

Title: Innovation in teaching and learning: knowledge exchange in dialogue with SMEs, government and higher education

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Sub-theme; 3.4. Transferring technology and knowledge to SMEs: the role of government and Higher Education Institutions, financial instruments creating a culture of knowledge-based SMEs

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Introduction

Lockett et al (2009) identify an urgent need for relevant empirical research that examines how knowledge transfer policy is translated into practice, particularly in the area of small firms. This paper is a respond to this call and explores the relationship between government, Higher Education Institutions (HEIs) and small to medium sized enterprises (SMEs) in creating peer learning communities which have a positive impact on the regional economy. This paper takes a multi-faceted view of knowledge transfer preferring the term knowledge exchange to indicate the dialogue between government, HEIs and SMEs. Accordingly, an innovative approach to engagement with SMEs through HEIs and knowledge exchange – networked learning - is presented and explored. Specifically, the paper draws upon the results from two studies of a management and leadership knowledge exchange programme

which was part-funded by government through a Regional Development Agency. The studies highlight that the combination of government policy, business needs and university knowledge and expertise benefits from an approach which enables dialogue between all three stakeholders allowing for flexibility and innovative approaches to learning in order to meet the needs of all three stakeholders.

Knowledge Exchange, Higher Education and SMEs

Knowledge exchange is an activity where SMEs receive business support working with HEIs to tap into the knowledge and expertise within universities in order to develop the businesses. Within the UK, SMEs account for 99% of all businesses (Carter and Jones-Evans, 2006) and a flourishing small business sector is central to economic growth. Universities are seen as one way of achieving this through the knowledge exchange agenda (see Lambert Review, 2003; Benneworth and Charles, 2007; Athey et al., 2007) and are playing an increasingly important role in regional economic development. Successive UK governments since the mid-1980s have argued that universities should be making a greater contribution to raising the global competitiveness of the UK economy (Cox and Taylor, 2006, p. 117). Transferring the knowledge and skills between universities and business and the wider community increases the economic and social returns from this investment (Lambert Review, 2003, p.39). Since the 1990s ‘third mission work’ or ‘knowledge transfer’, better named ‘knowledge exchange’¹, has complemented the traditional role of universities. Driven by the Labour government agenda² universities have been encouraged and funded to develop knowledge exchange activities. Knowledge exchange is seen as a way to boost world class excellence and strengthen the work of universities in supporting the regional economies (Lambert Review, 2003). Education institutions are regarded as having an important role in raising the productivity of local businesses, and are incentivised to increase knowledge transfer (Williams et al., 2008, p. 31). This has consequently added a new dimension to the way in which universities are funded (Cox and Taylor, 2006; Robson et al., 1997). Funding such as the Higher Education Reach Out to Business and the Community (HEROBC) was followed by the Higher Education Innovation Fund (HEIF) aimed at strengthening links between HE and business through knowledge exchange.

Knowledge exchange has been a growing activity within universities. Ritchie and Lam (2006) mapped and evaluated the research and policy evidence from a major conference against the seven strategic themes published in the UK’s Small Business Service policy document. They note that knowledge transfer was a main focus for many of the papers. McAdam and Marlow (2008) look at networking activities within a university incubator which supports the growth of new businesses. Specifically, they show that once trust was established links with university academics and personnel facilitated knowledge transfer. Knowledge exchange can also work the other way round through releasing entrepreneurial potential within universities through entrepreneurial academics (Brennan and McGowan, 2006) or facilitating and strengthening links between graduates and the SME sector (Mukhtar et al., 1999). Choeke and Armstrong (1998) look at the opportunities and barriers with regards to the relationship between HE and SMEs. They suggest that a major part of the fault

¹ These three terms are used interchangeably but the preferred term within this paper is ‘knowledge exchange’ because it implies that there is an exchange back from the business community into the university rather than the transferring of ‘knowledge’ from the university to the business community.

² The Labour government was in power between 1997 and 2010 and knowledge exchange gained increasing significance throughout this period. Unless indicated otherwise ‘the government’ refers to the Labour government during this period.

lies with the HE sector in that it has the opportunity to make stronger local links with SMEs yet often fails to do so.

The knowledge exchange activity under investigation is a leadership and management programme for owner-managers of SMEs designed, developed and delivered by a department within a university in the North-west of England and is discussed in more detail below. The knowledge exchange work of this department has assisted over 1500 SMEs³ since 2001 whilst also developing strong collaborations with government bodies such as the Regional Development Agency and business intermediaries.⁴ This work has facilitated an in-depth understanding of the needs of SMEs and what interventions can provide meaningful support. It has highlighted that working with the owner-manager (or a decision maker) on their own development and the strategy of the business had a definite impact on the business's bottom line.⁵ In this sense the leadership of the owner-manager⁶ is seen to have an impact on the performance of the business. The management and leadership capability is thus a key factor in SME survival and growth. Similarly, one of the government's key aims as outlined in the Skills White Paper is to improve leadership and management capability: "Effective leadership and management are key to the development of competitive businesses" (DfES, 2003, chapter 2, 2.14). Elsewhere the government identified the need to take action to address regional management capability, not only because it affects performance and productivity of individual companies, but also because it impacts on the ability of business leaders to address the skills gap by managing wider skills development within these businesses (Framework for Regional Employment and Skills Action, 2002).

