ABSTRACT

Purpose:
The aim of this paper is to present discussions and elaborations on some of the key skills development barriers for small and medium-sized enterprises (SMEs) in the construction sector.

Design/methodology/approach:
The research methodology employed in this project involved conducting a series of semi-structured interviews with Directors and/or Senior Managers of 89 SMEs, with an emphasis being on their utilisation of design for general construction including building design and manufacturing of construction products.

Findings:
The investigation concludes that there are a number of barriers that may hinder the efforts of many training initiatives offered by organisations and government departments to help SMEs to gain a competitive advantage. The research revealed that there are many barriers to training. These include awareness, finance, geographical location and provision of training and other skills development opportunities.

Originality/value:
This investigation identifies some of key barriers to learning and training that have perpetuated skill gaps and skill shortages in SMEs in the construction sector. This may help academicians and professionals in their attempts to bridge these gaps and shortages.

Keywords: Training, Barriers, SMEs, Construction
1. INTRODUCTION

The construction industry forms about 18.2% of the total firms in the UK and contributes around 8% of gross domestic product (GDP) (Anumba et al., 2005). The industry is dominated by SMEs which make up over 99 per cent of organisations (Hari et al, 2005). It is made up of different professionals and skilled and unskilled tradesmen who provide their services based on their knowledge. Investment in these human resources through training especially those job-related training is increasingly becoming vital to the continuation of their services. All organizations therefore, regardless of their size, activity, or ownership invest in development of their staff. Training can be on how to use a new software package, machine, fill in a form, or carry out specific work. Most organizations formalize this process by drawing up a plan and allocation of budget and resources for training to ensure the best possible return of such investment.

The research described in this paper reports the main findings of a study which set out to identify the barriers to learning and training that have perpetuated skill gaps and skill shortages in the SMEs in the construction sector. This research project is part-funded by European Social Fund (ESF). The study examines how training is planned, monitored, assessed and conducted. The paper focuses on the general aspects of skills and knowledge management. The study is based on a survey conducted in the North of England. The results from the study identify and provide lessons and opinions that can help SMEs and training providers on the key issues that may be taken in consideration when planning and organizing training for employees of SMEs in construction.

The paper starts by a thorough discussion of previous research work related to this study. The research methodology adopted in conducting this research is also presented. This is followed by a description of the key finding of the survey. A discussion of these finding is presented as well. The paper concludes that the are a number of barriers that should be taken in consideration when planning training for SMEs and these barriers may have an effect on the skill of the SMEs in the construction sector and consequently on their competitiveness.

2. PREVIOUS WORKS

Training and development in the construction industry have not been given much attention by researchers in the built environment. There is a growing body of evidence on SMEs and skills issues at a national level, much of which is quantitative and gathered from national skills surveys such as the ‘Employer Skills Survey 2001’. The information from this paper provides recommendations on ways of tackling skill and training issues facing construction SMEs in North of England.

Miros & Dale (1996) discussed total quality management training needs of small companies. The study examined training needs for 15
small companies. Gann & Senker (1998) attempted to provide a framework for analyzing skills needs for the UK construction industry. The study investigated different training courses provided for developing the skills of the workforce. It concluded that the skill structure is not sufficiently adaptable to support innovation needed to maintain long term performance improvements and a generic training programme is needed to reduce bureaucracy. The study recommended that construction firms should take the responsibility for training to secure the long-term benefits from employing a skilled workforce. Selecting suitable time for training is important.

New business processes, different forms of organizing production and technical innovations have led to changes in training needs (Gann & Senker, 1998). Knowledge is increasingly regarded by many SMEs as a competitive advantage. Few SMEs engaged in any form of training to achieve this. Training Needs Analysis (TNA) is an essential first step in management development if an organization wishes to achieve the greatest improvement in performance and best value from its investment in training and development. Companies of the construction sector need to recognize their training needs clearly in the context of their market and technology. (Agapiou 1997). A comprehensive training needs analysis is the basis for designing a cost effective management or talent development programme. The Training cost can be a deterrent to train especially for small companies (Agapiou, 1997). For the construction industry to improve its performance, high quality skills and development of effective human resources strategies by firms are required. Most SMEs do not only have the ability to train their employees for several reasons which will be discussed in more detail later in this paper but they also seek help and that help must be suitable for their conditions and situation. Staff development and training have been given little attention by SMEs in the construction sector despite this sector being considered as the largest one.

3. METHODOLOGY

The sensitivity of the subject made it difficult to find people who can participate in this project. The required information is very sensitive and the time of people working in SMEs is valuable in terms of cost as it is difficult for a small company to assign one of its employees to participate in such a project.

