

**The Role of Cognitive Social Capital in Entrepreneurial Learning:
A Comparison of Nascent Entrepreneurs**

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Abstract

As a concept that is rooted in many different social sciences including sociology, education, politics, economics and management, social capital encompasses a number of dimensions. Nahapiet and Ghoshal (1998) suggest that social capital has three distinct dimensions: structural, relational and cognitive. Cognitive social capital is created through communicative language, narratives and codes which influence perceptions of meaning and reality in relationships. This research compares the discursive statements of nascent entrepreneurs based in the high-technology and creative sectors. The two groups had recently completed two very different entrepreneurship training courses. Qualitative data provides an account of how cognitive social capital is created through face-to-face and electronic communication. We demonstrate that entrepreneurial learning extends well beyond the classroom. Making effective use of communication, both face-to-face and electronic, is an essential element of that learning process. The data demonstrate that those experienced individuals (trainers/lecturers) responsible for organizing particular entrepreneurial courses can open-up wider networks and learning for their students.

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Introduction

Social capital is an asset that resides in the web of relationships between and among actors and collective units. As Putnam (1995) argues, classifying the different dimensions of social capital is a high priority due to its multidisciplinary nature and multi-facets. In their influential paper, Nahapiet and Ghoshal (1998) suggest that social capital has three distinct dimensions: structural, relational and cognitive. The importance of social capital to entrepreneurs is increasingly acknowledged in the literature (Anderson and Miller, 2003; Myint *et al*, 2005; Ullhoi, 2005; Yli-Renko *et al*, 2001). Studies are also beginning to emerge which examine the links between cognitive social capital and entrepreneurship (Liao and Welsch, 2005). In the literature, a clear distinction is made between different levels of entrepreneurial learning and the effective transformation of experience (Corbett, 2005). Furthermore, interaction with other people (where entrepreneurs reflect on their experiences from networks) develops co-operation for higher level learning (Söderling, 2003). Earlier network studies (Larson and Starr, 1993) do not consider the prerequisites for learning which shape the various stages of the entrepreneurial process.

Direct face-to-face communication is regarded as an essential medium for communicating rich meaning whereas electronic communication is less rich because actors are unable to clarify ambiguous situations (Daft and Lengel, 1986). Others suggest that electronic communication is central to the completion of many managerial tasks (Markus, 1994; Yates and Orlikowski, 1992). The research provides an account of how cognitive social capital is created through face-to-face and

electronic communication. We adopt a similar approach to Neergaard et al (2005) and argue that a more qualitative understanding of the social interactions of entrepreneurs will provide a more comprehensive analysis of cognitive social capital. The overall aim of this study is to analyse entrepreneurs' discursive statements related to their perceptions of face-to-face and electronic communication. In analysing transcribed interview dialogue we interpret the constitution of meaning that the entrepreneurs themselves enact in their use of face-to-face and electronic mediated communication through which important resources are acquired. We use this analysis to suggest that cognitive social capital is an essential concept for understanding entrepreneurial network learning. The research project was designed to examine nascent entrepreneurs who have recently participated in two distinct training courses: Manchester Science Enterprise Challenge (MSEC) and the New Entrepreneurship Scholarship (NES). The MSEC postgraduate programme combines the process of business incubation with formal education to simultaneously develop a scientific idea and business strategy with a view to taking a technology-based concept to market. NES is designed to encourage regeneration by stimulating enterprise. The programme adopts an action-learning approach to assist nascent entrepreneurs from socially deprived areas develop their business ideas.

The paper begins with a brief review of recent literature associated with entrepreneurial learning. This is followed by a discussion of links between entrepreneurial networks and social capital. We then integrate ideas from literature associated with social capital and information richness theory (IRT). Following a discussion of the research methods we present data on six nascent entrepreneurs. In our discussion, we demonstrate the significance of cognitive social capital for

providing resources (information, knowledge, finance) to those attempting to establish sustainable new businesses.