This paper focuses on the exchange of knowledge *between* HEIs and SMEs which has been funded and supported by government. Accordingly, it is less about technology transfer, research and development or regional development (other authors have addressed this in more depth, see Lendel, 2010; Adams et al., 2001; Benneworth, 2004⁷) and more about the triple helix concept as discussed by authors such as Leydesdorff and Etzkowitz (1994) and Etzkowitz (2003; 2008) summarised by Etzkowitz (2008, p. 294) as: "the interaction in university-industry-government." In the UK this is an increasing and dynamic role of HEIs and given the recent change in the funding structure of (English) universities the exploration in this paper of how to successfully work with the triple helix model is of importance.

The LEAD programme

LEAD is a leadership and management programme which takes place over a ten month period in cohorts of up to 25 owner-managers of SMEs throughout the Northwest of England. It has been supported with funds from the Regional Development Agency since 2004 in order to stimulate regional economic development through the growth of SMEs by developing the

³ Within the Northwest, SMEs represent 98% of all businesses, with micro-SMEs constituting 89% of this figure (Small Business Service, 2006).

⁴ The knowledge exchange work has predominantly been supported through funding from the European Regional Development Fund (ERDF), HEIF and through the Northwest Regional Development Agency, to name a few.

⁵ A number of different types of formal and informal evaluations have been carried out in conjunction with the requirements of the funding bodies. These have taken place since 2001 and support this finding.

⁶ In relation to the LEAD delegates the terms 'owner-manager' and 'leader' are used interchangeably. Delegates do not often view themselves as leaders and it is a label which educators and policy makers have used to describe SME owner-managers.

⁷ Additionally, much of the literature has focused on technology transfer in the USA. This activity has a longer history than in the UK and, inevitably, more research carried out to investigate it (see Decter et al., 2007).

leadership of the owner-manager. Regional Development Agencies have taken an active role in building bridges between business and universities across the regions and nations (Lambert Review, 2003, p. 13) and the LEAD programme is a case point. It was designed and developed in dialogue with the Regional Development Agency, which part-funded it, to respond to the lack of leadership provision for SMEs. Specifically, the programme was set up to benefit the region's micro companies by providing access to the highest quality leadership development to individual owner-managers. The SME sector is under-represented in training programmes with most, if not all, other training programmes being designed for and marketed to managers within larger companies (Smith and Peters, 2006). The main objective of the programme was to raise regional productivity, competitiveness and skills by addressing issues of leadership within the context of the SME sector generally and in particular within the owner-manager's business.

The programme adopts an integrated learning approach to develop both the owner-manager and the business through master classes, coaching, action learning, learning and reflection sessions, business shadowing and business exchanges. A virtual learning environment supports communication and peer-to-peer interaction between everyone involved in LEAD (delegates and facilitators⁸) when not physically together.⁹ Each element of LEAD is designed to meet the needs of SME owner-managers as learners and over the last six years the programme has changed in response to an ongoing dialogue with the delegates and the research data. In brief the following key learning processes are central to the design of LEAD:

Taught learning

The taught aspects of the integrated learning model focus largely on the master classes. However, as LEAD is based on a social view of learning the master classes are designed to create awareness and potential re-evaluation of key areas shaping the business. The emphasis is on stimulating awareness of key issues relating to business and leadership. Delegates are asked to identify 'golden nuggets' from the taught elements and to share these with one another (i.e. pertinent points that they take away).

Observational learning

SME owner-managers have limited opportunities to learn how to develop their leadership capabilities (see Kempster, 2009). The integrated learning model provides multiple opportunities for the delegates to observe each other's leadership practices as well as meeting inspirational leaders from different sectors to learn about their own leadership styles.

Enacted learning

Delegates are encouraged to try out what they are learning through enactment. The emphasis across LEAD is on developing their critical thinking skills and learning techniques such as open questioning to use when addressing problems, issues and opportunities in their

⁸ The term facilitator is used to represent other terms such as teacher and lecturer for instance but is more appropriate in a networked learning setting whereby 'facilitators' are part of the connectivity or as Jones and Steeples (2002) argue, 'the guide on the side' rather than 'the sage on the stage'.

⁹ There have been a number of platforms used for the virtual learning environment but the aim has consistently been to provide a shared, confidential space for the LEAD delegates. It was initially used for posting course information and organising social events but the delegates also use it to discuss the content of master classes, to ask one another for business help and to continue their action learning set discussions online in a confidential space.

workplace (and inevitably their personal lives too). Enacting the learning helps them to refine the observed and taught learning in action.

