



## Firm size and skill formation processes: an emerging debate

Daniel Bishop

To cite this article: Daniel Bishop (2012) Firm size and skill formation processes: an emerging debate, *Journal of Education and Work*, 25:5, 507-521, DOI: [10.1080/13639080.2012.661848](https://doi.org/10.1080/13639080.2012.661848)

To link to this article: <https://doi.org/10.1080/13639080.2012.661848>



Published online: 27 Feb 2012.



Submit your article to this journal [↗](#)



Article views: 506



Citing articles: 7 [View citing articles](#) [↗](#)

---

## **Firm size and skill formation processes: an emerging debate**

Daniel Bishop\*

*Centre for Labour Market Studies, University of Leicester, Leicester, UK*

*(Received 2 June 2011; final version received 20 January 2012)*

Recent research has established that small firms tend to develop and acquire the skills they need in different ways to those employed by larger organisations. More specifically, due to certain characteristics inherent to their small size, small firms generally display greater informality in their learning processes. As such, it is now broadly accepted that they cannot normally be expected to learn in the highly formalised and structured ways more often pursued by their larger counterparts. However, this enlightened perspective has, in certain parts of the literature, arguably led to a neglect of formal training as a means of developing skills. Small firms can and do benefit from formal training – some more than others – but this is at risk of being ignored. Based on a critical review of the relevant research, the paper aims to bring a measure of clarity and structure to this emerging debate. In doing so, it draws on the concept of ‘learning architecture’ to illuminate the connection between firm size and learning processes.

**Keywords:** learning; skill formation; firm size small firms

### **Introduction**

An expanding body of evidence is increasingly establishing two things. First, small firms are crucially important. In the UK, for example, more than 99% of businesses employ fewer than 50 people, and nearly half of the private sector workforce is employed in small firms (Small Business Service 2006); this is a trend replicated across most of the developed world. The growth and development of these firms is thus of profound significance to issues of national social and economic health, particularly at times of macro-economic fragility (Matlay 2004, 505). Second, existing research consistently suggests that small businesses participate less in formal training than do larger organisations. Learning in small firms seems to be characterised by informality relative to larger firms; managers and employees in the small enterprise appear more likely to develop their skills through normal workplace and business activities (as opposed to anything identifiable as

---

\*Email: dan.bishop@le.ac.uk

‘training’) than those in larger organisations (e.g. Kitching and Blackburn 2002; Dawe and Nguyen 2007).

For some, this situation represents a cause for concern. Jameson (2000, 45), for example, claims that a reliance on informal modes of skill development is representative of ‘low skills requirements’. It can also leave employees without formal recognition of their skills and abilities, and thus potentially at a disadvantage in the external labour market. Similarly, Webster, Walker, and Barrett (2005) argue that participation in formal training is associated with higher success and growth rates among small firms. Marlow (1998) echoes such concerns, observing that the lack of formal, accredited training in the small business sector could be problematic due to the importance of the sector to the UK economy. This indeed has been the view adopted by successive UK governments in the last three decades, which have consistently equated the relative lack of formal training in small firms with a paucity of skills and learning activity. In this assessment, it is therefore a problem that needs to be addressed; consequently, governments’ efforts have tended to focus on encouraging and enabling small firms to aspire to the levels of formal training conducted by their larger counterparts. The Leitch Review of Skills (2006), for example, advocated the extension of existing training and development programmes originally conceived with larger organisations in mind (e.g. Train to Gain, and the Leadership and Management Programme operated by the then Learning and Skills Council) to encompass the small firm sector.

Recent years have seen the emergence of a critical alternative to this position, as a better understanding of skill formation within the small business has been established. For example, as Ashton et al. (2008) and Kitching (2008) argue, it is wrong to confuse a tendency towards informal modes of learning with a systematic under-investment in skills. Small firms, they claim, do develop skills and engage in learning, but in doing so they tend to adopt a less formal approach that is more resonant with the internal environment of the small business, more suited to its needs and potentially more supportive of high performance. As businesses grow, become differentiated, more specialised and complex, there is a need for more formal types of learning (Ashton et al. 2008). Thus, processes of skill formation formalise as firm size increases (as, it seems, do other Human Resource Management [HRM] and management practices more broadly; see, e.g. Kotey and Sheridan 2004; Kotey and Slade 2005; Martin, Janjuha-Jivraj, and Carey 2008). In this view, it is therefore generally unnecessary – and indeed potentially harmful – to push small firms towards ever greater participation in formal training. Small firms, it is increasingly argued, are not simply scaled-down large firms; they are fundamentally different in respect of their skill formation structures, and this is something that needs to be acknowledged rather than changed.

