model

| | | Model A1 Coefficient | Model A2 Coefficient | Model A3 Coefficient |
|---|---|---|---|---|
| Employers | $\alpha_0$ | 1.71 (0.08) | 1.97 (0.09) | 2.03 (0.13) |
| | $\alpha_1$ | 1.59 (0.45) | 1.59 (0.45) | 1.13 (0.60) |
| | $\beta_{0f}$ | | | -0.49 (0.17) |
| | $\beta_{1f}$ | | | 1.19 (0.92) |
| Graduation | $\alpha_0$ | 0.11 (0.06) | 0.36 (0.07) | 0.44 (0.19) |
| | $\alpha_1$ | 3.75 (0.43) | 3.48 (0.43) | 3.97 (0.60) |
| | $\beta_{0f}$ | | | -0.01 (0.21) |
| | $\beta_{1f}$ | | | -1.21 (0.89) |
| Civic education | $\alpha_0$ | 0.08 (0.06) | 0.31 (0.07) | 0.40 (0.19) |
| | $\alpha_1$ | 2.63 (0.38) | 2.74 (0.38) | 3.34 (0.54) |
| | $\beta_{0f}$ | | | -0.10 (0.20) |
| | $\beta_{1f}$ | | | -1.24 (0.77) |
| Schooling hours | $\alpha_0$ | 1.06 (0.07) | 1.31 (0.08) | 1.46 (0.19) |
| | $\alpha_1$ | 1.86 (0.51) | 1.81 (0.51) | 2.19 (0.66) |
| | $\beta_{0f}$ | | | -0.20 (0.21) |
| | $\beta_{1f}$ | | | -0.91 (1.04) |
| Challenge | $\alpha_0$ | 1.17 (0.06) | 1.41 (0.07) | 1.53 (0.19) |
| | $\alpha_1$ | 2.55 (0.46) | 2.67 (0.47) | 2.24 (0.63) |
| | $\beta_{0f}$ | | | -0.15 (0.20) |
| | $\beta_{1f}$ | | | 0.96 (0.94) |
| Structure | $\alpha_0$ | 1.66 (0.08) | 1.91 (0.09) | 1.97 (0.20) |
| | $\alpha_1$ | 0.95 (0.56) | 1.04 (0.56) | 1.11 (0.76) |
| | $\beta_{0f}$ | | | -0.01 (0.22) |
| | $\beta_{1f}$ | | | -0.11 (1.12) |
| Other parameters | $\Delta$ | 0.39 (0.01) | | |
| | $\Delta_f$ | | 0.43 (0.01) | 0.43 (0.01) |
| | $\Delta_m$ | | 0.38 (0.01) | 0.38 (0.01) |
| | $\beta_{0f}$ | | -0.40 (0.06) | |

Standard errors in parentheses

Table 3.6 shows the estimates we obtain from the ordered probit estimations for model B. In contrast to model A, the intervals in model B between each value do not have an equal value (delta). Instead, the cut-off points in model B are variable. B1 shows the results for the basic model. Here the cut-

off points are equal for male and female students. Model B2 allows the cut-off points to be different for male and female students. The results show that the gender specific cut-off points, leading to the intervals, differ considerably in size. For females, the cut-off point 0-1 is .27 and cut-off point 1-2 is .57. The female interval for the '2' has a size .3. For males, the cut-off point 0-1 is .6 and the cut-off point 1-2 is .79, indicating that the male interval for the '2' has a size .19. In the estimation B3 the gender beta's attribute specific, so every aspect can have a different interaction with gender. Similar to model A, there are differences in gender effects between the attributes ($\beta_{0f}$ and $\beta_{1f}$ are not equal to zero), but they are not significant.

### 3.5.1 Comparing the models using log likelihood

To determine whether a) the model B explains the data better than model A and b) that estimations 2 and 3 better explain the data then estimation 1, we used the Likelihood Ratio test (LR-test). The Likelihood Ratio compares the fit of the models, by expressing how many times more likely the data are in a certain model than in the alternative model. Table 3.7 shows the results of the LR-tests. The test shows that model A outperforms model B. Furthermore LR-test proves that alternative 2 outperforms alternative 1 but alternative 3 does not outperform alternative 2. This leads us to conclude that the male and female students in our study performed a different response strategy, that is best explained by a model that allows the cut-off point for the different steps of the Likert scale to be of different sizes. The different response strategy does not vary across items.

### 3.5.2 Visualisation of the gender specific transition of a conjoint score into a grade on the Likert scale

Figure 3.2 visualizes the cut-off points of males and females of model B2. The x-axis shows the conjoint scores of the students. The bars represent the Likert-scale intervals, from -5 to 5. The bar of the male students is more centred on the right, pointing to a more negative response style. In comparison, with a conjoint score of 0.16, a male student chooses for a 3 in the survey while the female student chooses for a 4. On the left side of the figure this is even more

Table 3.6: Three estimations for the non-linear transition of conjoint scores to the Likert scores. Intervals between the Likert scale values have different sizes for male and female students. Estimates from an ordered probit model

| | | Model B1 Coefficient | Model B2 Coefficient | Model B3 Coefficient |
|---|---|---|---|---|
| Employers | $\alpha_0$ | 1.93 (0.08) | 2.14 (0.10) | 2.17 (0.14) |
| | $\alpha_1$ | 1.67 (0.44) | 1.66 (0.44) | 1.12 (0.57) |
| | $\beta_{0f}$ | | | 0* |
| | $\beta_{1f}$ | | | 1.39 (0.92) |
| Graduation | $\alpha_0$ | 0.29 (0.06) | 0.48 (0.08) | 0.54 (0.19) |
| | $\alpha_1$ | 3.24 (0.43) | 3.00 (0.43) | 3.34 (0.60) |
| | $\beta_{0f}$ | | | -0.01 (0.21) |
| | $\beta_{1f}$ | | | -0.79 (0.89) |
| Civic education | $\alpha_0$ | 0.25 (0.06) | 0.42 (0.07) | 0.47 (0.19) |
| | $\alpha_1$ | 2.17 (0.38) | 2.29 (0.39) | 2.74 (0.55) |
| | $\beta_{0f}$ | | | -0.05 (0.21) |
| | $\beta_{1f}$ | | | -0.92 (0.77) |
| Schooling hours | $\alpha_0$ | 1.18 (0.07) | 1.37(0.08) | 1.47 (0.19) |
| | $\alpha_1$ | 1.95 (0.51) | 1.91 (0.51) | 2.32 (0.66) |
| | $\beta_{0f}$ | | | -0.15(0.21) |
| | $\beta_{1f}$ | | | -0.98 (1.04) |
| Challenge | $\alpha_0$ | 1.31 (0.07) | 1.50 (0.08) | 1.58 (0.19) |
| | $\alpha_1$ | 2.77 (0.46) | 2.88 (0.47) | 2.53 (0.63) |
| | $\beta_{0f}$ | | | -0.09 (0.20) |
| | $\beta_{1f}$ | | | 0.79 (0.94) |
| Structure | $\alpha_0$ | 1,87 (0.08) | 2.06 (0.09) | 2.09 (0.20) |
| | $\alpha_1$ | 1,07 (0.56) | 1.16 (0.56) | 1.20 (0.76) |
| | $\beta_{0f}$ | | | 0.01 (0.22) |
| | $\beta_{1f}$ | | | -0.04 (1.12) |
| Cut-off pts Female students | -5 -4 | -0.94 (0.05) | -1.18 (0.11) | -1,17 (0.11) |
| | -4 -3 | -0.84 (0.05) | -0.98 (0.09) | -0.98 (0.09) |
| | -3 -2 | -0.59 (0.04) | -0.64 (0.06) | -0.64 (0.64) |
| | -2 -1 | -0.43 (0.03) | -0.40 (0.04) | -0.40 (0.42) |
| | -1 0 | -0.28 (0.02) | -0.27 (0.03) | -0.27 (0.03) |
| | 0 1 | 0.28* | 0.27* | 0.27* |
| | 1 2 | 0.50 (0.03) | 0.57 (0.04) | 0.57 (0.04) |
| | 2 -3 | 0.91 (0.03) | 0.97 (0.05) | 0.97 (0.06) |
| | 3 -4 | 1.51 (0.04) | 1.52 (0.06) | 1.53 (0.06) |
| | 4 -5 | 2.13 ( (0.05) | 2.19 (0.07) | 2.21 (0.07) |
| Cut-off pts Male students | -5 -4 | -0.94 (0.05) | -0.56 (0.09) | -0.51 (0.19) |
| | -4 -3 | -0.84 (0.05) | -0.49 (0.09) | -0.43 (0.19) |
| | -3 -2 | -0.59 (0.04) | -0.25 (0.08) | -0.20 (0.18) |
| | -2 -1 | -0.43 (0.03) | -0.13 (0.08) | -0.07 (0.18) |
| | -1 0 | -0.28 (0.02) | 0.24 (0.08) | 0.08 (0.18) |
| | 0 1 | 0.28* | 0.60 (0.07) | 0.66 (0.18) |
| | 1 2 | 0.50 (0.03) | 0.79 (0.07) | 0.85 (0.18) |
| | 2 -3 | 0.91 (0.03) | 1.19 (0.07) | 1.25 (0.18) |
| | 3 -4 | 1.51 (0.04) | 1.83 (0.07) | 1.90 (0.17) |
| | 4 -5 | 2.13 ( (0.05) | 2.44 (0.07) | 2.49 (0.17) |

Standard errors in parentheses, *reference value, with the assumption that g5 ( -1 0) = -g6 (0 -1), so that 0 is always the middle of the middle interval. This only holds for women, allowing the scaling for males to shift relative to the scaling of females.

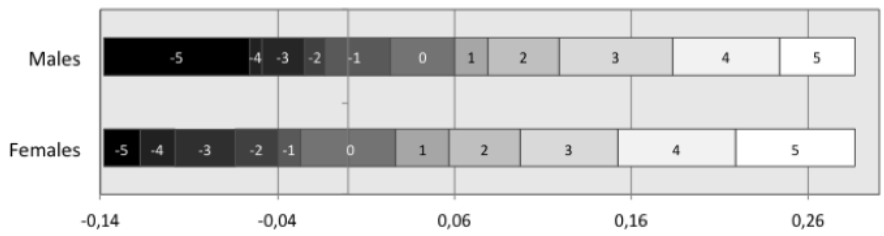
Table 3.7: Maximum Likelihood Ratio Tests

| Model 1 | Chi2 | Outcome |
|---|---|---|
| B1 > A1 | LR chi2(8) =422.71 | Yes (0.0000) |
| B2 > A2 | LR chi2(16) =433.47 | Yes (0.0000) |
| B3 > A3 | LR chi2(16) = 430.41 | Yes (0.0000) |
| B2 > B1 | LR chi2(10) = 56.70 | Yes (0.0000) |
| B3 > B1 | LR chi2(21) = 67.28 | Yes (0.0000) |
| B3 > B2 | LR chi2(11) = 10.58 | No (0.4790) |
| A2 > A1 | LR chi2(2) = 45.95 | Yes (0.0000) |
| A3 > A1 | LR chi2(13) = 59.58 | Yes (0.0000) |
| A3 > A2 | LR chi2(11) = 13.46 | No (0.2536) |

extreme. When the male student switches from a -4 to a -5, the female student chooses for only a -2.

In case model B3 would have explained the data better than model B2 a figure for each separate aspects would have been necessary. However, the likelihood ratio test did not point to a significant added value of B3 over B2. Therefore, one figure that applies to all aspects suffices.

Figure 3.2: Male and female transition of conjoint score into grade on Likert scale

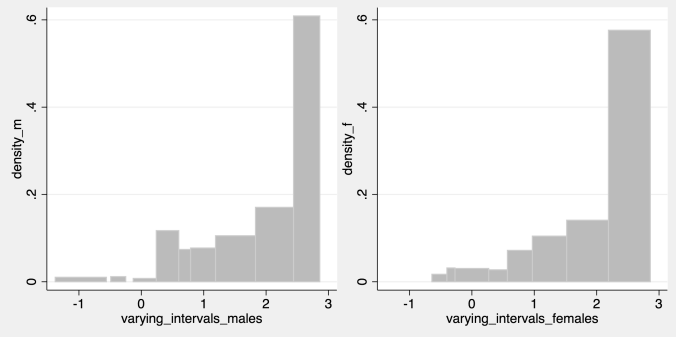



Returning to the question we posed in the introduction, we can conclude that figure 3.1 is indeed subject to a gender bias. Firstly, in general female students tend to choose their Likert grades more positively than male students. Therefore their distribution in figure 3.1 is relatively more to the right than that of the males. Without the gender bias the distributions would be closer to each other. Secondly, male students with a negative attitude towards

graduation tend to 'emphasize' this and choose the -5 grade. Figure 1 indeed shows a group of male students with a -5 grade. Female students on the other hand are a bit more careful: the most negative females students chose grades -2. Furthermore, female students with a positive attitude towards graduation often choose 'generously', their share of grade 5 is much higher than that of the male students with a positive attitude.

In order to correct for the gender bias, the intervals in the distribution should be changed into the new intervals that are represented by the bars in figure 3.2. Figure 3.3 shows the new version of figure 3.1, in which the bar widths are equal to the new interval sizes.

Figure 3.3: The importance of the graduation rate of a vocational programme for male and female students with varying interval sizes




With the middle values of the new varying intervals a corrected mean importance for male and female students can be calculated. Table 3.8 shows that the use of the new scale with varying interval sizes decreases the difference between male and female answers considerably.

Table 3.8: Distribution of scores of male and female students on a scale with varying interval sizes.

| | *Mean score on survey statement 'Graduation rate'* | |
|---|---|---|
| | Likert Scale | New scale with varying interval sizes |
| Male | 3.63 | 1.99 |
| Female | 4.22 | 2.07 |

## 3.6 Conclusion

In this chapter we compared the use of Likert scales with conjoint analyses to measure the opinion of students about what constitutes quality in education. First, we found that male students answer more negatively than their female counterparts, given the weight they attach to different aspects of education quality in the conjoint task. Second, we found that this transformation is not linear. This is because the intervals between the grades of a Likert scale that are implicitly used in the process of answering a question have different sizes for male and female students. A conversion that allows the steps between the grades in the Likert scale to be of different sizes appears to capture the gender differences most effectively. Our final finding suggests that this conversion is consistent for different questions in the survey. We came to this conclusion by comparing the survey items with the outcomes of the conjoint scores that function as anchors.

To our knowledge, this is the first study in the educational field to compare results using two methods: attitude survey and conjoint analysis. Our study adds to the literature by: (1) demonstrating how preferences measured with the less well-known method of conjoint analysis can be used to evaluate survey results, (2) using detailed empirical comparisons to compare and contrast findings from the two approaches in the light of gender, and (3) visualizing gender specific use of the Likert scale. Likert scales are widely used in different areas for attitude measurement. There have been warnings about interpersonal incomparability in the Likert scale. This study shows that the Likert scale is sensitive to bias in gender in the field of education. When evaluating studies that differ in their gender composition one should be careful drawing conclusions from different outcomes between male and female students. For example, one might conclude from figure 3.1 that female students are more motivated to graduate than female students. While the data would suggest that special measures might be needed to support male students to graduate, there was in fact no difference between the sexes. The same could apply to s ituations in which male and females student are asked to rate their teachers or schools.

Our study is limited by the generalizability of the sample. Our sample exists of students in Dutch vocational education. Further research is needed

to examine gender differences in other groups of students. Gender differences might very well also be present in the other areas that use the Likert scale for attitude measurement. Here as well further research is needed.

In this study we applied a conjoint study in addition to a survey with Likert items to investigate the attitudes of students towards several aspects of vocational education quality. The method is thought to model the decision making more realistically than the more traditional survey methods. Our vignettes represented vocational programmes that existed of 9 quality aspects with varying levels. The conjoint coefficients, indicating for each individual the relative weight of each quality attribute in the valuation, formed our anchors. A great advantage of a research design with combined methods is that it enables the researcher to obtain insights in the response style of respondents that are normally out of reach.

In conclusion, the measurement of attitudes with Likert scales will continue to be an important part of educational evaluations. Education researchers should consider the limitations of surveys when determining differences between male and female students, and apply necessary correction methods before comparing these groups. The use of multiple methods provides valuable insights in the process of answering questions of different groups of students.

# Chapter 4

# Determinants of Vocational School Choice[1]

## 4.1 Introduction

Free school choice provides students and parents with the opportunity to choose the school they prefer. If school quality affects school choice behaviour, schools have incentives to provide high quality education in order to attract students and, consequently, funding.

The aim of this study is to provide evidence on school characteristics that are accompanied by a higher enrollment of students in vocational education. We investigate whether the quality indicators school average graduation rates and student satisfaction are predictors of school choice. We further investigate whether school choice behaviour is heterogeneous across vocational programmes and background characteristics of students. We use enrollment data of students in the highest level of Dutch vocational education for three major vocational programmes: administrative, social-pedagogical and construction studies. We further use additional school satisfaction survey data and administrative data from the Dutch Inspectorate of Education to construct measures of school quality.

[1] This chapter is based on joint work with Ulf Zölitz.

In our analysis, we apply discrete choice models of school demand and estimate fixed effects conditional logit models. Our results show that increased distance to a school option is negatively related to the probability of enrollment. The sensitivity to distance is heterogeneous across the different fields of studies: administrative studies students are less willing to accept long traveling distances than students in social-pedagogical and construction studies. We further investigate whether schools scoring high on student satisfaction scores attract more students. We find that a school level increase in student satisfaction is related to an increase in the probability of enrolment in social-pedagogical and construction studies, but less for administrative studies. Non-native students appear to have weaker preferences for schools with a higher level of student satisfaction. Further we find that higher graduation rates of a school are related to a lower probability of enrollment.

The present study builds on Hoxby (2002)'s idea that school choice gives schools an incentive to improve quality in order to maintain or increase student enrollment. According to this mechanism, free school choice can be a stimulus for raising school quality. Hoxby (2002) assumes that, if choice is free, the customers (parents or students) will choose the school that they value most, i.e. the school they consider to have the highest quality. Enrollment in a school will therefore increase when raising the quality. Consequently, in a system where money follows the student, this will provide the school with a larger budget. While Hoxby (2002) focuses on parents of primary schools, this theory could also apply to students in vocational education. The assumption underlying the theory that school quality is an important choice criterion for the customer remains the same. In the present study, we test this assumption on a sample of students in Dutch vocational education.

Cloodt et al. (2010) investigates how commuting distance affects the choice of field of study using a sample of 15,500 vocational education students in the southeast area of the Netherlands. They show that the probability of enrolling in a particular programme decreases with the distance to the closest and second closest school option. They further find that an increase in distance for a specific field of study increases the probability of enrolling in a different field of study. In addition to Cloodt et al. (2010), we incorporate measures of school quality in our models. What further distinguishes our study from

Cloodt et al. (2010) is that we assume that students first choose for a field of study and then make a decision about the school and hereby the location of the school. The fact that the majority of the students come from preparatory secondary vocational education in which they already choose a specific sector (service and health care sector, commerce and administration, technology or agricultural) adds to this reasoning.

Koning and Wiel, 2013 investigate how parents in the Netherlands react to publicly available quality information about secondary schools. They show that the school ranking that is published in a national newspaper is significantly related to future enrollment: negative school quality indicators decrease the number of enrolments and positive scores increase the number of students choosing that school. The effect of published quality indicators is generally small compared to the impact of other characteristics. The largest effect of the indicators is found in the highest secondary school track (VWO). The authors suggest that the smartest and most ambitious students pay most attention to positive quality information. Hastings, Kane, and Staiger (2010) also show that preferences for school characteristics can be heterogeneous. With data form Charlotte, North Carolina they show that black and lower income families have weaker preferences for primary and secondary schools with higher student achievements. The authors conclude that lower quality schools have weak incentives to improve because they attract the parents that are less inclined to choose schools with higher student achievements.

