CHAPTER 13

Vocational Education from an Economic Point of View

HANS HEIJEKE

13.1 Introduction

Intermediate or Secondary Vocational Education (IVE) plays an important role in the Dutch education system. The education level of approximately half the working population is IVE and almost two thirds of the current school-leavers entering the labour market were educated at this level. In addition, a large part of the labour force with a higher education level originally completed a vocational education at IVE level. A considerable part of IVE is funded by the government. Out of a total education budget of 3.6% of the GDP, the government spends 15% on this type of education. By funding IVE, the Dutch government thereby ensures that a large part of the Dutch population receives the education that prepares them for their later occupational careers.

The Dutch government rates the economic importance of this type of education high. According to a recent memorandum, the government believes that vocational education will play a strategic role in the transition of society towards a knowledge economy (Ministry of Education, Culture and Science, 2000). Vocational education is of crucial importance to increasing and maintaining the knowledge and skills that make it possible to adapt quickly to new technological developments. According to the memorandum, this is vital for the country's international competitiveness. Unfortunately, little is known about the actual returns in the labour market on investment in this type of education. It is estimated that IVE undertaken after Lower General Secondary Education yields very little additional income, but the returns after Preparatory Vocational Education (PVE) can be regarded as reasonable (for this estimate, see De Koning, 1998). The labour market prospects until 2004 for IVE school-leavers vary greatly (ROA, 1999). Prospects for technical studies are often moderate to poor, for the service industry and the care sector moderate to very good, while for the economic and administrative sectors they are generally good.

Social investments in the Dutch IVE system are considerable, in terms of both public funds and the time and effort of the participants. Despite high expectations, economic returns are still unclear. The above indications point to widely varying returns in income and labour market perspectives within this system. In this paper, I will therefore try to gain greater insight into the economic impact of vocational education. In so doing, I shall focus on three aspects of vocational education: the first concerns the level of returns of IVE for the economy (Section 2); the second is the effect of knowledge and skills acquired in a vocational education on the occupational careers of graduates (Section 3); and the third concerns the scope that graduates who have completed a vocational education enjoy in the labour market (Section 4).
In the absence of reliable data to assess these aspects, I shall make frequent use of more theoretical views on the way the system works in relation to the economy and the labour market. As a result, this paper will be - to some extent - an outline of economic problems and, consequently, an agenda for empirical research. At the end of the paper is a concluding section (Section 5).

13.2 Returns for the economy

13.2.1 Productive capacity

The central idea in the human capital theory is that individuals, by investing in education and training, increase their productive capacities (Becker, 1975; Schultz, 1961). Taking society as a whole, a well-educated workforce could contribute to the economic performance of a country. Cérvers (1999) mentioned four ways in which education and training can influence the productivity of a workforce: the worker effect, the allocative effect, the research effect, and the diffusion effect. The worker effect concerns the fact that better-educated workers make more efficient use of the means available in their occupations. The allocative effect refers to the greater efficiency of higher-educated workers in allocating a company's available means to the various application options in the production process. The research effect relates to the role of the higher educated in R&D activities. Lastly, the diffusion effect indicates that higher-educated workers have a greater ability to adapt to technological changes and are capable of introducing new production methods more quickly in the company. The worker effect and the allocative effect are static effects that influence the level of productivity. The diffusion effect and the research effect, on the other hand, are dynamic effects that influence the growth of productivity. I estimate that the power of IVE lies primarily in promoting productivity in companies through the worker effect and, possibly to a slightly lesser degree, through the allocative effect and the diffusion effect. The R&D effect seems to be reserved exclusively for the higher educated with an education at Higher Vocational Education (HVE) or university level.