Yet this debate is still relatively young: while it is clear that small firms participate less in formal training than do larger organisations, there remains uncertainty about exactly how and why processes of learning, development and skill acquisition differ between small and large firms, and what the wider implications of this may be (Taylor 2004). This paper attempts to clarify the parameters of this debate and to probe the evidence regarding the effect of firm size on learning processes. In the first two sections, it is seen that the weight of evidence indicating the importance of informal learning in small enterprises is indeed considerable, and it now seems clear that we should not expect small firms to approach learning in quite the same way as larger firms. However, the third section provides a rejoinder to this, observing that, in adopting such an enlightened view, there is arguably a risk of neglecting formal training altogether. Some writers have continued to point out that formal training still plays (and, perhaps, should play) a central role in the small firm sector (see, e.g. Bisk 2002; Webster, Walker, and Barrett 2005). Others have highlighted the varying approaches and orientations to skill formation adopted within the sector (e.g. Kitching and Blackburn 2002; Bishop 2009); some firms seem much more positively orientated towards formal training than others. In addition, developments in the workplace learning literature more broadly suggest that an excessive privileging of informal learning can obscure the benefits of formal learning in terms of providing individuals with marketable accreditation for their learning, as well as in developing technical skills and an understanding of the broader context within which those skills are used (e.g. McGuire and Gubbins 2010). Thus, it is ultimately argued, while a highly structured, formalised and bureaucratic approach to skill development is likely to be inappropriate for most small firms, this should not be equated with the rejection of formal training as a legitimate method of learning. A more balanced and nuanced analysis should instead be adopted; one that acknowledges the heightened importance of an informal 'learning architecture' (Jenlink 1994; Morrison and Bergin-Seers 2002) among small businesses, but also accepts that formal training potentially has much to offer within that architecture – particularly if presented, delivered and targeted in appropriate ways.

### **Learning in the small firm: emphasising the informal and the social**

Our understanding of how learning occurs in the small business has improved in recent years, as an increasing number of studies have highlighted in particular the importance of *informal* learning throughout the sector. This has encouraged researchers, if not policy-makers, to refocus their attention away from an obsession with formal, accredited training (e.g. Gibb 1997; Doyle and Hughes 2004). In short, as Dawe and Nguyen (2007, 7) point out in a review of international research on learning in small firms, there is now a growing consensus that the '[s]mall business learns "through

doing”, with the focus on current or real issues in the workplace, and through social networks – learning from other business people’. These twin themes of learning informally through doing and through (largely unstructured) interactions with social, kinship and business networks have been reaffirmed through numerous studies of small businesses (e.g. Kerr and McDougall 1999; Dalley and Hamilton 2000; Skinner, Pownall, and Cross 2003; Devins et al. 2005; Holden et al. 2006). Such studies have consistently indicated that certain characteristics inherent in the small firm (e.g. limited resources of time and finance, fewer functional specialists) produce an approach to learning where skills are predominantly developed *in situ*, without a pedagogic support structure or ‘trainer’, in response to immediate needs, and often with the assistance of trusted contacts such as friends, business colleagues, suppliers or even competitors. Participation in formal, off-the-job training is often seen as expensive, time-consuming and not sufficiently pertinent to the short-term needs of the firm. As Kotey and Folker (2007, 216) argue,

Informal learning is preferred [among small firms] because it is less costly, can be easily integrated into daily operations of the small firm, and is focussed on employees’ specific needs ... It is consistent with the overall strategic orientation of SMEs – that is, informal and flexible.

Described in this light, the relatively low levels of formal training reported among small firms may not appear surprising, or even (for some) particularly problematic (e.g. Ashton et al. 2008).

### **The impact of firm size on learning processes**

Through studies such as those outlined above, the picture of skill formation in small businesses as tending towards an informal and social character is now fairly well established. What is less well known, however, is exactly how this picture changes as firm size increases. This is to some extent surprising, given that it is fairly easy to find examples of research that addresses the impact of firm size upon a range of other organisational processes, characteristics and outcomes, such as incomes and wages (e.g. Ferrer and Lluís 2008) and research and development activity (e.g. Lee and Sung 2005). There is also an expanding corpus of research concerning the relationship between firm size and management practices; e.g. Kotey and Slade (2005), whose study of Australian small- and medium-sized enterprises (SMEs) indicates a significant increase in formal practices as firm size approaches 20 employees, and Storey et al. (2008), who find that HRM practices also increase in formality as firm size increases. Marlow, Taylor, and Thompson (2010) present similar findings, but emphasise that the growth process does not entail a linear ‘progression’ from an informal to

formal management paradigm. Rather, it is characterised by the irregular assimilation of formal management practices into the overarching informal paradigm. Over time, with further growth, the paradigm itself eventually shifts towards greater formality.

