School of Social Sciences

CARDIFF UNIVERSITY
PRIFYSGOL CAERDYDD

Working Paper Series
Paper 58

Skills, Qualifications and Training in the Netherlands

Steel Industry: A Case Study

Peter Fairbrother, Dean Stroud and Amanda Coffey

July, 2004

ISBN 1 904815 24 3

Global Political Economy (GPE) Research Group

The Global Political Economy (GPE) Research Group is located in Cardiff University's School of Social Sciences. The Group focuses on the social dimensions of globalisation, and brings together academics, representatives of employers' organisations and trade unions as well as civil society actors for teaching, learning, research and debate.

Aims

- Advancing understanding of globalisation and its impacts on society.
- Improving policy-making through the creation of a high quality research base.
- Conduct critical sociological analysis and research.

Approach

GPE members undertake independent, rigorous, theoretical and applied small and large-scale research and evaluation studies. Research by GPE members is informed by the work of radical and imaginative thinkers in political theory, sociology and labour studies, and by a commitment to social justice.

GPE Working Paper No 8

The Authors

Amanda Coffey is senior lecturer in the Cardiff School of Social Sciences. Her research interests include young people and the transitions to adulthood, gender and transforming labour markets, and qualitative research methodologies

Peter Fairbrother is a professorial fellow in the Cardiff School of Social Sciences. His research interests include state restructuring, the intersection between locality and global organisation, and questions relating to trade unionism at local, national and international levels.

Dean Stroud is a research associate in the Cardiff School of Social Sciences. His research interests include skills and training, local labour markets and life-long learning.

Address for correspondence:

Cardiff School of Social Sciences
Cardiff University
King Edward VII Avenue
Cardiff CF10 3WT

FairbrotherPD@cardiff.ac.uk

Acknowledgements

This Report is one of a series of 13 reports produced for the European Union funded study, 'New Steel Industry Challenges' (Leonardo Da Vinci, UK/00/B/F/pp-129 016). The project is led by the Steel Partnership Training (http://www.steelpartnershiptraining.org.uk/), and involves the following partners: Federation Europeenne des Metallurgistes (Belgium), Solidarność (Poland), Talentis (Netherlands), Buro fur Organisationsentwicklung und Berufsbildung (Germany), Acas (UK), London North Learning Skills Council (UK), IDEC (Greece), ASTRA (Lithuania), Istituto Per la Cultura e la Storia d'Impresa (Italy) and Cardiff University Regeneration Institute (UK).

The aims of the project are to:

1. Promote Lifelong Learning within the European Steel Industry
2. Support workers' adjustment to new ways of working.
3. Promote equal opportunities.
4. Support workers' adjustment to new technologies.
5. Provide workers with transferable skills.

In meeting these aims the project undertook the following:

1. Mapped existing qualifications using new and existing research to ascertain the level of need in new and transferable skills.
2. Developed transnational qualification modules comprising new and transferable skills.
3. Developed an on-line training programme.

The duration of the project was three years, from December 2000 to November 2003.

The research for the Reports was undertaken by: Peter Fairbrother, Dean Stroud, Amanda Coffey, Jan Clark, Jenifer Daley, Nikolaus Hammer and Steve Davies, with contributions from all partners.

The Reports are:

1. New Steel Industry Challenges
2. The Internationalisation of the World Steel Industry.
3. The European Steel Industry: From a National to a Regional Industry.
4. The Changing European Steel Workforce.
5. Skills, Qualifications and Training in the German Steel Industry: A Case Study
6. Skills, Qualifications and Training in the Italian Steel Industry: A Case Study
7. Skills, Qualifications and Training in the Netherlands Steel Industry: A Case Study
8. Skills, Qualifications and Training in the Polish Steel Industry: A Case Study
9. Skills, Qualifications and Training in the British Steel Industry: A Case Study
10. Future Skill Needs in the European Steel Industry
11. Training and Qualifications in the European Steel Industry.
12. The Question of pan-European Vocational Qualifications
13. Equality and Diversity in the European Steel Industry

Skills, Qualifications and Training in the Netherlands Steel Industry: A Case Study

Introduction

The Netherlands case study focused on the principal steel making plant in the Netherlands, at IJmuiden, in the north east of the country. In 1999 the owners of the plant merged with British Steel plc to become a major European steel producer. It is a well established integrated plant, with extensive facilities, which has benefited from considerable and on-going investment. While there has been a reduction of staff at the plant since the 1980s, there remains a substantial working population on site. Considerable attention has been given to developing a skilled workforce and recruiting young and more highly qualified workers. Accompanying this, there has been an on-going process of work reorganisation.

The material and analysis presented in this case study report should be viewed in the wider context of the restructuring of the world (including European) steel industry. The European (and world) steel industry has undergone significant adjustment over the last two decades. The changes are, in part at least, due to the deregulation and privatisation of this industry, and coincided with much cross-border merger activity. One result is an increasing concentration of ownership and the refocusing of production within international markets. There have also been other catalysts for change; for example a substantial degree of technological innovation, and an increasing emphasis on downstream activities and customisation. The corollary of these developments is that there has been pressure on companies to create the conditions for further automation and mechanisation of production (not least through significant technological development), as well as to centralise production into fewer facilities. One result of these activities has been a major reduction of steelwork employment, particularly in the advanced industrial countries, but also in the former Soviet Union and Eastern Europe, too. Along-side these shifts, new recruitment strategies and skills and training needs are likely to emerge. It is against this transformative context that the skill needs of the European steel workforce is set. A more in-depth discussion of the above issues is located in Work Package 1 Reports 1, 2, 3 and 4.

The Report is organised in five sections. Section One comprises an account of the company, followed by a more detailed presentation of the plant that was studied. In Section Two an overview of the workforce is provided, including a schematic presentation of the managerial and work organisation. Section Three examines the skills, qualifications and occupational profile of the plant. In Section Four, the training profile is reviewed. In Section Five future skills needs are identified.

Section One: Netherlands Steel Co.