Situated learning

To ensure the enactment is context relevant and not artificial for the delegates it is essential that the delegates take their learning back to their own organizations. They are encouraged to try out new ways of working and leading. Situating the learning in their businesses ensures that it has relevance and applicability.

Figure 1 shows the integrated learning model and the different components or ‘learning interventions’.

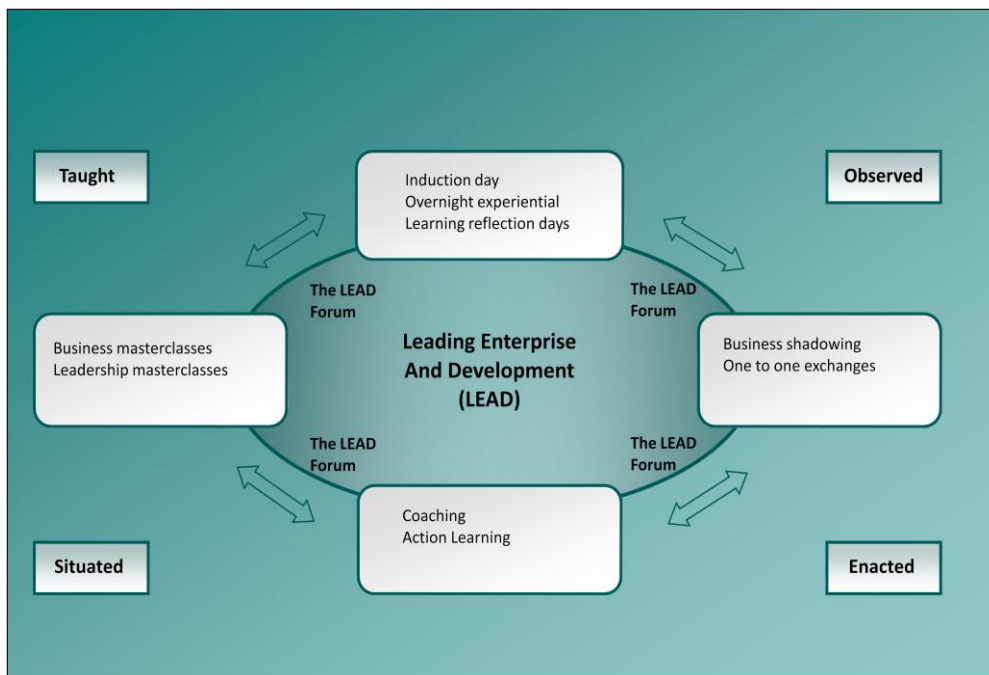


Figure 1: The LEAD integrated learning model

Networked Learning as an approach to Knowledge exchange

LEAD is a networked learning programme and as such is underpinned by a set of pedagogic assumptions which are not dominant in most HEI programmes. As such networked learning can be considered as an innovative approach to learning. The term ‘networked learning’ draws on theories supporting social learning and social constructionism in relation to technology-supported management education which promotes connections between learners and resources (see Goodyear et al., 2004; E-Quality Network, 2002). Networked learning is based on a social theory of learning, whereby learning constructed between members of a peer learning community. The pedagogy of LEAD as a networked learning programme is also influenced by situated learning theory (see Lave and Wenger, 1991), whereby learning is situated or embedded within activity. Learning arises from participation in a community and gaining recognised membership within that community (see Lave and Wenger, 1991). The activity for the delegates on the programme is their own work practices as owner-managers of SMEs. In other words the learning they experience is always situated back into their own contexts. The approach itself is considered as an innovative teaching method drawing on participative pedagogies through collaborative learning. Hodgson (2009) makes the link

between situated learning theory and management education arguing that becoming a member of a community can be interpreted as:

“...learning through participation in the pedagogy and curriculum of a given educational programme. Through this participation ‘students’ learn how to be a participant or member of a given knowledge community and acquire the language and an identity that is recognised by that community” (p. 131).

In terms of networked learning this paper specifically refers to the definition of networked (management) learning as drawing mostly on theories supporting social learning and social constructionism in relation to technology-supported management education. The *E-quality in e-learning Manifesto* presents a working definition of networked (e)learning:

“Networked e-learning refers to those learning situations and contexts which, through the use of ICT, allow learners to be connected with other people (for example, learners, teachers/tutors, mentors, librarians, technical assistants) and with shared, information rich resources. Networked e-learning also views learners as contributing to the development of these learning resources and information of various kinds and types” (E-Quality Network, 2002, p. 5).