By comparison, it is only very recently that researchers have begun to conduct comparative investigations that allow similar connections to be drawn between firm size and learning processes. It is of course true that a variety of survey data have, for some years, demonstrated higher rates of participation in formal training schemes among larger firms than smaller businesses (e.g. Department for Education and Skills 2002; Hoque and Bacon 2006). Such data can certainly be useful in terms of highlighting trends in relation to training participation, but they can only offer a fairly abstract and superficial impression of how learning actually occurs and skills developed in the absence of formal training, and of how these processes change with firm size. In order to obtain a clearer impression of how learning is accomplished differently within small and large organisations, and of how such differences are related to unfolding structural and contextual developments within the workplace, a more fine-grained and comparative approach is arguably needed.

Such comparative research is still in its emergent stages, but in a study that does attempt such an approach, Ashton et al. (2008) draw on a series of illustrative case studies from various industrialised countries around the world to suggest that most small and 'micro' firms actually have similar skill requirements to their medium-sized and large counterparts. Due to certain inherent characteristics associated with their small size however, they tend towards more informal means by which to acquire those skills. Such characteristics may include, for instance, a lack of solvency that promotes uncertainty about the future and subsequently a short-term outlook, a flat and undifferentiated management structure comprised of generalists rather than (HR and training) specialists, a predominantly informal mode of internal communication and higher marginal costs associated with providing cover for employees who train off the job. Such features create an organisational environment within the small firm that promotes an informal approach to learning.

However, survey evidence tells us that, as firm size expands towards the 50 employee mark, the emphasis begins to shift towards more formal methods of skill acquisition (see, e.g. Kotey and Folker 2007). This shift, argue Ashton et al. (2008), is due to various changes that occur to the internal structure of the organisation as it expands. In particular, it becomes more complex as roles become differentiated and specialised; relationships between individuals and functions become formalised where previously they had been relatively ad hoc and flexible; and authority becomes delegated as layers of management are introduced (see also Phelps, Adams, and Bessant 2007). These observations resonate clearly with the findings of studies that

demonstrate the increasing complexity of organisational structures as firm size increases (e.g. Olson and Terpstra 1992).

Crucially, claim Ashton et al., this increasing complexity promotes a more formal approach to skills development. For example, the differentiation of roles leads to the employment of specialists

in finance, production, sales and personnel. This ... frequently results in the appointment of specialized trainers and in the establishment of separate training departments. This is symptomatic of the fact that learning is increasingly differentiated from other activities and treated as a separate activity, namely, 'training'. (2008 , 24)

Furthermore, as firm size expands and the number of employees grows, senior managers find it more difficult to maintain personal relationships with staff, and therefore to make informed decisions about who needs to learn what, and in what way, in order to be effective. As a result, formal procedures such as development plans and training needs assessments are put in place, along with dedicated training budgets, which HR/training specialists are appointed to oversee. Gradually, the training function, and consequently Human Resource Development (HRD) processes, become formalised.

Comparative studies such as Ashton et al.'s (2008) are still relatively rare (see Gray and Mabey (2005) for another example, which draws on empirical evidence from firms across Europe), but they are crucially important in demonstrating how learning processes are heavily conditioned by, and therefore subject to change in accordance with, broader organisational practices and structures that tend to shift as the firm grows. They also serve as a necessary reminder that, within small firms,

learning activity may well be taking place but of a character and nature that does not sit comfortably with any commonly understood definition of training, i.e. mainly off-the-job and provided by external sources. (Holden et al. 2006, 435).

Armed with such insight, researchers are increasingly reaching the conclusion the conventional, prescriptive model of skill formation that privileges a formal, structured approach to the provision of training may be unnecessary, irrelevant or even harmful when applied to small firms. Indeed, this is the conclusion promoted by the various studies outlined so far. Learning informally by doing, or by networking, needs to be seen as a valid and crucial method of developing skills within the small firm. To recognise this is to make an important advance in understanding the way in which skills are developed within the small enterprise.