Learning for Nascent Entrepreneurs

Approaches to entrepreneurial learning are influenced by the theoretical orientation of those responsible for creating teaching programmes. According to Cope (2005) there are three theoretical perspectives which dominate entrepreneurship research. First, the earliest attempts to explain entrepreneurial activity came from an economic perspective (Say, 1845). Economists continue to have a strong influence on theoretical explanations of entrepreneurship (Casson, 1982; 1990). Second, personality theories of entrepreneurship have been particularly influential in North America (Kickul and Gundry, 2002). Third, Gartner (1985) has primarily been responsible for developing the behavioural perspective. Corbett (2005) also focuses on the entrepreneurial process to examine links between learning and the identification of new business opportunities. According to Shane (2000) the reason why some individuals are better able to identify and exploit opportunities can be explained by three concepts: knowledge, cognition and creativity. Prior knowledge and experience means that individuals have very different abilities to recognize business opportunities. In other words, knowledge asymmetries are important in explaining who does and who does not become an entrepreneur. Corbett (2005) argues that research should focus on the mechanisms by which information is acquired and transformed (learning) as individuals attempt to exploit opportunities.

Successful entrepreneurs learn through the transformation of their experience into new and useful knowledge. However, Corbett also acknowledges that individuals have

different learning modes: converger, accommodator, diverger and assimilator (Kolb, 1984). These four learning styles are mapped onto a model of opportunity recognition (Lumpkin et al, 2004). What this revised model illustrates is that effective entrepreneurs must adopt different learning approaches at different stages of the start-up process. Hence, individuals who are more flexible and adaptable in their learning styles are more effective in identifying and exploiting new opportunities. Armstrong (2001:527) argues that most research shows that entrepreneurs are generally not risk takers. Therefore, we need to develop a better understanding of the mechanisms by which information is acquired and transformed (learning). Making use of Kolb's (1984) experiential learning theory (ELT) Corbett (2005:479) attempts to explain 'how individuals acquire and transform information during the process of opportunity identification and exploitation'. Corbett (2005) acknowledges that while ELT provides insight into entrepreneurial learning there are still opportunities to draw-in other learning theories from the organizational behaviour and strategy fields. Corbett (2005) also argues that the focus should be on how individuals store and use information to exploit opportunities. Our research attempts to inform how entrepreneurs utilize their experiences and transform them into a 'knowable action'.

Politis (2005) develops a conceptual framework based on the distinction between entrepreneurial experience and entrepreneurial knowledge. The framework has three main elements: the entrepreneur's career experience, the transformation process and the entrepreneur's knowledge in terms of opportunity recognition. Politis also uses the work of Kolb (1984) as a basis for understanding the process of entrepreneurial learning. In focusing on the transformation of career experience into knowledge, Politis draws on the well-known distinction between exploration and

exploitation (March, 1991). That is, the entrepreneur can decide to exploit their pre-existing knowledge or they can choose new actions based on new knowledge. Clearly, the outcomes of these two transformation processes are likely to be different in terms of opportunity exploitation. As Politis (2005) goes on to argue, career orientation will have a major impact on the mode of transforming experience into knowledge. This argument is based on the idea that individuals have different motivations and hence have different career anchors (Schein, 1987). Hence, the entrepreneur's career orientation will be strongly related to their mode of knowledge transformation (Politis, 2005: 415).

Entrepreneurial Networks and Social Capital

Social capital, located within the structure of relations between and amongst actors, represents resources available to those belonging to particular networks. Coleman (1988) examines ways in which social relations constitute useful resources for individual actors. The core of social capital is that goodwill drawn from family, friends, workmates and other acquaintances provides a range of valuable resources including information, influence and solidarity (Sandefur and Laumann, 1998). Distinctions between open and closed networks are central to the emergence of social capital as a conceptual tool for understanding entrepreneurial behaviour. Burt (1992) argues that sparse social networks mean the inherent openness creates many 'brokerage opportunities'. Those influenced by 'structural hole theory' believe that the consistent norms fostered by cohesive networks limit opportunities open to individual actors (Burt *et al*, 2000). In contrast, Bourdieu (1985) suggests that social capital is mobilised as a result of resources which accrue to groups or individuals from institutionalised relationships which are the outcome of durable networks.

Similarly, Coleman (1988) posits that network 'closure' based on strongly cohesive social ties creates an environment which facilitates trust and cooperative relationships. Johanson (2001) argues that resolution of the structural hole theory (SHT) versus social capital theory (SCT) debate has been attempted through application to differing situations. The former applies in cases typified by competition (Burt, 1992) and the latter where cooperation is more appropriate (Walker *et al*, 1997). According to Gargiulo and Benassi (2000) attempts to reconcile the opposing perspectives (SHT/SCT) are based on the principle that benefits accruing from network structure may be contingent on exchanges between actors (Podolny and Baron, 1997). While Davidsson and Honig (2002) suggest the two forms of social capital which they describe as 'bonding' and 'bridging' are actually complementary.

