DOCUMENT RESUME

ED 476 323 CE 084 938

TITLE	Matching Skill Needs to Training Provision in the Electrotechnical Industry. Project Final Report.
INSTITUTION	Learning and Skills Development Agency, London (England).
SPONS AGENCY	Learning and Skills Council, Coventry (England).
ISBN	ISBN-1-85338-811-4
PUB DATE	2002-00-00
NOTE	16p.
AVAILABLE FROM	Learning and Skills Development Agency, Regent Arcade House, 19-25 Argyll Street, London W1F 7LS, United Kingdom (Ref. No. 1298R, free). Tel: 020 7297 9000; Fax: 020 7297 9001; Web site: http://www.lsda.org.uk/home.asp. For full text: http://www.lsda.org.uk/files/PDF/1298R.pdf.
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	Admission (School); Adult Education; Colleges; Continuing Education; Developed Nations; Education Work Relationship; *Educational Cooperation; *Educational Needs; Electricians; *Electronic Technicians; *Electronics Industry; Foreign Countries; Job Skills; *Job Training; Labor Market; Postsecondary Education; Recruitment; *School Business Relationship; Technical Education
IDENTIFIERS	*England; Work Based Learning

ABSTRACT

A project examined skills shortages and gaps in the electrotechnical industry and to what extent stakeholders' training provision was addressing them in two areas in England--the eastern region, and Liverpool with the Wirral peninsula in the northwest. The national training organization called the National Electrotechnical Training (NET) and work-based learning providers were of particular interest. Findings on partnership issues indicated organizations involved in training varied in size and role, and it was found to be problematic when stakeholders competed for recruits while contracting with each other for provision. Other findings related to declining recruitment, deficiencies in the corporate culture, effects of colleges' wider responsibilities and the impact of funding. Findings on skill needs indicated NET had difficulty influencing training provision, and the main learning needs were updating of knowledge of regulations and legislation, maintaining and updating technology and workers' knowledge of it, and knowledge of how to manage people. Other findings were communication problems in the sector, skill gaps, skills shortages, and recruitment difficulties. Findings on provision or learning opportunities indicated problems in changes in qualifications, training relevance, responding to demand and gaps in provision, responsiveness to industry needs, progression and coherence, and integrated provision. A range of solutions were offered to solve recruitment difficulties, including using online learning, improving employers' knowledge of funding for training, and providing awards for students choosing to go into engineering. (YLB)

learning and skills development agency

Matching skill needs to training provision in the electrotechnical industry

Project final report

Published by the Learning and Skills Development Agency

www.LSDA.org.uk

Feedback should be sent to:
Information Services
Learning and Skills Development Agency
Regent Arcade House
19–25 Argyll Street
London W1F 7LS.
Tel 020 7297 9144
Fax 020 7297 9242
enquiries@LSDA.org.uk

Registered with the Charity Commissioners

Printed in the UK

1298/10/02/website

ISBN 1 85338 811 4

This publication was supported by the Learning and Skills Council as part of a grant to the LSDA for a programme of research and development.

Contents

1. Project background

This is a summary report of a project about skills in the electrotechnical industry in two geographical areas of England – the eastern region, and Liverpool with the Wirral in the north-west. The project examined the issues of skills shortages and gaps and to what extent training provision by the stakeholders was addressing them. In addition, it explored the extent and nature of joint work between the various stakeholders in training within the electrotechnical industry. Of particular interest was the national training organisation NET (National Electrotechnical Training) and work-based learning providers (including colleges).

2. The electrotechnical sector: key facts

- The activities of the electrotechnical sector comprise primarily the installation, maintenance and repair of electrical wiring and equipment in industrial, commercial and domestic premises.

- The sector comprises:

  - non-electrical firms which employ an in-house electrician
  - multi-disciplined firms
  - niche contractors which have a particular specialism
  - mainstream electrical contractors.

- Over 90% of firms have fewer than 20 employees.

- 350,000 workers are employed in the industry.

- The main occupational roles of the workforce are:

  - electrician (47%)
  - apprentice (13%)
  - manager (11%).

- NET's labour market survey[1] predicted an annual labour force shortfall in 1999/2000 of around 35,000 staff (equivalent to 10% of the workforce).