Yet, it may be time to pause and reflect on this judgement, for in arguing for an alternative to the more structured 'large-firm' way of acquiring and developing skills, there is a simultaneous risk of neglecting formal training (something that, as McGuire and Gubbins (2010), point out, may already be

happening in the broader literature on learning and skills). With researchers' attentions increasingly focused, as noted above, on exploring and demonstrating the benefits of informal learning in small firms, the role potentially and actually played by formal training in the skill development process has received less attention and may consequently be less well understood. This, it will be argued, could represent something of a problem. Firstly, it is far from clear that informal learning can be relied upon to perform equivalent skill formation functions to formal training (e.g. Edwards 2010). And secondly, as the following section will show, a sizeable body of evidence suggests that such training can be, and is, of considerable utility to small businesses. If we fail to recognise this, we are in danger of presenting an account of learning in small firms that goes too far in privileging the role of informal learning.

### **Understanding the role of formality in small business learning**

As observed above, recent years have seen a growing emphasis among researchers upon the role played by informal learning within small firms. In a comprehensive and systematic review of the research on education and training in relation to small firms, Dawe and Nguyen (2007, 36) state that '[s]trategies [for promoting learning] which fit the way the small business learns are clearly more successful than direct or formal training'. Similarly, Dalley and Hamilton (2000, 55) claim that 'learning by doing is the preferred and predominant method of knowledge creation in the small business. This is the only method that is trusted and respected by the owners' (Dalley and Hamilton 2000, 55). Similar assertions concerning the centrality of informal and social learning, and the dangers associated with formal training, can be found throughout the international literature on small firms (e.g. Down 1999; Taylor and Thorpe 2004; Palakshappa and Gordon 2007; Zhang and Hamilton, 2009; Gray, Ekinci, and Goregaokar 2011). While such sentiments are crucial in highlighting the importance of informality, there is inherent in their growing popularity a risk of giving the impression that formal training is simply less useful and/or meaningful – even harmful – for small businesses.

There is much evidence to suggest that such a 'blanket' analysis would be inappropriate, and that formal training can and does contribute to success among small firms, particularly if certain conditions are met. For example, in a study of Australian SMEs, Webster, Walker, and Barrett (2005) conclude that education and training are

effective ways to reduce small business failure [and are] ... essential for success and growth of small- to medium-sized enterprises ... training is regarded as important for competitive success and business strategy. (2005, 553)

We should of course guard against drawing simplistic causal connections between skills, learning, training and organisational performance outcomes; as Keep, Mayhew, and Corney (2002) observe, much of the research on the training – performance link suffers from a range of methodological and conceptual problems, such as inconsistent and questionable measures of inputs and outputs (see, e.g. Keep, Mayhew, and Corney 2002). Further, as argued by Grugulis and Stoyanova (2010), the effects that skills – and the processes by which they are developed – have on organisational performance are mediated through organisational strategies and practices. It is therefore extremely difficult to claim with confidence that any improvement in organisational performance can be traced directly and simply to investment in skills. With such considerations in mind, researchers such as Chi, Chi-Yun, and Yen-Yin Lin (2008) (in Taiwan) and Bryan (2006) (in the UK) have attempted the task of clarifying the nature of the relationship between training and performance in small firms, given the intervening effects of other organisational factors. In essence, what such studies have generally found is that, in many instances, it is possible to observe a positive statistical relationship between measures of training and subsequent organisational performance. Crucially, however, this connection is seen to be a complex, partial and ambiguous one that is dependent on a number of factors, such as the broader product market strategies adopted, the type of training involved, who is trained, how ‘performance’ is assessed and how much time elapses between the training event and the measurement of its impact.

Increasingly, there is a growing body of data to support and elaborate on this picture. For example, while some studies have found little or no relationship between training and performance in small firms (e.g. Baldwin et al. 1994; Westhead and Storey 1996), Tocher, Shook, and Giles (2007) review the literature on training and performance in small firms as a whole and observe that the weight of evidence suggests a broad statistical association between training and performance where, e.g. the firm’s competitive strategy relies on technical, codified skills. Firms whose overall strategy eschews an emphasis on cost reduction also seem to benefit more from such training. In short therefore, while as noted above clear causal relationships are difficult to establish, the available evidence seems to suggest that formal training can be *a* factor associated with improved performance in small firms; but we need to be more specific about what type of training is used, who delivers it, how it is used, which firms use it, which employees within those firms receive that training and when, and how the training articulates with broader organisational strategies.