In chapter 2 we estimate stated preferences for school characteristics with a conjoint approach. A group of 334 Dutch vocational students ranked fictitious vocational programs in order of perceived quality, and thereby had to make explicit trade-offs between different attributes of the quality of vocational education. The results indicate that students highly value graduation rates and furthermore employers' appreciation and student satisfaction. In this chapter, we will show the results of a fifth ranking assignment in the conjoint study that indicates that the addition of traveling distance significantly decreases the importance of the nine process and product attributes. We will then investigate whether graduation rates and student satisfaction are in fact indicators of revealed school choice and to what extent distance is related to revealed school choice.

The contribution of this study is that we show that preferences for school proximity and schools with a higher average student satisfaction are existent and heterogeneous among different vocational programmes and between native and non-native students. We are, to the best of our knowledge, the first to provide evidence on the predictive power of quality indicators in vocational schools choice.

The remainder of this chapter is structured as follows. Section 2 provides background information on the Dutch education system. Section 3 introduces the data. Section 4 discusses the empirical strategy. Section 5 shows the results and section 6 concludes.

## 4.2 The Dutch vocational education system

The Netherlands have a longstanding tradition in free school choice. Freedom of education is a key feature of the Dutch primary and secondary education system. Since 1917, free school choice constitutes the freedom to found schools that provide teaching based on particular religious, ideological or educational beliefs. This resulted in a variety of publicly and privately run schools that are funded equally by the state. Parents can freely choose between state funded private and public schools and schools with specific beliefs or ideologies.

Furthermore, the law prescribes that there has to be a public primary school available everywhere within a radius of 10 kilometres. In reality, parents often have several school options to choose from within a 2-kilometre radius from home (Zölitz, 2014). In vocational education, students are also free to enrol at a school of their choice, but face a different school structure. Nationally, there are 41 vocational schools (ROC's), each offering a broad range of vocational programmes. These vocational schools are all state funded private schools, the enrolment costs are low and do not differ much between the institutes. Given the maximum travel distance of around 4 hours in a relative small country like the Netherlands, students could therefore in theory attend every school. Therefore the Dutch vocational education system provides an excellent opportunity to study the extent to which students are actually willing to travel, and under what circumstances.

### 4.2.1 Vocational education

The vocational education and training sector is the main supplier of employees to the labor market in the Netherlands. In 2010, more than 485,000 students were enrolled in a public vocational programme. One ROC school location often offers more than 100 vocational programmes. The amount of students in one programme varies greatly, ranging from 1 student to more than 1000 students. Students can choose between the school-based learning route (BOL) and the work-based route (BBL) in which work and study are combined. There are four levels of training. Level 4, middle-management training and specialist training, contains the largest group of students. In 2011 almost half of the vocational students were enrolled in a level 4 programme. In order to enrol in a level 4 programme students need to have successfully completed secondary education. Holders of a level 4 MBO certificate are eligible to continue in higher professional education. Examination in vocational education focuses on vocational competences and is organized within the school in collaboration with the professional sector. Since vocational education in the Netherlands lacks centralized exams or standardized achievement tests measures of school quality are scarce. For this study, we use school average graduation rates and school average satisfaction as indicators of school quality.

### 4.2.2 Availability of quality indicators and motives for school choice

Jongerenorganisatie Beroepsonderwijs (JOB), a school student organization representing VET students in the Netherlands, publishes the student satisfaction of VET students biannually in a general report. Satisfaction rates for specific institutions or vocational programmes can be found on the website of JOB. The graduation rates of VET students are published on the website of the Inspectorate of education, but only at school level.

In 2009 Hiteq, a knowledge centre for education research, made a report on the reasons and motives for school choice using data on a representative group of Dutch vocational education students. The report shows that the students' most important source of information for making a choice is teachers of their current school; almost half of the student sample consulted this source.

Students furthermore report information events of prospective schools (41%), written information on prospective schools in leaflets or brochures (22%) , and parents (22%) as important sources (Hiteq, 2009). The researchers report some differences between student groups. Girls are better informed when choosing an education than boys; they consult more sources. Secondly, students from the bigger cities and non-native student get least often information from their teachers. Non-native students in general seem to have less access to sources than natives; they receive much less frequently information from their parents, teachers or someone that works in the sector for which they have chosen and they less often visit information events. Instead they obtain more information from the Internet and from friends.

In view of the above, it is important to mention that 1) students in general are not widely informed about their prospective school and 2) students are not equally informed when making a school choice. We therefore can not make the assumption that school choice among these students is based on information they have about the schools. Furthermore it points to the possibility that differences in enrollment behaviour are caused by a different access to resources.

## 4.3 Stated school preference and travelling time

In chapter 2 we estimated stated preferences for school characteristics with a conjoint approach. A group of 334 Dutch vocational students ranked four sets of four fictious vocational programs in order of perceived quality. For students, there was a fifth ranking assignments. After ranking four times four vignettes, they saw the most recent set of four vignettes again. This time the vignettes were extended with an additional attribute: travelling time. This attribute either had the value 30 minutes, 1 hour or 90 minutes (table 4.1). The accompanying question was *"Which programme would you choose?"*

Table 4.1: Additional attribute for travelling time and attribute levels

| | *Level 1* | *In between value* | *Level 2* |
|---|---|---|---|
| *P10* Travelling time | 30 minutes | 1 hour | 90 minutes |

Table 4.2 contains the original results of the conjoint study (column 1) and the results of the fifth ranking round that included travelling time (column 2). The coefficients represent the importance of the nine programme attributes to the students. The table shows that travelling time has a strong negative impact on the probability of students to choose a VET programme. The coefficient is very large compared to the other coefficients and as a result of the addition of P10, the coefficients of almost every other attributes decrease. This indicates that the importance of programme attributes lose importance when travelling time increases. The drop of the weight of graduation rate after adding P10 is a significant decrease.

Table 4.2: Importance of nine programme attributes and travelling time to school to students after ranking vocational programmes according to their idea of quality (N=334)

| | Attributes | Original | | With P10 | |
|---|---|---|---|---|---|
| O1 | Employers' appreciation of students | 0.32** | (0.04) | 0.19 | (0.08) |
| O2 | Graduation Rate | 0.50** | (0.04) | 0.27** | (0.09) |
| O3 | Language skills obtained by students | 0.25** | (0.04) | 0.19* | (0.08) |
| P4 | Attention to civic education | 0.19** | (0.04) | 0.12 | (0.08) |
| P5 | Schooling hours | 0.17** | (0.04) | 0.16 | (0.09) |
| P6 | Challenge (description of the task) | 0.24** | (0.04) | 0.08 | (0.08) |
| P7 | Structure (description of the programme) | 0.14** | (0.04) | 0.01 | (0.08) |
| P8 | Mentoring hours provided by school in workplace learning | 0.23** | (0.04) | 0.17* | (0.09) |
| P9 | Students' apprecation of teachers | 0.25** | (0.04) | 0.27** | (0.09) |
| P10 | Travelling time | | | -0.93** | (0.09) |

Standard errors in parentheses, asterisks indicate significance (*=.05, **=.01)

## 4.4 Data

For the empirical analysis in this study we combine various sources of data. The first source is a national student-level dataset containing the entire population of Dutch students that were enrolled in one of the publicly funded secondary vocational institutions in the 2010/2011 school year. The data contains the attended school and programme, gender, age, background and previous education and 4-digit postal codes of approximately 500,000 students. For this study, we selected students of three major vocational programmes: administrative studies, social pedagogical studies and construction studies.

The second source is the data on school level graduation rates as provided by the ministry of education. For each programme in vocational education, the ministry calculates the percentage of students leaving school with a diploma based on the total amount of students leaving school. Figure E.1 in the appendix shows the distribution of the unweighted school level average graduation rates for each of the three programmes.

The third source is the student satisfaction survey of JOB. This survey is conducted biannually and has a response rate of about 40 percent out of the total amount of students in senior secondary vocational education. The survey contains questions on teacher quality, content of lessons, safety, quality of the workplace and other items that evaluate the school. For the analysis in this study we aggregate the data to programme level, and use three year averages of the years 2008, 2010 and 2012. We use two satisfaction measures: Firstly, the average overall satisfaction with the school, measured with on a scale from 1-10 and secondly, the percentage of satisfied students on different domains of satisfaction, measured by a dichotomous variable satisfied / not satisfied. Figure E.2 shows the distribution of the students' overall satisfaction scores at an individual level.

Figure E.3 shows the unweighted distribution of the student overall satisfaction scores aggregated at the school level for the three different programmes social-pedagogical studies, administrative studies and construction studies.

The fourth source is a dataset that contains the postal codes of each school - programme combination. Some schools offer an educational programme at multiple geographic locations. In these cases we included the postal codes of each location, and made the assumption that the student chooses to go to the location closest to their own living neighbourhood. In this study we will focus on level 4- BOL students that are enrolled in three major vocational programmes: administrative studies, social pedagogics and construction studies. In 2011, 38,923 students enrolled in one of these three programmes. Almost all schools in our data offer each of the three programmes, two schools do not offer construction studies. In the final analyses we included 39 schools. A vocational school can offer a programme at different locations. Administrative studies and social pedagogical studies are often offered at more locations.

This is not the case for construction studies which are mostly offered at one location.

Two ROC's (Hoornbeeck College and ROC Menso Alting) have a strong religious identity and aim specifically at attracting protestant students. These schools attract less students than the other general schools, but those students that choose to attend these religious schools have a high willingness to travel for these schools. For the religious schools the average travelling distance is 20,9, whereas for the other schools it is 11,2. We therefore excluded them from our analyses. The finding in itself is however interesting. Apparently, the willingness of vocational students to travel increases considerably when schools have a specific characteristic to offer.

### 4.4.1 Descriptive statistics at student and school level

Table 4.3 shows the descriptive statistics for the students of the three different programmes. Firstly, the table gives an impression of the differences between the three programmes. The programmes are gender specific: the population of construction studies is almost entirely male, the population of social pedagogical studies is mostly females and the gender composition for administrative studies is mixed. Furthermore the average distance to school is highest for construction studies (14.32 kilometres). This is partly due to the fact that for construction studies, vocational programmes have fewer locations available.

Table 4.4 shows the descriptive statistics for the schools. The table contains information on the amount of schools and school locations, the travel distance, the satisfaction of students with the school and different domains of the programme and information about the graduated students of the programme. Construction studies have the highest average monthly wage but the lowest graduation rate. Administrative students have the highest amount of satisfied students. Students of social pedagogical studies are less satisfied with the facilities and more satisfied with the workplace than students of the other two programmes. The table also shows the proximity rank of the different programmes.

Figure 4.1 shows the distribution of the distance from the students' living neighbourhood to the chosen school for all vocational programmes. The median distance to the chosen school is 11.4 kilometers. 90 percent of the

Table 4.3: Student characteristics

| | Administrative studies | Social pedagogical studies | Construction studies | Total |
|---|---|---|---|---|
| Percentage native Dutch students | 0.55 | 0.80 | 0.80 | 0.71 |
| | (0.50) | (0.40) | (0.40) | (0.45) |
| Percentage with low previous education* | 0.48 | 0.49 | 0.53 | 0.50 |
| | (0.50) | (0.50) | (0.50) | (0.50) |
| Percentage female students | 0.35 | 0.90 | 0.07 | 0.53 |
| | (0.48) | (0.30) | (0.25) | (0.50) |
| Average age | 19.50 | 19.41 | 18.72 | 19.29 |
| | (3.52) | (3.68) | (3.21) | (3.54) |
| Average distance to school | 9.76 | 11.24 | 14.32 | 11.43 |
| | (11.00) | (15.09) | (14.07) | (13.71) |
| Percentage that attends closest school | 0.62 | 0.58 | 0.65 | 0.61 |
| | (0.49) | (0.49) | (0.48) | (0.49) |
| N | 13,109 | 17,087 | 8,626 | 38,822 |

* The variable percentage with low previous education equals one if the student graduated in preparatory secondary vocational education, excluding the theoretical pathway (vmbo B/K/G), or graduated in senior secondary vocational education level 1 Assistant training (mbo 1) or graduated in 2 Basic vocational training (mbo 2), or did not graduate from secondary education previously.

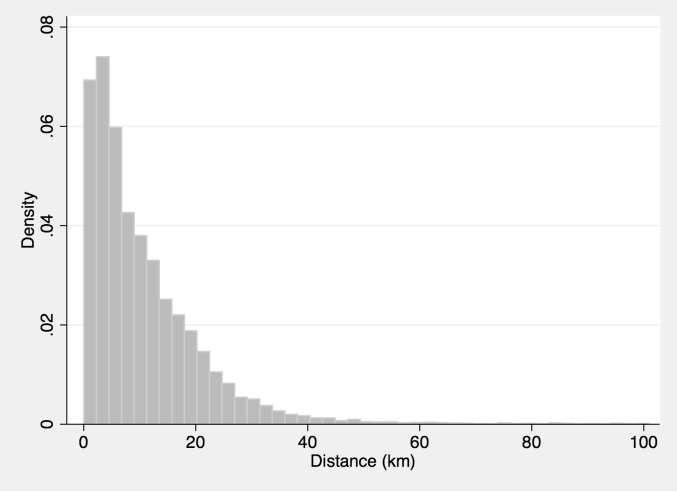
Table 4.4: School characteristics

| | Administrative studies | Social pedagogical studies | Construction studies | Total |
|---|---|---|---|---|
| Number of schools | 41 | 41 | 38 | 120 |
| Number of school locations | 94 | 104 | 54 | 252 |
| Average number of locations per school | 2.3 | 2.5 | 1.4 | 2.1 |
| Average traveling distance of students | 10.60 | 11.75 | 14.04 | 12.08 |
| Overall satisfaction with school | 6.32 | 6.04 | 6.04 | 6.14 |
| | (0.49) | (0.54) | (0.53) | (0.53) |
| Percentage of students satisfied with | | | | |
| teachers | 52.50 | 50.16 | 48.24 | 50.35 |
| lessons | 46.53 | 31.12 | 36.74 | 38.16 |
| guidance | 59.20 | 52.83 | 54.18 | 55.44 |
| facilities | 49.87 | 35.68 | 47.80 | 44.37 |
| workplace | 50.88 | 59.20 | 50.66 | 53.65 |
| safety | 67.96 | 63.12 | 66.56 | 65.86 |
| Graduation rate | 78.92 | 82.41 | 70.33 | 78.22 |
| | (13.58) | (9,68) | (9.33) | (11.96) |

The overall satisfaction with the school is measured with a mark form 1-10. The percentages of satisfied students are based on a dichotomous variable satisfied / not satisfied. Graduation rates are measured as the fraction of students that graduates out of the total amount of students that leave the program or the institution in a given year

students choose a school that is within a 23.5 kilometers radius from their living neighbourhood, and few students choose schools that are located far away further away.

Figure 4.1: Distance to school location

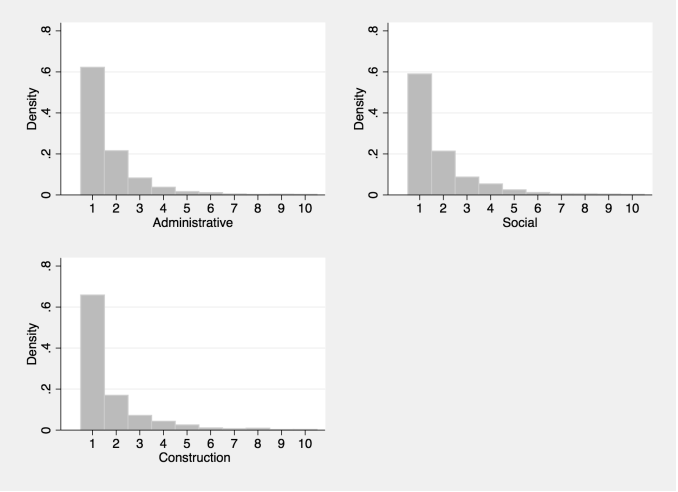



Distance as the crow flies between the student and school location. For distances lower than 100km. Including the three vocational programmes administrative studies, social pedagogical studies and construction studies. n = 38.822

Figure 4.2 shows the amount of students that choose for the school that is closest by. The different programmes follow the same pattern; around 60 percent of the students choose the nearest school. Around 20 percent of the students choose the second closest school.

Figure E.4 shows the distribution of the number of schools that are available to the students within a 20 km radius. The figure shows that the variation in the number of available schools is substantial. The number of available schools ranges from 0 to 6. Students of administrative and social-pedagogical studies have more often two, three or four schools to choose from than students of construction studies.

Figure 4.2: School proximity rank




The figure shows the proximity rank of the chosen schools in relation to the other schools. The first bar represents the students that choose the school that is closest by their own living neighbourhood, the second bar represents the students that choose the second-closest school etc.. For ranks 1-10. n = 13109 for administrative studies n=17087 for social studies and n=8626 for construction studies.

## 4.5 Empirical strategy

In order to investigate how students choose between different vocational schools we estimate a discrete choice model, the conditional logit model. In the following, we will briefly discuss the intuition and limitation of this estimation technique. The conditional choice model was developed by McFadden (1974) and first applied to the context of school choice by Glazerman (1998). Intuitively, the conditional logit model compares the characteristics of the chosen school with the attributes of all schools that are not chosen.

In this model student $i$ faces the decision to choose between $j$ different schools. Every school is associated with a certain amount of individual specific utility $U_{ij}$. The model assumes that utility $U_{ij}$ can be described as a linear function of a student's specific component $W_i$, a school specific component $X_j$, a school-student specific component $Z_{ij}$ and a non-systematic random component $U_{ij}$.

$$U_{ij} = W_i + X_j + Z_{ij} + \epsilon_{ij} \tag{4.1}$$

Examples of $W_i$ are individual specific characteristics like gender, age or previous education. $X_j$ are school characteristics that are common to the population of school choosers. Examples of $X_j$ are the average satisfaction of students about certain aspects, the graduation rate of the school and the average wage of graduated students. $Z_{ij}$ is the distance between the students' living neighbourhood and the school. The utility that student i obtains from choosing school alternative j can be written in a linear form as:

$$U_{ij}(X_j, Z_{ij}) = \beta_1 W_i + \beta_2 X_j + \beta_3 Z_{ij} + \beta_{ij} \tag{4.2}$$

The parameters $\beta_1$, $\beta_2$ and $\beta_3$ are the focus of our interest, since they determine how differences in the attributes translate into utility differences. We assume that students choose the school that provides them with the highest level of utility.

We do not directly observe the utility level $U_{ij}$, but use the observed outcomes of the choice process, which are revealed to us in the actual data. The observed outcome variable is binary and takes on the value 1 if the school is chosen and zero otherwise. If the students chooses school J, it is revealed to us that $U_{ij} > U_{ij-j}$ , i.e. that the utility level of the chosen school must have been larger than the utility of any other school in the choice set. Using the observed outcomes of school choice we can estimate how differences in $X_j$, and $Z_{ij}$, which vary over different school options, relate to the probability that one given school has the highest amount of utility of all schools in the choice set.

One practical problem with the conditional logit estimation is the assumption of independence of irrelevant alternative (IIA). The IIA property assumes that the probability of enrolling in a particular alternative does not depend on the characteristics of other alternatives.