On 6 October 1999, British Steel plc merged with Koninklijke Hoogovens, a Dutch steel producer, to create Corus plc. The headquarters of the company is located in London and comprises 21 Business Units, which are located world-wide. Its shares are listed in London, New York and Amsterdam. The new company is global, and in 2000 was the third largest steel

producer in Europe, and sixth in the world. At the end of 2000 the Corus workforce in the Netherlands was 12,900, based at the IJmuiden plant. Subsequently, in late 2001, it was announced that nearly 1,500 staff would be made redundant, on a voluntary basis and aimed specifically at older staff.

The Company

Koninklijke Nederlandsche Hoogovens was founded on 20 September 1918 in The Hague. The aim was to remove the dependence that Dutch industry had on imports. During the 1920s the steel plant was established at IJmuiden, a town on the North Sea coast, with good access inland via the North Sea Canal. Construction began in 1920, and in 1924 the first blast furnace was commissioned and iron production began. By the mid-1930's, Hoogovens had become the largest exporter of pig iron in the world. In 1936, the company began producing cast-iron pipes. Steel production began in 1939, using open-hearth furnaces. In 1941, Hoogovens acquired Van Leer's Walsbedrijven; a rolling mill that was renamed Walserij Oost (East Rolling Mill).

In the mid-1960s, Hoogovens began a process of product diversification, into aluminium and mining. In 1966, the company commissioned the Aldel primary aluminium smelter, following the acquisition a year earlier of Vaassen Aluminium. In 1970, Hoogovens took a holding in Sidal, an aluminium rolling and extrusion company. On the 7 July 1972 Hoogovens and Hoesch of Germany merged to form Estel.

The steel company was caught up in the crisis of overproduction in the European steel industry in the early 1980s. Against this background the merger arrangement between Hoogovens and Hoesch was dissolved in 1982. The European activities of Kaiser Aluminium were acquired in 1987, making Hoogovens one of the four largest producers of rolled and extruded aluminium in Europe.

In 1990, the Hoogovens group had five divisions:

- Steel and Aluminium
- Technical Services
- Subcontracting
- Steel Processing
- Trading

In 1999, in the context of increased moves towards merger and acquisition in the European steel industry, Hoogovens and British Steel entered merger discussions. At that time, Koninklijke Hoogovens had 17 business units, around 22,000 employees, a turnover of €4.9 billion, production of 6.7 million tonnes of crude steel and sales of 429,000 tonnes of aluminium products[1].

On October 6, 1999, the merger with British Steel to form Corus came into effect. By 2002, Corus was the second largest steel producer in Europe and the sixth largest in the world.

[1] Information on Corus Netherlands gathered from: http://www.corusgroup.com/home/index.cfm

Corus produced around 21 mt of crude steel in 1999 and 16.8 mt in 2002. The group produced carbon steel by the basic oxygen steel making method at five major steelworks located in the UK at Llanwern, Port Talbot, Teeside and Scunthrope, and in the Netherlands at IJmuiden. The company supplies a range of markets: aerospace; agriculture; automotive; construction; consumer products; energy and power generation; engineering; heating, ventilation and air conditioning, packaging, rail and shipbuilding. The distribution is as follows:

Table 1: Markets supplied by Corus

Estimated share of turnover, 2000*	**%**	**Estimated share of turnover, 2003**	**%**
Construction	**32**	Construction	**30**
Automotive	**18**	Automotive	**16**
Mechanical Engineering	**13**	Packaging	**15**
Metal Goods	**12**	Mechanical Engineering	**14**
Packaging	**10**	Electrical Engineering	**4**
Electrical Engineering	**4**	Metal Goods	**13**
Other Transport	**3**	Oil & Gas	**2**
Other Industries	**8**	Other	**6**

Sources: *Corus plc, *Annual Report 2000*, p. 3; http://www.corusgroup.com/media/pdf/ACFE15%2Epdf

Despite the relatively short period of time in which to make such assumptions (i.e. 2000 to 2003), it would appear that there is a shift in the balance of production that is consistent with a new company undergoing a process of restructuring. Following the merger, the company has reviewed its corporate strategy, part of which has involved the review of the UK operations, especially in relation to carbon steel production.

Table 2 highlights where Corus's business attentions are focused (see Work Package 1 reports about the internationalisation of the European steel industry):

Table 2: Corus's Turnover by Region (1st half 2003)

Region	**Percentage of Turnover**
UK	**27**
Rest of Europe	**53**
North America	**10**
Rest of World	**10**

Source: http://www.corusgroup.com/media/pdf/ACFE15%2Epdf

The refocus of business strategy and more general restructuring activity has impacted on workforce numbers. The company employed 64,900 people at the end of 2000 but by mid-2003 there had been a major decline in numbers, distributed as follows (Table 3):

Table 3: Employees by location

Employment by Country 2000 (end December)	**Total** ('000s)	**Employment by Country 2003** (end June)	**Total** ('000s)
UK	32,800	UK	25,100
The Netherlands	12,900	The Netherlands	11,600
Germany	6,800	Germany	6,200
Sweden	3,650	USA	1,100
USA	2,100	France	1,700
France	1,800	Belgium	1,600
Belgium	1,600	Canada	1,100
Other Europe	1,500	Other countries	2,000
Canada	1,250		
Other countries	500		
Total	**64,900**	**Total**	**50,400**

Sources: Corus Report and Accounts, 2002 and http://www.corusgroup.com/media/pdf/ACFE15%2Epdf

By 2002 the numbers employed by Corus plc was 50,900 and by mid-2003 the figure was 50,400. This decline in numbers employed is in line with the corporate strategy that has been developed by the Corus management since 1999.