International comparative studies have shown that a well-developed Intermediate Vocational Training system constitutes a strategic factor in economic development (cf. Finegold & Soskice, 1988; Ryan, 1991). Comparisons were made between the United Kingdom, Germany and France. The poorly developed IVE system in the United Kingdom (compared with other countries) resulted in very low proportions of skilled workers with an intermediate-level education in many production and service companies, compared with similar companies in Germany and France. International comparative case studies at company level have shown that this has a decidedly negative influence on productivity in these companies (Finegold & Soskice, 1988; Mason, Van Ark & Wagner, 1994; Steedman & Wagner, 1987). There were more frequent delays in the production process as a result of inadequate procedures and/or insufficient preventive maintenance. In addition, this underrepresentation of workers with an IVE often appeared to result in the lower quality of goods and services. As a result of all these shortcomings, comparable British plants need more overhead labour in the form of quality controllers and production planners. Finegold and Soskice also pointed out the crucial importance of a high level of education and training when it comes to reorganising the work process in pursuit of new product markets ('flexible-system production strategies'). This demands a quick response to changes, and a quick response is facilitated by a non-hierarchical management structure, few job demarcations, and an emphasis on teamwork and product quality maintenance.
From the results of these studies, one could implicitly deduce that the Netherlands, where IVE is aimed at a broad layer of the population, is in a more favourable position than the United Kingdom, which lacks a similar education facility. The question is, however, whether the Netherlands will in fact experience all those favourable effects of a well-educated workforce at the medium level. It would therefore be interesting to conduct a number of international comparative case studies, comparing the Netherlands with countries with less developed or more developed systems of vocational education. The distinction of four types of productivity effects of education and training, as mentioned by Cörvers, would be a good point of departure. This could provide the study with a systematic view of the strengths and weaknesses of the Dutch vocational education system in an international perspective, in both static and dynamic terms.

In connection with the above case-study results, it is interesting to note that these are confirmed by a European study carried out by Cörvers on the basis of data for different economic sectors (Cörvers, 1998). In his study, he made an econometric estimate of both the static and the dynamic effects of three skill levels for manufacturing sectors. On the basis of the study results, he concluded that - considering the productivity effects still to be achieved - the United Kingdom, as well as France and Spain, exhibits an underinvestment in intermediate skills. In Germany and Denmark, there is an overinvestment in intermediate skills with respect to the static productivity effects still to be achieved, whereas there may be an underinvestment in this category of skills with regard to the dynamic effects to be achieved. The Netherlands takes a middle position with respect to these two productivity effects. This means that productivity gains appear to be possible by investing more in intermediate skills, albeit less than in the United Kingdom, France and Spain. Complementing this more general research, the aim of which is merely to indicate a direction, the international comparative case studies for which I pleaded above, could give greater insight into the specific skills on which IVE should focus.

With respect to the productivity effects of vocational education, I also refer to the results from a study that relates solely to the situation in the Netherlands. These data come from De Koning (1998), who lists a number of results from a study on the effects of education both on the level of productivity and on innovation in companies. Therefore, this study looked at not only the static but also the dynamic productivity effects of education. It distinguished between vocational education and general education. Compared with other types of education, at both higher and lower levels, IVE appeared to make an average contribution to productivity. It scored below Lower General Secondary Education, as expected – considering the small salary effect of a vocational education on top of a Lower General Secondary Education. However, IVE scored above Higher General Secondary Education/Pre-university Education, which is difficult to explain. There also appeared to be a generally positive relationship between the level of education in a company and the scores for the innovation indicators distinguished in the study, including the R&D efforts and product innovation. This is in line with the expectation that participation in R&D efforts will be reserved for the higher educated and the role of the lower educated will be restricted to diffusing the fruits of these efforts. As far as the study distinguishes between general and vocational education, vocational education usually scored better for the different innovation indicators.
The studies discussed above failed to create a clear picture of the economic returns of IVE. At most, the international comparative studies indicate that these returns are potentially favourable. The study of the current situation in the Netherlands seems to indicate that the positive returns are indeed there and quite extensive. These statements concern vocational education as a whole. The system, however, remains highly differentiated as to levels, types, and practical components. The tentative conclusion reached here will certainly not apply to all types and levels of education. Research on the economic returns of vocational education will therefore have to take this differentiation explicitly into account.