## 4.6 Results

### 4.6.1 School distance and student satisfaction (basic model)

Table 4.5 shows the estimates we obtain from the conditional logit estimation separate for the three vocational programmes. Coefficients significantly larger than zero represent a characteristic that is related to an increase in the probability of enrollment and coefficients significantly lower than zero mean that this school characteristic is unpopular or unattractive among the population of choosers. The table shows that increased distance to a vocational programme is negatively related to the probability of choice of that programme. Furthermore the table shows that the distance coefficient of the administrative programme (-0.153) is lower than the distance coefficients of the other two programmes (-0.125 and -0.117). This suggests that students in an administrative programme are somewhat more sensitive to distance when making their school choice, or, in other words, are a little bit less willing to travel than students in the other programmes. The differences between the programmes are highly significant.

Table 4.5: Preferences for school distance and student satisfaction (basic model)

| | (1) | (2) | (3) |
|---|---|---|---|
| Labels | Administrative | Social | Construction |
| Distance (km) | -0.153*** | -0.125*** | -0.117*** |
| | (0.001) | (0.001) | (0.001) |
| Overall satisfaction with school | 0.176*** | 0.526*** | 0.442*** |
| | (0.029) | (0.027) | (0.034) |
| | 496,480 | 675,200 | 309,838 |

Conditional logit regressions; Standard errors in parentheses; All regressions control for whether the school is a religious school. *** p<0.01, ** p<0.05, * p<0.1

Table 4.5 furthermore shows that a higher overall satisfaction with the school is positively related to the probability of enrollment in that school. This effect is largest for the social pedagogical programme. The implied willingness to travel for school with a one point higher average satisfaction score is 1.15 km for administration students, 4.2 km for social pedagogical studies and 3.8 km for construction studies.

### 4.6.2 Native vs. non-native background

Table 4.6 includes the interaction between a dummy variable that specifies whether a student is a Dutch native and quality measure of school level satisfaction. The estimates show that native students in the administration programme have a much higher chance of enrolling in a school with higher perceived quality than their non-native fellow students, which appear to prefer schools that score low on the student satisfaction measures. For social pedagogical studies native students also appear to have substantially stronger preferences for schools with high satisfaction scores than non-native students, which appear not to be sensitive to the school quality measure. For construction studies, we observe a different pattern. In this programme, non-native students appear to value perceived school quality while their Dutch native classmate do not seem to be influenced by it in their school choice.

Table 4.6: Preferences for school distance and student satisfaction for students with native vs. non-native background

| | (1) | (2) | (3) |
|---|---|---|---|
| Labels | Administrative | Social | Construction |
| Distance (km) | -0.154*** | -0.126*** | -0.117*** |
| | (0.001) | (0.001) | (0.001) |
| Overall satisfaction with school | -0.103** | -0.038 | 0.354*** |
| | (0.041) | (0.053) | (0.067) |
| Native* Overall satisfaction with school | 0.516*** | 0.700*** | 0.114 |
| | (0.055) | (0.057) | (0.075) |
| | 496,480 | 675,200 | 309,838 |

Conditional logit regressions; Standard errors in parentheses; All regressions control for whether the school is a religious school. *** p<0.01, ** p<0.05, * p<0.1

### 4.6.3 Different domains of student satisfaction

Table 4.7 shows for each programme the results of conditional logit regression for different domains of student satisfaction. The separate cluster scores on satisfaction are very small and not consistent. For administrative studies and social studies, the coefficients for satisfaction with facilities are positive, indicating that students prefer schools that have a higher perceived level of facilities, but the coefficients on the satisfaction with lessons are negative. For construction studies, we observe orthogonal point estimates. In all estimated

models, the coefficients are much smaller than the overall satisfaction with the school. Although this might have various reasons, we will in the following discuss two explanations that appear likely to us. Firstly, the overall satisfaction was measured on a scale from 1-10. The domains of student satisfaction on the other hand are dichotomous measures: satisfied or not satisfied. This is a much less accurate measurement and thus might lead to measurement errors. Secondly, the measures of school satisfaction are aggregated at the programme level. This suggests that there is a common feeling of student satisfaction among student in a programme. It could however be that students in a programme do share the overall feeling of quality but still think very differently about the different domains of the school or programme. The coefficient of the overall satisfaction with the school increases when combined with the different domains of student satisfaction. This suggests that controlling for different subdomains of student satisfaction does provide a clearer picture on school quality with less measurement error in the overall satisfaction measure.

### 4.6.4 Graduation rates

Table 4.8 shows the results of conditional logit regression for the effect of distance and graduation rates for the probability of enrolment. The graduation rate is the fraction of students that graduates out of the amount of students that leave the program or the institution in a given year. For administrative studies there is no effect of graduation rate on the probability of enrolment. For social and construction studies there is a significant negative effect on the probability of enrolment, indicating that students within these programmes value something in schools with lower graduation rates. It could be that students are attracted to schools with characteristics that correlate with higher amounts of early school leavers (and lower graduation rates), such as being located in one of the bigger cities. Or that students that live in one of the bigger cities, nearby one of more schools with higher graduation rates, receive less information about the other options they have (see also Hiteq (2009) finding about students from the bigger cities). It can also be that schools with a lower graduation rate do in fact have a high quality of education, but are simply more selective in whom they grant a diploma.

Table 4.7: Preferences for school distance and different domains of school satisfaction

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| *Panel A* | *Administrative Studies* | | | | | | |
| Distance | -0.156*** | -0.153*** | -0.154*** | -0.154*** | -0.154*** | -0.155*** | -0.155*** |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Overall satisfaction with school | | 0.176*** | | | | | 0.723*** |
| | | (0.029) | | | | | (0.049) |
| Satisfaction with lessons | | | -0.004*** | | | -0.020*** | -0.042*** |
| | | | (0.001) | | | (0.002) | (0.002) |
| Satisfaction with facilities in school | | | | 0.017*** | | 0.031*** | 0.032*** |
| | | | | (0.001) | | (0.002) | (0.002) |
| Satisfaction with workplace learning | | | | | -0.002 | -0.010*** | -0.023*** |
| | | | | | (0.001) | (0.001) | (0.002) |
| Observations | 537,469 | 496,480 | 496,480 | 496,480 | 496,480 | 496,480 | 496,480 |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| *Panel B* | *Social studies* | | | | | | |
| Distance | -0.125*** | -0.125*** | -0.124*** | -0.124*** | -0.124*** | -0.124*** | -0.126*** |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Overall satisfaction with school | | 0.526*** | | | | | 1.060*** |
| | | (0.027) | | | | | (0.037) |
| Satisfaction with lessons | | | -0.009*** | | | -0.022*** | -0.043*** |
| | | | (0.001) | | | (0.002) | (0.002) |
| Satisfaction with facilities in school | | | | 0.006*** | | 0.006*** | -0.000 |
| | | | | (0.001) | | (0.001) | (0.001) |
| Satisfaction with workplace learning | | | | | 0.008*** | 0.019*** | 0.005*** |
| | | | | | (0.001) | (0.002) | (0.002) |
| Observations | 700,567 | 675,200 | 675,200 | 675,200 | 675,200 | 675,200 | 675,200 |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| *Panel C* | *Construction studies* | | | | | | |
| Distance | -0.119*** | -0.117*** | -0.117*** | -0.118*** | -0.117*** | -0.119*** | -0.118*** |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Overall satisfaction with school | | 0.442*** | | | | | 0.544*** |
| | | (0.034) | | | | | (0.062) |
| Satisfaction with lessons | | | 0.013*** | | | 0.028*** | 0.009*** |
| | | | (0.001) | | | (0.002) | (0.003) |
| Satisfaction with facilities in school | | | | -0.007*** | | -0.023*** | -0.022*** |
| | | | | (0.001) | | (0.002) | (0.002) |
| Satisfaction with workplace learning | | | | | 0.002* | 0.001 | 0.001 |
| | | | | | (0.001) | (0.001) | (0.001) |
| Observations | 327,788 | 309,838 | 309,838 | 309,838 | 309,838 | 309,838 | 309,838 |

Conditional logit regressions; Standard errors in parentheses; All regressions control for whether the school is a religious school. *** p<0.01, ** p<0.05, * p<0.1

Table 4.8: Preferences for school distance and graduation rates

| | (1) Administrative | (2) Social | (3) Construction |
|---|---|---|---|
| Distance (km) | -0.149*** | -0.122*** | -0.109*** |
| | (0.002) | (0.001) | (0.001) |
| Graduation rate (2) | 0.001 | -0.016*** | -0.005** |
| | (0.001) | (0.001) | (0.002) |
| | 260,334 | 581,492 | 130,878 |

Conditional logit regressions; Graduation rates are measured as the fraction of students that graduates out of the total amount of students that leave the program or the institution in a given year. All regressions control for whether the school is a religious school. Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

### 4.6.5 Revealed preferences versus stated preferences

In the conjoint study, we measured the importance of nine programme attributes to the students, using representations of fictitious VET programmes. These are called the stated preferences. In the present study we measure the influence of quality attributes on the actual school choice of students; the revealed preferences. In order to compare the stated preferences to the revealed preferences we searched for school characteristics that match the vignette attributes. We used the graduation rate and students satisfaction. Other indicators from the student satisfaction survey of JOB and the school leaver survey of Research Centrum Onderwijs Arbeidsmarkt (ROA) lead to inconsistent results and we therefore excluded them from the analyses for this study.

In both the conjoint study and the school choice study we estimated parameters for the effect of distance on school choice. Table 4.9 shows the distance parameters of both the conjoint study and the school choice study separately for each programme. Both parameters are estimations of logit analyses (rank-ordered logit and conditional logit). Yet they are quite different in size: the parameters of the conjoint study are between 6 and 8 times larger than the parameters of the school choice study. In the conjoint study this was expressed with the time spent on traveling to school (varying between 30 minutes, 60 minutes and 90 minutes). In the present study distance was expressed with the traveling distance in kilometres. If we estimate the speed of traveling on 60 kilometres per hour, the attribute values of the conjoint study (30 minutes, 60 minutes and 90 minutes) can be translated into traveling distance of 30

kilometres, 60 kilometres and 90 kilometres. If students actually travel slower, the difference between the two sets of estimates widens further. This suggests that students value travel distance much less in reality than in a hypothetical situation

Although the estimations differ between the studies, table 4.9 nevertheless points to comparable differences between the VET programmes. The table shows that the distance parameter in the conjoint as well as the school choice study is largest for the students of the administrative programme. This means that construction students are less influenced by distance in their rankings of fictitious programmes and in reality also travel on average further for their school. Administrative students on the other hand, are less inclined to travel, both hypothetically and for real.

Table 4.9: Distance-parameters for the conjoint study and the school choice study

| Distance parameters | Administrative studies | Social studies | Construction studies |
|---|---|---|---|
| Conjoint study* | -1.078 | -1.018 | -0.684 |
| School choice study (basic model)** | -0.153 | -0.125 | -0.117 |

*Estimations of rologit model ** Estimations of clogit model

In the conjoint study, graduation rate was the most important attribute to the students. Yet in the school choice study graduation rate did not, or did negatively influence the probability of enrolment. Whilst students in theory find the graduation rate of a programme important, in practice there are apparently other factors of importance that do not, or negatively, correlate with graduation rate.

## 4.7 Conclusion

In a system of free school choice, students' preferences for school characteristics determine the dimensions in which schools compete with each other. If students value academic standards highly, then schools are provided with an incentive to improve their performance in this dimension. Schools that perform well on the characteristics that affect the probability of enrollment positively will attract more students and, consequently, more funding.

In this study, we investigate whether students value schools with higher student satisfaction and how graduation rates and distance affect the probability of enrollment. Our results show that around 60% of the students chooses the nearest closest school and that 20% of the students choose the but-one closest school. The other 20% chooses a school that is further away. We furthermore found that students prefer schools in their geographical proximity, schools with higher student satisfaction and, in two of the three vocational programmes, lower graduation rates. These results suggest that schools scoring highly on student satisfaction will attract more students in the long run. If school satisfaction is interpreted as an indicator that correlates with school quality, schools will have incentives to keep up and improve the quality of education that they offer. Our results suggest that there are aspects that students' value in schools with lower instead of higher graduation rates. This result appears surprising as in Dutch policy, graduation rates are regarded as a crucial indicator of vocational education quality. Policy makers believe that schools with fewer dropouts and therefore higher graduation rates are better schools since they are able to retain and successfully educate their students. All Dutch vocational schools are therefore required to contribute to reducing the national amount early school leavers in vocational education (Ministerie van Onderwijs Cultuur en Wetenschap, 2011) and, the graduation rate of programmes is one of the most important assessment criteria that the inspectorate uses to monitor the quality of vocational schools (Inspectie van het Onderwijs, 2011b). However, if graduation rate is reversely related to aspects of education quality, the government could do harm by focusing too much on the graduation rates and overlooking other signs of quality. In order to explore this matter further, our analysis should be repeated with a more comprehensive set of quality indicators as well as school characteristics.

Our work has further shown that school choice behaviour is heterogeneous among students of different programmes and across students of different socioeconomic background. Students in construction studies and social studies differ in two ways from students in administrative studies. They generally travel further for a school of their choice and they enroll more often in schools with higher student satisfaction. Furthermore we have shown that students with a non-native background seem to have weaker preferences for schools

with student satisfaction. This does not apply to students of construction studies, where background does not have an effect on school choice. These heterogeneous findings indicate that, while vocational schools might have an incentive to improve their quality on certain dimensions, these incentives might be more salient for some programmes and socio-economic groups than for others.

For further research it would be interesting to expand the study to other vocational programmes. We find differences between the programmes in the way distance and school quality characteristics correlate with school choice. An investigation of other vocational programmes could give more insight into the relative size and wider occurrence of these differences. Moreover, we find that the students with a higher willingness to travel and stronger preferences for schools with high student satisfaction rates are also the ones with a preference for schools with a lower graduation rate. One could hypothesize that the quality concept is better developed in programmes where students are willing to travel for and that have high satisfaction rates and that the graduation rates do not fit into this concept. In order to test this hypothesis more widely, other vocational programmes should be included in the analysis as well.

There are some limitations to our results and the interpretation that we provide. As we have mentioned before, student satisfaction and graduation rates are likely to be correlated with other unobserved school characteristics that may affect school choice. Also, the discrete choice model we use in this study assumes that the probability of enrolling in a particular alternative does not depend on the characteristics of other alternatives. Our results therefore can be interpreted as evidence that the school characteristics that we investigate are consistent indicators of choice, but not necessarily then causing the choice of a particular school.

# Chapter 5

# The Challenge of Being Consistent: Implementing New Public Management in Educational Policy[1]

## 5.1 Introduction

### The Concept of New Public Management

From the 1980's onwards, countries worldwide introduced reforms that were marked by the term New Public Management (NPM hereafter). The reforms took place in various societal domains, one of which is the educational system. NPM influenced educational policy in for example the United States, Australia, Korea, Lithuania, and several countries in Western Europe such as the Netherlands. Because of political and economic differences between countries, the reforms took place in different decades and contexts (Braun and Merrien, 1999; Fusarelli and B. Johnson, 2004; Leisytë and Kizniene, 2006; Byun, 2008).

[1]This chapter is based on joint work with Gerry Reezigt and is currently in review as a journal article for Educational Policy

The main aim of NPM was to make educational policy more effective and more efficient. Often, budget reductions were also at stake.

In the Netherlands, one of the key features of NPM in education is the changing relationship between the Department of Education, Culture and Science (Department hereafter) and schools. The Department changes its policy from a traditional input-oriented model of detailed and direct departmental interference with educational processes of schools to a much less prescriptive and output-oriented model. To control educational quality, the Department monitors quality by means of output indicators and departmental powers are deregulated to schools by law. Schools in their turn gain more autonomy and are free to decide independent of the Department how they want to design educational practice, as long as they meet the output criteria set by the Department. By these changes, the main aim of NPM, a more efficient and effective regulation of education, is supposed to be achieved.

A complicating factor in NPM policy is that national goals that the Department wants to achieve not necessarily equal goals of individual schools. The Department and schools are different actors in the educational arena, each with their own set of values and interests which may sometimes conflict (Leney and A. Green, 2005; Clarke and Winch, 2007; Taylor, 2009; Cedefop, 2010; Sluis, Reezigt, and Borghans, 2014). For example, a school may want to expel students who do not perform well or cause trouble although they have not graduated yet, while the Department strongly stresses that each and every student must get their degree before leaving school. As a consequence the Department cannot easily assume that schools will comply and might feel the need to intervene. Ideally the Department knows when interventions are needed (on issues where diverging opinions may hinder the achievement of national aims, and in NPM these are primarily output issues) and when not (when schools hold the same opinions as the Department does and act accordingly), so that the autonomy granted to schools will stay intact as much as possible.

We are interested in studying to what extent the Dutch Department actually incorporated NPM in its vocational education policy over the past decade. By this we mean that educational policy should concentrate on the output of schools and accountability issues, no longer on teaching and learning processes.

Furthermore we want to find out whether the government diverges from its NPM principles when there is a conflict of interest with schools. To answer these questions we firstly analyzed three types of policy documents. We conclude that elements of educational policy certainly match NPM assumptions. There is a strong focus on output indicators, such as the reduction of the number of early school leavers, and self-governance of schools is stimulated. At the same time, interference with educational processes did not disappear and the Department sometimes seems to act inconsistently by introducing policies that impact these processes. Secondly, we performed analyses on the data of the field study in Dutch vocational education that was introduced in chapter 2. We found that our expectations were only partially met. The Department does tend to invest more strongly in output issues when its concerns are not fully met by the schools concerns. Here too however there are exceptions. The policy attention for the quality of examinations for example is extensive, even though schools regard this topic as highly important as well.

The concept of New Public Management (NPM) refers to a management culture that influenced the public sector in many countries, including the educational sector. Compared to the private sector, the public sector had acquired a reputation of being less effective and efficient, and therefore it was supposedly too expensive. To change this, policymakers introduced ideas and techniques of the private sector into the public sector, such as outcome-based accountability and market driven management. NPM reforms generally pursued aims such as the improvement of the effectiveness and efficiency of the public sector, the enhancement of responsiveness of public agencies to their clients and customers, the reduction of public expenditures, and the improvement of managerial accountability. NPM reforms were implemented to different degrees and with different emphases. NPM still is a relevant framework in discussions on educational policy. It is very much alive in many countries and NPM reforms so far have not been replaced by new policy reforms, although they may be revised or followed up by post-NPM reforms[2]. (Christensen and Laegreid, 2007).

[2]Post NPM-reforms are characterized by a process of rebalancing the existing administrative systems rather than changing them in any fundamental way. Although there has been no dominant model, many Post-NPM reforms entail a combination of vertical integration, either through reorganizing existing agencies, or via stronger control measures and increasing the capacity available to the political executive, with far more horizontal collaboration in the form of networks, teams, projects, etc. (Christensen and Laegreid, 2007).

**New Public Management in Education**

The introduction of NPM had varying consequences for educational systems throughout the world, but there are common features as well. We focus on two widespread elements of NPM in education: the focus on the output of schools and governmental deregulation.