Recently, these authors have called for a re-visit to this manifesto and definition (Beaty et al., 2010) but the definition is used here to show the perspective used in relation to LEAD as a networked learning programme. Further, LEAD is based on the relationship between teachers and learners, itself based on collaboration and co-construction of knowledge rather than on that of expert and acolyte (E-Quality Network, 2002, p.6). Such a collaborative and participative approach to learning relies on the dialogical creation of meaning and construction of knowledge, as discussed by Hodgson and Watland (2004, p.126) which is a key asset that new communication technology affords to management learning. However, this does not mean that technology determines such an outcome, rather the pedagogy that underpins the approach encourages participation; ICTs can support this but will not achieve participation on their own. Parchoma and Dykes (2008, p.5) address this and argue: “networked learning and communities can provide unique opportunities to use technology to enhance, *not* replace, sound pedagogy” (emphasis in the original). Greener and Perriton (2005) argue that networked learning opens up new avenues in pedagogy enabling communities of learners to come together. LEAD enables the community of SME owner-manager learners to come together and responds to research which shows that owner-managers experience loneliness and isolation (see Smith and Peters, 2006).

LEAD is rooted in a participative pedagogy and as a networked learning programme it aims to support participative approaches to learning as proposed by Hodgson and Reynolds (2005, p.11). LEAD encourages the participants to learn from each other, relying less on the tutor(s) as the “sage on the stage” but as the “guide on the side” (Jones and Steeples, 2002, p.9). It supports a social view of learning that relies upon peer-to peer learning to make sense of the taught, situated, observed and enacted learning as shown in figure 1 above. The integrated learning model requires the delegates to engage with the ideas that come from the different elements of LEAD and to develop skills and capabilities relevant to their own situations back in their businesses. In Communities of Practice terms it enables them to address problems and share knowledge (Wenger, 2004). The circulation of knowledge within LEAD comes largely from the delegates and their experiences of running small businesses. This pedagogy includes learner-directed styles of learning and interactive approaches for the delegates to

learn from each other and the knowledge they have about running small businesses. This paper draws upon two pieces of research which have explored the learning process within and the impact of LEAD on the participating SMEs which are now discussed.

Methodology

This paper draws upon two research projects. The first is a six year qualitative study into how small business owner-managers learn leadership through the innovative learning approach of networked learning. This study includes an in-depth ethnography of one cohort, including a virtual ethnography within the online discussion forums which forms part of the integrated learning model. The ethnography is supplemented by interviews from delegates across six cohorts. Additional data such as emails and the researcher's reflections were also part of this research project. Specifically, the research explored how owner-managers learn leadership through networked learning as a knowledge exchange initiative. The second research project is a qualitative study with 60 delegates from different cohorts exploring the impact of the programme in terms of innovation within their companies. The data include 60 transcripts of mid-course interviews with participants and 35 end-of course questionnaires. These were manually processed for evidence of types of innovation as understood in the context of the firm, as occurring in a number of different ways both within a firm and in its customer or client-directed products and services:

“Innovation...is generally understood as the introduction of a new thing or method ... Innovation is the embodiment, combination, or synthesis of knowledge in original, relevant, valued new products, processes, or services” (Luecke and Katz, 2003, p.2).

Using Actor-network theory (ANT), Situated Learning theory (SLT) and Communities of Practice (CoP) theory as theoretical frameworks and lenses for analyses, this study enriches our understanding of the effectiveness of knowledge exchange through networked learning. Specifically it helps to understand how SMEs as learning communities, engaged with the university, co-construct knowledge viewing knowledge and learning as socially situated concepts. This paper explores the enabling nature of the relationship between SMEs, government and HEIs through the networked learning approach.

Findings and Analysis

The paper focuses on, in depth, three main findings from the research. Firstly, knowledge exchange in dialogue between government, the university and the SMEs, secondly, innovation in knowledge exchange: the networked learning approach, and, thirdly, innovation as a result of leadership development. These findings contribute to our understanding of the role of government and HEIs in creating a culture of knowledge-based SMEs. Accordingly, the paper concludes with a set of principles or recommendations which can be used to inform the triple helix model between government, HEIs and SMEs.

1. Knowledge exchange in dialogue between government, the university and the SMEs

Transferring the knowledge and skills between universities and business and the wider community increases the economic and social returns from this investment (Lambert Review,

2003). LEAD was created in dialogue with three stakeholders. First, with the government and policy which identified leadership provision as lacking for the SME sector. Second, with the SMEs in order to understand their ever changing needs and how, with little opportunities to learn leadership (see Kempster, 2009), a peer learning community could be built to enable leadership learning. Understanding the needs of owner-managers and the approaches needed for them to learn leadership is a social context was fundamental in developing an open and responsive relationship with the government as the funding body, the owner-managers as recipients and the HEI under investigation. Third, with the university department which was able to respond to the government and SMEs through its absorptive capacity (Cohen and Levinthal, 1990) and ability to create a programme that was and is both robust in its pedagogy and flexible enough to move with the needs of the delegates in response to and in dialogue with them.

Research has shown that on joining LEAD, SME leaders feel isolated and lack the opportunities to learn leadership that their larger counterparts would provide (Smith and Peters, 2006). LEAD is based on a social theory of learning through which the delegates would learn leadership from shared opportunities. The salience of their conversations and their experiences underpinned the participative pedagogy and they learnt with and from each other. Understanding how to create a learning community that is of benefit and relevance to its members has helped to understand better the learning process of SMEs within networked learning.