13.2.2 Value on the labour market
If IVE has a positive effect on productivity, employers should value graduates accordingly. Here, the value of their productive capacities will be deduced from data supplied by graduates on their salary levels and on their having jobs either below their level of education or where their specific type of education is irrelevant. The idea behind this is that salaries are related to the productive value that graduates add to the companies for which they work. In addition, employing graduates in jobs where a lower education level is sufficient and the type of education irrelevant indicates that the higher level and the specific type of education have no additional value for the companies concerned.

The data relating to the three criteria mentioned above are presented in Table 13.1. The data apply to graduates who left school about 18 months previously. The table shows the hourly wage, the percentage of graduates working below their level of education, and the percentage whose jobs do not require the education taken. The figures for required education level and required type of education are estimates made by the responding graduates as to the opinions of their employers. The table compares data for IVE with data for Preparatory Vocational Education (PVE) and Higher Vocational Education (HVE). Unfortunately, such data are not available for general education. For reasons of clarity, the data have been grouped per education under a number of main headings, while at the intermediate level only the two highest levels are presented. IVE has, however, been differentiated according to the learning route (either the traditional school variant or the apprenticeship system).

A vocational education at the intermediate level returns double the wages of a Preparatory Vocational Education. The dual track yields the highest wages. Going on to do Higher Vocational Education produces a further increase, but this is less than in the first step. At the intermediate level, wages are relatively high for technical jobs and dual-track health care jobs. Wages are relatively low at this education level for graduates from agricultural and economic/administrative studies.

The knowledge and skills acquired by graduates are not being fully utilised. Underutilisation is particularly high after a Preparatory Vocational Education and dual-track IVE. For Higher Vocational Education and IVE taking the school track, underutilisation is lowest, with an average of 20%. Underutilisation also varies according to type of education.
It is very low at the intermediate level for those who have taken a technical education following the school track (17%), but very high for those who have taken a dual-track technical or economic education (62% and 51%, respectively).¹

Table 13.1: Wages, job below level, and no specific type of education required

<table>
<thead>
<tr>
<th>Education sector type</th>
<th>Gross hourly wages (NLG)</th>
<th>Lower level required (%)</th>
<th>No type required (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVE</td>
<td>9.28</td>
<td>31</td>
<td>41</td>
</tr>
<tr>
<td>Agriculture</td>
<td>8.23</td>
<td>26</td>
<td>48</td>
</tr>
<tr>
<td>Technical</td>
<td>9.40</td>
<td>33</td>
<td>28</td>
</tr>
<tr>
<td>Economics</td>
<td>9.05</td>
<td>30</td>
<td>69</td>
</tr>
<tr>
<td>Health Care</td>
<td>9.28</td>
<td>20</td>
<td>47</td>
</tr>
<tr>
<td>IVE levels 3 and 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School track</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>17.75</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Technical</td>
<td>15.76</td>
<td>33</td>
<td>29</td>
</tr>
<tr>
<td>Economics</td>
<td>19.65</td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td>Health Care</td>
<td>16.65</td>
<td>21</td>
<td>28</td>
</tr>
<tr>
<td>Behaviour and Society</td>
<td>17.04</td>
<td>23</td>
<td>15</td>
</tr>
<tr>
<td>IVE level 3 and 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dual track</td>
<td>18.66</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>Technical</td>
<td>21.46</td>
<td>62</td>
<td>19</td>
</tr>
<tr>
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<td>18.65</td>
<td>51</td>
<td>37</td>
</tr>
<tr>
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<td>22.80</td>
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<td>11</td>
</tr>
<tr>
<td>Behaviour and Society</td>
<td>18.89</td>
<td>34</td>
<td>17</td>
</tr>
<tr>
<td>HVE</td>
<td></td>
<td></td>
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<tr>
<td>Agriculture</td>
<td>25.05</td>
<td>20</td>
<td>19</td>
</tr>
<tr>
<td>Teaching</td>
<td>23.18</td>
<td>25</td>
<td>18</td>
</tr>
<tr>
<td>Technical</td>
<td>27.08</td>
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<td>Economics</td>
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<td>Behaviour and Society</td>
<td>26.55</td>
<td>18</td>
<td>5</td>
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<tr>
<td>Art and Culture</td>
<td>24.38</td>
<td>34</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>23.93</td>
<td>33</td>
<td>17</td>
</tr>
</tbody>
</table>