NPM is characterized by an output-oriented governance model. This means that the national government, i.e. the Department of Education, sets objectives in line with their vision on education, and accordingly constructs performance measures (national tests, standards, targets, benchmarks) to monitor the extent to which schools achieve these objectives. Monitor output data are used as a basis for decision-making on the future allocation and management of resources, and the development of policy programs. Monitor output data are also used to inform educational stakeholders and society at large (Lindgren, 2001). Output control by means of indicators enables the Department to loosen the reins in other areas, such as educational processes in schools. This refers to governmental deregulation, another key characteristic of NPM. Many decisions once taken by the Department are now being taken by schools. The Department still funds schools, but schools are highly autonomous in their planning and budgeting, resource allocations, hiring and firing, as well as in evaluating and monitoring their quality. The freedom of schools to design educational processes is much larger than before. It was expected that this would lead to more effective ways of governing, because schools are closer to the educational process than the national Department. Students are also supposed to benefit, because NPM emphasizes the centrality of 'customers' (Tolofari, 2005). For schools this means they should try to tailor education to the needs of their students.

The effects of NPM in education are often questioned. Sometimes it seems that policy programs take away the initiative of schools rather than to entrust them with new responsibilities (Leisytë and Kizniene, 2006; Byun, 2008; Honig and Rainey, 2012). Sometimes it is argued that we cannot expect market-based management techniques embodied in NPM to be equally effective when applied to schools (Fusarelli and B. Johnson, 2004). Output indicators, for example, are not always sufficient motivators for improving schools (Lindgren, 2001; Fusarelli and B. Johnson, 2004). Educational outcomes are also diverse

and complex, and difficult to define, measure and interpret. Because of this, it is hard for schools to act like private sector firms.

Some scientists warn against the complicated combination of autonomy and departmental control. For educational departments, letting go of their traditional forms of control on the one hand and developing output control on the other hand appears to be rather complex. NPM in practice sometimes shows both centralizing and deregulatory elements (Tolofari, 2005).

Over the last two decades it became increasingly clear that deregulation is often coupled with re-regulation and more scrutiny and control by national governments (Christensen and Laegreid, 2007). Balancing control and autonomy is getting increasingly complex in (post)-NPM reforms. Tolofari (2005) argues that schools may become more powerful and more entrepreneurial in order to keep up their finances, while educational departments demand parsimony and output measurement that might result in bureaucratic control limiting autonomy. Studies show that theory and practice are sometimes worlds apart.

**Research Questions**

In our study, we will elaborate on the concept and practice of NPM in the Netherlands. We want to know whether the Dutch Department of Education, Culture and Science behaves in line with NPM assumptions. According to NPM, policymakers should mainly be output-oriented and less prescriptive on educational processes. However, we hypothesize that it will be hard for policymakers to merely concentrate on output and to stop interfering with educational processes in the way they were used to. We therefore studied whether policymakers and schools hold different opinions on educational issues. We also studied whether educational policy keeps focusing on output issues when schools hold opinions that may hinder the achievement of policymakers' goals. Our research questions are:

1. To what extent is Dutch policy on vocational education consistent with the concept of NPM?

2. Does the Department divert from the concept of NPM when there is a conflict of interest with the schools?

We studied these questions in the setting of Dutch vocational education, because in this educational sector NPM policies were implemented first. Before we explain our method, we will discuss this setting shortly.

### Dutch Vocational Education in the Context of New Public Management

In the Netherlands, senior secondary vocational education and training is organized in vocational schools. These schools offer courses at four levels of increasing difficulty. In 2010, more than 485,000 Dutch students aged sixteen and older were enrolled in vocational education. Students can choose between a school-based learning route and a work-based route (combining work and school). Schools offer courses in four vocational domains: technology, commerce/administration, services/health and agriculture. Vocational education policy is based on the law of vocational education (WEB). According to this law, vocational education should provide students not only with sufficient theoretical and practical tools for their future jobs, but also with basic skills in literacy, numeracy, and civic functioning.

NPM was introduced in Dutch vocational education in 1985, when a large-scale process of departmental deregulation started and changed this sector completely. Other educational sectors followed later. In 1992, the Dutch Department of Education started providing lump sum funding to all vocational schools (Karsten and J. Meijer, 1999). With lump sum funding, schools are free to spend their budget as they wish. By this the Department aims to stimulate schools to be responsible for educational quality and operational management, while the Department itself manages the educational sector by setting and monitoring output standards (Karsten and J. Meijer, 1999). In the lump sum system, the production of education is outsourced to independently operating boards at the school level. The school's main budget is allocated by means of standardized formulae and increases with the numbers of students. In addition, incentives were built into the lump sum system. For example, schools can acquire additional funding based on the number of students who graduate successfully. With the introduction of the lump sum funding system, schools became autonomous in deciding about topics like class size and didactic approaches. For example, it was no longer mandatory for all students to stay

in the same class, studying the same subjects, for a full year (Karsten and J. Meijer, 1999).

However, some output goals that are central for the Department transcend the interests of individual vocational schools. When schools are highly autonomous, it is not self-evident anymore that they will pursue these goals as strongly as the Department wants them to. These output goals are for example: all students should obtain diplomas, all students have to master basic literacy and numeracy skills when they graduate, all students acquire knowledge and skills in the area of citizenship. For a school, numeracy standards or citizenship development may not be very important, especially when stakeholders (parents, students, employers) attach little importance to them. This led us to hypothesize that the Department may feel the need to interfere when schools hold different opinions on policy topics.

## 5.2 Method

In order to answer our first research question, we applied content analysis to documents from three sources: reports of the Department of Education, of the Inspectorate of Education and of the Dutch Education Council. For our second research question, we performed analyses on our survey data.

### 5.2.1 Content Analysis of Reports

We analyzed the content of reports published between 2000 and 2010, thereby covering a ten-year policy term. The implementation of NPM in Dutch vocational education started a few years before the year 2000, but unfortunately a systematic analysis of this earlier period was not possible. Policy programs were not set out explicitly and departmental reports were not systematically structured to report about similar policy topics year after year. From 2000 onwards the reports showed more consistency. We studied a decade because that allowed us to see which policy programs were important for a longer period of time, indicated by the budget or attention they received.

### Annual departmental financial reports 2000-2010 of the Department of Education, Culture and Science

The departmental financial reports are published yearly and show how the budget is spent on policy programs in the preceding year. The reports also give insight in the content and progress of these programs[3]. Our aim was to see to what extent educational policy is consistent with the concept of NPM. To answer this research question we first selected policy topics that received a lot of attention throughout the years. We then measured the degree of attention given to a specific policy topic in the field of vocational education by counting the number of pages in the financial reports about this topic. The reports from the years 2007 - 2010 enabled us to add the money spent on each topic as an additional indicator of policy attention. In reports from earlier years, the differences in budget specification unfortunately were too substantial to do the same.

### Reports of the Inspectorate of Education

The Dutch Inspectorate of Education is part of the Department of Education. We studied inspection frameworks and thematic reports.

Inspection frameworks outline the aims and methods of school inspection for a period of two to four years. They comprise the indicators used by inspectors to make judgments about vocational schools. These frameworks were relevant because they informed us about the prevailing ideas about the relationship between the Department and schools. For example, when the Department focuses on output control according to the concept of NPM, it would be surprising to find the inspection framework focusing on educational processes in schools. We studied the main statements about the Department-schools relationships in the inspection frameworks of 2003, 2007 and 2009.

Thematic reports describe research results of studies by the Inspectorate. The subjects of these reports make clear what the main policy topics in voca-

[3]In a prestudy, we studied more departmental documents but the annual departmental financial reports were the most insightful and specific. Descriptions of questions asked in Parliament and discussions about educational topics were too detailed and scattered to get a good overview of policy programs. A more extensive search in all departmental documents showed that it was hard to distinguish which policy programs were actually executed and for how long.

tional education are, according to the Inspectorate and the Department. We analyzed thematic reports about vocational education and checked how often specific subjects were examined between 2000 and 2010.

**Reports of the Dutch Education Council**

The Education Council is an independent advisory body which provides advice, both solicited and unsolicited, to the Department of Education. For this study we were especially interested in reports requested by the Department, because we wanted to know to what extent these reports reflect the concept of NPM. Firstly we selected the reports requested by the Department about vocational education. Secondly we analyzed reports about the (changing) relationship between the Department and schools that were not confined to vocational education but comprised more educational sectors.

### 5.2.2 Analysis of the survey data

In order to measure the degree of agreement about educational topics between the Department and vocational schools we used a set of statements from the survey that was also part of the conjoint questionnaire and already used in chapter 3. The questionnaire consists of statements about vocational education and aims to measure the perceived importance of topics about processes and output in vocational education. For the present study, we selected nine statements that explicitly refer to educational output aspects (such as employer satisfaction) and educational process aspects (such as frontal instruction) of vocational education. Table 5.1 shows the nine aspects and the accompanying statements. Since this study focuses on the relationship between the Department and schools, we concentrated on the data of 54 departmental representatives (18 employees of the Department of education and 36 vocational education inspectors of the Inspectorate of Education) and 75 school representatives (66 teachers and 9 managers of five vocational schools). We calculated mean scores per topic for each of these two groups and used t-tests to find out whether differences in scores were statistically significant. As a next step we confronted the agreement on topics with the level of policy attention these topics had in the documents we analyzed.

Table 5.1: Nine quality aspects and the accompanying survey statements

| *Quality aspect* | *Statement* |
|---|---|
| 1. Early school leaving | Preventing students from leaving the school early is an important issue at the school |
| 2. Employer satisfaction | Employers appreciate graduates of this programme |
| 3. Numeracy | In this programme attention is paid to the mathematical skills of the students |
| 4. Literacy | In this programme attention is paid to the Dutch language |
| 5. Examination | The tests of this programme are of good quality |
| 6. Frontal instruction | The programme makes use of frontal instruction |
| 7. Challenge | The students are offered challenging assignments during the programme |
| 8. Mentoring in workplace learning | Students of this programme are mentored sufficiently during the workplace learning period |
| 9. Schooling hours | The programme has many hours per week |

**Consistency of Educational Policy and the Concept of New Public Management**

Our first research question states to what extent educational policy is consistent with the concept of NPM. To answer this question, we will describe the results of our analysis of three types of documents. In doing so, we will concentrate on two main characteristics of NPM: a focus on output and school autonomy.

## 5.3 Annual Departmental Reports (2000-2010)

The five topics receiving the highest levels of policy attention in 2000-2010 are reduction of early school leaving, innovation budgeting, quality of examinations, reform of qualification structure, and literacy and numeracy standards. They will be discussed below.

**Reduction of early school leaving**

This topic is strongly influenced by the goals set by European education ministers in Lisbon in 2000. In the first years after 2000, the Department is primarily concerned with methods to adequately register early school leavers. Later reports show the number of early school leavers is gradually reducing. Over the years, this topic became a large policy program consisting of many projects. In 2010, the policy program on early school leaving contains projects on the

maintenance of regional registration centers, the formulation of target agreements (between schools, the minister and the regional registration centers), digital systems for the registration of absenteeism, facilities for overloaded students and social work in schools (in order to prevent early school leaving). In 2007-2010, a lot of money was spent on the reduction of early school leaving compared to other policy topics. The topic of early school leaving also dominates other topics with regard to the number of pages it comprises in annual reports (Table 5.2).

**Innovation budgeting**

In 2000, the Department provides funding for innovations in vocational schools. Plans of schools aiming at improving the transition of students from secondary to tertiary vocational education or improving connections with the labor market are funded on top of the lump sum. From 2000 to 2010 a major part of the budget is spent on these innovative projects. The annual reports do not give systematic information about effects of the projects.

**Quality of examinations**

In Dutch vocational education, students must show that they are qualified for the jobs they were trained for in their exams. The exam guarantees the formal qualification of students and reflects the level and content of job training. In 2000, the Department starts providing additional funding to improve the quality of exams and up to 2010 the quality of the exams is an ongoing concern in many annual reports. In 2002, the responsibility for the quality of examination, which belonged to the Inspectorate of Education, was transferred to the Quality Examination Center. The results of this organizational change were disappointing however and in 2008 the Inspectorate is once again made responsible for the quality of examinations in vocational education. These events lead to a considerable amount of departmental attention through the years. The expenditures in 2007-2010 are not in line with that, but this is due to the fact that costs for exams are funded in the lump sum.

### Reform of qualification structure

In 2002 the Department starts reforming the vocational qualification structure, i.e. the full set of qualification dossiers of vocational educational levels. A qualification dossier specifies the knowledge, skills and competencies for a particular course diploma. It states what a student should know and be able to do in order to get a diploma (Sanden, Smit, and Dashorst, 2012). The main goal was to make qualifications more transparent, to guide the output of vocational courses and to align educational contents more closely with the demands of the labor market. The Department combined the structural reform with a pedagogical reform: vocational education had to become competence-based and courses were supposed to become more challenging and attractive by stronger links to professional practice. Furthermore teachers were to vary their teaching methods more, for example by alternating frontal instruction and working in groups. During 2000-2010, the Department reports repeatedly on the changes on the way to competence-based vocational education.

### Literacy and numeracy standards

Since 2008, the policy attention for literacy and numeracy standards is substantial. In 2006 the Dutch Education Council states that cognitive skills in education were under pressure. The Council recommended that schools should improve the monitoring of students' levels of knowledge and repair knowledge gaps in Dutch language and mathematics (Onderwijsraad, 2006). Starting in 2008, the Department generates a budget for the enforcement of literacy and numeracy education in vocational schools. On August 1, 2010, the law on 'Reference Levels Dutch language and mathematics' comes into force. Vocational schools are then required to use reference levels for language and math in addition to vocational requirements. The Department obliges level 4 students to take central examinations in language and math in order to get their diploma. Such examinations are new in vocational education.

### Conclusion

In the departmental reports we see aspects that align with the concept of NPM. Many policy topics reflect a focus on the output of education: the

Table 5.2: Policy attention measured in numbers of pages (2000 - 2010) and expenditures (2007 - 2010)

| *Policy programs* | *Total number of pages in 2000-2010*[4] | *Expenditures in 2007-2010 (x 1.000)* |
|---|---|---|
| Reduction of early school leaving | 20 | €356 552 |
| Innovation budgeting | 10 | €382 505 |
| Quality of examinations | 8 | €11 300 |
| Reform of qualification structure | 5 | €18 785 |
| Literacy and numeracy standards | 1 | €79 962 |

reduction of early school leaving, the quality of examinations and literacy and numeracy standards. We also see that the Department provides school with unearmarked resources for innovation on top of their lump sum budgets. Schools can decide independently how they want to spend their innovation budgets in order to achieve their goals. This too fits into the NPM concept. Other policy actions however are in conflict with NPM: by forcing a pedagogical reform on vocational schools the Department interferes with their autonomy and subverts their discretion in designing educational processes.

## 5.4 Reports of the Inspectorate of Education in 2000-2010

The Dutch Inspectorate of Education assesses the quality of vocational schools. Currently, vocational schools are visited every three years. An inspection takes place at the course level and consists of interviews with students, teachers, the school board and staff members. Inspectors also observe lessons and analyze school documents. When courses are below inspection norms, they are judged as 'weak'. Quality care is an important factor to decide for further investigation. During 2000 - 2010, the Inspectorate stimulated vocational schools to be responsible for the quality of education, examinations and operational management. We studied inspection frameworks and thematic reports.

### 5.4.1 Inspection frameworks

The inspection framework of 2003 contains legal requirements schools must meet, but also ascribes a large degree of autonomy to schools. The Inspectorate works according to the proportionality principle: the interference of the Inspectorate is dependent on the extent to which schools make their governance processes visible and reliable. The more they do this, the less extensive inspection will be. The Inspectorate proclaims self-evaluations of schools as the most important documents for inspection (Inspectie van het Onderwijs, 2003).

In the 2007 framework, the Inspectorate again strongly focuses on the quality of self-governance of vocational schools by stimulating the professionalism of school boards. Also, schools are legally obliged to install a board of supervisors to control the executive board (Inspectie van het Onderwijs, 2007a).

In 2009, the Inspectorate starts using methods of risk analysis. Through self-evaluations, accountability data and indicators such as the graduation rates of students, the Inspectorate monitors all vocational schools. The Inspectorate only intervenes at institutions which show risks in their output and have underdeveloped quality assurance systems. When schools are sufficiently capable of monitoring and improving their educational quality, the Inspectorate keeps its distance (Inspectie van het Onderwijs, 2010b).

### 5.4.2 Thematic reports

The Inspectorate publishes thematic reports when a sample of vocational schools is investigated to answer specific research questions. These activities are separate from the regular inspection visits described above. Table 5.3 shows the subjects of the thematic reports and the number of reports per subject.

Table 5.3 shows four subjects that also came up in the annual departmental reports: the quality of examination, early school leaving, the reform of the qualification structure and the implementation of competence-based education, and literacy.

The remaining subjects are specific for the Inspectorate.

Table 5.3: Subjects of thematic reports by the Inspectorate of Education on vocational education 2000-2010

| *Subject* | *Number of thematic reports* |
|---|---|
| The quality of examinations | 7 |
| Compliance with the 850 hours standard | 4 |
| Early school leaving | 3 |
| Reform of qualification structure / competence based education | 2 |
| Complaint procedures of schools | 2 |
| Self-governance of schools | 1 |
| Literacy standards | 1 |
| The quality of workplace learning | 1 |
| Labor market perspective | 1 |

- Compliance of schools with the 850 hours standard. Vocational schools are legally required to offer 850 hours per year to full-time students. At the request of the Department, the Inspectorate repeatedly investigated the compliance with this law (Inspectie van het Onderwijs, 2006; Inspectie van het Onderwijs, 2007b; Inspectie van het Onderwijs, 2009; Inspectie van het Onderwijs, 2007a), because many schools did not live up to the 850 hours standard.

- Complaint procedures. The code for good governance in vocational education of 2009 included many recommendations for complaint procedures (for example appoint a committee which treats complaints objectively and independently; give optimal information to students; appoint a person in whom students can confide and to whom they can address complaints). The Inspectorate found that in 2009, a majority of schools did not have adequate procedures; a follow-up study took place in 2010 (Inspectie van het Onderwijs, 2009).

- Self-governance of schools. In 2010, the inspectorate presents a study in which a correlation is demonstrated between the quality assurance capacity of a vocational school and the quality of education; institutions with a higher education quality often know a functioning quality assurance and greater organizational effectiveness. At the same time they find that only a small proportion of the schools meet the conditions for good self governance. Only about 15 percent of institutions have a good

quality assurance capacity as well as a large organizational effectiveness and high education quality (Inspectie van het Onderwijs, 2010b).

- Quality of workplace learning. The Inspectorate monitors the quality of workplace learning, an important part of Dutch vocational courses. The report discusses topics such as the availability and accreditation of workplace learning places, and the (changing) relationship between learning in school and learning in workplaces (Inspectie van het Onderwijs, 2006).

- Labor market perspective. Since 2008, vocational schools are legally obliged to only offer courses with sufficient labor market perspective for students. In addition, they must inform students about employment opportunities. The Inspectorate exploratively studied in 2009 how schools handle this requirement, with the aim to find out how the Inspectorate can include this topic in its inspection framework at a later stage(Inspectie van het Onderwijs, 2010c).

**Conclusion**

NPM is clearly represented in the frameworks and reports of the Inspectorate. The frameworks aim at strengthening educational governance of schools, by emphasizing the quality of self-evaluations, accountability data and quality assurance systems. The inspectorate furthermore uses output indicators such as graduation rates in risk analyses and inspects educational processes only when schools do not succeed in achieving an adequate output and are judged as being 'weak'.

Most thematic reports of the Inspectorate mainly reflect output concerns (examination, early school leaving, literacy standards, labor market perspective) and the state of the art in self-governance of schools, a prerequisite for a distant Department. However, some reports are more concerned with educational processes or the educational context of schools (850 hours of educational time, competence based education, complaint procedures, the quality of workplace learning). These subjects sometimes result from educational laws that schools are supposed to respect, laws that are necessary to guarantee a basic quality of all schools. On the other hand, these can also be considered

infringements on school autonomy, especially when schools perform well on output indicators.