The Plant

With the establishment of Corus in 1999, the Netherlands steel plants became part of a much larger multinational company. The IJmuiden plant is the largest in the Corus portfolio. Following the merger, the company reviewed its corporate strategy, which involved the review of the Netherlands operations. Since then the Company announced the reduction of the staff complement at the Netherlands of 1200 to 1500 (10-15% of the total workforce) in August 2001. The expectation is that these reductions will be met by age related voluntary retirements and redundancies. The possible sale of the aluminium part of the Netherlands operation is also often mooted and this would mean a further reduction in numbers employed by Corus at the IJmuiden plant. (An initial announcement to sell was followed by a second in March 2002, but the sale has been met with repeated opposition from the works council, backed by the Dutch legislation.)

Steel at IJmuiden is organised into three business groups:

- Strip Products (including hot rod and coating)
- Packaging Plus
- Consultancy and Technical Services

The company also had a Product Application Centre (PAC) on site, in which advice is given on the use and value of new materials and designs, to the customer. Different tests are performed on materials in this centre to see how they react in different environments under different conditions.

The Netherlands plant is situated on the North Sea, with its own inner and outer harbour facilities as well as main line rail and road links. The site is the largest industrial site in the Netherlands, covering 750 hectares of land. It housed a total of 18 steel factories (3 of which have been closed since 1st April 2001). It is an integrated steel works, in 2002 employing over 10,000 workers (5500 of which were shift workers), and over 2000 subcontractors. A small nearby industrial estate houses some of the 30 contractors, including installation, design, reconstruction, logistics and transport, and crane hire. There is also a power station, cement works, and fertiliser works linked to the site.

The site is well served by a comprehensive road network, rail services and a deep-sea port. It is laced by 80kms of roads and 150kms of railway track. The railways have been specially designed and constructed to carry loads of up to 800 tonnes. It is possible to see heavily insulated 'torpedo cars', travelling on the rail track, transporting hot iron ore. A public highway also bisects the site.

The steel company in IJmuiden produces steel for three main markets: the packaging industry, the car industry and the construction industry. Around 6.1 mt of steel is made from the raw materials at the site. Iron-ore and coal are imported from all over the world. Ninety per cent of these materials are supplied by ship and 10 per cent by road. Ships weighing up to 150,000 tonnes can come right up to the site. Cranes then remove the cargo, and conveyor belts take the stock to the appropriate buildings. Seventy-nine per cent of the production at the plant is destined for the European steel market, confirming the integration of this plant into the regional EU steel bloc.

There was some new building on the site in 1998-99, including 3 new commissions related to direct steel production. One of these new production areas was a thin slab casting mill, the next stage in the development of continuous casting lines, whereby technological innovation in line design results in a much smaller line run than was previously the case for the almost universal thick slab continuous casting lines.

The Site: The plant site was entered via a bridge and a sign stating 'world class'. A Congress/Reception Centre is located towards the middle of the site, adjacent to the main administration block (which housed 800 staff). The Centre appeared to be new, modern and well equipped. Much of everything else appeared to be new, well appointed and looked after and gave the impression of a strong corporate identity.

The plant was well laid out and ordered in its appearance. This impression was confirmed by production facilities, illustrated by one of the hot rolling mills, built in 1972, but modernised and upgraded in the late 1990s. The mill was entered via a bright and clean foyer area. This area had a number of display cabinets and photographic displays on the wall. It was relatively quiet; there were no people around. The foyer led into an area with some lockers, and to the right a

vast shower and changing area. Clothes were covered and hung from high hangers above an open plan shower area. The whole area was clean, organised and tidy. The chrome shower equipment was highly polished; the air was dry and cool.

The production areas were typical although in this case neat and tidy. The line was directed by control modules located part way up the side of the building at intervals. These appeared to be clean, bright, glass fronted rooms, equipped with computers and visual display monitors. They were air-conditioned, temperature controlled and glazed to reduce noise. Few people were visible. Those workers in the area were mainly located in the modules and the area had the appearance of a series of machines servicing the line, completely independent of human intervention. To go from one side of the line to the other, there was a tunnel underneath the line area. This tunnel had photographs and more exhibitions (of the uses of steel – for example food cans, car panels, and steel tiles).

The slip yard provided a storage area for the line, with vast slabs of steel, and further along some huge coils. This area resembled a large hanger and was notably cooler than elsewhere. An open metal stairway leads to a high viewing platform that ran all the way along the slip yard hanger and then double backed and went all the way along the hot strip mill production line.

Routine maintenance of the hot strip mill was done on one shift once a week. For a six-day period once a year production is stopped for high level maintenance. Other than these times, the production process was a continuous one.

Overall this is a large, well organised site. It is an integrated mill providing for a full range of iron and steel production activity. It had become a key site for production of steel goods in the new company, Corus.

Section Two: The Workforce

The workforce at IJmuiden was 10,300, of whom 688 were women (6 per cent). As with other parts of the Corus plants, staff reductions were continuing, in the case of the IJmuiden plant, down from 12,900 in 2000. It is likely that this pattern of reduction will continue.

Such a development impacts not only on the plant workforce directly, but also on the nearby residential communities. Approximately 50 per cent of the workforce live nearby the plant, within seven kilometres (Interviews, 2002). The other 50 per cent are spread over a wider area (35 per cent still relatively near, the other 15 per cent in villages and cities to the north). Corus run 60 transportation lines per day (free transport system for employees).

The workforce is largely male and middle aged. Increasingly, however, the steel workforce is an old workforce. The foundations of this lay in large-scale redundancies in the early 1990s. In 1992/93 the company implemented a compulsory redundancy programme accompanied by early retirements (with the work force reduced by 6000). In the same year there were no new apprenticeship recruits. As a result, over time there has been a growing gap between a predominantly older average workforce and a relatively small number of young recruits. The average age of the workforce is 46 years, with approximately 55% of the workforce over 50

years (with an estimated 40% of the workforce over 55 years). For this reason the planned redundancies in 2001, had the effect of shifting the average age of the workforce down.