A large part of the graduates from Preparatory Vocational Education (41%) end up in jobs for which no specific type of education is required. If we add this to the fact that many also work below their level of education, we can assume that this is unskilled labour. At the intermediate and higher levels, the percentage of graduates who work in jobs for which no specific type of education is required is half as big, or approximately 20%. There are also differences between the education sectors with respect to this indicator of underutilization of the education, in particular the type.

¹ The researchers are afraid that many school-leavers from the apprenticeship system who stayed on with their respective employers after graduating took the education level required during their studies as the reference level.
At the intermediate level, it is especially those with an agricultural or economic/administrative education who get jobs where the type of education is irrelevant. This effect is smallest among those who took a technical, health care or behaviour and society education, regardless of the track.

The labour market data discussed here show that Dutch IVE is generally rated favourably on the labour market. The wage increase of those who have completed an IVE following a Preparatory Vocational Education track can be regarded as considerable.\(^2\) This applies in particular to those who took the dual-track variant. A large majority of the graduates have jobs at the level of their education, in particular those who took the school track. Most of them also have jobs where their type of education is relevant. However, there are great differences between the education sectors. Consequently, it seems as if benefits could be accrued by improving the allocation of students across education programmes, for example by providing better information about studies and a better match between the education programmes offered and the labour market. Before we draw any definite conclusions, however, we should take into account that the data presented here give only a general indication. The data concern recent graduates, who could improve their position in the course of their career by finding a job that better matches their level and type of education. It is important, therefore, to follow the careers of graduates a little longer. Furthermore, a more detailed picture would have to be obtained of the way in which graduates with a particular educational background perform when they cannot work at their own level or in a job that requires their type of education. It may very well be that they distinguish themselves positively from the graduates with a lower educational level or from different types of education in the occupations concerned.

13.3 Impact on occupational careers

On the basis of the human capital model, one can argue that the returns on vocational education are greatest if it is undertaken at a young age. The period during which the returns can be enjoyed is then longer and the loss of income during training is smaller. Nevertheless, it is not wise to pull the generation of knowledge and the acquisition of skills too far forward, because some types of knowledge and skills can be learned much more effectively within a working situation than at school. During one's later occupational career, unforeseen shifts in the labour market will take place, making certain occupations superfluous and allowing new, previously unthought-of occupations to emerge. In addition, technological innovations may take place that lead to drastic changes in the nature of goods and services, and in the way these are produced. In particular, the globalisation of the economy and developments in the field of ICT appear to be accelerating this process. Accordingly, the knowledge present in workers will age rapidly and will need to be updated more and more quickly to enable them to stay abreast of developments. Life-long learning is therefore becoming a vital solution to these problems. During the early years, vocational education would have to concentrate primarily on supplying the knowledge and skills that form the broad base of the subject field where one will later end up, and on generating general competencies such as an adequate ability to learn, thus facilitating the acquisition of new knowledge.

\(^2\)This is in line with the data on returns provided by De Koning (1998), as referred to in the introduction.
This would be an argument in favour of making the initial phase of vocational education as general as possible. Current practice, however, is completely different. The IVE programmes in the Netherlands are organised on the basis of proposals from sector-oriented national organisations. The business community — in particular the employers — have a great influence on the contents of these proposals. Within the framework of the basic principles that the law imposes on education and vocational training, education programmes are compiled in such a way that they closely match the requirements of the occupational field. This is done to create a labour potential that can immediately be deployed productively after leaving school, with minimal adaptation costs. This increases the occupation-specific nature of education programmes and leaves little room for more general knowledge or the skills necessary to acquire new knowledge during one’s later career and for jobs that are outside one’s own field of education.³ This last point could be relevant for a large part of the students immediately after their graduation, as is shown by the figures presented above on working outside one’s field of education (see Table 13.1).