## 5.5 Reports of the Dutch Education Council

The Dutch Education Council advises the Department, solicited and unsolicited. Here, we focus on the solicited advices in vocational education and on reports about the changing relationship between the Department and schools. In the period 2000-2010, five reports meet these criteria. We will discuss each report shortly.

### Direction VET

In this report, the Council reflects upon the policy document Koers BVE, which outlines the long-term policy for vocational education. The Department chooses a facilitative role in a field where stakeholders are supposed to control the quality of schools; they are considered countervailing powers in a system of checks and balances. According to the Council, the Department should make it more clear which responsibilities still belong to the Department itself, and which responsibilities now belong to schools. The Council suggests that specific responsibilities of the Department concern the quality, accessibility and cost-efficiency of education. The Department should take a leading, directive role in achieving these goals and it should also define the minimum requirements of the qualification structure, the curriculum and examination in vocational education. The Council also remarks that the introduction of competence-based education needs more consideration and elaboration. It is, for example, not clear what exactly is meant by competencies (Onderwijsraad, 2000)

### The Adult and Vocational Education Act in its implementation phase

In this advice the Education Council concludes that the Adult and Vocational Education Act in general works reasonably well. There are however some issues that need extra attention. For example, the transition to a qualification structure based on competencies requires clearer control by the Department.

Because so many actors are involved in this process, a coordinating and decisive role of the Department is desired to reach the required uniformity and simplicity of structures (Onderwijsraad, 2001b).

**The vocational learning chain**

Dutch vocational education is preceded by preparatory secondary vocational education, and followed by higher professional education. The Council states that these three sectors are worlds apart to many students and therefore the Department, schools and the labor market must realize they are all part of the learning chain. The learning careers of pupils must be central, not the courses. The Council advises the Department to introduce a system in which funding applies to the entire vocational learning path of students instead of just parts of it (Onderwijsraad, 2003).

**Direction VET: Goal-oriented autonomy**

The Council reflects upon this policy document, the follow up to Koers BVE (see above). The Department proposes innovations in vocational education, but does not want to prescribe in detail how schools should behave. The Council agrees on this idea, but thinks the quality of self-governance is not high enough yet to ensure adequate vocational education. The Council then makes several recommendations in order to improve the self-governance of schools (such as a system to compare schools, protocols for the dialogue between the Department and schools on their output, clear agreements on what schools want to achieve in collaboration with their environment; (Onderwijsraad, 2004b).

**Educational governance**

The Council formulates two principles for educational governance. The first principle is creating two layers of governance in vocational schools: an executive board and a board of supervisors. In addition, the vocational education and higher education sectors should draft governance codes. The second principle concerns the development of vertical and horizontal accountability. Vertical accountability is accountability to the Department, horizontal accountability

is non-hierarchical and exists mainly of accountability to stakeholders. The Council also recommends that the Department should not prescribe how public accountability responsibilities are to be carried out, but instead it should formulate targets to measure the degree of involvement of societal bodies (Onderwijsraad, 2004a).

**Conclusion**

The reports of the Education Council about the implementation of NPM clearly uncover the frictions that the Department meets in this process. Firstly, the Council makes clear that it is not enough for the Department to define it's facilitative role: it should also be made be very clear what is expected of vocational schools and standards should be measureable. Secondly, the council states that the quality of self-governance of schools is crucial: when this quality is not enough, the Department cannot just take a facilitative role, but should operate more directive. Finally, the Council urges the Department not to forget the interests of students. While the customer, or the student, should be central according to NPM, in reality student interests are sometimes overlooked for example due to financial concerns of schools.

## 5.6 Policy focus and (dis)agreement

To answer our second question, we first have to determine on which topics the Department and schools hold different opinions. The next step is to determine whether topics where disagreement exists (especially when these are output topics) obtain more policy attention than topics where Department and schools think alike. For this, we use our analysis of annual reports of the Department described in an earlier section. Table 5.4 shows the values vocational schools (teachers and managers) and the Department (inspectors and employees of the Department of Education) attach to 9 topics that refer to educational processes and educational output. The output topics are early school leaving, employer satisfaction, numeracy, literacy and examination. The process topics consists of frontal instruction, challenge, mentoring in workplace learning and schooling hours. Frontal instruction and challenge refer to the introduction of

competence-based education: schools were forced to reduce frontal instruction, while paying more attention to supposedly more challenging forms of learning.

On 4 out of 9 topics, values of the Department and the schools do not significantly differ. Concerning the output of education, the Department values two topics higher than schools do: early school leaving and numeracy. Concerning the process topics, the schools value frontal instruction higher than the Department, while the Department values challenge higher than schools do.

In order to classify the level of agreement between the Department and the schools, the topics were then divided in three groups:

- Topics with agreed importance;
- Topics that are significantly more important to schools,
- Topics that are significantly more important to the Department.

The amount of policy attention was defined as follows:

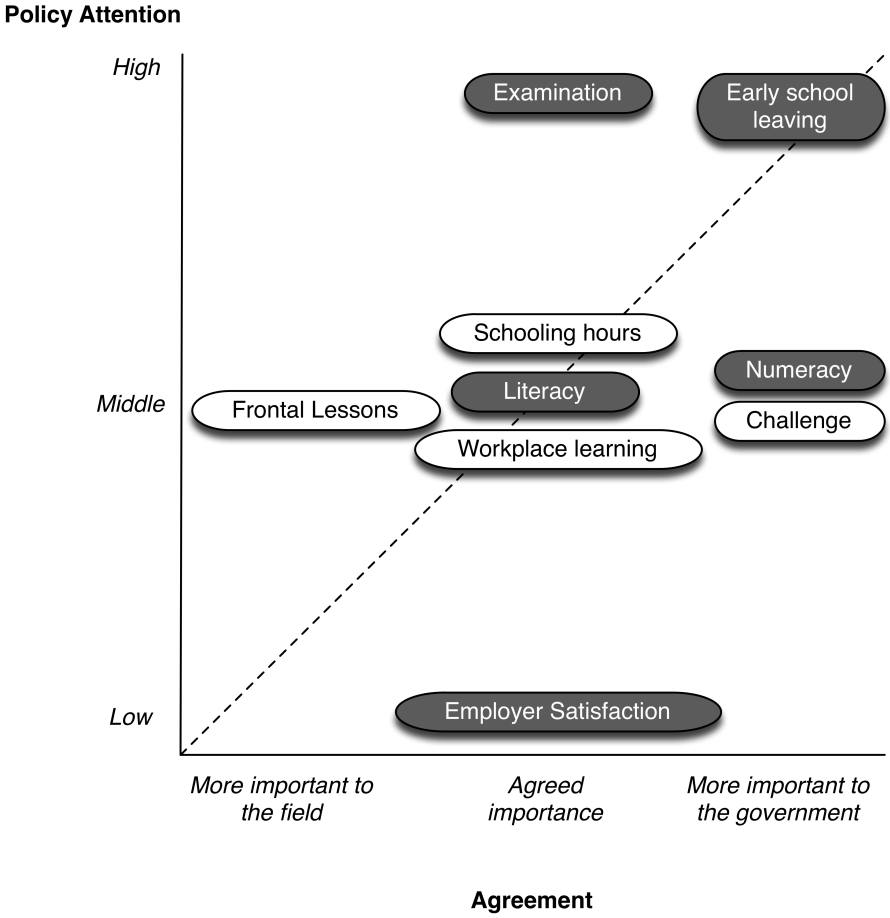
- Early school leaving receives most attention in annual departmental reports (measured in numbers of pages as well as expenditures). The quality of examination also ranks rather high in the annual departmental reports and tops the list of thematic inspection reports. These two topics therefore are defined as receiving high policy attention;
- Employer satisfaction does not appear in the annual departmental reports nor in the inspection frameworks or reports. This topic is considered as receiving low policy attention.
- All other topics come up in the annual departmental reports and/or the inspection frameworks and reports. These topics are defined as receiving middle policy attention.

Figure 5.1 depicts the relationship between agreement on a topic and the level of policy attention that the topic receives. The x-axis shows the degree of agreement on topics between schools and the Department. The y-axis shows the amount of policy attention the topics receive. Output topics are depicted in blue, process topics in brown.

Table 5.4: Values attached by vocational schools and the Department of Education, Culture and Science to 9 output and process topics (range -5 to 5)

| | Department | Schools | Difference | SE difference | Difference > .30 | Significant difference |
|---|---|---|---|---|---|---|
| *Educational output* | | | | | | |
| Early school leaving | 3,93 | 3,09 | 0,83 | 0,33 | Yes | Yes |
| Employer satisfaction | 4,07 | 4,19 | -0,1 | 0,17 | | |
| Numeracy | 2,89 | 2,60 | 0,29 | 0,34 | Yes | Yes |
| Literacy | 3,3 | 3,45 | -0,16 | 0,23 | | |
| Examination | 4,17 | 4,27 | -0,1 | 0,18 | | |
| *Educational processes* | | | | | | |
| Frontal instruction | 1,94 | 3,68 | -1,74 | 0,30 | Yes | Yes |
| Challenge | 4,11 | 3,64 | 0,47 | 0,20 | Yes | Yes |
| Mentoring in workplace learning | 4 | 4,11 | -0,11 | 0,17 | | |
| Schooling hours 2,52 | 2,85 | -0,33 | 0,29 | Yes | | |

Figure 5.1: The relationship between agreement on topics and policy attention for topics



We hypothesized that output topics that are more important to the Department than to schools will receive the highest level of policy attention. This hypothesis can only be partly confirmed. Early school leaving is a clear example of a topic that is more important to the Department and receives high policy attention. Numeracy on the other hand is also more important to the Department, but does not get that much policy attention. In addition there are three output topics on the importance of which Department and schools agree, but one of them, examination, still leads to a lot of policy attention. Policy attention for process topics is generally lower than for output topics, which is in line with the concept of NPM, but it is not absent. Here we see again, as in the first section of the results paragraph, that the Department keeps developing policy on educational processes even though this is not in line with NPM ideas. Moreover, the Department does not focus exclusively on process topics where disagreements with schools exist.

## 5.7 Conclusions

The influence of NPM is evident in vocational education policy in the Netherlands. We expected that an output-orientation and a less prescriptive role of the Department would be major characteristics of NPM in education. Indeed we find a strong tendency towards output measures: early school leaving takes up a large part of expenditures and policy attention in the annual departmental reports and examinations receive a lot of policy attention as well. Furthermore, the Department is developing new output indicators such as literacy and numeracy standards. Several policy documents also reflect attempts of the Department to create more distance and leave more autonomy to the schools. Self-governance of schools is stimulated and the inspectorate mainly intervenes in schools that show risks on output indicators and schools whose quality assurance systems are insufficient. Schools performing well are rewarded by less extensive inspection.

Nonetheless we see inconsistencies in the policies of the Dutch government considering the direction they intend to take in terms of NPM.

- Firstly, the Department is ambiguous by introducing policy programs that are questionable considering the concept of NPM, because they are

explicitly focusing on educational processes. In this sence regulations such as the ones following from the implementation of competence based learning seem to rather decrease autonomy than increase autonomy. This has been argued before in evaluations of the WEB (for an overview of different studies on this subject see Nieuwenhuis and Shapiro (2004)). While on the one hand the Department is trying to bring schools at a professional level of self-governance, and to be self-responsible for their educational processes, on the other hand it simultaneously interferes by developing rules that affect the content of these processes. Such a step could be rational when the output of schools is not sufficient. The Department then might feel obliged to interfere in failing schools and announce policy measures for them concerning processes that lead to the insufficient output. However, this does not apply to Dutch vocational education when competence-based education was imposed on all schools, regardless of their output.

- Secondly, the Department (by means of the Dutch Inspectorate) focuses on legal requirements such as the minimum of schooling hours and complaint procedures. Again, it might be necessary for the Department to develop policy on these topics when the output of schools is at stake. It may be necessary for some schools to pay attention to schooling hours or complaint procedures, especially when their output is not sufficient. But here too the Department applied their policies to all schools, regardless of their output. As a consequence, many schools felt their freedom to decide autonomously was hindered. The Department could be clearer about their reasoning behind these policies, and preferably there should be reasons that are linked to the output of schools.

- Thirdly, the Department develops policy programs on topics even when these topics are already highly valued by schools itself and it may be assumed that schools will do their best to achieve well in these fields. The government could consider whether these policies are superfluous and confusing, because they are not inherent to the path the Department has chosen to follow. Instead, we propose that the Department should focus on improving the continuous development of their two main NPM

features: sufficient output and school autonomy. Both the output itself and the output indicators are not as good as they should be, and in addition school autonomy leaves a lot to be desired.

Even though there are not as many early school leavers in vocational education as before, the desired numbers have not been achieved yet. If this still is a main issue according to the government, the Department should therefore strengthen its policies to reduce the numbers even further in the years to come. In addition, the Department could distinguish between topics they need to invest in (because it can be assumed that schools will not deliberately pay attention to them) and topics they can leave alone (because they are important for and pursued by schools already or because they do not affect output of schools).

The output indicators used by the Department to gain insight into the state of vocational education are very limited thus far. The main indicator is the number of early school leavers. More output indicators can be expected in the near future, such as the levels of numeracy and literacy acquired by students. A very important output indicator, highly valued by both the Department and the schools, is missing in the set of indicators on which schools are judged: employer satisfaction, which may be a central indicator for vocational education.

For educational policy rooted in the concept of NPM, self-governance of schools is central. When schools are not professional in this respect, one of the main pillars of NPM, accountability, is in danger. The Dutch Education Council stressed the importance of further development of accountability already in 2004. In 2010, the Inspectorate stated that a majority of Dutch vocational schools do not live up to the expectations of adequate self-governance. The Department might consider developing a system of bonuses and sanctions for schools who are or are not professional in their self-governance, especially when inadequately governed schools also achieve insufficient output. As of yet there is no such system. While we focus in this study on Department, we think NPM also implies responsibilities of schools. NPM depends on a good self-governance of schools. If schools show themselves to be trustworthy governors of their educational processes, it will be easier for the Department to reduce their interference with them.

A limitation of the method we employed concerns the field study data we used. The field study is not representative for vocational education as a whole. The data were gathered in convenience samples and do not necessarily represent the wider field of schools and policymakers. As a consequence, we cannot make strong generalizations about Department officials and school representatives. Nonetheless, we think the field study data give some indication of how interests of the Department and vocational schools differ at certain topics and correspond at others. Future research should seek to further investigate the interests of both parties and how this can enhance the features of NPM. We could only use survey data, but interviews with policymakers and members of school management might provide more insightful information in the way NPM policy is developed in the Department and experienced in schools.

Overall, our findings suggest, that even though NPM is clearly visible in Dutch educational policy, there are still many elements that do not align with the direction the government intends to take and may sometimes be counterproductive. This can be caused by conditions that underlie NPM, and that are not easily met. Firstly, output regulation depends on valid and reliable output indicators and secondly, school autonomy depends on a sufficient level of self-governance. In order to be effective, it might be better for policymakers to focus on those conditions, be clear about this and not wander off to other policy programs. By not being consistent, policymakers send out ambiguous signals. We put forward that a better distinction of policy programs that strengthen or hinder the NPM features, and a better insight in the interest of the Department on the one hand and of schools on the other hand, can help to more effectively and successfully stimulate the quality of education.

# Chapter 6

# Conclusions

In this dissertation we investigate the regulation of VET quality given the presence of a variety of stakeholders and their differing values. In the first section of this concluding chapter we present the main findings, using the three research questions that we posed in the first chapter. Drawing on these findings, we elaborate in section two on the options the government has to use stakeholder values and related behaviour to enhance and regulate the quality of VET. In section three we discuss further implications that follow from our results. We conclude with a section on suggestions for further research.

## 6.1 Main findings

**How do the different stakeholders value quality attributes of a VET programme?**

There are substantial differences in the values the groups attach to the 9 attributes in our study. Students primarily aim to obtain a diploma and find it important that employers appreciate graduates of the programme; teachers mainly determine the quality of a VET programme by its structure, whereas programmes that lack structure. Workplace training supervisors value the attribute 'employers appreciation of students' as highly important and for policymakers the outcomes are important: a programme should deliver stu-

dents that meet the demands of the labour market and the students should leave with a diploma. The study furthermore showed that for each attribute different coalitions exist. While the attributes a 'challenging curriculum' and 'employers appreciation' are similar valued across the four groups of stakeholders, other attributes, such as 'structure', are mainly valued by one of the stakeholders (the teachers). The largest overall disagreement between stakeholders concerns 'graduation rate'. Students and policymakers attach high value to this attribute but teachers and workplace training supervisors value this as a relatively unimportant attribute.

In general, the product attributes seem to be higher valued than the process attributes. With regard to the three aims of VET used in the study, meeting the needs of the labour market is highly valued and entails little disagreement. National educational performance, especially in the case of the graduation rate, evokes both very high and very low coefficients. Civic education is never top priority, but never low either.

**To what extent are the values of students reflected in their behaviour and does school choice have the potential to increase school quality?**

Vocational students prefer schools in their geographical proximity: the probability of enrolment in a school strongly decreases as the travelling distances increases. Yet forty percent of the students choose a school that is not the closest to their living area.

Schools that have a higher overall satisfaction attract more students. For schools with a higher graduation rate however, this effect does not exist, and, for students in social and construction programmes higher graduation rates even have negative effect on the school enrolment. In the conjoint study 'graduation rate' was the most important attribute to the students. The school choices revealed no positive influence of graduation rate on the probability of enrolment. Whilst students in theory find the graduation rate of a programme important, in practice there are apparently other factors of important that do not, or negatively, correlate with graduation rate. Taken together, the evidence is thus mixed: although free school choice seems to have the potential to provide schools with incentives to keep up and improve the quality of education

in terms of student satisfaction, this does not apply to the indicator graduation rate. Furthermore, the results vary across different programmes and socio-economic groups, indicating that the incentives might be more salient for some vocational programmes than for others.

**Do Dutch vocational education policies reflect the aims of NPM (less prescriptive and output-oriented) and to what extent have these policies been responsive to the values of school representatives?**

Influenced by the concept of New Public Management, the Dutch government has adopted a regulation approach to VET in which schools should operate rather autonomously as long as they meet output criteria. Several policy documents do indeed reflect attempts of the department to leave more autonomy to the schools. Schools receive lump sum funding and additional un-earmarked resources for their innovation budget and the Inspectorate of education strongly aims at strengthening educational governance of schools. This way, schools are provided scope to incorporate their own values, and those of their stakeholders, in the education they offer.

We also show, however, that the government is not consistent in this attempt. First of all, the government develops policy programs on topics even when the field study indicates that these topics are already highly valued by schools themselves and it may be assumed that they will do their best to do well in these fields. Furthermore, the government interfered in the autonomy of schools by imposing policies that directly affect the educational process regardless of their output.

## 6.2 Valorisation

### 6.2.1 Using stakeholder values to enhance the quality of VET

In this section we return to the overall question of this dissertation as it is posed in the introduction: How can the government use stakeholder values and related behaviour to enhance and regulate the quality of VET?

We distinguish different possibilities for the government to use the insights into the values of stakeholders:

- Broadening of scope
- Focused policy
- Stepping back

In the following section we will describe each option.