3. Key findings and messages on partnership issues

a) Nature and roles of partner organisations

The organisations involved in training in the electrotechnical sector vary in terms of their size and role. Some of them have more than one role, for example:

- a college may provide full-time electrotechnical training at Level 2 as well as being an off-the-job centre for day-release apprentices
- the national managing agency not only commissions apprentice training, but also provides detailed lesson outlines, undertakes its own work-based assessments and offers bespoke courses of its own
- the NTO (NET) is one of the smaller of its kind, and endeavours to establish and maintain the sector identity within wider engineering, construction and service concerns. NTOs are currently involved in the changes to the Sector Skill Council (SSC) environment
- the employers in the sector are varied, as cited in the key facts (**section 2**) above. Many trained electrotechnical staff work for employers in other sectors.

b) Competition, collaboration and recruitment

Problematic circumstances include those where stakeholders are in competition with each other for recruits while simultaneously contracting with each other for provision. This can lead to 'treading on toes' issues, lack of clarity, or even conflicts of interest. The national managing agency grew up under anomalous circumstances in the TEC (Training and Enterprise Council) regime, in which all its contracting business was channelled through one local TEC. This same agency is also closely associated with other employer and provider organisations in the industry. Some other providers, particularly colleges, feel that they are outside this grouping.

Colleges may require some vocational curriculum areas to have a critical mass of full-time students in order to justify continued efficient investment in skilled and experienced staff, plant and equipment. Local volumes of demand for off-the-job part-time training through Modern Apprenticeships in electrotechnical subjects may be insufficient on their own to merit the level and quality of resources needed. Full-time provision may be appropriate at Level 2 for individuals who require ongoing study support, but the industry need for Level 3 skills are normally most appropriately delivered through the work-based route. This problem has the potential, however, to be solved through clustering arrangements and will be an important consideration for CoVEs (Centres of Vocational Excellence).

c) Decline in recruitment

The reduction in the overall pool of potential entrants (because of demographic trends as well as being the apparent result of other recruitment activities at 16+ by schools with sixth forms and colleges) has tended to push down the educational attainment level of entrants. This in turn places greater obligations on providers and employers to assist entrants in attaining appropriate levels of achievement.

d) Corporate culture within the industry

A deficiency within the industry's overall corporate culture is identified essentially as *the tolerance of poor performance*. According to the DfEE/NTOs report on skills dialogues,[2] customers and clients have been led into valuing low prices above good quality standards, and the subsequent need to cut costs and corners has pervaded all of the sector's activities. This includes training activities. Linked with this is a climate of limited horizons placed on employees by their organisations.[3] The overall impression gained from the fieldwork and seminars was an absence of any sense of excitement about the industry and a general feeling of despondency.

e) Colleges' wider responsibilities

Colleges, as partners involved in the delivery of training, have responsibilities and roles beyond those of the electrotechnical sector. Their overriding interest is in learners and curricula. Other partners and stakeholders – for instance, work-based learning providers – all have a more dedicated linkage to the electrotechnical sector itself, and therefore have a greater stake in it. It was evident from the seminars and fieldwork that there was a lack of appreciation among some partners about how such differences might affect participation and contribution.

f) Impact of funding issues on partnerships

High targets for participation were set for the first LSC year (2001/02), and there was concern that the higher-rate incentive for new providers (borne out of the need to widen participation) could adversely affect existing providers. Some colleges are able to place part-time, work-based trainees on an 'infill' basis into existing publicly funded courses, but others make a full-cost charge to the employer. These varying practices have made it difficult for partnerships to work transparently. Some providing organisations had been attracting high volumes of learners under previous funding mechanisms, and these have sometimes been associated with poor completion rates. Partnerships now need to provide a mechanism through which some of these issues can be discussed and resolved.

4. Findings and key messages on skill needs within the electrotechnical sector

a) Current arrangements for identifying and meeting skill needs

As the NTO, NET is in a prime position to influence training provision through its knowledge of the industry, its links with employers in the electrotechnical sector, and its work with colleges and other providers. This project has provided insights into the difficulties of putting this into practice.

- NET has produced the following resources and services as part of its work on identifying skills:
    - electrotechnical information service
    - occupational standards/qualifications structure
    - learning pathways and career progression
    - framework for key skills in apprenticeship programmes.

b) The main learning needs in the electrotechnical industry were:

- updating of knowledge of regulations and legislation
- maintaining and updating technology and workers' knowledge of it
- knowledge of how to manage people.