As indicated previously, only about 6 per cent of the workforce are women. The vast majority of these women do not work inside the mills and related steel making areas. Nevertheless, some women are employed in the rolling mill areas and a much smaller number work on shift basis in the Hot Mill. Women's employment in production is still unusual, however:

> Not many, no, no….. a few women are working in the shifts, I think about six, not many and more in administration and we have now 2 women in our personnel dept, for administration and… the development is a little bit more and the maintenance have…. A woman starting at the first of March in the Maintenance Department, that's the first women working there so it's not much. I think about altogether 20 I think. Secretarial also. But there's not many women working in the shifts. (2002)

The low presence of women on shifts attributed to a stereotyped view of women at work and in the home.

> …you also know that there are women that come to work for us and after a few years then they gonna marry and gonna have children and stay at home. 'Cause it's not easy to work in a shift and have children, and in the day shift it's easier…. (2002)

Nonetheless, the company was attempting to increase the proportion of women working in the plant, in particular via recruitment to the apprentice scheme. In 2002 10 per cent of the intake was female, and there were attempts to increase this proportion towards the 50 per cent level.

The steel workforce was predominantly of Dutch origin. However, there is a significant older Spanish origin workforce, recruited in the 1950s and 1960s. This workforce lives in the immediately adjacent residential areas to the plant and has maintained a vibrant Spanish language culture. Most of these workers are employed in the coking plants and furnace areas. As a manager from this area stated:

> Spanish, Italian and people from Turkey, Morocco. And now we have a language problem that we didn't have ten years ago. It's a problem. More strict rules for environmental safety, it's becoming a problem because people don't speak Dutch fluently. And …ten years ago we didn't mind …but nowadays it's not good anymore. So nowadays we ask for level 2, and level 2 so you can be sure they speak Dutch in the right way. (2002)

These workers have few formally accredited qualifications and are thus located on the lower occupational grades principally Level one and Level two. However, by gaining these qualifications there is an assumption that these workers will be able to read and speak Dutch. For this reason the company is promoting dedicated courses for these workers.

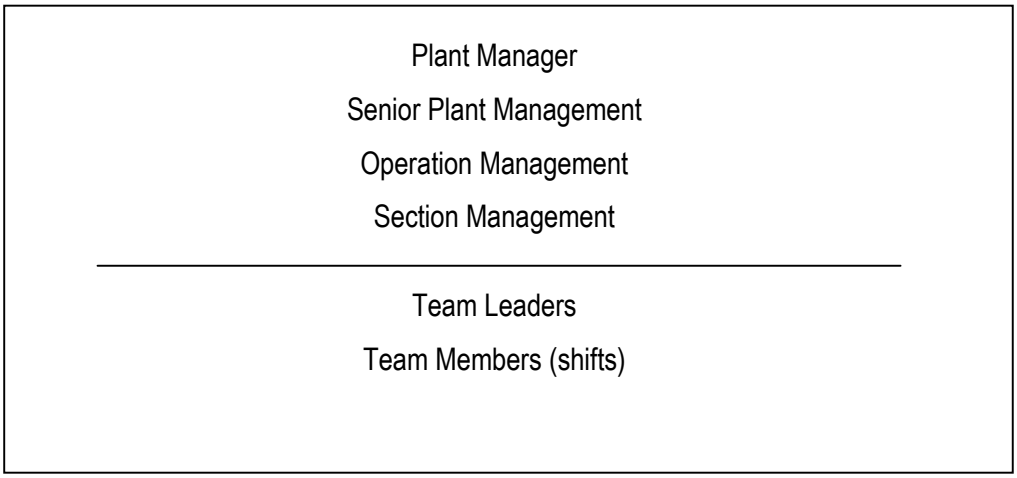
Other areas in the plant also had substantial immigrant populations. In the Hot Mill area, for example, specific sections of the workforce were from outside the Netherlands.

> There are some departments of the Hot Mill, the service centre we call it, there are a lot of people from Surinam, y'know. There are Spanish people, a few Italian, Turkish and Moroccan, not Moroccan, Turkish there are a lot of people… I think. I don't know exactly, but the service department, the service centre, I think it's about 20% of the population. (2002)

While it was unclear what proportion of the total workforce were from ethnic minorities or were immigrant, it was nonetheless a socially significant population.

The Management Hierarchy

The managerial hierarchy and workforce are organised as follows:



The managerial hierarchy is relatively flat with three effective layers, compared with five in the recent past. As a constituent part of Corus plc the plant is located within the broader divisional structure of the company as a whole. In the context of the reviews that are taking place within the company it is likely that these arrangements will change over time.

Work Organisation

The plant operates a five-shift rota and production workers work 3 days on/2 days off. The average working week is:

- Production 33.6 hrs
- Maintenance 36 hrs
- Administration 37 hrs

In 1992 the plant began to reorganise the workforce on a team basis, although this process of reorganisation is still not complete. Senior staff in the Training Centre described how team working is organised:

> …maintenance at first level is done by production team, so the production team is trained in process engineering, mechanical aspects mostly and a little bit of electrical aspects and that's what they do together and that's a self-steering team and they use all sorts of problem solving methods from Japan (2002)

The intention is that the teams will deal with maintenance and repair questions in the first instance.

This process of reorganisation began after studies of the same process elsewhere. Consultants were employed to advise on the shift to team forms of working. This process was described for the coking area in the following terms:

> We changed the organisation because of the process of the Coke plant itself and to bring more responsibility to the team members. There were two main reasons for us to change our organisation. We saw that we had two groups in the Coke plant, a group for production and a group for maintenance and they did not have the right connection between those two groups. And, also the responsibility stayed at the top and they did not fit nowadays with how they are and people are grown up now and are more talk easily and take responsibilities ... (Manager 2002)

Teams were introduced in the coking area in 1999, to encourage more fluid and autonomous ways of working. Each team has its own maintenance workers who identified problems and dealt with production disturbances, although the actual maintenance work in this area was carried out by contract workers. Teams in gas comprised roughly nine workers and in coke between twenty and thirty. Complementing this set of arrangements, each shift had its own manager, as does each section.