In being more precise about the kinds of training to be delivered, in what ways and to whom, we can avoid problematic, generalised assumptions about formal training being unsuited to the small firm environment. Brown, Tomasini, and Figueira (2005), for example, highlight the utility of training in terms of helping small firms with particular activities such as ‘sense-making’ (2005,

130), and enabling them to understand and make better use of their informally-acquired skills. Further, as Walker et al. (2007) and others have pointed out, if training is packaged and presented in the correct way by credible providers, directly related to the requirements of the firm, cognisant of the lack of structure surrounding learning activity and delivered in a flexible form, many small businesses will take an interest and benefit. Some will, of course, take more interest than others; as Rabemananjara and Parsley (2006) observe in their study of Canadian SMEs, while the majority of small firms show lower rates of participation in formal training than larger businesses, a significant minority actually commit extensive resources to more formal employee development, yet we know relatively little about exactly how and why these small firms differ from others. Clearly, some will engage more in formal training due to regulatory or professional requirements, or sector-specific skills needs, but this can only explain part of the variation. Bishop's (2009) study, for example, shows that small firms with similar staffing levels, similar financial capacity and operating within similar product markets sometimes display varying approaches towards learning (Kitching 2008, also finds significant variations between small firms in respect of skill development strategies). This is attributed, at least in part, to social and subjective factors within and between firms (e.g. the owner-manager's historically embedded 'learner identity' or the networks of which the firm is a part; see also Bishop 2008).

Barrett and Mayson (2007), in a study of HRM practices in growing small firms, identify a further source of inter-firm variation. They find that tendencies towards formal or informal practices within the small firm are conditioned by prevailing orientations towards growth. 'Growth-orientated small firms' they observe, 'are more likely than non-growing ones to use formal HRM practices where that means that they are written down, regularly applied or assured to take place' (2007, 307). They add that, '[g]rowing small firms are also more likely than non-growing small firms to pay for off-site training or work-related education for employees' (2007, 315). Very similar findings are presented by Gray and Mabey (2005), who observe that growth-orientated small firms appear much more likely to engage in formal management development practices.

The above accounts suggest it would be wrong to assume that the small firm sector, as a whole, has little to gain from, formal training. Such an assumption would greatly over-simplify both the approaches adopted by small businesses with regard to the development of skills, and the ways in which formal training can be (and has been) applied to great effect. As already discussed, approaches to learning that assume the presence of extensive financial, human and temporal resources, the presence of a dedicated training or HRD function, the existence of written training plans and the ability to defer returns to training over the long term – in short, that are designed with the learning environment of large organisations in mind – will be inappropriate for most small firms. However, this should not be taken to

mean that formal training itself, as a technique for developing skills, is similarly inappropriate.

What is needed – for researchers and policy-makers alike – is a more measured, nuanced and precise understanding of how formal training can be used in a way that benefits small firms and complements their generally less formal learning support mechanisms. In order to reach such an understanding, we need to transcend a simplistic conception of formality and informality. As Marlow, Taylor, and Thompson (2010) observe, formality and informality invariably exist in co-dependent relationships within both large and small organisations. In the same way, formal training practices can usefully exist within an overarching informal skill formation paradigm. In this sense, it might be useful to think in terms of the ‘learning architecture’ of the organisation; a concept first formally articulated by Jenlink (1994). Essentially, the firm’s learning architecture

consists of the organizational mechanism(s), artifacts, and human assets that the organization has constructed over time and which contribute to the type and level of learning within the organization. (Jenlink 1994, 317)

It forms the overall pattern for learning within the organisation and defines, among other things the extent to which skill formation tends towards a predominantly formal or informal mode. What the evidence reviewed here seems to suggest is that the structural characteristics of small firms and the ways in which they interact with the external environment normally predispose them towards an informal learning architecture, but also that more formal types of learning can and do still fulfil important roles (just as informal learning may perform key functions within the more formal architecture of larger firms). Thus, while small firms may tend towards informal skill formation structures, this should not be confused with a systematic aversion to, or inability to benefit from, formal training.

## **Conclusion**

Our understanding of how learning occurs differently within large and small firms has advanced significantly in the last 20 years or so. Recent studies have illuminated the importance of informality in the small firm, of learning by doing and networking, and have begun the task of prising current thinking and policy away from an obsession with the highly formal, structured prescriptions for skill development that reflect the needs and experiences of large organisations. In doing so, they have grasped the insights provided by the wider literature on informal and workplace learning (e.g. Fuller et al. 2003; Eraut 2007; Billett 2008; Cairns and Malloch 2010).