This last issue is not specifically stipulated in the occupational standards for the electrotechnical sector, and fieldwork showed that it was an issue that few work-based learning providers, particularly colleges, felt it necessary to address. Some colleges were constrained by the skill ranges of teaching staff and reported inflexible departmental structures – for instance, where the expertise of business studies staff is called upon. The need for a wider range of skills to be offered suggests that providers should respond with staff development and updating as well as improved institutional coordination where cross-college considerations are involved.

c) National Occupational Standards and the demands of employers

The credibility, usefulness and currency of the standards have been questioned by project participants in the light of the fast-moving demands of employers. They also noted the contradiction within some employers' expectations: 'employers want site-proven skills, yet are reluctant to provide work experience to trainees'; also 'sub-contractors are becoming very specialised, yet want employees who are increasingly multi-skilled'.[4]

This paradoxical situation, and the limitations of the tools – the occupational standards – to deal with it, encapsulates the difficulties facing the partners in this sector. What this project has also revealed is

a limited awareness – or even a rejection – of these and other tools by some participants. It is clear that a greater consensus is called for on the kind of strategies needed to move on from these issues. The NTO is in a position to take on board issues such as the utility of, and familiarity with, the National Occupational Standards for the various stakeholders.

d) Problems of communication within the sector

The project revealed the following shortcomings in communication:

- lack of shared understanding on skills issues
- lack of awareness about the relevance of occupational standards and the role of the NTO
- lack of agreement on relevant issues
- employers' lack of up-to-date knowledge on training and standards.

Adding this to the picture of constraints on communication between partners, it is apparent that the ability of the sector to address the skills issues is at a low level, and that some fundamental strategies need to be put in place.

e) Skills gaps in the electrotechnical industry

Skills gaps are defined as 'cases where the skills of existing staff fall short of what is needed to meet all of an employer's objectives'.[5] Failure to address skills gaps has an impact on employees' work output and may contribute to a reduction in competitiveness of businesses.

f) Technical qualifications of the workforce

Some 71% of the electrotechnical workforce have a qualification, the most prevalent being at Level 2, and only 4% at Level 4. Eight per cent have completed a Modern Apprenticeship and 15% of the workforce are working towards apprenticeship completion. Some employers do not place demands on apprentices to remain on the programme after completion of the Level 3 qualifications, but there is no systematic feedback on the longer-term implications of this.

g) Skills shortages in the electrotechnical industry

Skills shortages are defined as 'cases where employers face difficulties filling vacancies because there are simply not enough people with the appropriate skills and knowledge'.[6] This can lead to employers attempting to retrain staff from one occupational area into another, and/or trying to retain those workers who would otherwise be due for retirement. However, the new, appropriately qualified entrants are the ones that the industry requires for its long-term future.

h) Recruitment difficulties

The main areas of difficulty lie in the recruitment of supervisors, managers, technicians and approved electricians (Level 3 and beyond). Reasons cited are the shortage of available labour and a lack of qualifications and key skills.

i) Recruitment strategies

Project participants have ascribed the difficulty of attracting high achievers into the industry partly to the absence of any mandatory licensing of electrotechnical specialists, and also to the presence of 'cowboy' contractors. At the same time, there has been a lack of success in attracting girls and young women to train within the sector.

There is room for more openness in the industry about the kind of jobs and careers it offers, perhaps through seizing opportunities to promote and highlight some of the more exciting or worthwhile aspects of the sector. There is a need for employers to look at the connection between:

- the low expectations in the industry regarding apprentices' completion of key-skill learning
- the reasons cited by employers for recruitment difficulties.

j) Estimates of skills shortages

It was predicted that by 2000, there would be a shortfall of 7500 electricians and 1500 apprentices. This is comparable with the recruitment situation in the broader engineering and construction industries. It underlines the key tasks ahead for training and workforce development.

5. Findings and key messages on provision or learning opportunities

Broadly speaking, provision falls into four categories:

- initial entry training at Levels 2 through to 3, part- or full-time
- updating courses for existing employees
- inspection and testing courses
- bespoke courses – particularly multi-skilling – for companies or individuals.

Technical certificates with Modern Apprenticeships (MA)

Underpinning knowledge has always been a separately assessed part of the Modern Apprenticeship framework, but there have been changes to the content of qualifications at Level 3 that remain controversial among providers and employers in terms of their relevance. There is now an opportunity for the qualification portfolio and spread of qualifications for the industry – including the content of the MA framework – to be clarified and agreed.

Relevance

There has been a history of responsiveness to industrial change and to government initiatives, which has resulted in an extensive range of qualifications and courses. The spread of qualification opportunities is now perceived as too wide to be readily understood either by employers or potential learners and their parents. Relating qualifications to the National Occupational Standards is a way of ensuring sustained relevance, but the project has revealed that the standards themselves are capable of varying interpretation. Providers therefore need to be aware of the employment context in which training is delivered.