The importance of strengthening the occupation-specific component in initial education is supported by research. On the basis of a review of conducted research and a survey among employers, Bishop (1995) concluded that ‘for most jobs productivity derives directly from social abilities (such as good work habits and people skills) and cognitive skills that are specific to the job and occupation: not from reading, writing and mathematics skills.’ He further states that reading and mathematics skills have only an indirect effect on productivity, because these help the individual to learn the occupation-specific and job-specific skills. As the skills important for occupational performance are easier to acquire than reading and mathematics skills, occupation-specific training is highly desirable, at least if it is likely that the knowledge acquired can be put into practice in either the occupation or a closely related one.

It would be too easy to deduce from Bishop’s plea for occupation-specific training that the occupational component in vocational education should be extended to the disadvantage of the more general skills. There are three relevant aspects, however, that his argument does not sufficiently take into account. The first aspect concerns the complementarity in the education programme between acquiring occupation-specific knowledge and general skills. The second is the significant chance that individuals will find a job outside their own field immediately after leaving school. The third aspect concerns the fact that some competencies are only relevant later in an occupational career and can also be acquired much more effectively in the working situation than during one’s education at school. A recent study by Heijke, Meng and Ramakers (2001) explicitly deals with these aspects. Using a data set of university graduates, the authors investigated the role of three types of skills in the labour market. The first type concerns the skills on which the education primarily focuses, or the field-specific skills. The second type concerns the skills that can be acquired as part of the education but which are probably learned more efficiently in the working situation. Here, an example would be management skills.

³The law states a number of conditions that are intended to counter this effect. Studies should provide opportunities for social development, provide connections with both the previous and the next link in the education column, and in order to qualify for funding, education programmes should provide a broad and sustained preparation for occupational careers. The dominant position of the business community and the absence of a uniform vision on the contents of vocational training programmes in the sector-oriented national bodies, however, mean that these conditions are hardly met in practice.
The third type concerns the skills that are also acquired as part of the education but which, in themselves, promote the effectiveness with which the other skills are acquired, both during the education programme and afterwards in one's career. These are the general academic skills, including such qualities as having a wide general knowledge, analytical skills and learning ability. The researchers found that a high level of field-specific skills acquired as part of an education increases the chances of finding a job in the field-specific occupational domain immediately after graduation. This is important for graduates because these field-specific skills give them a comparative advantage in performing a job in their own occupational domain and hence enable them to earn more. Once an individual is working in his or her own domain, the chances of staying there are very great, at least during the first years\(^4\) of an occupational career. Supervising appears to bring extra rewards. The results of this study indicate that the skills required are developed primarily after graduation\(^5\) and that a higher level of general academic skills at the time of graduation promotes the development of such skills. This shows that general academic skills are definitely important but, unlike field-specific and management skills, do not derive their value so much from their immediate productive returns. Their value is more in promoting the acquisition of those skills that appear necessary during an occupational career but which are not acquired as part of the education programme, for example because they cannot effectively be taught there or it is insufficiently clear that a graduate will need them later.\(^6\) Further, the researchers found a positive relationship between the available field-specific skills and the general academic skills at the time of graduation. This probably refers to a certain degree of complementarity between the acquisition of these two types of skill. General academic skills are necessary for an effective acquisition of field-specific skills and the learning process within which this takes place promotes, in itself, the development of general academic skills. It would therefore be too simplistic to regard education as a system of communicating vessels, where the room available in a study programme for acquiring field-specific skills can be increased by decreasing the room available for developing general academic skills.

The above research outcomes underline the importance of acquiring occupational skills in the initial phase of the education programme. These skills provide graduates, when looking for jobs or working in a particular occupational domain, with a comparative advantage over those who completed a more general education. These advantages also extend over a longer period because many graduates stay within this domain for a longer time. However, it is necessary to make a suitable choice between what can be learned effectively at school and what should be learned afterwards in the working situation. This is apart from the fact that it is not immediately clear in every individual case which skills will be needed later – as is the case with management skills. Making a choice is necessary because room in education programmes for additional learning activities aimed at acquiring extra knowledge and skills is limited.