These ongoing developments are very much to be welcomed, and we can now talk with some confidence about the need to recognise the distinguishing features of the ‘learning architecture’ (Jenlink 1994; Morrison and

Bergin-Seers 2002) of small firms. Specifically, we can highlight the scarcity of dedicated training functions in small businesses, their very limited resources, a need for training that meets immediate requirements and the central role played by informal and networked learning. For policy-makers, there is still some way to go in terms of acknowledging these specific needs of small businesses; policy initiatives, particularly in the UK, have historically been weak in terms of recognising the different, less formal learning environment of small firms (Matlay 2004). Instead, efforts have generally been focused on simple, blanket attempts to encourage and enable small firms to mimic larger organisations by engaging more in formal training. Such policies are based on the flawed assumption that small firms are possessed of (or are able and willing to develop) the same learning architecture as their larger counterparts. It now seems clear that a more effective approach would need to base itself on a grasp of the different architecture of small firms and build this understanding explicitly into skills policies. In recent years, critics within academia have exhorted governments to accept the necessity of such a shift. Yet, in pursuing such an enlightened perspective, and in rejecting the 'large-firm' paradigm traditionally advocated by policy-makers, the impression may be given – whether intentionally or not – that formal training itself holds no relevance, benefit or interest for the small firm. This impression reflects an unwarranted extension of the understanding that small firms tend to have a less formal learning support infrastructure.

While informality clearly plays such a crucial role in the skill formation strategies adopted by small firms, these firms can and do still benefit from formal training – particularly where the delivery of that training recognises that the capacities, needs and preferences of small firms are different to those of larger organisations. In moving towards this understanding however, one should not ignore the potential utility of formal training as a tool for developing skills within the small firm. Where our knowledge is still in need of improvement is in understanding which small firms might benefit most from an increase in formal training (e.g. growth-orientated firms?), which employees would benefit the most (e.g. those employed in technical roles?), how is such training best structured and delivered, and through which (credible) channels? And, further, in what ways can training be delivered in order to complement the informal learning that plays such an important role within small firms (Brown, Tomassini, and Figueira 2005)? There is also the issue, as Edwards (2010, 5) points out, that '[n]o study has directly investigated informality in small firms to demonstrate that it is *functionally* equivalent to large-firm formality'; we should therefore be wary, as McGuire and Gubbins (2010) warn, of making the assumption that informal routes to skill formation deliver similar individual and organisational benefits to more formal ones (or vice versa). It is questions such as these that researchers now face, and which point to a requirement for more comparative studies of learning within large and small businesses – perhaps using

matched samples of different sized firms – in order to extend and elaborate our understanding of how their approaches to skill formation vary as the organisation grows and structures, relationships and practices become more complex.

### Acknowledgements

I would like to thank the anonymous reviewers and David Ashton for their helpful comments on previous versions of this paper.

### Notes on contributor

Daniel Bishop is a lecturer at the Centre for Labour Market Studies, University of Leicester. With a background in the teaching profession, he previously worked as a researcher on ESRC-funded projects at the Universities of Leicester and Cardiff. He has conducted and published research in areas connected to training, development and workplace learning, with a particular interest in learning processes within small businesses.

### References

- Ashton, D., J. Sung, A. Raddon, and T. Riordan. 2008. Challenging the myths about learning and training in small and medium-sized enterprises: Implications for public policy. ILO Employment Working Paper 1. Geneva: ILO.
- Baldwin, J., W. Chandler, C. Le, and T. Papailiadis. 1994. *Strategies for success: A profile of growing small and medium-sized enterprises (GSMES) in Canada*. Ottawa: Statistics Canada.
- Barrett, R., and S. Mayson. 2007. Human resource management in growing small firms. *Journal of Small Business Enterprise and Development* 14, no. 2: 307–20.
- Billett, S. 2008. Learning through work: Exploring instances of relational interdependencies. *International Journal of Educational Studies* 47, no. 4: 232–40.
- Bishop, D. 2008. The small enterprise in the training market. *Education and Training* 50, no. 8/9: 661–73.
- Bishop, D. 2009. *Small firms and universities: How training markets are socially constructed*. Saarbrücken: VDM Verlag.
- Bisk, L. 2002. Formal entrepreneurial mentoring: The efficacy of third party managed programs. *Career Development International* 7, no. 5: 262–70.
- Brown, A., M. Tomassini, and F. Figueira. 2005. Implications of the Participa project for policy, practice and research. In *Learning while working in small companies: Comparative analysis of experiences drawn from England, Germany, Greece, Italy, Portugal, Spain*, ed. A. Brown, 115–56. Oxford and Coventry: ESRC Centre for Skills Knowledge and Organisational Performance Universities of Oxford & Warwick.
- Bryan, J. 2006. Training and performance in small firms. *International Small Business Journal* 24, no. 6: 635–60.
- Cairns, L., and M. Malloch. 2010. Theories of work, place and learning: New directions. In *The Sage handbook of workplace learning*, ed. M. Malloch, L. Cairns, and B. O'Connor. London: Sage.
- Chi, N., W. Chi-Yun, and C. Yen-Yin Lin. 2008. Does training facilitate SME's performance? *International Journal of Human Resource Management* 19, no. 10: 1962–75.