Responding to demand and to gaps in provision

It is difficult to give precise numbers of those in training, since there may be an overlap between those in colleges undertaking part-time study and those engaged on Modern Apprenticeships. In any one year, more than 10,000 are enrolled at colleges on Level 2 courses, with 9000 on Level 3. The increases needed in apprenticeship training therefore represent a considerable jump. However, the DfEE/NTOs document on skills dialogues[7] advises against a sharp increase in entry-level provision. Providers are seeking to extend the funded age range for apprenticeship. Funding is available to applicants aged between 16 and 25; but restrictions apply to those aged 19 and over. Employers point out that apprenticeship in the sector lasts for four years, but that public funding ends after 18 months.

Responsiveness to industry needs

Colleges and other providers approach employers in a variety of ways, mainly depending on the structure and nature of the local industry. Some are heavily dependent on one or two large employers; others need to keep abreast of the needs of many smaller contractors. Most reported a move towards multi-skilling training. Some colleges found it expensive to tailor provision closely to employers' needs in terms of timing and were having to rethink ways of being responsive.

Progression and coherence

Within the range from Level 1 to Level 4 there is a lack of coherent entry and routing strategies, due in part to the nature of the sector, but also as a result of uncoordinated responses by the stakeholders to varying industry demands and government initiatives and funding opportunities. There is limited, and declining, Level 1 provision and a Level 4 NVQ is still at the development stage. Direct entry to Level 2 or Level 3 appears to be the main route, but the possibilities for employment from Level 2 are not clear, and those qualified to this level swell the numbers of the self-employed within the sector for whom competence accreditation has now become an urgent need.

Within Level 3, there is evidence that the qualification combinations offered to full-time students fail to meet the electrotechnical sector's need, but may equip those who successfully complete it to enter certain engineering occupations. Sometimes the need to use specialist staff and other resources influences colleges' decisions as to which provision to offer, and such decisions are felt to pay insufficient attention to industry's needs.

Integrated provision

The project revealed a lack of interest by employers in aspects of key skills delivery and assessment, echoed by providers' attitudes concerning the perceived lack of capacity in key skills of their technically-based trainers. Within colleges, provision for training in key skills, including wider key skills, tended to be farmed out to other departments and was not always well integrated into the electrotechnical students' learning. This was a perception of the electrotechnical staff only: there was insufficient opportunity within this project to invite the participation of other college staff.

This is a problem which will benefit from partnership attention. At the same time, the development of partnerships will need to move away from the current situation whereby some colleges pay little attention to NET and its encouragement of an integrated approach and to tools such as the National Occupational Standards.

6. Building and disseminating a model to show good practice in collaborating and responsive provision

The fieldwork revealed a range of ideas that may help in disseminating information to a wider audience. When asked how the electrotechnical industry could solve various recruitment difficulties, a range of solutions were offered:

- solve the problem of viable group sizes through online learning
- improve employers' knowledge of funding to make it easier to put on training schemes
- improve employers' knowledge of work-based and vocational training
- improve responsiveness of colleges and providers to employers' needs
- identify more positive role models for under-represented groups
- give school pupils opportunities to go into colleges to become aware of what is on offer
- provide awards for students to go into engineering
- secure greater engagement by employers in the learning process
- provide careers teachers with more information that is more up-to-date
- enhance the currency of the qualifications by devising a compulsory registration scheme for electrotechnicians (the 'card' which is compulsory in mainland Europe)
- pay companies (assisted by local LSCs) to put on training schemes
- remove the entry barrier, in terms of initial qualifications, to electrotechnical training.

7. Overall key messages from the project

There would appear to be an urgent need for a step change by partners within the sector so that they take on board the implications, for skills, of future change not only in technology, but also in forms of employment and in patterns of work and careers. This needs to involve a mutual acknowledgement and understanding of:

- what the skill shortages are
- what tools are available to address them.

More research is needed to add to the information which occupational trends give us about skill needs, and major strategies need to be put in place by the industry and all its partners to prevent the image of the sector as being increasingly a deterrent factor to recruitment and take-up of training.

The DfEE/NTOs document on skills dialogues recommends change in several areas that are relevant to the electrotechnical sector,[8] all of which coordinate with findings of this project.