**Broadening of scope**

The government demands effort and output on certain aspects of education. Chapter 5 has shown that in the past years these aspects were the reduction of early school leaving, the quality of examinations and literacy and numeracy standards. It is important to keep in mind that although these aims are justified and might help to reach quality, they do not *define* nor *guarantee* quality in a broader sense. As we have seen in chapter 2, the weights that the government attaches to topics of vocational programmes are at some points totally different than the weights of the stakeholders.

It is an option for the government to use the insights into the values of stakeholders to broaden its scope on quality. It can, for example, include an output attribute that everybody finds important in its monitoring system. The output attribute employer satisfaction was highly valued in the conjoint study by students as well as teachers, workplace learning supervisors and the government. If the government wants to expand its set of output indicators, this would be an interesting indicator to investigate. This way the government takes into account the values of stakeholders and by doing this might also enhance the quality of education.

**Focused policy**

As shown in chapter 2, the government and other actors in the VET field do not have the same priorities. This may lead to resistance to certain goals that the governments wants to achieve. Resistance can be a reason for policies not to work out as expected. If the government wants to make its goal attainment more effective, insight into the values of different actors might help. By being

aware of existing differences in priorities and therefore of possible tensions or resistance to a particular subject, the government can take focused action to solve issues arising from those tensions or resistance.

**Stepping back**

Our conjoint study has shown that there are attributes of vocational programmes that each stakeholder values highly. In this case the government does not have too much to worry about. If all stakeholders agree on the importance of an attribute, it is probable that it will be given high priority and there is no need for the government to take action.

In chapter 5 we have shown that it is not easy for the Dutch government to step back when schools are concerned. This can be caused by the fact that policymakers are not aware of the values of the school representatives and possible points of (dis)agreement, or, by the fact that the government thinks the schools are not up to the task. The fact that the government stated that a majority of vocational schools seems not to live up to the expectations of adequate self-governance does point in that direction. However, even when these schools meet the output criteria, it is still difficult for the government not to intervene. Examination is a topic with agreed importance of the government and schools but still leads to a lot of policy attention. The government might be missing opportunities here to save time that can be spent on other subjects.

### 6.2.2 Further implications of this dissertation for schools and policy

- Whilst the main focus of this dissertation is on the government, our results are also directly relevant to vocational institutions. Just like the government, vocational schools have to deal with a (similar) variety of stakeholders and their interests. In order to effectively provide high quality education, schools will need to identify what their stakeholders deem the most important elements of educational quality, and then design curricula in correspondence with those characteristics. The visualisation of different preferences in actual choice situations, such as have been incorporated in the conjoint study, can therefore help vocational colleges

to better understand stakeholders and their expectations, and ultimately improve the educational process. If, for example, employers appreciation of students is seen as an important characteristic of vocational education, school boards can ask themselves whether they sufficiently employ this as an indicator of quality, or if they even measure this indicator at all. Insight into the preferences of stakeholders also presents an opportunity to discuss the characteristics that are important to a certain group. For example, the high importance that teachers assigned to structure can be a stimulus to instigate a conversation on this matter.

- Taking together the results of chapter two and three we can conclude that the conjoint technique provides a good complement to existing methods that evaluate educational quality. The measurement of the relative value of different attributes offers a different perspective on education: education as a compromise resulting from different trade-offs instead of education as a sum of requirements. This helps to understand and deal with educational issues in a time where a lot of people have high expectations of education. Furthermore, the vignette study shines a critical light on the traditional survey and shows that surveys are sensitive to differences in interpretation. This means that educators and researchers should be careful to draw conclusions from group differences in scores on Likert survey questions and consult complementary research material to confirm the outcomes.

- In a system where the money follows the student, increasing student numbers is an obvious reward for schools. However, our results indicate that VET students principally choose a school in their geographical proximity. Only the religious vocational schools stand out: their students travel on average twice as much as other students. One could argue that students are willing to travel more if that school is clearly distinguished from other schools in characteristics other than outcomes. This fits with Zölitz (2014), who recently showed that in Dutch primary education, school characteristics such as the schools' denomination and teaching concept play an important role in the choice process. Overall, however, the variation in characteristics of VET programmes is not that

high. Policies such as the national implementation of competence based learning (chapter 6) enhances uniformity of teaching concepts instead of variations. We can therefore raise the question whether VET makes a good case as 'education market'. Uniformity does not trigger students to critically evaluate different school options and by this stimulate schools to offer high quality.

- Another factor that might influence the effectiveness of school choice as a means of quality improvement is the number of available schools. In chapter 5 we show that distance has a strong effect on students school choice. This indicates that the less schools students have in their environment, the less they will let their choice be influenced by quality aspects. As a result of the merger process in the end of the eighties (Karsten and J. Meijer, 1999) VET schools in the Netherlands are large, and although current policies aim to stimulate the creation of smaller divisions within the schools, they do not aim to change the scale of VET schools themselves (Ministerie van Onderwijs Cultuur en Wetenschap, 2014). While larger schools are said to cover financial fluctuations and variations in student enrolment better, it is a disadvantage for the school choice of students: the power of school choice as a means to improve the quality of schools is limited when there are not many options. In this light, the allocation of a public transport card to all VET students is a positive development. This enables students to travel to the schools of their choice.

- In chapter 4 we show that for students of construction and social pedagogical programmes the probability of enrolling in a schools with higher student satisfaction is higher than for the students of administrative programmes. If student satisfaction is an indicator of quality that means that some students have a higher chance of ending up at a good school than others. We can also hypothesise that the 'notion of quality' is more developed in some study fields than in others. The degree to which schools in a specific field attract students from different places could then be an indicator for the quality consciousness of a study field. We furthermore showed that for students with a non-native background the

probability of enrolling in a school with higher student satisfaction is lower than for native students. The government might consider developing group-specific approaches on school choice. For example students of administrative studies and students with a non-native background might need more help in school choice or might need more information than students of construction studies or students with a native background.

- Chapter 4 showed that for one of the quality aspects, graduation rate, the effect on the probability of enrolment is zero or negative. This result suggests that there are aspects that students value in schools with lower instead of higher graduation rates. It is yet unclear what these aspects are and to what extent these aspects correlate with quality. It could be that students are attracted to schools with characteristics that correlate with higher amounts of early school leavers (and lower graduation rates), such as being located in one of the bigger cities. Or that students that live in one of the larger cities, nearby one of more schools with higher graduation rates, receive less information about the other options they have Hiteq (2009) finding about students from the larger cities). It can also be that schools with a lower graduation rate do in fact have a high quality of education, but are simply more selective in whom they grant a diploma. If graduation rate is reversely related to aspects of education quality, like in this final example, this would be alarming. In that case the government could do harm by focusing too much on graduation rate as an indicator of school quality and might risk overlooking other signs of quality.

- For educational policy rooted in the concept of NPM, self-governance of schools is central. When schools do not live up to the expectations in this respect, one of the main pillars of NPM, accountability, is in danger. If the government aims to continue NPM policy and is not satisfied with the current level of self-governance, a further investment in the development of self-governance is extremely important. The Department might, for example, consider developing a system of sanctions for schools that are not professional in their self-governance, especially when inadequately governed schools also achieve insufficient output.

## 6.3 Future research

In chapter two we showed that for each attribute there is a different situation regarding the value students, teachers, workplace training supervisors and policymakers attach to it. Given these findings, it might be interesting to investigate in more detail the coalitions of stakeholders that exist per attribute and the consequences of these coalitions for VET practice. Is it, for example, the case that attributes that are given high value in the education field are better or easier embedded in education practice than attributes that are given low value? Is the involvement of certain groups, for example the teachers, needed in order for policies to succeed? Insights into these processes could help to better understand the educational arena and more effectively influence processes within this arena.

Based on the findings in chapter three, it would be interesting to examine gender differences in larger, and other groups of students. Our sample exists of students in vocational education. Gender differences might very well also be present in other student groups or in other areas that use the Likert scale for attitude measurement. This could potentially provide further evidence for the influence of gender on the use of Likert scale and guidelines on how to deal with different outcomes between male and female students.

In chapter four we find differences between the programmes in the way distance and school quality characteristics correlate with school choice. It is yet unclear whether these results are generalizable to the entire vocational field. An investigation of other vocational programmes could give more insight into the relative size and wider occurrence of these differences. It is also not clear how other indicators of school quality influence vocational school choice. In order to explore this matter further, our analysis should be repeated with a more comprehensive set of quality indicators as well as school characteristics.

Given the findings in chapter five, future research should seek to further investigate the interests of both schools and the government and how these can be used to enhance the features of NPM. We used survey data, but interviews with policymakers and members of school management might also provide insightful information on the way NPM policy is developed in the Department and experienced in school.

## 6.4 Personal note

I would like to end this dissertation by saying that the VET sector is an incredible interesting and exciting area that deserves a lot of positive attention. The students that I met in the field study were, one by one, gentle and fun young people with a lot of potential. They are going to enrich our society by becoming the administrators, social workers, construction workers and all the other professionals we need. VET schools are large learning factories that have gone through enormous development and, in the meantime, might have grown to be more innovative than the schools in every other sector. Finally, the people who work in - or for - VET are motivated people with a lot of expertise that have their hearts in the right place. Of course, there is still a lot to learn in how to reach the full potential of this sector, but that is what we researchers are for and with this piece of work I hope to contribute a tiny little bit to that goal.

# Appendices

# Appendix A

# Rating, ranking and choice

Regarding the elicitation of consumer preferences, there are three alternative methods: rating, ranking and choice. The first method involves the presentation of the respondents with one vignette at a time and asking them to rate their preferences for this vignette on a predetermined scale (see for example Leslie, Ettenson, and Cumsille (2000). The second one requires presenting to the respondents all vignettes at once and asking them to rank the vignettes in the order of their preference (see for example (Beek, Koopmans, and Praag, 1997). The third method requires the presentation of the respondents with groups of vignettes and asking them to choose the vignette they prefer most (see for example (Hill et al., 2005). Advantages and disadvantages of each method are shown in table A.1.

It is possible to choose a combination of elicitation methods. Leslie, Ettenson, and Cumsille (2000) kill two birds with one stone by first asking parents to select one child care centre and then to rate each child care centre. More than one conjoint task can however diminish the respondents' energy, curiosity, receptiveness and motivation for the task.

Table A.1: Advantages and disadvantages of choice, rating and ranking variants of conjoint research. Based on: Alriksson and Oberg (2008), M. Shamir and J. Shamir (1995), and Biesma et al. (2007)

| | Advantages | Disadvantages |
|---|---|---|
| Rating | Rating is the only option in which respondents have the choice to judge two or more vignettes equally. | The different alternatives do not need to be compared, and therefore the rates are not directly comparable.<br>It is time-consuming.<br>It is unnatural. In normal life we do not rate products or situations.<br>Danger lies in that respondents can get lack of motivation. |
| Ranking | Ranking is easier for the respondent than rating. The respondent only has to decide which vignette is better, not how much better.<br>Ranking yields a lot of information because it tells you the value of each vignette as opposed to each of the other vignettes | It is time-consuming |
| Choice | This is the easiest option for the respondent, he or she only has to choose the best<br><br>The choice-based conjoint approach mostly resembles real life decisions | The information obtained by a choice study is less elaborate than that obtained by rating or ranking. |

# Appendix B

# Reduced vignette design: the attribute allocation model

The model first randomly assigns high and low levels to the attributes of vignette 1. Consequently each of those levels receives a converter: a randomly assigned number between 1 and 9. Converters 8 and 9 are randomly substituted with one of the other converters from 1-7, but a different one for 8 than for 9. The levels of vignette 2 are assigned by duplicating the levels of vignette 1, while exchanging the levels belonging to converters 1-4 with their counterpart levels. The levels of vignette 3 are assigned by duplicating the levels of vignette 1, while exchanging the levels belonging to converters 1-2 and 5-6 with their counterpart levels. The levels of vignette 4 are assigned by duplicating the levels of vignette 1, while exchanging the levels belonging to converters 1, 3, 5 and 7 with their counterpart levels (see table B.1).

For attributes 1, 3 and 6 a middle value has to be assigned. When the low and high levels are distributed unevenly (three times a low or three times a high value), one of the three equals is replaced. Attribute 1 and attribute 6 for example have three low values, so one of those will be replaced by the middle value. In every other case, the level of one of the vignettes is replaced by the middle value. The procedure is repeated for each vignette round and

for each respondent. If identical vignettes show up in the set of 16 vignettes of one respondent, the whole procedure is repeated.

Table B.1: Assignment of levels of vignette 2, vignette 3 and vignette 4 based on the randomly assigned levels of vignette 1. (A= level 1, C = level 2)

| | Vignette 1 | Converters* | Vignette 2 | Converters | Vignette 3 | Converters | Vignette 4 |
|---|---|---|---|---|---|---|---|
| A1 | A | 6 | A | 6 ** | C | 6 | C |
| A2 | A | 3 ** | C | 3 | C | 3 ** | A |
| A3 | C | 5 | C | 5 ** | A | 5 ** | C |
| A4 | A | 7 | A | 7 | A | 7 ** | C |
| A5 | C | 1 ** | A | 1** | C | 1 ** | A |
| A6 | A | 6 | A | 6 | A | 6 | A |
| A7 | C | 2 ** | A | 2 ** | C | 2 | C |
| A8 | C | 2 ** | A | 2 ** | C | 2 | C |
| A9 | C | 4 ** | A | 4 | A | 4 | A |

* A randomly assigned number. ** In these cases the levels of the following vignette are replaced by the counterpart value of the previous vignette.

# Appendix C

# Power study

The power analysis in this section aims to find an appropriate balance among the different parameters by anticipating the likelihood that the study yields a significant effect. In particular for a conjoint study this can be very helpful because of the many choices that have to be made. We conducted a power study that enables the variation of:

- The number of vignettes
- The number of attribute levels
- The design
- The number of participants
- Expected coefficient sizes
- The use of an allocation model[1]

Table C.1 shows the default settings of the power study. These default settings match with how we actually perform the study.

The power study gives the probability of a significant result in different scenarios. Table C.2 shows the results of the power study. The table shows that a doubling of the vignettes from 8 to 16 increases probability of a significant

[1]The stata-dofile for this study is available upon request

Table C.1: Default settings in power study

| Parameter | Default setting |
|---|---|
| Vignettes | 16 |
| Attributes | 9 |
| Attribute levels | 3 |
| Design | 4 x 4 |
| Participants | 54 |
| Coefficient size | 0.3 |
| Allocation model | on |

finding by 30 percentage points. Furthermore the table shows that the mean significance is lower for attributes with 3 levels than for attributes with 2 levels. Since the sizes of the coefficients are unknown beforehand we tried out different sizes. The allocation model slightly improves the result with 0.01 percentage points. The power study does not distinguish differences in the designs. A 4x4 design (respondent sees 4 times 4 vignettes) yields the same result as a 2 x 8 design (respondents sees 2 times 8 vignettes). The number of attributes also influences the chance of significance but this requires a different study.

Table C.2: The probability of a significant result in different scenarios

| | Probability of a significant result |
|---|---|
| *Number of vignettes* | |
| 4 | .270 |
| 8 | .606 |
| 12 | .820 |
| 16* | .904 |
| 20 | .972 |
| 24 | .986 |
| *Number of attribute levels* | |
| 2 | .988 |
| 3* | .904 |
| *Design* | |
| 1 x 16 | .904 |
| 2 x 8 | .904 |
| 4 x 4* | .904 |
| *Number of respondents* | |
| 20 | .576 |
| 30 | .728 |
| 54* | .904 |
| 80 | .988 |
| 100 | 1.00 |
| *Coefficient size* | |
| 0.1 | .224 |
| 0.2 | .600 |
| 0.25 | .784 |
| 0.3* | .904 |
| 0.4 | .996 |
| 0.5 | 1.00 |
| *Allocation model* | |
| Off | .892 |
| On* | .904 |

* default settings

# Appendix D

# Descriptive table of survey statements

Table D.1: Mean scores for all respondents on 37 questionnaire statements

| | (1) Students N=334 | (2) Teachers N=66 | (3) Employers N=77 | (4) Policymakers N=54 | (5) Managers N=9 |
|---|---|---|---|---|---|
| Teachers of this programme have sufficient expert knowledge | 4.16 | 4.29 | 4.36 | 4.17 | 4.22 |
| The programme offers high chances of securing a job | 4.09 | 3.50 | 3.65 | 3.70 | 4.11 |
| The teachers of this programme have good teaching skills* | 4.05 | 4.48 | 4.08 | 4.59 | 4.67 |
| Many students of the programme graduate* | 3.89 | 3.14 | 3.03 | 3.61 | 4.33 |
| There are good facilities at the school location of this programme | 3.83 | 3.97 | 3.71 | 3.48 | 4.44 |
| Students are proud when finishing the programme. | 3.80 | 4.24 | 3.99 | 4.13 | 4.44 |
| Employers appreciate graduates of this programme* ** | 3.79 | 4.18 | 3.96 | 4.07 | 4.22 |
| Students enjoy participating in this programme | 3.78 | 3.91 | 3.71 | 3.52 | 3.89 |
| The programme leads to a job with a good salary. | 3.77 | 2.24 | 2.29 | 1.89 | 3.00 |
| The curriculum of this programme is well connected to the workplace learning periods | 3.76 | 4.03 | 4.17 | 4.13 | 4.44 |
| Students are mentored sufficiently during the workplace learning period * ** | 3.73 | 4.09 | 3.89 | 4.00 | 4.22 |
| The tests of this programme are of good quality.** | 3.63 | 4.26 | 4.04 | 4.17 | 4.33 |
| Teachers show confidence in the commitment and the abilities of students | 3.55 | 3.64 | 3.59 | 3.48 | 3.78 |
| Students of the programme score well on tests | 3.49 | 2.76 | 2.95 | 2.44 | 2.89 |
| The programme makes use of frontal instruction ** | 3.44 | 3.76 | 3.47 | 1.94 | 3.11 |
| A large part of the curriculum of this programme is devoted to vocational skills | 3.41 | 3.70 | 4.05 | 4.09 | 4.33 |
| Students of the programme are mostly judged by their individual achievements | 3.30 | 3.27 | 3.40 | 3.67 | 2.89 |
| The programme conducts intake interviews with all prospective students | 3.10 | 3.82 | 3.04 | 3.67 | 4.67 |
| The management of the programme functioning well | 3.04 | 3.71 | 3.33 | 3.63 | 4.56 |
| The programme has an effective safety policy | 3.02 | 3.39 | 2.43 | 3.04 | 3.44 |