Teams ranged in size around 10 for the maintenance teams of mechanical and electrical engineers to 20 – 30 in the Coke plant teams. In general the teams became multifunctional with respect to maintenance and production capabilities comprised team leaders and members. The workforce did not always welcome these changes. As stated:

> …also the levelling in the teams has taken [something] away [from staff] because everyone is a team member and you have only one team leader and the rest are team members. But it has created a last problem because you had levels in the teams and we took them away completely and people are very touchy about it. But it's not even the money; they lost their stripes. (Manager 2002)

Further, with the establishment of the team form of work organisation the managerial hierarchy was reduced from five levels to three.

Team leaders were elected by team members, rather than appointed. However, this was not as straightforward as it seems, since team leaders were required to have Level 4 qualifications, thus restricting the pool of personnel eligible to become team leaders. In addition there had

been some movement amongst the teams as they settle into place. It was not unknown for team leaders to resign and return to the team member position.

This team form of organisation is uneven in terms of the degree to which effective forms of team working are realised. The Coking Plant, for example, only recently moved over to a form of team working, although other areas of the plant had done so earlier. Even then, the form of team working was only partial since there were significant sections of this workforce who lacked the qualifications to undertake multi-skilled work in this area. As a result the area management began to promote training programmes to enable so-called 'single task' workers (loaders or labourers) to acquire the qualifications necessary to undertake multi-tasked work. A further complication to this process was that it was in the coking plant that many of the immigrant workers were employed, mostly from the large Spanish community of workers in the plant, many of which resisted up-skilling.

The work organisation at the plant had been reconstituted during the 1990s, with the introduction of team working and the ending of a previously hierarchical and multi-layered set of arrangements. Under previous arrangements it was common for staff to be engaged in single task forms of work; with the shift towards team forms of employment, multi-tasking was more likely to be expected.

Section Three: Skills, Qualifications and Occupational Profile

The skills and qualification profile of the workforce was inextricably linked. Designated qualifications are moreover, required for promotion within the workforce. The first point to note in relation to the skill/qualification and occupational profile relationship is that qualification training is standardised in the Netherlands. Senior staff in the Training Centre maintained that there is a direct relationship between an employees' level of qualification and occupation (with Level 1 referring to unqualified unskilled work and level 5 being an academic qualification linked to technological, engineering or training work):

> We have basic occupational training with qualification, whose work in all parts in the Netherlands are the same. Steel industry or chemical or doesn't matter. For the Dutch management this kind of level recognition is very important so our management is saying for that kind of occupation or jobs we're asking level two, three or four as it is now in the Netherlands. (2002)

One consequence of these types of links was that there was an implicit segregation in the organisation and location of the workforce, with unqualified workers confined to the non-promotable jobs, labouring, other forms of unskilled labour and the like. In general the ethnic minority workers at the plant, about 5 per cent of the total plant population, are located in Level 1 of the qualification hierarchy. Over the last two years the plant management took decision to raise the baseline of the qualification hierarchy from Level 1 to level 2. As a result, education and training programme for these workers have been promoted. Despite working in the plant for up to twenty-five years, it is now argued that because of new safety and environmental regulations these workers should be upgraded. For many this means learning to read basic Dutch (Interviews, 2002).

This programme of training was defined in terms of language acquisition:

> Spanish, Italian and people from Turkey, Morocco. And now have a language problem that we didn't have ten years ago. …So nowadays we ask for level 2, and level 2 you can be sure they speak Dutch in the right way. (Manager 2002)

The problem is seen as a failing by the workers themselves:

> ….sometimes people are here for 5 years and they speak Dutch, enough for us. Other's here for 25 years and they don't speak Dutch at all, although we try to teach them. (2002)

By implication the problem was seen as one of linguistic ghettoisation, which can only be dealt with by linking occupational opportunity and mobility to qualifications.

Another consequence was that each occupation was linked to an occupational level. All occupations are linked to specific qualification level requirements. In the coking plant this was as follows:

> So level 3 and 4 also have a special task. And also the work task, machine operator is level 3 but tool setter is level 2 … and the machine operator is level 3 and production is level 4, or very good 3 and team leader has to be 4. (Training Manager 2002)

This feature was particularly evident in the selection and appointment of team leaders where, across the plant, a team leader was required to have a Level 4 qualification.

A third consequence was that with the reorganisation of the work process, increased technical development and a growing concern within the company about health and safety at work, attention was focused on encouraging staff with low qualification levels to gain higher levels.

It was not clear whether this process of encouragement was open-ended and voluntary on the part of workers or whether there was an implicit level of coercion involved. Nonetheless, these programmes serve to confirm the inter-link between qualification and occupations. The plant workforce is organised and recruited on the basis of formal qualifications, ranging from Level 1 to Level 5 on the externally determined educational grades. These grades structure promotion in the plant, with promotion set by grade obtained. As a result there is an on-going pressure on the workforce to secure the qualifications necessary to either work in particular areas or to be eligible for promotion. One feature of this system is that there is no automatic right to time off to obtain qualifications and as a result there is a high degree of out of work hours studying.

One recent development is that the plant management has begun to look to recruiting German and UK workers. Indeed, two tranches of UK workers have already transferred from the Ebbw Vale plant, which is scheduled for closure, to the IJmuiden plant. The problem for the management is that while there is an educational equivalence that can be matched between German workers and Dutch workers this is not so clear for the UK workers. For the first time for some years, the plant management has been forced to rely on records of worker experience (for the British workers) rather than formal qualifications, which is the norm at the plant.

Section Four: Training

The broad training policy pursued at the plant was twofold. First, training was aimed at new recruits via the apprenticeship scheme. Second, the training policy sought to up-date, refresh and occasionally re-train the current workforce, emphasising technical skills. In addition, over the previous two years the policy had a further specific aim, namely to secure an overall up-grading of the workforce, effectively ending recruitment at Level 1, as indicated above.

Training Organisation

Training at the plant was extensive, involving apprentice training in the training facilities and worker training on-site and also in the training facilities at the plant. These facilities comprised a large and well furnished Training Centre. The Centre was located next to the main production site. It was a relatively large four-storey building, complete with seminar rooms, offices, Information Technology (IT) laboratories, work centres and an extensive refectory. The internal layout of the teaching area was open plan, around dedicated work areas. Extensive catering and ancillary facilities complemented these teaching areas, most located on the first floor.