- **Solve the recruitment problem**, and the impending difficulties of 10 years hence, when the lower levels of attainment of current cohorts will militate against their promotion to jobs requiring higher skills and involving supervisory work. However, a sharp increase in college provision is specifically precluded.
- **Do a better job of retaining existing workers:** win back traditional recruits; attract more people from outside that group – women, members of ethnic minorities, older people, and then invest in their skills.
- **Reduce reliance on under-qualified site workers**, both by recognising the skills that many site workers already have, and by encouraging workers to gain qualifications through training. The demand for this shift comes partly from the need to retain workers; partly from a need for multi-skilled or cross-craft workers; and partly from customers who want some assurance that they are getting good-quality work, and thus care about the qualifications of those who do the work.
- **Address quality problems in front-line supervisory and technician posts** and enhance project management skills.
- **Raise the quality of managers and professionals** at entry to employment. This is closely connected with improving the attractiveness of the industry.

Notes

1. *Report on a skills and labour market survey of the electrotechnical industry,* National Electrotechnical Training (NET), 1999.

2. *An assessment of skills needs in construction and related industries,* Department for Education and Employment/National Training Organisations, 2000, p62.

3. *An assessment of skills needs in construction and related industries,* Department for Education and Employment/National Training Organisations, 2000, p63.

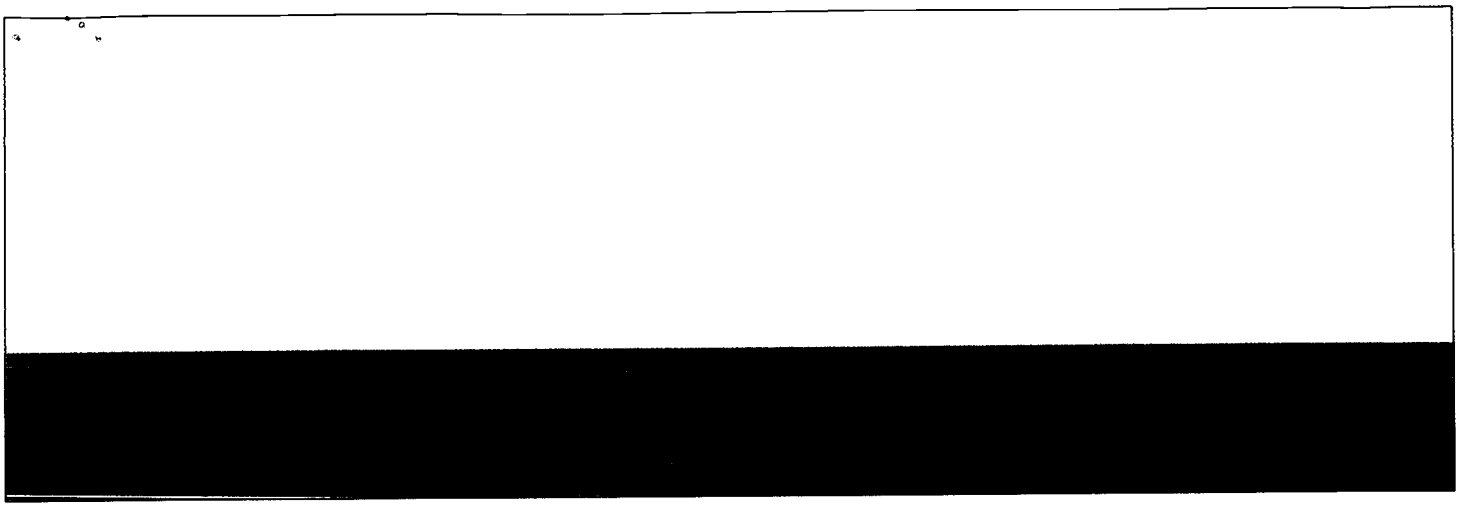
4. *An assessment of skills needs in construction and related industries,* Department for Education and Employment/National Training Organisations, 2000, p40.

5. *Skills foresight guide*, National Training Organisations' National Council/SCONTO, 1999, p6.

6. *Skills foresight guide*, National Training Organisations' National Council/SCONTO, 1999, p6.

7. *An assessment of skills needs in construction and related industries,* Department for Education and Employment/National Training Organisations, 2000, p76.

8. *An assessment of skills needs in construction and related industries,* Department for Education and Employment/National Training Organisations, 2000, pp76–77.



Learning and Skills Development Agency research reports disseminate the outcomes of selected LSDA research projects.

Feedback should be sent to:
Information Services
Learning and Skills Development Agency
Regent Arcade House
19–25 Argyll Street
London W1F 7LS.
Tel 020 7297 9144
Fax 020 7297 9242
enquiries@LSDA.org.uk

You can download many LSDA publications from our website, www.LSDA.org.uk

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

NOTICE

Reproduction Basis

X	This document is covered by a signed "Reproduction Release (Blanket)" form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.
	This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").