- Dalley, J., and B. Hamilton. 2000. Knowledge, context and learning in the small business. *International Small Business Journal* 18, no. 3: 51–7.
- Dawe, S., and N. Nguyen. 2007. *Education and training that meets the needs of small business: A systematic review of research*. Adelaide: NCVER.
- Department for Education and Skills (DfES). 2002. *Learning and training at work 2001: First release*. London: DfES.
- Devins, D., J. Gold, S. Johnson, and R. Holden. 2005. A conceptual model of management learning in micro businesses: Implications for research and policy. *Education + Training* 47, no. 8/9: 540–51.
- Down, 1999. Owner–manager learning in small firms. *Journal of Small Business and Enterprise Development* 6, no. 3: 267–80.
- Doyle, L., and M. Hughes. 2004. *Learning without lessons: Supporting learning in small businesses*. London: LSDA.
- Edwards, P. 2010. *Skills and the small firm: A research and policy briefing*. Wath-upon-Deane: UKCES.
- Eraut, M. 2007. Learning from other people in the workplace. *Oxford Review of Education* 33, no. 4: 403–22.
- Ferrer, A., and S. Lluís. 2008. Should workers care about firm size? *Industrial and Labor Relations Review* 62, no. 1: 102–25.
- Fuller, A., D. Ashton, A. Felstead, L. Unwin, S. Walters, and M. Quinn. 2003. *The impact of informal learning at work on business productivity*. London: DTI.
- Gibb, A. 1997. Small firms' training and competitiveness: Building upon the small business as a learning organisation. *International Small Business Journal* 15, no. 3: 13–29.
- Gray, D., Y. Ekinci, and H. Goregaokar. 2011. Coaching SME managers: Business development or personal therapy? A mixed methods study. *International Journal of Human Resource Management* 22, no. 4: 863–82.
- Gray, C., and C. Mabey. 2005. Management development: Key differences between small and large businesses in Europe. *International Small Business Journal* 23, no. 5: 467–85.
- Grugulis, I., and D. Stoyanova. 2010. Skill and performance. *British Journal of Industrial Relations* 49, no. 3: 515–36.
- Holden, R., G. Nabi, J. Gold, and M. Robertson. 2006. Building capability in small businesses: Tales from the training front. *Journal of European Industrial Training* 30, no. 6: 424–40.
- Hoque, K., and N. Bacon. 2006. The antecedents of training activity in British small and medium-sized enterprises. *Work, Employment and Society* 20, no. 3: 531–52.
- Jameson, S. 2000. Recruitment and training in small firms. *Journal of European Industrial Training* 24, no. 1: 43–9.
- Jenlink, P.M. 1994. Using evaluation to understand the learning architecture of an organization. *Evaluation and Program Planning* 17, no. 3: 315–25.
- Keep, E., K. Mayhew, and M. Corney. 2002. Review of the evidence on the rate of return to employers of investment in training and employer training measures. SKOPE Research Paper 34. SKOPE: Universities of Oxford and Warwick.
- Kerr, A., and M. McDougall. 1999. The small business of developing people. *International Small Business Journal* 17, no. 2: 65–74.
- Kitching, J. 2008. Rethinking UK small employers' skills policies and the role of workplace learning. *International Journal of Training and Development* 12, no. 2: 100–20.
- Kitching, J., and R. Blackburn. 2002. *The nature of training and motivation to train in small firms*. DfES Research Report 330. Nottingham: DfES.