The teaching areas and facilities were dedicated and up-to-date. The first floor, for example, had a number of classrooms, laid out in conventional style (tables in rows). These were used for management training, some of the theoretical work, and examinations. However, most of the training, certainly for the apprenticeships, was based on an open learning model. Trainees worked independently and in groups on 5 week modules. Video and other course materials supported modules. On-line materials were used (CD-roms). All Modules had a teacher/trainer attached to give help and support. Many of the short/continuation courses were also run in this way (and some of these were done via evening classes). From 8.30am – 4. 30pm the facilities were used mainly by the apprentices. Then from 5.00pm – 9.00pm they were used for evening modules, aimed at adult workers attempting to secure further qualifications.

One of the features of the Training Centre was that it incorporated a set of simulation laboratories where workers could practice 'real' life events and activities. There were several computer laboratories downstairs, some of which had recently been upgraded. Several of the modules were inter-linked, so that the computer laboratories, for example, could mirror control stations, that in turn were linked directly to simulated production laboratories. This procedure enabled trainees to interact with each other, as would be the case on site. This system also enabled the trainees to use their imagination (they cannot see the production labs from the IT room) and to develop communication skills.

The laboratories were well equipped, with what looked like fairly new equipment. They were well organised and seemed well maintained. They were light and airy, also very clean. Each module lasted for five weeks, and was assessed at the end of that period. The trainees started with bench working. This used to take up the first year of the apprenticeship, but now took only one five-week module. Most of the bench work (cutting, drilling) had gone to sub-contractors (and hence the Training Centre did not offer this type of training). The practical laboratories appeared to be rather sterile, and were certainly not as intense as the hot strip mill environment. Nonetheless, so as to secure practical experience, apprentices engaged in 2 to 3 modules (5 week blocks) each year in the plant factories to 'smell and taste' the plant (Interview, 2001). The practical laboratories were also used for continuation and adult training.

Training Practice

Ninety-five per cent of the courses that are run in the Training Centre were for the plant, 5 per cent was for external clients. The Training Centre was part of Human Resource Services, but run as an independent section – much like the production 'factories'. It should be noted, moreover, that each 'factory' was free to procure training from external providers, as well as the Training Centre. In effect, the Training Centre was in competition with other training providers for Corus training contracts. It was however, the sole provider for training apprentices – in association with local colleges, as specified by Dutch legislation.

Internally the centre was divided into different expertise groups, and trainers/teachers located within these areas of expertise. The Training Centre had 70 employees (55 of whom were teachers/trainers). Most of the teaching was practical or laboratory based. The apprenticeship training was integrated (multi-tasking), which dovetailed with the new production practices based on team working. One important shift that had taken place was that the 'theoretical'

teaching was undertaken by local colleges, under the dual training system arrangements, but this was now undertaken internally using teachers from the same colleges. The reason for this shift was that it enabled the teachers to focus on Corus production needs and it resolved some discipline problems with the Corus apprentices at the college (interviews, 2001/2002). This move had been accompanied by a shift in the focus of learning towards task based learning and modular forms of curriculum (Interviews, 2002).

The Training Centre aimed to recruit 100 apprentices per year, and had links with local schools and colleges. However, recruitment has proved increasingly difficult and in 2001 only 52 new apprentices started, 10 per cent of whom were female. Apprentices followed a modular training programme during their three-year apprenticeship and each had a work and learn agreement with the Centre. They were guaranteed a job at the end of successful completion of the training National Apprenticeship exams, leading to national apprenticeship system diploma. Overall, only 1 to 2 per cent of successful apprentices went elsewhere, although in the region of 15 to 20 per cent who initially enrolled failed to finish their course, usually at the instigation of the training staff.

Part of the reason for the policy of young recruitment was that the average age of the workforce was high, at 46 years, with the majority of the workforce in the age bracket fifty plus. This age profile caused concern and the plant was attempting to off-set the consequences of large scale departure over the next few years, with a relatively high intake of young workers. One way of promoting this policy was to focus on the children of current workers and apprentices spoke of how their 'father worked here and…they pay good money…it's a good training' (Panel Interview, 2002). However, the plant faced difficulty meeting its targets and over the last five or six years it had broadened its criteria for recruitment and was now actively targeting young females. When questioned about this the replies from management were generally a combination of necessity and the desirability of breaking the image of steelwork as predominantly, if not exclusively, male (Interviews, 2002). Apprentices spoke of the way women on the course 'changes the behaviour in a team or a class' (Panel Interview, 2002).

One feature of the training in the plant, reflected on the apprentice courses and the worker programmes is the close integration between the training programmes and the work process. The modular training system was designed in consultation with the different plant departments. Local colleges used to provide the theoretical teaching (one day of theory/four days of practical at the training centre). This dual system has now been scaled down, and most of the theoretical work was undertaken within the centre. The apprenticeship training was integrated (multi-tasking). This fitted in with the new production practices. It was claimed that the training levels had changed in recent years, with the percentage of higher grades increasing. (Interviews, 2001 and 2002).

The claim was made that the teaching content, especially for the apprentices provided a rounded and comprehensive introduction both to steel work and work relations more generally. As stated by a senior trainer:

> But in the total programme of the apprentices there are a lot of possibilities for social skills. There are some of the courses given by our management training group and there is for communication and team work and others throughout the year, I think six

> times one day. And there is also one week in a year we have an outdoor activity in Luxembourg. (2002)

One of the regrets by the apprentices is that the different programmes are designed for specific types of jobs, so that on one of the advanced programmes there was little opportunity to learn the more conventional technical skills, such as welding (Interviews, 2002).