One way of understanding the complexities of the relationship between government, HEIs and SMEs is through the sociology of translation, a key element of Actor-network theory (ANT). The approach details the processes of enrolment rather than the resultant framework. Callon (1986) uses translation to show how an actor-network is created and how actors assume certain roles within the network in relation to one another. It is through this understanding that the actor-network starts to develop and the social structures comprising both social and non-human entities are shaped and consolidated. Fox (2005) uses ANT in relation to networked learning and HE, in particular the process of 'translation' in elite universities. In his analysis Fox suggests that people are enrolled by teachers and translated into 'learners' with the teachers acting as Callon's (1986) 'obligatory points of passage' (Fox, 2005, p. 106). ANT explains how networks come into being and can help contribute to our understanding of how a learning network emerges and is sustained. It shows the importance of the primary actor and the need for the network to be stabilized. In this case the primary actor is seen to be the university working in collaboration with the government and the SMEs. The primary actor establishes itself as the obligatory passage point between other actors and the network and becomes indispensable to the network. As such it imposes and stabilizes the identity of the other actors it seeks to enrol, i.e. regional SMEs and works to convince other actors and negotiate their terms of involvement. Law (1996, p. 3) points out that enrolment is precarious; links and nodes in a network do not last all by themselves, they need constant maintenance work. Although the actor-network is dynamic the focal actor seeks to stabilize and align the interests of the actors and this is one of the mechanisms for doing so.

Applying the process of translation to the triple helix model of engagement / knowledge exchange between HEIs, SMEs and government can help to inform thinking about how to build meaningful initiatives and relationships between these three actors. Building these in dialogue between each actor is an innovative approach and one which this paper recommends for knowledge exchange activities. A practical outcome of translating SME owner-managers

into university LEAD delegates has an impact of the leadership capabilities of the delegates and an increased innovative capacity of the business, which is the third finding.

2. Innovation in knowledge exchange: the networked learning approach

This paper argues that networked learning has not been considered as an approach or method of knowledge exchange between SMEs and HEIs. Additionally, there has been limited empirical work focusing on SMEs and networked learning. Networked learning has gained increasing academic and practical significance since the *E-quality in e-learning Manifesto* was published in 2002. Over the same period of time the knowledge exchange agenda also gained significant momentum¹⁰. The networked learning approach still has some way to go to fully realise its potential within and by the HE sector. Further, it has been underutilised as a learning approach within the knowledge exchange practices of UK universities. The Lambert Review (2003) recognises that there is no single model for a university to undertake knowledge transfer/exchange activities, stating that:

“...some take in knowledge transfer and technology transfer activities, while others keep the two activities separate and have established specialised companies to manage technology transfer. The appropriate approach will vary depending on the needs of local business, the mission of the university, and the focus of the local economy” (p.50).

There is little evidence from policy to show that networked learning can be seen as a viable method of knowledge exchange between SMEs and HE institutions. However, this empirical work supports the case for using networked learning when supporting SMEs through HEIs. Networked learning is underpinned by collaboration and participation and can support pedagogies which promote peer-to-peer learning between SME owner-managers. Although there is little written within policy about how networked learning can support regional development the networked learning literature can provide guidance on the design of networked learning for knowledge exchange (and thus regional development). This can help educators understand how a well thought out and pedagogically sound programme can achieve appropriate learning outcomes for SME leaders. Ponti and Hodgson’s (2006) work is a case in point. They propose that networked (management) learning can be relevant for SMEs since it recognizes the importance of social relations and the associated relational dialogue that underpins knowledge and innovation in specific business contexts. They recognise that relationship building is developmental and starts with establishing knowledge and understanding of each other’s views and histories. Hodgson and Reynolds (2010, p.598) suggest that networked learning provides a space for dialogue and interaction that supports the co-construction of knowledge, identity and learning. This is important for SME owner-managers learning how to develop their leadership skills. A key challenge here lies in the ability to design interventions that are cost effective and reflect the heterogeneity of micro businesses (Devins et al., 2005, p. 547). Similarly, Ponti and Hodgson’s experience of networked learning with SME managers showed that putting their principles into practice was a challenge. They state:

¹⁰ It should be noted that many universities were engaged in knowledge exchange before the government developed an agenda for it. Certainly, the IEED has been engaging with and supporting businesses since its inception in the mid 1990s.

“The participants involved seemed to be caught between two conflicting positions: on one side, they appreciated the opportunity to participate in a collaborative setting and to network with their peers; on the other side, they often called for a more structured and instrumental approach to solving their business problems” (2006, p. 6).