\(^4\) The data set used for the study is restricted to the careers during the first three years after graduation.
\(^5\) Previous research also provided indications that management skills are learned more effectively during an occupational career. In their research among university graduates of Economics and Business Administration, Heijke and Ramaekers (2001) concluded that graduates in Business Administration have no comparative advantages in the performance of supervisory jobs, despite the attention undoubtedly paid to the required skills in their studies. These graduates appear to be paid no better in supervisory jobs nor to receive less training than economists and econometricians.

\(^6\) This is in line with Bishop's view on the role of general academic skills. His nevertheless one-sided plea for more attention for the teaching of occupational skills in education, should perhaps be explained on the basis of his great concern for a good link with occupational life immediately after leaving school, and the relatively limited attention for occupational skills in regular education in the USA.
There is a risk of the education programme becoming overloaded, which could have a negative effect on the quality of other skills that need to be acquired or increase drop-out rates because students cannot cope with their studies. To prepare students properly for their later careers, the continuous expansion of curriculums with learning processes aimed at the acquisition of all possible categories of knowledge and skills that might play a part in their later occupational careers should be avoided. This objective can be achieved much more efficiently, and with fewer risks, by paying attention in the curriculum to an optimal acquisition of the general academic skills that promote the development of the knowledge and skills that appear to be necessary in a career and which can be learned more easily than during their study years. This applies in particular to those graduates who find jobs outside their own specific field, immediately after graduating or later in their occupational careers, and who need to acquire new knowledge and skills there. The attractive aspect of the outlined approach is that, in as far as acquiring general academic skills in the education programme is complementarily related to acquiring occupational skills, the increased attention to acquiring the general academic skills need not be an extra burden on the curriculum. The main issue will be the search for the most effective didactic model for the curriculum.

The argument above is slightly at odds with current practice. In the national organisations that make proposals for vocational education, there is a one-sided interest in the occupational profile to which the education programme should be geared. Although there is a growing interest in including the acquisition of key skills in the curriculum, a clear vision is lacking on the systematic evaluation of what can best be achieved in the education programme and what should be done after graduation, and how the curriculum can be constructed to generate the required general academic skills in the best possible way. Shifts in the primary point of view in the development of education programmes – from ‘learning for an occupation’ to ‘learning for an occupational career’ – could possibly promote the necessary shift in the approach to vocational education.

Lastly, it should be noted that our argument is strongly based on the results of the study among university graduates. Naturally, the general validity of the conclusions must be critically tested on the basis of different data sets of university-educated individuals. In addition, it is of course desirable that similar research be carried out focusing specifically on IVE graduates.

13.4 Scope of the labour market perspective

If a vocational education prepares students only for a single occupation, all attention in the programme can be focused on the acquisition of a high level of the knowledge and skills required for that occupation. Graduates from such a study will have great comparative advantages in the occupation concerned, because their knowledge and skills fit the job requirements exactly. If they venture outside their occupational field, however, they will certainly perform less well than graduates from those studies specialising in the preparation for the other occupation. If the degree of specialisation is less extreme and the knowledge and skills of related occupations have also been taught during their studies, the drop in productivity resulting from working in a related occupation instead of their own field of specialisation will be less. The performance level will still be lower than that of the graduates who specialised in the related occupation. In addition, the lower degree of specialisation will have decreased productivity in one's own occupation.
By broadening the education, the productivity drop in the occupation on which the study primarily focuses is offset by the greater chance of finding a job in a related occupation. By widening one's scope, one has traded in a decrease in productivity for greater flexibility on the labour market.