Approximately 10 per cent of apprentices were women, and this proportion was beginning to appear on the shop floor, although in some areas, such as the coking plant, this clearly was not the case. There was an expectation that this number might increase with new recruitment drives. The Training Centre now used apprentices as ambassadors, with visits to schools, and recruitment open days. The company also sponsored school equipment as a way of building links. One view expressed was that school leavers would, as a result, remember Corus after school (Interview, 2001 and 2002).

As well as the apprenticeship training, the training centre also offered a range of short courses to existing employees. Four-day courses were the norm. Each year the training centre offered a wide range of packages. These covered technical skills training as well as 'soft' skills training. A senior trainer noted:

> …the short training [for adults], welding training is one, is all about techniques. But the same people can come in another training about influence styles and communication and working in team work. We are specialised in a lot of training programmes, one, two, three, four days three times four days, especially for those that need that. So, in the yearly way of judging people, managers, assessing, they conclude to do some training in a way and that can be a training in influence styles or communication or you can manage a meeting or what kind of thing. (2002)

The Training Centre has a 'special' department of five staff, who focused on social skills training, particularly with reference to the development of teams.

There was no overall strategy of recruitment to these courses. Each employee had an appraisal meeting – or similar - each year with the 'factory' personnel and area based training advisors and discusses training needs. Each department/'factory' then agreed which employees would take each course offered.

Most of the teachers employed by the Centre had been there for 25 years or more (hence an old workforce). While the teachers had a lot of training experience, it also meant that up-dating was sometimes difficult due to time pressures and the like. It was common for teachers to be recruited from the shop floor and thus have years of practical experience. Some of the teachers, those responsible for the more theoretical side of teaching, had been recruited from outside. There was a teacher/student ratio of 1:9 for the practical modules, and 1:18 for the theoretical modules.

Trainers were allocated to and located in business units, so as to provide an on-going basis for training development as well as to identify the specific needs of different areas. While, there was no overall strategy of recruitment to these courses, each employee had an appraisal

meeting – or similar – each year to discuss training needs. Each department agreed which employees will take each course offered, usually on a four-day basis. However, it should be noted that there was no right for a stipulated amount of training per worker each year. Rather, the plant management rely on the requirement that each promotion level was related to a set qualification and that without this qualification the promotion cannot be given (for example a team leader, however appointed, must have a Level Four qualification).

Training and Skills

It was claimed that the Centre tried to be responsive in its teaching provision. On occasion, courses were specifically designed for workers in particular areas, for example as already noted, special basic training courses had been developed for Spanish speakers in the coking plant, to upgrade their basic skills, with the stated intention of achieving a situation where all workers hold at least Level 2 qualifications. This move was part of the attempt to extend multifunctional team working throughout the plant, a situation that could only be achieved when this qualification threshold is met (Interviews, 2002).

However, despite the extensive facilities, there was a basic unevenness in approach between the adult workers and the apprentices. While the apprentices received what appeared to be an extensive training experience, with an emphasis on the technical and social skills of work organisation in the plant, the adult workers had a less comprehensive provision in practice. While these workers had access to the extensive training facilities, and a proportion of workers availed themselves of these opportunities for up-grading their qualifications, it was the case that adult workers have no right to educational and training time. The exception being, specific requirements for technical work, for example securing a crane driving qualification or for learning to operate a new piece of machinery or equipment. Rather the emphasis for adult workers was on 'learning by doing' and 'ever-lasting usefulness'. These approaches were variously described, with the 'father and son' method being the most widely used popular designation (Interviews and observation, 2002).

There was a view that the approach at the Centre was one where the emphasis was on general skills that had a basic transferability, but which failed to meet the needs of specific areas in the plant. Indeed, the process was described as follows:

> We educate here not for the mill, not for the blast furnace; we educate process operators, and the plant then can educate for a mill, for a blast furnace, for a sinter fabric. (Adult Worker Panel, 2002)

For these workers this was seen as a desirable arrangement because there was a danger that the training would produce workers who were too job skilled and specific. As stated by one worker the aim should be to produce transferable skills, 'not function training, trained monkeys' and instead 'trained people in general skills' (Adult Worker panel, 2002).

One outcome of the relatively *ad hoc* approach to adult training was that there was a scepticism among adult workers about whether the company would promote the development of the current workforce to meet the changing needs of the industry, rather than recruit new staff. Such a shift was seen as a move from manual work to non-manual work. This shift was

graphically described as a move from a workforce that had 'an empty head and two big hands' to one with 'qualified personnel' (Worker Panel, 2002).

The stated company approach was to match qualifications and occupations at an increasingly higher level, presumably on the basis that this would result in an upskilling of the workforce, more in line with the needs of the plant. New recruits into the hot mill areas, for example, were now expected to have Level 2/3 qualifications. Alongside this there was an annual target of 100 apprentice trainees, the majority of whom were expected to end up in the plant, despite the pressures to reduce staff. Alongside this it was claimed that at least 10 per cent of the adult workforce were poorly educated (namely with Level 0/1 qualifications). These people never joined courses on offer and management saw the need to encourage these workers to train. However, the paradox facing the plant management was that while the ambition was to reduce the number of Level 0/1 jobs, in practice local 'factory' or area management still recruited such workers where necessary (from other areas of the plant as well as occasionally from outside) with Level 0/1 qualifications.

Complementing the broad approach by the company toward a general improvement of the skill profile was the senior staff training that took place within the Company. With the merger between British Steel plc and Koninklijke Hoogovens, this training included dedicated management programmes in the UK. In general, this training took place with external providers either in the Netherlands or the UK.

Assessment

The result was a partial and differentiated training programme, with young workers benefiting from the extensive training facilities, and with ambitious adult workers seeking to improve their qualifications. To this extent the system works for the benefit of the company. However, the bulk of adult workers did not in practice have the opportunity to avail themselves of these facilities or indeed see them as important (Interviews, 2002).