Utilising support from HE in general and through knowledge exchange initiatives is an ongoing challenge for both HE institutions and SMEs. SME leaders often do not know that business support is available or that programmes are being developed to meet their needs. Also, SMEs quite often do not engage with more traditional forms of education. The delegates enrolled on LEAD all have different levels of education. Similarly, universities are learning how to engage with SMEs effectively. Ponti and Hodgson (2006, p. 7) argue that despite the challenges involved, networked learning holds great promise for management learning in SMEs. The findings from this research suggest that networked learning is an approach that can achieve effective business support to SMEs. Networked learning focuses on connections between resources and people rather than delivery of taught programmes. SME leaders can utilise this approach in order to receive real-time business support. However, using networked learning as an approach to knowledge exchange needs consideration. Beaty et al. (2010, p. 591) propose that introducing networked learning into the curriculum and institutional educational practice:

“needs to happen not in isolation of the educational values and theory underpinning networked learning but rather alongside and informed by them.”

If networked learning is to be used for knowledge exchange then the principles presented below can be used to inform the design of programmes that can have relevance for SME leaders.

Knowledge exchange itself is not prescriptive. HE institutions have been encouraged by successive governments to develop activities whereby the exchange of knowledge can benefit businesses and lead to regional development. There are no hard and fast rules of ‘doing’ knowledge exchange. Many activities are influenced by the funding bodies which support this type of activity.¹¹ Being part-funded by the Regional Development Agency, LEAD had to adhere to a set of criteria around where the businesses can geographically come from, the size of business which can receive this funded support and whether funding is available depending on how much funded support that particular business has had in the past three years. This paper aims to contribute to understanding better how HE institutions can support SMEs through knowledge exchange. Just as Jones (2002) asks whether there could be a policy for networked learning, this paper asks whether there can there be a policy for knowledge exchange using networked learning?

The literature on small businesses highlights the isolation and loneliness experienced by owner-managers. The collaborative and participative approach to learning underpinning the leadership networked learning programme responds to these feelings. Through an integrated learning model the programme relies on the dialogical creation of meaning and construction of knowledge through peer-to-peer learning. This paper adds to our understanding of how and

¹¹ ERDF for example has strict criteria on what types of businesses to engage with and has sets of outcomes that each project has to deliver which focus on the number of jobs safeguarded and created as a result of the project. Lancaster university management school has worked with over 1000 SMEs through approximately £10m of ERDF funding over the last nine years.

why participative pedagogies enable peer-to-peer learning and how to design for networked learning as an innovative mechanism for knowledge exchange.

Design for networked learning is becoming increasingly significant for HE institutions. This paper has shown that networked learning with and for SMEs through HE institutions is an under-explored area. Further, networked learning as a means of knowledge exchange is even less explored. Beaty et al. (2010, p. 586) urge us to share our practice of networked learning to enable the implementation of rich forms of the approach. This research has shown that networked learning is a viable way of supporting SMEs through knowledge exchange initiatives. Additionally, the findings can help in the design of knowledge exchange and the design of networked learning for SME leaders.

3. Innovation as a result of leadership development

Kerr and Lockett's (2007) work shows that although LEAD focused on the leadership development of the owner-manager the impact on the business was equally significant. Their work shows strong evidence of internally-focused and externally-focused innovation. Internally, the research shows that the delegates innovated in leadership practices, management structures, HR-related practices and internal systems. Externally-focused innovation was shown through new ideas, products/services and practices. Kerr and Lockett state:

“Significantly, participants attributed the generation of these innovations to: i) the effects of whole programme osmosis; ii) the diffusion of ideas; iii) the dissemination of pedagogy and practices; iv) the affirmation of current and future actions; v) sharing and learning with peers; vi) facilitating insight” (2007, p. 2).

A Situated Learning reading of learning within LEAD can help us to understand why and how increased innovative activities take place within the businesses involved in the programme. Specifically this paper draws up the situated learning theory as presented in Lave and Wenger's (1991) seminal work which uses legitimate peripheral participation to characterize the process by which newcomers become included in a Community of Practice. The newcomers learn from old-timers, increasing their legitimacy within the group and moving from peripheral participation to full participation as they identify more with the Community of Practice in question. Legitimate peripheral participation encompasses:

“[the] process of being active participants in the *practices* of social communities and constructing *identities* in relation to these communities” (Wenger 1998, p.4, emphasis in the original).

Using legitimate peripheral participation as a lens for analyses it becomes apparent that the LEAD delegate's identity and behaviour changes with increased participation. Joining the programme as owner-managers of small businesses they often comment that at the beginning they do not feel like leaders, rather, they feel they are impostors. With no management team or hierarchical structure, and sitting at the head of the company in the 'leader' role, the owner-manager has nobody around them to share thoughts with (Smith and Peters, 2006). As they engage with the integrated learning model the delegates learn from one another. Through their participation they learn how to become a delegate which, in turn, develops their own

leadership capabilities and results in an increased identification with being a leader. Remarks such as, ‘*I know that I am a leader*’ or ‘*I have the confidence now to be a leader*’ are common. This increased identification with leadership has had a direct impact on the businesses resulting in an increase in innovation within the company.