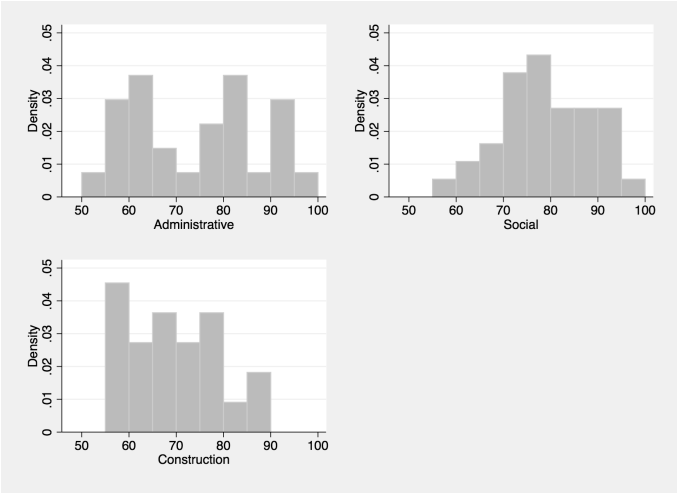
| | | | | | |
|---|---|---|---|---|---|
| Teachers of this programme take into account the heterogeneity of students | 2.98 | 3.17 | 2.41 | 3.67 | 4.22 |
| The programme offers a lot of structure* | 2.93 | 3.80 | 3.51 | 3.50 | 4.22 |
| The programme offers the students possibilities to collaborate with other students | 2.87 | 2.79 | 3.31 | 2.85 | 3.56 |
| The students are offered challenging assignments during the programme* ** | 2.79 | 3.61 | 3.83 | 4.11 | 3.89 |
| In this programme attention is paid to social skills | 2.65 | 3.35 | 3.60 | 3.17 | 3.44 |
| The school board is functioning properly | 2.61 | 2.95 | 2.80 | 3.39 | 4.22 |
| Students have a lot of freedom in the programme* | 2.35 | -0.36 | 0.23 | 0.22 | -0.11 |
| Preventing students from leaving the school early is an important issue at the school** | 2.29 | 2.94 | 3.07 | 3.93 | 4.22 |
| In this programme attention is paid to the Dutch language* ** | 2.29 | 3.38 | 3.72 | 3.30 | 4.00 |
| The students and teachers know each other at the programme | 1.92 | 3.08 | 1.85 | 2.17 | 3.00 |
| There is a good canteen at the school location of this programme | 1.79 | 2.02 | 0.59 | 0.22 | 2.33 |
| In this programme attention is paid to the mathematical skills of the students** | 1.78 | 2.53 | 3.11 | 2.89 | 3.11 |
| The programme organizes activities and parties for the students | 1.70 | -0.11 | -0.97 | -0.67 | 0.56 |
| There are students of different nationalities studying in this programme | 0.90 | 1.68 | 1.88 | 1.31 | 2.22 |
| In this programme attention is paid to civic education* | 0.76 | 1.88 | 2.49 | 2.17 | 2.89 |
| The students are offered achievable assignments during the programme* | 0.48 | -2.06 | -1.61 | -2.48 | -2.67 |
| The programme has many hours per week* ** | 0.43 | 2.83 | 2.45 | 2.52 | 3.00 |

* used as an attribute in the conjoint study ** used in the analysis of the survey data in chapter 5

# Appendix E

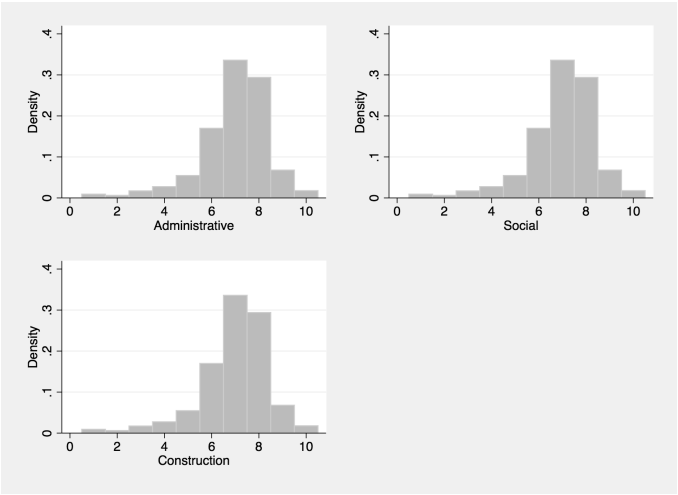
# Histograms choice study

Figure E.1: Distribution of average school graduation rates



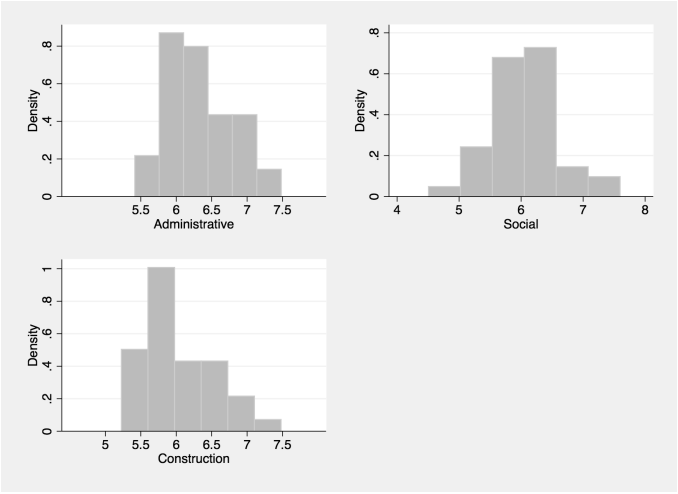

The figure shows the distribution of the unweighted average graduation rates at school level. Graduation rates are measured as the fraction of students that leave the program or the institution in a given year. This is for the year 2009-2010. n = 27 for administrative studies n=37 for social studies and n=22 for construction studies.

Figure E.2: Distribution of individual student satisfaction



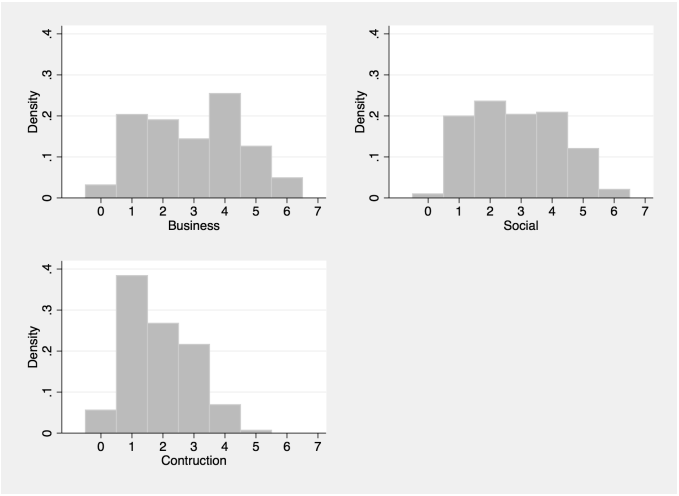

The figure shows the distribution of the individual overall satisfaction with the school, measured wit a mark from 1-10, for the years 2008, 2010 and 2012. n = 11089 for administrative studies n=28743 for social studies and n=7606 for construction studies

Figure E.3: Distribution of average school level student satisfaction




The figure shows the distribution of the unweighted average overall satisfaction score at school level, measured wit a mark from 1-10. This is a combined score for the years 2008, 2010 and 2012. n = 40 for administrative studies n=40 for social studies and n=37 for construction studies.

Figure E.4: Available school options within a 20 km radius




The figure shows the number of schools that is available to the student within a 20 km radius, with a maximum of 7 schools. n = 13109 for administrative studies n=17087 for social studies and n=8626 for construction studies

# Bibliography


Akkerman, S. F. and A. Bakker (2011). "Crossing Boundaries Between School and Work During Apprenticeships". In: *Vocations and Learning* 5.2, pp. 153–173. ISSN: 1874-785X.

Algemene Rekenkamer (2008). *Beroepspraktijkvorming in het mbo. Tweede Kamer, vergaderjaar 2007-2008, 31 368, nrs 1-2*. Tech. rep. Den Haag: Algemene Rekenkamer.

Alriksson, S. and T. Oberg (2008). "Conjoint analysis for environmental evaluation. A review of methods and applications." In: *Environmental science and pollution research international* 15.3, pp. 244–57. ISSN: 0944-1344.

Arguelles, A. and A. Gonczi (2000). *Competency Based Education and Training: a World Perspective*. Balderas: Editorial Limusa S.A. de C.V. Grupo Noriego Editores.

Bachman, J. and P. M. O' Malley (1984). "Yea-saying, Nay-Saying, and Going to Extremes : Black-White Differences in Response Styles". In: *The Public Opinion Quarterly* 48.2, pp. 491–509.

Baethge, M. et al. (2006). *PISA-VET. A feasibility study*. Stuttgart: Franz Steiner Verlag.

Batsell, R. R. and J. J. Louviere (1991). "Experimental analysis of choice". In: *Marketing Letters* 2.3, pp. 199–214. ISSN: 0923-0645.

Baumgartner, H. and E. M. Steenkamp (2013). "Response Styles A Cross-National Investigation in". In: *Journal of Marketing Research* 38.2, pp. 143–156.

Beek, K. W. V., C. C. Koopmans, and B. M. V. Praag (1997). "Shopping at the labour market: A real tale of fiction". In: *European Economic Review* 41, pp. 295–317. ISSN: 00142921.

Biemans, H. et al. (2004). "Competence-based VET in the Netherlands: background and pitfalls". In: *Journal of Vocational Education and Training* 56.4, pp. 523–538. ISSN: 1363-6820.

Biesma, R. et al. (2007). "Using conjoint analysis to estimate employers preferences for key competencies of master level Dutch graduates entering the public health field". In: *Economics of Education Review* 26.3, pp. 375–386. ISSN: 02727757.

Braun, D. and F. Merrien (1999). *Towards a new model of governance for universities? A comparative view.* Londond: Jessica Kingsley Publishers.

Brockmann, M. et al. (2008). "Competence-Based Vocational Education and Training (VET): the Cases of England and France in a European Perspective". In: *Vocations and Learning* 1.3, pp. 227–244. ISSN: 1874-785X.

Buckley, J. (2009). *Cross-National Response Styles in International Educational Assessments : Evidence from PISA 2006.* Tech. rep. 212. Department of Humanities, Social Sciences in the Professions. Steindhardt School of Culture, Education, and Human Development. New York University.

Byun, K. (2008). "New public management in korean higher education: Is it reality or another fad?" In: *Asia Pacific Education Review* 9.2, pp. 190–205. ISSN: 1598-1037.

Carneiro, P., C. Crawford, and A. Goodman (2006). *Which Skills Matter?* Tech. rep. July. London: Centre for the Economics of Education.

Cedefop (2010). *Learning outcomes approaches in VET curricula. A comparative analysis of nin european countries.* Tech. rep. 6. Luxembourg: Office for Official Publications of the European Communities.

Christensen, T. and P. Laegreid (2007). *Transcending New Public Management: the transformation of public sector reforms.* Abingdon: Ashgate Publishing Group.

Clarke, L. and C. Winch (2007). "Introduction". In: *Vocational education: International approaches, developments and systems.* Ed. by L. Clarke and C. Winch. London: Routledge.

Cloodt, D. et al. (2010). "The impact of distance deterrence on the choice of field of study in vocational education in the Netherlands *". In: *Investigaciones de Economía de la Educación*. Asociación de Economía de la Educación.

Cort, P., A. Härkönen, and K. Volmari (2004). *Professionalisation of VET teachers for the future*. Thessaloniki. ISBN: 9289603275.

Dodeen, H. and G. A. Johanson (2003). "An Analysis of Sex-related Differential Item Functioning in Attitude Assessment An Analysis of Sex-related Differential Item Functioning in Attitude Assessment". In: *Assessment & Evaluation in Higher Education* 28.2, pp. 129–134.

European Union (2009). *Recommendation of the European Parliament and of the council of 18 june 2009 on the establishment of a European Quality Assurance Reference Framework for Vocational Education and Training. C155/1*. Tech. rep. European Union.

Eurydice (2005). *Citizenship Education at School in Europe*. Tech. rep. Brussels: Eurydice.

Field, S. et al. (2009). *Learning for Jobs. OECD Reviews of Vocational Education and Training*. October. OECD.

Fretwell, D. (2003). "A Framework for Evaluating Vocational Education and Training (VET)". In: *European Journal of Education* 38.2, pp. 177–190. ISSN: 0141-8211.

Fusarelli, L. D. and B. Johnson (2004). "Educational Governance and the New Public Management". In: *Public Administration and Management* 9.2, pp. 118–127.

Glazerman, S. (1998). "School Quality and Social Stratification: The Determinants and Consequences of Parental School Choice". In: *Anual meeting of the American Educational Research Association*. San Diego.

Göb, R., C. McCollin, and M. F. Ramalhoto (2007). "Ordinal Methodology in the Analysis of Likert Scales". In: *Quality & Quantity* 41.5, pp. 601–626. ISSN: 0033-5177.

Gonon, P. (2008). "'Efficiency' and 'Vocationalism' as Structuring Principles of Industrial Education in the USA". In: *Vocations and Learning* 2.2, pp. 75–86. ISSN: 1874-785X.

Green, P. E. and V. Srinivasan (1978). "Conjoint analysis in consumer research: issues and outlook". In: *Journal of Consumer Research* 5.103-123.

Green, P. E. and V. Srinivasan (1990). "Conjoint Analysis in marketing: New Developments with Implications for Research and Practice". In: *The Journal of Marketing* 54, pp. 3–20.

Greenleaf, E. A. (1992). "Masuring Extreme Response Style". In: *Public Opinion Quarterly* 56.3, pp. 328–351.

Gregory, R. and R. L. Keeney (1994). "Creating Policy Alternatives Using Stakeholder Values". In: *Management Science* 40.8, pp. 1035–1048.

Hager, P. (2007). "Towards a new paradigm of vocational learning". In: *Vocational education: International approaches, developments and systems.* Ed. by L. Clarke and C. Winch. London: Routledge.

Harvey, L. and D. Green (1993). "Defining quality". In: *Assessment & Evaluation in Higher Education* 18.1, pp. 9–34.

Hastings, J., T. Kane, and D. Staiger (2010). "Heterogeneous Preferences and the Efficacy of Public School Choice".

Hayward, G. and R. M. Fernandez (2004). "From core skills to key skills: fast forward or back to the future?" In: *Oxford Review of Education* 30.1, pp. 117–145. ISSN: 0305-4985.

Heijke, H., C. Meng, and C. Ris (2003). "Fitting to the job: the role of generic and vocational competencies in adjustment and performance". In: *Labour Economics* 10.2, pp. 215–229. ISSN: 09275371.

Hill, a.R. et al. (2005). "Identifying low vision rehabilitation priorities using a conjoint analysis approach". In: *International Congress Series* 1282, pp. 573–577. ISSN: 05315131.

Hiteq (2009). *Kenmerkend mbo Een vergelijkend onderzoek naar de kenmerken van mbo-leerlingen, vmbo-leerlingen en de generatie Einstein.* Hiteq.

Honig, M. I. and L. R. Rainey (2012). "Autonomy and School Improvement: What Do We Know and Where Do We Go From Here?" In: *Educational Policy* 26.3, pp. 465–495. ISSN: 0895-9048.

Hooge, E., M. E. van der Sluis, and F. de Vijlder (2004). *Stakeholders in beeld. Over instellingen voor beroepsonderwijs en hun stakeholders en over methoden om stakeholdrs te identificeren en te positioneren.* Amsterdam: Max Goote Kenniscentrum.

Hövels, B., K. Meijer, and K. Hoogendijk (2011). *De waardering van bedrijven voor het mbo: een pilot*. Tech. rep. Nijmegen: Kenniscentrum Beroepsonderwijs Arbeidsmarkt (KBA).

Hoxby, C. M. (2002). "School Choice and School Productivity (or Could School Choice Be a Tide That Lifts All Boats?)"

IES (2012). *Highlights From TIMSS 2011. Mathematics and Science Achievement of U.S. Fourth- and Eighth-Grade Students in an Internationa Context*. Washington: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.

Inspectie van het Onderwijs (2003). *Toezichtkader beroepsonderwijs en volwasseneneducatie. Inhoud en werkwijze van het Inspectietoezicht conform de WOT (Supervisory framework in VET)*. Nederlands. Utrecht: Inspectie van het Onderwijs.

Inspectie van het Onderwijs (2006). *Beroepspraktijkvorming in het mbo (Professional training in VET)*. Utrecht: Inspectie van het Onderwijs.

Inspectie van het Onderwijs (2007a). *Meer onderwijstijd in het mbo (more schooling hours in VET)*. Utrecht: Inspectie van het Onderwijs.

Inspectie van het Onderwijs (2007b). *Onderwijstijd in het vo en bve (Schooling hours in secondary education and in VET)*. Utrecht: Inspectie van het Onderwijs.

Inspectie van het Onderwijs (2009). *Onderwijstijd bve 2009 (Schooling hours in VET 2009)*. Utrecht: Inspectie van het Onderwijs.

Inspectie van het Onderwijs (2010a). *Onderzoek Onderwijstijd BVE 2010*. Utrecht: Inspectie van het Onderwijs.

Inspectie van het Onderwijs (2010b). *Toezichtkader beroepsonderwijs en volwasseneneducatie. Werkwijze van het Inspectietoezicht (Dutch Inspection Framework VET)*. Utrecht: Inspectie van het Onderwijs.

Inspectie van het Onderwijs (2010c). *Zorgplicht arbeidsmarktperspectief mbo*. Utrecht: Inspectie van het Onderwijs.

Inspectie van het Onderwijs (2011a). *2012 Supervision Framework for Vocational and Adult Education*. Utrecht: Inspectie van het Onderwijs.

Inspectie van het Onderwijs (2011b). *De staat van het onderwijs. Onderwijsverslag 2009-2010*. Nederlands. Utrecht: Inspectie van het Onderwijs.

Inspectie van het Onderwijs (2014). *De Staat van het onderwijs. Onderwijsverslag 2012-2013*. Utrecht: Inspectie van het Onderwijs.

Jeffries, C. and D. W. Maeder (2005). "Using Vignettes To Build and Assess Teacher Understanding of Instructional Strategies". In: *The professional educator* 27.1, pp. 17–28.

JOB (2010). *JOB-Monitor 2010*. Tech. rep. Amsterdam: Jongeren Organisatie Beroepsonderwijs (JOB).

Johanson, G. A. (1997). "Differential Item Functioning in Attitude Assessment". In: *Evaluation practice* 18.2, pp. 127–135.

Kapteyn, A., J. A. P. Smith, and A. van Soest (2007). "Vignettes and Self-Reports of Work Disability in the United States and the Netherlands". In: *The American economic review* 97.1, pp. 461–473.

Karsten, S. and J. Meijer (1999). "School-Based Management in the Netherlands: The Educational Consequences of Lump-Sum Funding". In: *Educational Policy* 13.3, pp. 421–439. ISSN: 0895-9048.

King, G. et al. (2004). "Enhancing the Validity and Cross-Cultural Comparability of Measurement in Survey Research". In: *American Political Science Review* 98.1, pp. 191–207.

Klink, M. V. der (1999). "Effectiviteit van werkplekopleiden". PhD thesis. University of Twente.

Koning, P. and K. V. der Wiel (2013). "Ranking the Schools: How Quality Information Affects School Choice in the Netherlands". In: *Journal of the European Economic Association* 11.2, pp. 466–493.

Leisytë, L. and D. Kizniene (2006). "New Public Management in Lithuania's Higher Education". In: *Higher Education Policy* 19, pp. 377–396. ISSN: 0952-8733.

Leney, T. and A. Green (2005). "Achieving the Lisbon Goal: the contribution of Vocational Education and Training". In: *European Journal of Education* 40.3, pp. 261–278. ISSN: 0141-8211.

Leslie, L. A., R. Ettenson, and P. Cumsille (2000). "Selecting a Child Care Center : What Really Matters to Parents ?" In: *Child & Youth Care Forum* 29.5, pp. 299–322.

Lindgren, L. (2001). "The Non-profit Sector Meets the Performance Management Movement: A Programme-theory Approach". In: *Evaluation* 7.3, pp. 285–303. ISSN: 1356-3890.

Mane, F. (1999). "Trends in the payoff to academic and occupation-specific skills: the short and medium run returns to academic and vocational high school courses for non-college-bound students". In: *Economics of Education Review* 18.4, pp. 417–437. ISSN: 02727757.