One of the paradoxes at the plant was that despite the extensive training facilities, and seeming opportunities, the training approaches in the plant itself was based on a 'father and son' approach to learning. Such an approach is likely to be increasingly resisted by younger workers as they become more centrally involved in the production process. The learner identities of these younger workers was increasingly shaped by formal education, and education that is rooted in self-learning on a task basis, the very opposite of the 'father and son' approach. Indeed, the apprentices were critical of the age and scale of computing facilities in the training centre, despite its apparent provision, when compared with elsewhere (interviews 2002, and observation, 2001 and 2002). Thus, an apparent gap between these two approaches was likely to become more rather than less marked over time.

The paradox of a qualification based promotion track was that it places an emphasis on ambitious and self-motivated workers, while others for a variety of reasons are effectively excluded from promotion. In addition, such arrangements may be socially costly, since the onus and indeed the social cost was on the individual worker, with the company effectively taking none. Ultimately such arrangements were frustrating and exclusive for the bulk of the workforce.

There was a very parochial view of the plant and its location within the broader company (Interviews 2002). No doubt the roots for this perception lay within the manner of the merger that created Corus, and the subsequent developments that had taken place. While at a managerial level there was exchange and movement across the two principal countries, and indeed corporate divisional reorganisation, at a production level this was not the case. Hence the developments that may be taking place in terms of downstream activity as well as in terms of commercial arrangements were not evident at the IJmuiden plant.

Section Six: Future needs

The skills needs of the company at the IJmuiden plant had two principal aspects to it. Firstly, the provision for the apprentices was comprehensive and combined aspects of technical and social skill training. There was, however, some concern among the apprentices that the training at times was segmented with a distinction between advanced and less advanced training. In the eyes of the apprentices this resulted in deficits in experience. Secondly, the broad training programmes for adult workers tended to be partial and relatively *ad hoc* in focus. However, it was the case, that the company – via the Training Centre – recognised the training needs of longstanding immigrant groups within the workforce. Thus, at a relatively late stage in their working lives these older employers had been offered opportunities to gain training qualifications that would permit them to become more mobile within the plant.

Skills Needs

The approach to training and learning at the plant, coupled with the organisation of work, suggested three principal skills needs:

First, work procedures were in the process of changing. While forms of teamwork were evident throughout the plant, there was some limitation on the inter-changability and sharing of skills within teams. Management defined this as a need for flexibility, while the workforce saw this as an opportunity to broaden their task capabilities. The problem was that the training provision was not really geared to provide and meet this range of expectations. One problem was that there was increasing pressure on training staff numbers and over the last few years the complement had been halved with further reductions expected.

Second, there was a continuing neglect of the social side of work organisation, particularly in the context of team building. While the facilities for work simulation exercises, with an emphasis on communication skills was evident and commendable, there was less attention given to the broader range of team building and mentoring skills that may be part of the process of work in the future.

Third, the gender composition of the workforce was in a process of change and it can be expected to continue to shift towards higher levels of female recruitment on the shop floor and elsewhere. If this development is placed alongside the historical recruitment of workers from Spain and more recently Turkey and Surinam, then the plant management and the unions had not really addressed the implications of an increasingly diverse workforce in its training programmes. It was not that these lines of diversity were not recognised (they were) but that

there was little evidence that there was a serious attempt to mainstream these features of work organisation in training programmes and profiles.

Assessment

The training provision at this plant is comprehensive and well integrated into the production process. There are four points to note.

First, the integration between skills, qualifications and occupations is reflected in the design of the training facilities, so that module areas reflect work processes in the plant, with an emphasis on team building as part of the learning practice itself. Given the organisation and focus of the training at the plant, the main beneficiaries of this integration are the apprentice trainees. Nonetheless, there are attempts to develop adult training in ways that promote such integration, although it must be noted that the principal focus of adult training has been on technical skills, for specific and immediate needs

Second, there has been an attempt to increasingly diversify the recruitment intake into the plant, with more female apprentices and trainees being accepted on training programmes. However, it should be noted that this was not the result of debate about gender diversity, but as a result of difficulties in meeting target recruitment numbers with males alone. This rather instrumental approach to diversification of the workforce, nonetheless, has had a beneficial impact on the organisation and conduct of training, particularly in the Training Centre. However, there was no indication of dedicated or revised teaching and learning in the Centre as a result of the increasing diversification of the intake along gender lines.

Third, there is evidence of an on-going training presence within the work units that comprise the plant. The clearest indication of this is the physical location of trainers in each business unit. As a result, there are procedures in place that enable a clear identification of immediate training needs in each work area. It is also the case that more long-term requirements can also be met in this way. The provision of dedicated training for the long term immigrant workforce exemplifies this process, although in the main the pressure for these courses came from area management and not from the workforce itself.

Fourth, while there was training off-site, with external trainers, particularly for managerial staff (in part using UK based training facilities), most of the training took place on site, although on-going reductions in the number of trainers employed by the plant meant that there was a growing reliance on external trainers. It was not clear whether this increased reliance on external providers would begin to compromise the dedicated focus of much of the training in the plant.

Global Political Economy (GPE) Research Group

Working Papers

No. 1: After EU enlargement: a rough guide to the trade union movement in the European Union (2004)

No. 2: New Steel Industry Challenges (2004)

No. 3: The Internationalisation of the World Steel Industry.(2004)

No. 4: The European Steel Industry: From a National to a Regional Industry (2004)

No. 5: The Changing European Steel Workforce (2004)

No. 6: Skills, Qualifications and Training in the German Steel Industry: A Case Study (2004)

No. 7: Skills, Qualifications and Training in the Italian Steel Industry: A Case Study (2004)

No. 8: Skills, Qualifications and Training in the Netherlands Steel Industry: A Case Study (2004)

No. 9: Skills, Qualifications and Training in the Polish Steel Industry: A Case Study (2004)

No. 10: Skills, Qualifications and Training in the British Steel Industry: A Case Study (2004)

No. 11: Training and Qualifications in the European Steel Industry (2004)

No. 12: The Question of pan-European Vocational Qualifications (2004)

No. 13: Equality and Diversity in the European Steel Industry (2004)

For copies:

http://www.cardiff.ac.uk/socsi/publications/workingpapers/index.html