Investigating industry perceptions on skills issues is difficult as it depends upon the market sector in which a company operates and business development strategy (Dainty et al 2005). Consequently, a diverse set of qualitative data were combined in order to create a cross-section of opinion on the important issues in need of redress and the practical ways in which construction firms could begin to address them. This involved a total of 89 construction SMEs in order to debate the key barriers facing their business. The research methodology employed in this research project involved conducting a series of semi-structured interviews.
with directors or senior managers of a sample of the SMEs based in the North East and North West of England. These SMEs all work in the construction sector including design and construction product manufacturing.

The sample SMEs were classified as follow, according to the main activity identified by the interviewees:

- Architectural Design
- House Building
- Structural Design
- Civil Engineering
- Construction Product Manufacturing
- Other related sectors

To achieve the objectives of this study the following topics were discussed with the interviewees:

- Policies in place;
- The skills shortages;
- Training plan;
- Training budget; and
- Training and learning assessment methods.

The nature of data collected was mostly qualitative and therefore the analysis was largely a narrative evaluation. Interviewees were asked if and how certain functions were performed and an analysis of responses enabled building up a picture of formal and informal processes in place within the sample SMEs.

3.1 Training as a Request

It is widely considered that training is an important element of individual employees and organizational success. As jobs become more technical and organization specific, there are fewer candidates whose qualifications and skills meet such requirements. New jobs, equipment, systems, material and building methods are from time to time created and introduced to existing jobs. On the other hand, many jobs are vanishing and the people carrying these vanishing jobs do not have the required skills for the new created positions that now become available. All these mentioned conditions require the type of expertise training can provide, so training is needed to supply the types of employees required.

Effective training is not limited to any industry or to the size of an organization. It may be appear to be a noticeable need for large organizations concerned with the latest technology, but can also be a requirement for smaller, more traditional organizations. In a large organization, with 250 employees for example, a single untrained employee has little impact, he/she is only 0.4% of the total workforce, whereas a single untrained employee in a small organization, with 5
employees for example, a single untrained employee, he/she is 20% of the total workforce. It is obvious the one untrained employee is a small organization has more impact than an untrained employee in a large organization. This reflects the need and importance of training for employees in small and medium enterprises (SMEs). For SMEs to survive in this highly competitive world, a training strategy should be developed and adopted. Training is no longer a prestigious practice. Many organizations adopt training needs assessment methods to identify training needs, ensure success of training and high return of investments in staff development.

3.2 The SMEs‘ Role in skills development and Employment

Small and Medium Enterprises are regarded as a major source of the economy, employment generation and innovation. There are more than 4.3 million SMEs employing 12.9 million people. In the year 2005, there were 923,770 SMEs in the construction sector employing two million people. The construction SMEs have been criticized with regard to it’s the up take of new technologies. Technologies and processes ad issues related to organizational management (Stewart et al 2003).

4. FINDINGS

Data were collected about the age of the organization, number of staff, and sector of operation. The sample SMEs were classified as in Table 4.1, according to the main focus of operating sector identified by the interviewees.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architectural Design</td>
<td>50.5</td>
</tr>
<tr>
<td>Structural Design</td>
<td>8</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>4.5</td>
</tr>
<tr>
<td>Construction Product Manufacturing</td>
<td>17</td>
</tr>
<tr>
<td>Other</td>
<td>20</td>
</tr>
</tbody>
</table>

4.1 Sample Profile

Data were collected about the age of the organization and staff numbers to enable compilation of a company profile of the sample SMEs. Table 4.2 indicates that the majority of the interviewed SMEs have been less than 10 years in business. Table 4.3 shows the number of employees within
sample SMEs, and therefore the size classification of each company. Forty-nine of the SMEs which participated in this research project were micro-enterprises with less than 10 employees, 25 SMEs were small sized (11–49 employees) and the remaining companies were medium sized (50-250 employees).