Marden, J. (1995). *Analysing and Modelling Rank Data*. London: Chapman & Hall.

McFadden, D. (1974). "Conditional logit analysis of qualitative choice behavior". In: *Frontiers in Econometrics*. Ed. by P. Zarembka. New York: Academic Press, pp. 105–142.

Meijden, A. V. der et al. (2010). *Cgo langs de meetlat. Op zoek naar de effecten van competentiegericht onderwijs in het mbo.* 's-Hertogenbosch: Expertisecentrum Beroepsonderwijs (ECBO). ISBN: 9789460520242.

Meng, C. and J. V. Thor (2010). *MBO : Tevredenheid en aansluiting met vervolgonderwijs en arbeidsmarkt*. Maastricht: Researchcentrum voor Onderwijs en Arbeidsmarkt (ROA).

Ministerie van Onderwijs Cultuur en Wetenschap (2011). *Brief aan scholen. Vernieuwde VSV aanpak 2012-2015. Referentie 341352*. Nederlands. Den Haag: Ministerie van Onderwijs, Cultuur en Wetenschap.

Ministerie van Onderwijs Cultuur en Wetenschap (2014). *Ruim baan voor vakmanschap: een toekomstgericht mbo*. 94. Den Haag: Ministerie van Onderwijs, Cultuur en Wetenschap, pp. 1–27.

Mitroff, I. (1983). *Stakeholders of the organizational mind*. San Fransisco, Washington, London.

Neil, A. (1992). *Conjoint Analysis: A Guide for Designing and Interpreting Conjoint Studies*. Chicago: American Marketing Association, Market Reserach Division.

Nieuwenhuis, L. and H. Shapiro (2004). *Evaluating systems reform n vocational education and training : learning from Danish and Dutch cases review. Cedefop Reference series, 57*. 30. Thessaloniki.

OECD (2001). *Education at a glance 2001. OECD Indicators*. Paris. ISBN: 9264192816.

OECD (2009). *Learning for jobs. Reviews of vocational education and training. Initial report.* Paris: Organisation for Economic Co-operation and Development (OECD).

OECD (2010). *PISA 2009 Results : Learning to Learn - Student Engagement, Strategies and Practices (Volume III).* Vol. III. ISBN: 9789264083943.

Onderwijsraad (2000). *Koers bve (Direction VET).* Den Haag: Onderwijsraad.

Onderwijsraad (2001a). *Onderwijs in de markt.* Den Haag: Onderwijsraad.

Onderwijsraad (2001b). *WEB: werk in uitvoering (Law on VET: a work in progress).* Den Haag: Onderwijsraad.

Onderwijsraad (2003). *Onderweg in het beroepsonderwijs (En route in VET).* Den Haag: Onderwijsraad.

Onderwijsraad (2004a). *Degelijk onderwijsbestuur.* Den Haag: Onderwijsraad.

Onderwijsraad (2004b). *Koers bve: Doelgericht Zelfbestuur (Direction VET: Goal -oriented autonomy).* Den Haag: Onderwijsraad.

Onderwijsraad (2006). *Versteviging van kennis in het onderwijs (Consolidation of educational knowledge).* Den Haag: Onderwijsraad.

Onderwijsraad (2007). *Versteviging van kennis in het onderwijs II advies.* Den Haag: Onderwijsraad. ISBN: 9789077293652.

Özmen, I., B. Yasit, and Ö. Sezgin (2006). "A conjoint analysis to etermine the preferences for some selected MBA programs". In: *Relieve* 12.1, pp. 93–104.

Pavlova, M., W. Groot, and G. Merode (2004). "An Application of Rating Conjoint Analysis to Study the Importance of Quality-, Access- and Price-attributes to Health Care Consumers". In: *Economics of Planning* 37, pp. 267–286. ISSN: 1573-9414.

Phillips, K. A., F. R. Johnson, and T. Maddala (2002). "Measuring what people value: a comparison of "attitude" and "preference" surveys." In: *Health Services Research* 37.6, pp. 1659–1679. ISSN: 0017-9124.

Pilz, M. (2009). "Initial Vocational Training from a Company Perspective: a Comparison of British and German In-House Training Cultures". In: *Vocations and Learning* 2, pp. 57–74. ISSN: 1874-785X.

Ryan, M. (1999). "Using conjoint analysis to take account of patient preferences and go beyond health outcomes: an application to in vitro fertilisation." In: *Social science & medicine (1982)* 48.4, pp. 535–46. ISSN: 0277-9536.

Sanden, K. V. D., W. Smit, and M. Dashorst (2012). *The referencing document of The Dutch National Qualification Framework to the European Qualification Framework*. Brussels: European Commission.

Schwartz, N. et al. (2008). "The psychology of asking questions". In: *International Handbook of Survey Methodology*. Ed. by E. de Leeuw, J. Hox, and D. Dillman. New York: Taylor & Francis Group. Chap. The Psycho.

Sen, A. (2002). "Health: perception versus observation." In: *British Medical Journal* 324, pp. 860–1. ISSN: 1756-1833.

Seyfried, E. (2007). *Indicators for quality in VET. To enhance European cooperation*. Luxembourg: European Centre for the Development of Vocational Training, 2007. ISBN: 9789289604734.

Shamir, M. and J. Shamir (1995). "Competing values in public opinion: a conjoint analysis". In: *Political Behaviour* 17.1, pp. 107–133.

Shaw, G. (1999). "'European Standards' in Vocational Educationa and Training (VET). What Are They And Who Wants Them." In: *European Journal of Education* 34.2, pp. 137–152.

Sluis, M. E. van der, G. J. Reezigt en L. Borghans (2014). "Quantifying Stakeholder Values of VET Provision in the Netherlands". Nederlands. In: *Vocations and Learning* 7, p. 1–19.

Smith, T. (1992). "Discrepancies between men and women in reporting number of sexual partners: A summary from four countries". In: *Biodemography and Social Biology* 3-4, pp. 203–211.

Stanton, G. and B. Bailey (2001). "VET Under Review in England: Trends and Developments". In: *European Journal of Education* 36.1, pp. 7–22.

Stasz, C. (2001). "Assessing skills for work: two perspectives". In: *Oxford Economic Papers* 53.3, pp. 385–405. ISSN: 14643812.

Sturing, L. et al. (2011). "The Nature of Study Programmes in Vocational Education: Evaluation of the Model for Comprehensive Competence-Based Vocational Education in the Netherlands". In: *Vocations and Learning* 4.3, pp. 191–210. ISSN: 1874-785X.

Taylor, A. (2009). "Mapping the Field of VET Partnerships". In: *Vocations and Learning* 2.2, pp. 127–151. ISSN: 1874-785X.

Tolofari, S. (2005). "New Public Management and Education". In: *Policy Futures in Education* 3.1, pp. 75–89. ISSN: 1478-2103.

Torney-Purta, J. et al. (2001). *Citizenship and Education in Twenty-eight Countries. Civic Knowledge and Engagement at Age Fourteen.* Amsterdam: IEA. ISBN: 90 5166 834 1.

Vijlder, F. D. and A. Westerhuis (2002). *Meervoudige publieke verantwoording.* Amsterdam: Max Goote Kenniscentrum.

Wesselink, R., C. Jong, and H. J. a. Biemans (2009). "Aspects of Competence-Based Education as Footholds to Improve the Connectivity Between Learning in School and in the Workplace". In: *Vocations and Learning* 3.1, pp. 19–38. ISSN: 1874-785X.

Westerhuis, A. (2007). "The role of the state in vocational education: a political analysis of the history". In: *Vocational education: International approaches, developments and systems.* Ed. by L. Clarke and C. Winch. London: Routledge.

Wolf, I. F. de (2000). "Opleidingsspecialisatie en arbeidsmarktsucces van sociale wetenschappen". PhD thesis. Utrecht University.

Zölitz, U. (2014). "The Nature and Consequences of School Choice". PhD thesis. Maastricht University.

# Nederlandse Samenvatting

Dit proefschrift gaat over de kwaliteit van het beroepsonderwijs in Nederland. Iedereen is voorstander van goed onderwijs, maar wat verstaan verschillende partijen zoals studenten, docenten en werkgevers onder kwaliteit van het beroepsonderwijs? Lopen hun opvattingen hierover uiteen? Speelt kwaliteit een rol voor studenten bij de keuze voor een opleiding? En wat doet de overheid om kwaliteit te bevorderen? Door een veldstudie, het analyseren van studentgegevens en een analyse van beleidsdocumenten geef ik in dit proefschrift antwoord op deze vragen. Het doel van dit proefschrift is inzicht geven in de manier waarop de overheid de meningen en het gedrag van betrokkenen kan inzetten om de kwaliteit van het beroepsonderwijs aan te sturen en te verbeteren. Om de meningen van betrokkenen te analyseren gebruik ik een vignetmethode, waarmee je het relatieve belang van diverse aspecten meet bij het maken van keuzes.

Hoofdstuk 1 geeft een introductie op de inhoud van het proefschrift. Sinds de jaren '80 is de overheid bij de aansturing van het beroepsonderwijs overgestapt op een besturingsmodel dat minder voorschrijvend is dan voorheen en meer output-georiënteerd. Scholen kunnen zelf beslissen hoe ze hun financiering inzetten en hun onderwijsproces inrichten, maar moeten er tegelijkertijd wel voor zorgen dat voldoende studenten hun diploma behalen. De overheid probeert daarbij de zelfregulering van scholen te stimuleren en marktwerking in te zetten, zodat scholen zo veel mogelijk zelf verantwoordelijkheid nemen voor hun kwaliteit. Scholen hebben echter niet altijd hetzelfde beeld van kwaliteit als de overheid en ook de studenten die middels hun schoolkeuze bepalen naar welke scholen de meeste financiering gaat, hebben hun eigen opvattingen.

De overheid zal soms constateren dat haar eigen doelen in gevaar komen en staat dus voor de uitdaging om haar eigen doelen te behalen maar tegelijkertijd het veld voldoende ruimte te laten om het onderwijs naar eigen inzicht in te richten.

Hoofdstuk 2 beschrijft wat studenten, hun docenten, hun werkplekbegeleiders en beleidsmakers belangrijke kwaliteitsaspecten van het beroepsonderwijs vinden. Dit blijkt behoorlijk te verschillen. Alle 531 respondenten kregen denkbeeldige opleidingen (de vignetten) te zien met scores op negen kwaliteitsaspecten: 'de waardering van werkgevers over studenten', 'diplomarendement', 'taalniveau', 'mentoruren op de werkplek', 'uitdaging', 'structuur', 'studenttevredenheid over de docent', 'lesuren' en 'aandacht voor burgerschap'. De respondenten werd vervolgens gevraagd deze opleidingen naar eigen inzicht op volgorde van kwaliteit zetten: de beste opleiding eerst. De uitkomsten laten zien dat er veel variatie is. Studenten vinden het diplomarendement van een opleiding belangrijk en daarnaast de waardering van werkgevers en de studenttevredenheid. Docenten wegen aspecten waarmee zij in de klas te maken krijgen zwaarder, zoals een uitdagend curriculum en structuur, terwijl beleidsmakers vooral belang hechten aan de uitkomsten van het onderwijs, zoals het diplomarendement. Bij sommige kwaliteitsaspecten wijzen de resultaten op conflicterende belangen, zoals diplomarendement en structuur. Andere aspecten, zoals de waardering van de werkgevers voor de studenten, worden door alle groepen belangrijk gevonden. Het in beeld brengen van deze voorkeuren en de verschillen daartussen kan zowel de overheid als scholen voor beroepsonderwijs inzicht geven in de verschillende belangen waar ze mee te maken hebben.

Hoofdstuk 3 laat zien hoe de uitkomsten van mijn vignetstudie zich verhouden tot een meer traditionele vorm van meten, waarin studenten stellingen voorgelegd krijgen waar ze een score aan moeten geven. We geven antwoord op de vraag of mannelijke en vrouwelijke mbo studenten de Likert schaal, die traditioneel veel gebruikt wordt in vragenlijsten, verschillend toepassen. Dit doen we door hun antwoorden op stellingen over kwaliteitsaspecten te vergelijken met hun vignetoordelen. De uitkomsten van deze studie laten zien dat mannelijke studenten bij het gebruik van een 11-punts Likert schaal (van -5 tot +5) bij een gelijk oordeel toch een andere waarde kiezen dan vrouwelijke

studenten. Allereerst scoren vrouwelijke studenten gemiddeld positiever dan de mannelijke studenten, ook als hun vignetoordelen gelijk zijn. Vervolgens blijkt dat deze verschillen oplopen bij de lagere scores: hoe lager het oordeel hoe groter de verschillen tussen beide groepen. Een verklaring hiervoor is dat mannen en vrouwen de stappen tussen de antwoordcategorieën, bijvoorbeeld tussen 3 en 4, of tussen 4 en 5, impliciet een andere grootte toekennen. Zo maken mannen sneller de overstap van 0 naar -1 dan vrouwen en kiezen mannen met een negatief oordeel sneller voor een -5, terwijl vrouwen met een negatief oordeel vaker kiezen voor een -2, -3 of -4. We vinden tenslotte dat de verschillen tussen mannen en vrouwen bij iedere vraag terugkomen en daardoor te corrigeren zijn. De vignetmethode, die met concrete waarden werkt, is veel minder gevoelig voor interpretatieverschillen en is daarom een meerwaarde voor onderzoek dat zich richt op het meten van verschillen tussen groepen.

In hoofdstuk 4 kijken we of de voorkeuren van studenten voor kwaliteitsaspecten ook terug te vinden zijn in hun studiekeuze. We onderzoeken of mbo-studenten scholen kiezen met een hoge studenttevredenheid en in hoeverre afstand en het diplomarendement van mbo-opleidingen van invloed zijn op de kans op instroom in een school. Als studenten kiezen voor kwaliteit zou dat scholen extra kunnen stimuleren hun kwaliteit te verhogen om zo studenten en de bijbehorende financiering te krijgen. Uit de resultaten blijkt dat zestig procent van de studenten de dichtstbijzijnde school kiest en twintig procent de op-een-na dichtstbijzijnde school. Naast een korte reisafstand hebben studenten ook voorkeur voor scholen met een hogere studenttevredenheid. De drie studierichtingen die we hebben onderzocht laten verschillende resultaten zien: studenten van bouw en sociaal pedagogisch werk zijn bereid verder te reizen voor een opleiding van hun keuze en kiezen vaker een opleiding met een hogere tevredenheid dan studenten van administratie. Als we kijken naar diplomarendement zien we een ander beeld: studenten van sociaal pedagogisch werk en bouw kiezen vaker voor een opleiding met een lager diplomarendement dan met een hoger diplomarendement. Dit wijst er op dat er íets moet zijn dat studenten waarderen in opleidingen met een lager rendement. Het is belangrijk te weten wat dat is; als het gaat om iets wat te maken heeft met onderwijskwaliteit, kan de overheid, door opleidingen met een hoog diplomarendement te belonen, een ander aspect van kwaliteit in de weg zitten. De conclusie van

dit hoofdstuk is tweeledig: schoolkeuze heeft potentie om scholen te stimuleren hun kwaliteit te vergroten als het gaat om studenttevredenheid, maar niet als het gaat om diplomarendement. Daarnaast wijzen onze resultaten op de mogelijkheid dat studenten in bepaalde branches bewuster kiezen voor kwaliteit en dat de stimulerende werking van schoolkeuze daarom voor sommige branches groter is dan voor andere.

Hoofdstuk 5 laat zien hoe de overheid met haar onderwijsbeleid de kwaliteit van het beroepsonderwijs probeert te bevorderen. Dit beleid past goed in wat wetenschappers beschrijven als het New Public Management, een hervorming die de publieke sector van veel landen heeft beïnvloed. In Nederland heeft het New Public Management twee belangrijke gevolgen gehad voor het onderwijs: een minder voorschrijvende overheid en een focus op de output van scholen. We vragen ons af of deze lijn terug te zien is in het overheidsbeleid aangaande het beroepsonderwijs en of de overheid van deze lijn afwijkt als er meningsverschillen zijn met de betrokkenen in het onderwijsveld. Diverse beleidsdocumenten, in de periode 2000-2010, laten inderdaad een focus zien op de output van het beroepsonderwijs: voortijdig schoolverlaten neemt een groot deel van de uitgaven in beslag, de examinering is een hoofdonderwerp en de overheid ontwikkelt nieuwe outputmaten zoals taal- en rekenstandaarden. Daarnaast is er aandacht voor het zelfbestuur van scholen en intervenieert de Inspectie van het Onderwijs vooral in scholen die risico's hebben in hun output of wiens kwaliteitszorgsystemen niet naar behoren functioneren. We zien echter ook inconsistenties. De overheid introduceert beleidsprogramma's en wettelijke vereisten die het onderwijsproces van scholen raken, zonder daarbij rekening te houden met de output van scholen. Ook zet de overheid in op onderwerpen waar de scholen zelf al veel waarde aan hechten en waar overheidsbeleid wellicht niet nodig is. We stellen dat de overheid met beleid dat consistenter is en meer afgestemd op de waarden van scholen, effectiever bij zou kunnen dragen aan de kwaliteit van het beroepsonderwijs.

In hoofdstuk 6 bespreek ik welke mogelijkheden de overheid heeft om het inzicht in de waarden van belanghebbenden in te zetten voor de kwaliteit van het beroepsonderwijs. Een eerste mogelijkheid is het verbreden van de definitie van kwaliteit. Als belanghebbenden een bepaald aspect van het onderwijs heel hoog waarderen, maar dit aspect maakt geen onderdeel uit van het huidige

kwaliteitsbeleid, kan dit leiden tot reflectie bij de overheid. Is het nodig de definitie van kwaliteit uit te breiden op dit punt of heeft het aspect op een andere manier al een plek in de regulering van het beroepsonderwijs? Een tweede mogelijkheid is dat de overheid gericht aandacht besteedt aan die aspecten waarbij haar belangen niet overeenkomen met die van de overheid. Weerstand uit het onderwijsveld kan de effectiviteit van beleid van de overheid immers in de weg staan. Een derde mogelijkheid is dat de overheid de betrokkenen in het onderwijsveld aan zet laat en zelf een stapje terug doet. De vignetstudie heeft laten zien dat er ook kwaliteitsaspecten zijn die door alle betrokkenen hoog gewaardeerd worden. De overheid zou op deze onderwerpen ruimte aan het onderwijsveld kunnen geven om de onderwijspraktijk zelf in te richten en te reguleren.

# Curriculum Vitae

Margriet van der Sluis was born in Enschede, the Netherlands, at August 3, 1981. She graduated from Stedelijk Lyceum Kottenpark in 1999. From 1999-2005 she attended the University of Amsterdam where she majored in educational sciences. During her Master's program, she studied for six months at the Università degli Studi di Firenze, Italy. She graduated with a master thesis that analysed the policy problem of early school leaving by means of a historical policy analysis and a survey among experts.

During and after her study she worked for the Max Goote Expert Centre, a specialized research centre for vocational education. There she published several articles on administrative policies in vocational institutions.

In 2006 Margriet got employed at the Dutch Inspectorate of Education, where she specialized further as a researcher in vocational education. Since that time, Margriet contributes to the annual research document of the Inspectorate, the state of education in the Netherlands, and the development of supervision in the area of vocational education.

In 2008 Margriet started her dissertation research at Maastricht University. Her research has been presented at various national and international conferences, among them the annual meeting of the American Educational Research Association (AERA) of 2011 in New Orleans and the biennial conference of the European Association for Research on Learning and Instruction (EARLI) of 2011 in Exeter.