In the case of highly specialised studies for an occupation with a stable labour market, broadening an education programme makes no sense. The labour market perspective is highly predictable and there is less chance of being forced to resort to a related occupation or even something more remote. Only if the labour market is highly volatile should one consider broadening the education programme as a shield against uncertainty. As said before, the price paid for this is a drop in productivity. One needs to find a balance. This need not be merely choosing a particular breadth for the education programme. It is possible to think of an optimal situation where there are education programmes with different degrees of broadness within a segment of the labour market. In a segment that is sufficiently large in terms of employment but which is characterised by great turbulence, a combination of narrow specialised education programmes and broad study programmes can be a very rational choice. In the case of shifts in employment opportunities, graduates from the broader programmes will benefit from their ability to resort to other occupations where the perspectives are more favourable. This will have a soothing effect on the otherwise volatile perspective of graduates in specialised education programmes.

Table 13.2 shows a number of categories of IVE programmes, classified according to the broadness and volatility of the labour market perspective. The criterion for the broadness of the education programme is based on the distribution of the programme across economic sectors, while the criterion for sensitivity to the economic climate is based on the average fluctuations in the employment rates over a long period of time in the economic sector concerned. It appears that the technical studies have the highest risk factor because there are few opportunities to resort to other occupations in other sectors, and these sectors are highly sensitive to economic fluctuations. The education programmes are regularly considered as being of strategic importance for the transition to a knowledge-intensive society. The risky labour market position of these education programmes underlines the importance of decreasing these risks if the studies are to be made more popular amongst young people. The position for economic and administrative studies is very stable. A mixed risk profile can be observed in agricultural education programmes and studies in services/care sectors. These offer few opportunities for resorting to other occupations, but the sectors also exhibit a stable employment perspective.

Having outlined and illustrated the problem at hand, I hope I have shown how important it is to take the labour market position of education programmes into consideration when developing study programmes. Analyses of the labour market perspectives and risks of education programmes should be able to help developers of study programmes to make strategic choices with respect to the required broadness and contents of the

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7 This would mean broadening the education in such a way that it provides a wider scope on the labour market. I shall not answer the question how this can be achieved within the curriculum and what this should imply for the above-mentioned mix of occupational skills and general academic skills.

8 For a more elaborate discussion of these issues, see Borghans and de Grip (1999), and Heijike and Borghans (1998).

9 For this argument, see Borghans and de Grip (1999).
programmes. Developing education programmes should be more than fitting a study to an occupational profile conjured out of thin air – as is often the case today.

Table 13.2: Labour market risk profile for education programmes

<table>
<thead>
<tr>
<th>Sensitivity to economic fluctuations</th>
<th>Narrow</th>
<th>Wide</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>High</em></td>
<td>IVE Technical</td>
<td></td>
</tr>
<tr>
<td><em>Low</em></td>
<td>IVE Agriculture</td>
<td>IVE Economics</td>
</tr>
<tr>
<td></td>
<td>IVE Services/Care</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Heijke and van der Velden (1997)*

13.5 Conclusions

International studies appear to indicate that preserving an IVE system such as we have in the Netherlands is potentially economically profitable. Dutch research has shown that such profits are difficult to prove and are likely to be quite substantial. If we look at the labour market position of graduates, we see that they are certainly appreciated in terms of wages and working within their own occupational domain. On the other hand, the picture varies greatly according to education programme.

An analysis of the importance of vocational education for the careers of graduates shows that, in addition to occupation-specific skills, the development of general academic skills in the initial phase of education is important. This follows on from the fact that education programmes should not endeavour to teach everything that might be of use later, but should make strategic choices on the basis of the limited room available in the curriculum, the chances of particular skills being actually required, and how effectively certain skills can also be acquired in the working situation.

The chosen breadth of an education programme has a certain return in terms of productivity in the job concerned and a certain risk profile with respect to the chances of finding a job within one’s own educational domain or outside. This demands optimisation of the decisions on the contents and breadth of education programmes, partly on the basis of the specific position that these programmes hold in the labour market in terms of returns and risks.

The above can be regarded as a plea for greater consideration to be given to the dynamics of careers and the labour market when deciding the contents of education programmes. The paradigm of linking the contents of education programmes to a static occupational profile conjured out of thin air has been eroded and should be reviewed.
References