### Table 4.2: Age of SMEs

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>No of SMEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10</td>
<td>40</td>
</tr>
<tr>
<td>11-20</td>
<td>18</td>
</tr>
<tr>
<td>21-30</td>
<td>11</td>
</tr>
<tr>
<td>31-40</td>
<td>6</td>
</tr>
<tr>
<td>41-50</td>
<td>4</td>
</tr>
<tr>
<td>51- over</td>
<td>9</td>
</tr>
</tbody>
</table>

### Table 4.3: Number of Employees

<table>
<thead>
<tr>
<th>No of Employees</th>
<th>No of SMEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10</td>
<td>52</td>
</tr>
<tr>
<td>11-49</td>
<td>25</td>
</tr>
<tr>
<td>50-249</td>
<td>12</td>
</tr>
</tbody>
</table>

### 4.2 Training and Development

Learning is an ongoing process. For training and development to be conducted properly, a plan should be drawn up for this purpose. The purpose of a Training Plan is to identify the work to be carried out to achieve agreed objectives. The plan is a general guide - the real treasure found from implementing a training plan is the knowledge an employee achieves. Fifty-one percent of the SMEs participated in this study have a training plan and 40% of the SMEs have a training plan and Training and Development Policy (see Table 4.4).

### Table 4.4: Training Policy and Training Plan

<table>
<thead>
<tr>
<th>SME have a training plan</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMEs have Training and Development Policy</td>
<td>40%</td>
<td>29%</td>
</tr>
</tbody>
</table>

Inductions should be carried out at the start of new employment as they are very useful for the employees and the employers. Most SMEs have generally one new starter joining at any one time, therefore, induction processes should be designed to suit the individual’s requirements. These processes usually include the new starters’ job role within the enterprise, level of seniority, prior experience, and technical and industry knowledge.
Seventy-two percent of the interviewed SMEs carry out inductions at the start of new staff employment.

The greatest challenge facing the construction industry today is the shortage of skilled labour. One of the causes of this shortage is the introduction of new technologies that require new skills (Mackenzie et al, 2000). Crafts skills shortage has been investigated in other studies (e.g. Mackenzie et al, 2000; Ruiz 2004). These studies did not investigate skills shortages other than crafts skills such as design, CAD and management skills. Ninety percent of the surveyed SMEs have identified skill shortage in their workforce. These skill shortages are in 2D and 3D CAD, IT, skilled tradesman, general architectural and structural design skills, collaboration, information management, electrical engineering, senior management skills, drafting skills and project management. These skill shortages within the SMEs have not been paid attention to in most studies investigating skill shortages. Most of surveyed SMEs do not have any plans to overcome these shortages.

5. DISCUSSION

In order to achieve the largest impact from training, an organisation regardless of the size must set up an effective training strategy which should be linked to the organisation’s objectives. The organization does not only need to adopt different approaches but also needs substantial help and support. These approaches are different from one SME to another depending on many issues and circumstances. Many SMEs tried to improve their staff skills but failed to meet the set targets due to many reasons.

SMEs often do not have adequate resources to fully fund the development of skills of their staff. This is regarded by one of the key barriers to training and development of skills. SMEs usually do not have enough resources for training. These include lack of funding for training fees, paying the employees salary and sometimes for the accommodation of the trainees or the training provider in case in house-training.

Inconvenient time has been identified as a key barrier for many SMEs in the construction sector. The size of an enterprise may affects taking training by its employees. A SME with 10 employees, for example, sends one of them for training, it means that 20% of its workforce will be away. It will be difficult for the other employees to do the job. This may also cause that the whole work in hand be disrupted with loss in money and time to the SME.

One of the interviewees commented that when developing a training plan within the company, its size should be taken into consideration, i.e. the small size of the company can prevent it from sending people away on training courses. The work may stop and it is difficult to find time for training during the working hours. He suggested training should be online so that trainees could undertake training at their own convenience.
The other barrier for SMEs to training and development is the location of the venue. SMEs in villages and small towns face difficulties in going to training centres and providers. Most training centres and providers are located in cities and big towns. The other impact of the location of training venue is that if an employee has been recruited and sent for training to one of the training centres in a city he/she may find a job there and move there as these new employees are young and prefer living in cities over living in a small town or village after they have gained some experience and training which enable them to compete in the employment market. This may prevent many SMEs from recruiting young employees and send them for training. Smaller SMEs have difficulty in providing formal training to their staff or release their staff to undertake training to gain new skills. This may make these SMEs less capable of taking new contracts and consequently grow and compete with other SMEs.

6. CONCLUSION

Advances in technology, introduction of many new building materials and methods of construction require employees of construction firms to undertake training. The survey revealed that SMEs in construction are facing difficulties in the development of their employees’ skills. These included a lack of resources, lack of knowledge of training provision, financial difficulties, the size of the SME, lack of enthusiasm for growth, or the pressure of work made it difficult. There are also a number of barriers that may hinder the efforts of many training initiatives offered by organisations and government departments to help SMEs to gain a competitive. These include awareness, geographical location and provision of training and other skills development opportunities.

7. REFERENCES