Figure 2 below shows that increased identification with leadership can be seen almost as a by-product of learning to be a delegate. Legitimate peripheral participation is linked with learning to become a delegate (rather than explicitly becoming a leader). Increased identification with leadership happens as a result of fuller participation as a delegate. Becoming LEAD delegates influences their practice of running small businesses and how and where they are accountable. Communities of Practice have a regime of mutual accountability which becomes part of the practice (Wenger, 1998, p. 81). As SME leaders the delegates are not only accountable to one another but are also accountable to their businesses. LEAD is a leadership programme so if it achieves its pedagogic aims of developing leadership capabilities, we should accordingly expect to see an increased identification with leadership. This paper argues that it is through the process of learning to be a delegate and becoming a fuller participant that a shift in identity towards leadership happens which in turn has an effect on the innovative capacity of the company. In CoP theory, change in identity is inevitable with movement away from the periphery.

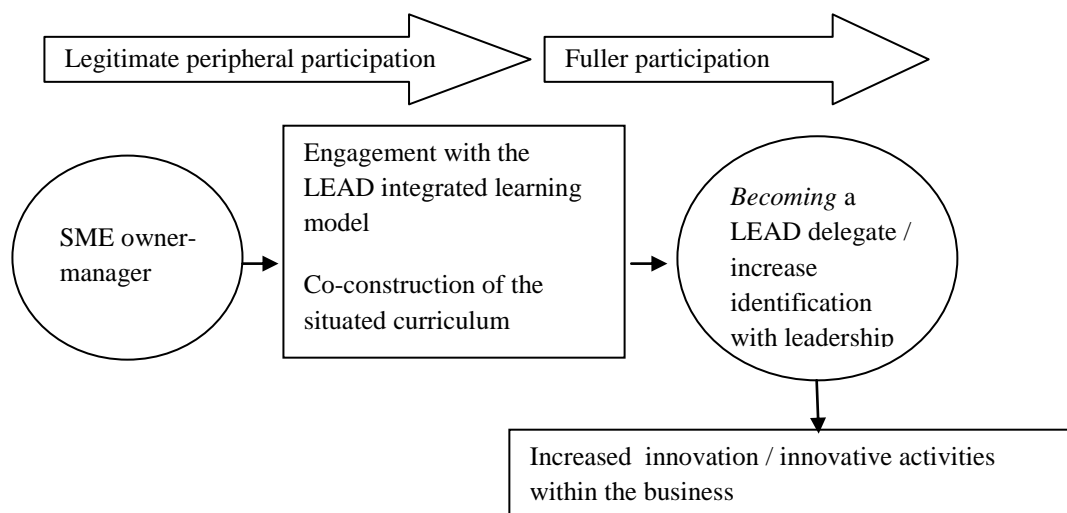


Figure 2: Shift in identity through legitimate peripheral participation leading to innovation

The programme’s main focus as an intervention is on leadership and business development in SMEs. Developing the leadership of the owner-manager has led to a number of innovations within the delegates’ companies as reported by Kerr and Lockett (2007). The theoretical framework of situated learning theory and legitimate peripheral participation helps to understand that becoming a LEAD delegate increases identification with leadership which has an effect on the innovative capacity of the business.

So what does this mean? Wider impact and recommendations

The main objective of the LEAD programme was to raise regional productivity, competitiveness and skills by addressing issues of leadership within the context of the SME sector generally and in particular within the owner-manager's business. Evaluation of LEAD has shown that on average the small businesses increased their turnover by £200k per annum (Wren and Jones, 2006). This evaluation has also shown, amongst other things, that delegates felt more confident in taking risks, had a more motivated workforce, had better delegation skills and feel they had developed their leadership skills. The impact of the programme led to a large scale £15m roll out across 15 providers (including Lancaster university) in Northwest England¹² and Wales¹³ delivering LEAD to 1750 SMEs by 2015.

Design for networked learning is becoming increasingly significant for HE institutions (see Fox, 2005). This final section presents a set of design principles which are targeted at networked learning for SME leaders. However, they can also be used generally to inform networked learning and can be used as a basis for thinking about knowledge exchange initiatives with SMEs through HE. These design principles support and build on the work of Ponti and Hodgson (2006). This paper has shown that networked learning with and for SMEs through HE institutions is an underexplored area. Further, networked learning as a means of knowledge exchange is even less explored. Beaty et al. (2010, p. 586) urge us to share our practice of networked learning to enable the implementation of rich forms of the approach. The set of principles presented here responds to this call.

Learning principle / recommendation	
<i>Create opportunities to address the isolation and loneliness felt by SME leaders</i>	Networked learning programmes such as LEAD, designed for owner-managers/leaders, should focus on creating opportunities for the learning community to meet (physically and/or virtually). Creating time and space for conversations to develop with a focus on their businesses and issues/challenges/opportunities they are facing will help to alleviate the feelings of isolation and loneliness. Being networked with like-minded people who are 'in the same boat' will help the learning community to share their experiences and learn from one another.
<i>Be mindful of nurturing a 'trusted' environment which is confidential where the participants can ask for help and share salient knowledge</i>	Trust plays a major part in the learning community's circulation of knowledge and its ability to allow for the members to ask for help and share their own business issues. Facilitators in networked learning are part of this and should be mindful of (perceived and real) concerns around confidentiality. Many SME leaders are involved in networking and may know one another or each others' clients, and trust and confidentiality are essential. Trust is integral to enabling real issues to be shared with the group and for the members to approach these issues with critical reflection and respect for one another.