- Kotey, B., and C. Folker. 2007. Employee training in SMEs: Effect of size and firm type – Family and non-family. *Journal of Small Business Management* 45, no. 2: 214–38.
- Kotey, B., and A. Sheridan. 2004. Changing HRM practices with firm growth. *Journal of Small Business and Enterprise Development* 11, no. 4: 474–85.
- Kotey, B., and P. Slade. 2005. Formal human resource management practices in small growing firms. *Journal of Small Business Management* 43, no. 1: 16–40.
- Lee, C., and T. Sung. 2005. Schumpeter's legacy: A new perspective on the relationship between firm size and R&D. *Research Policy* 34: 914–31.
- Leitch, S. 2006. *Prosperity for all in the global economy ? world class skills*. Final report of the leitch review of skills. London: HMSO / HM Treasury.
- Marlow, S. 1998. So much opportunity, so little take up: The use of training in smaller firms. *Journal of Small Business and Enterprise Development* 5, no. 1: 38–48.
- Marlow, S., S. Taylor, and A. Thompson. 2010. Informality and formality in medium-sized companies: Contestation and synchronization. *British Journal of Management* 21, no. 4: 954–66.
- Martin, L., S. Janjuha-Jivraj, and C. Carey. 2008. Formalizing relationships: Time, change and the psychological contract in team entrepreneurial companies. In *International handbook of entrepreneurship and HRM*, ed. R. Barrett and S. Mayson. Cheltenham: Edward Elgar.
- Matlay, H. 2004. Contemporary training initiatives in Britain: A small business perspective. *Journal of Small Business and Enterprise Development* 11, no. 4: 504–13.
- McGuire, D., and C. Gubbins. 2010. The slow death of formal learning: A polemic. *Human Resource Development Review* 9, no. 3: 249–65.
- Morrison, A., and S. Bergin-Seers. 2002. Pre-growth small businesses: Learning architecture. *Journal of Management Development* 21, no. 4: 388–400.
- Olson, P., and D. Terpstra. 1992. Organizational structural changes: Life-cycle stage influences and managers' and interventionists' challenges. *Journal of Organizational Change Management* 5, no. 4: 27–40.
- Palakshappa, N., and M. Gordon. 2007. Collaborative business relationships: Helping firms to acquire skills and economies to prosper. *Journal of Small Business Enterprise and Development* 14, no. 2: 264–79.
- Phelps, R., R. Adams, and J. Bessant. 2007. Life cycles of growing organizations: A review with implications for knowledge and learning. *International Journal of Management Reviews* 9, no. 1: 1–30.
- Rabemananjara, R., and C. Parsley. 2006. *Employee training decisions, business strategies and human resource management practices: A study by size of business*. Ottawa: Industry Canada.
- Small Business Service (SBS). 2006. *Statistical press release URN 06/92*. London: Department for Trade and Industry.
- Skinner, J., I. Pownall, and P. Cross. 2003. Is HRD practised in micro-SMEs? *Human Resource Development International* 6, no. 4: 475–89.
- Storey, D., G. Sandakis, S. Sen-Gupta, P. Edwards, and R. Blackburn. 2008. Management formality, size of firm and self-reported job quality (SRJQ) in Great Britain. Paper presented at the EURAM conference, May 16–19. Ljubljana, Slovenia.
- Taylor, S. 2004. HRM in small firms: Hunting the Snark? In *Managing labour in small firms*, ed. S. Marlow, D. Patton, M. Ram, and M. Ram. London: Routledge.
- Taylor, D., and R. Thorpe. 2004. Entrepreneurial learning: A process of co-participation. *Journal of Small Business Enterprise and Development* 11, no. 2: 203–11.

- Tocher, N., C. Shook, and W. Giles. 2007. Training in small firms: An analysis of when small firms should emphasize formal and informal training to maximize performance. *Journal of Business and Entrepreneurship* 19, no. 1: 76–91.
- Walker, E., J. Redmond, B. Webster, and M. Le Clus. 2007. Small business owners: Too busy to train? *Journal of Small Business and Enterprise Development* 14, no. 2: 294–306.
- Webster, B., E. Walker, and R. Barrett. 2005. Small business and online training in Australia: Who is willing to participate? *New Technology Work and Employment* 20: 248–58.
- Westhead, P., and D. Storey. 1996. Management training and small firm performance. Why is the link so weak? *International Small Business Journal* 14, no. 3: 3–25.
- Zhang, J., and E. Hamilton. 2009. A process model of small business owner-managers' learning in peer networks. *Education + Training* 51, no. 8/9: 607–23.