¹² See <http://www.businesslinknw.co.uk/Beagoodleader/LEAD/Pages/default.aspx>

¹³ See <http://www.swan.ac.uk/business/LEADWalesProject/>

Learning principle / recommendation	
<p><i>Be aware of the situated curriculum and how to work effectively with it</i></p>	<p>All learning communities will develop ways of behaving which can be through of in terms of a situated curriculum (see Gherardi et al., 1998). In networked learning the facilitators act more as the ‘guide on the side, not the sage on the stage’ (Jones and Steeples, 2002, p.9) and are part of the co-construction of the situated curriculum, i.e they are part of helping the delegates learn how to become LEAD delegates thus increasing their salience with leadership and having an effect on the innovation within their businesses. The situated curriculum is part of the learner’s identity and of what Fox (2005) identifies as the translation of learners. This design principle advocates that we should understand the importance of the co-construction of the situated curriculum in the learning experience. On LEAD, the delegates participate in the learning interventions and, in doing so, co-construct the situated curriculum which is part of their learning to become a delegate. Cousin and Deepwell (2005, p. 65) argue that a strong example of networked learning would allow blurred boundaries between students, tutors and other interest groups in the learning environment. Ponti and Hodgson (2006, p. 5) note that SME managers can co-construct knowledge with the help of experts and peers through participatory social practices. This is true of SME leaders within networked learning.</p>
<p><i>Support the process of legitimate peripheral participation</i></p>	<p>HEIs and funding bodies need to recognise that learners engage in a process of learning to become learners as well as identifying with what they are learning. This paper has shown that learning how to ‘be’ a LEAD delegate brings them closer to fuller participation through Lave and Wenger’s (1991) account of legitimate peripheral participation. This, in turn, helps them to become better leaders in their own contexts and increases the innovative capacity of the company. Networked learning is underpinned by social theories of learning and the process of legitimate peripheral participation should be expected. It is proposed that learners in networked learning should seek to achieve fuller participation as a learner in that practice. Depending on the focus of the networked learning programme they may be reaching fuller participation with another identity also (leadership in the case of LEAD). Facilitators in networked learning should be aware that the learners’ identity changes as they move towards fuller participation.</p>

Conclusions and policy implications

The above principles are presented as a way of thinking about networked learning as a means of knowledge exchange between SMEs and HEIs which is supported by government (policy and / or funding). It is important however to keep in mind that as Wenger (1998, p. 233) argues: “practice cannot be the result of, but instead constitutes a response to design.” The design principles are not concerned with the design of specific activities within networked learning or the design of a technology; other authors have discussed this at length (see Jones

and Dirckinck-Holmfeld, 2009; Goodyear et al., 2001, 2004; Jones 2007). Rather, they are offered as principles for the overall design to aid thinking about how knowledge exchange can use networked learning with SME leaders.

This paper considers the impact of university engagement with SMEs through knowledge exchange which is part-funded by government. This engagement has not only demonstrated economic impact for the SMEs and the region but has helped the SMEs to be more innovative in their own practices. Networked learning still has some way to go to fully realise its potential within and by HE and it has been underutilised as a learning approach for knowledge exchange. This paper contributes to our understanding of how networked learning can be used in HE as an innovative and effective mechanism for knowledge exchange to work with SME leaders in impactful ways. An ongoing challenge lies in the in which knowledge exchange activities are funded and implemented which calls for a need for government to allow for HEIs to develop initiative underpinned with sound pedagogies which are responsive to the diverse needs of SMEs.

Directions for further research

This is an original piece of research and has provided fertile ground for a policy for knowledge exchange through HE institutions using networked learning. To allow for interpretive flexibility (Bijker, 1995) in delivery of knowledge exchange at the same time as ensuring that meaningful engagement and knowledge exchange take place, further research can consider what is needed to enable this to happen further. Additionally, in the UK the future of this activity through HE remains unclear. At the time of writing the role of universities was receiving much political attention, with tuition fees set to increase.¹⁴ Additionally the Coalition Government¹⁵, which came into power in 2010, announced the scrapping of Regional Development Agencies which have supported knowledge exchange through HE.¹⁶ The function of universities working with their own local and regional companies through knowledge exchange initiatives has an uncertain future. Arguably, this research is even more pressing and relevant as it can inform policy in the area of university business support and knowledge exchange.

¹⁴ See www.independent.gov.uk/browne-report

¹⁵ The Conservative Party and The Liberal Democrats

¹⁶ See <http://www.englandsrdas.com/news/qas-on-the-future-of-rdas>

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