Larson and Starr (1993) stress the importance of networks and networking for nascent entrepreneurs (also see Starr and Fondas, 1992:73). The network model developed by Larson and Starr (1993) has three stages which are important for the acquisition of the critical resources needed to start a new business. As pointed out by Kanter (1983) these resources include information, technical knowledge, capital, physical resources, as well as symbolic support such as endorsement, political backing, approval and legitimacy. Stage One, focusing on essential dyads; relationships including family, friends and business contacts provide the basis for any entrepreneur seeking resources. Effective entrepreneurs are able to concentrate on the critical dyads by 'culling' those unlikely to provide sufficient resources to the venture. Stage Two, converting dyads to socioeconomic exchanges is concerned with changing 'one dimensional' (social or economic) exchange processes into two dimensional exchange processes (social and economic). This conversion process is based on social exchange

theory (Homans, 1958; Gouldner, 1960; Blau, 1964) which proposes that dyads develop through stages of increased commitment and reward. Thus as the socioeconomic relationship develops:

‘..the exchange process is characterized and structured by trust, norms of reciprocity investment in mutually beneficial goals, and organizational interdependence. Trust includes a variety of dimensions: confidence that a best effort will be made and the proprietary information will be protected, and faith in the veracity and good intentions of the exchange partners’ (Larson and Starr, 1993: 7).

Stage Three, layering the exchanges, as activities becomes more formalised in terms of functions such as finance, marketing, production and service delivery then there is an added level of complexity to network relations. Furthermore, the development of organizational routines means that there is increasing interdependence with a number of key dyads such as customers and suppliers helping ‘stabilize’ the network. Increasingly, relationships are not entirely reliant on the entrepreneur’s interpersonal connections but become part of repeated exchange cycles which typify established organizations. Although Larson and Starr do not use the term social capital their model confirms the importance of entrepreneurial networks. Entrepreneurs inform themselves by networking and this process helps with the identification, articulation and evaluation of business opportunities (Aldrich and Zimmer, 1986).

Hite and Westerly (2001) develop a series of propositions related to links between social capital and business growth. In essence, their argument is broadly in-line with findings related to studies of ethnic entrepreneurs. As businesses grow in size and entrepreneurs gain in experience the character of network ties change from ego-centric to organizational links (Hite and Westerly, 2001:278). During the start-up phase ‘identity based’ ties which are homogenous and strongly embedded in the entrepreneur’s pre-existing social relationships predominate. There is a gradual

evolution to ‘calculative networks’ (Williamson, 1993) in which ties based on purpose and function are more significant than those based on identity (Hite and Westerly, 2001). In other words, there is a shift from strongly cohesive networks to linkages which are typified by what Burt (1992) describes as ‘structural holes’. This more extensive and heterogeneous network opens access to a wide range of knowledge and resources which are essential for any business to grow successfully. Learning to exploit their networks is a key stage in the entrepreneurial process. However, Larson and Starr (1993) do not conceptualise how entrepreneurs mobilize experience to extend their network boundaries to access additional resources.

Social Capital and Information Richness Theory (IRT)

According to Nahapiet and Ghoshal (1998) social capital has three dimensions: structural, relational, and cognitive. Different personal and social relations mean that entrepreneurs have different economic resources and different networking strategies (Lechner and Dowling, 2003; Witt, 2004). Moreover, entrepreneurs’ background can influence the creation of social capital; entrepreneurs from socially deprived settings and previously employed in low growth firms stay low growth (Taylor *et al*, 2004). Entrepreneurs from well educated backgrounds in high-tech fast growing firms employ dynamic networking strategies (Yli-Renko and Autio, 1998). Social capital (especially accessing social networks) and entrepreneurs’ growth capabilities are therefore linked.

The structural dimension is concerned with actors’ membership of social networks (Gargiulo and Benassi, 2000). The distinction between strong and weak ties is particularly important in understanding network relationships (Granovetter, 1973; Coleman, 1988). Network ties activated through frequent and repeated social

interaction are central to members of an efficient and competitive organisation (Ghoshal and Bartlett, 1990). Actors are also connected to others with whom they have little emotional engagement and these relationships are labelled weak ties. Burt (1992) argues that sparse social networks consisting of diverse weak ties mean the inherent 'openness' creates brokerage opportunities. Brokerage concentrates attention on the accessing of linkages through diverse contacts individuals otherwise would not have had contact. At its most basic level, an important thread of structural social capital is the overall configuration of strong and weak ties.

The relational dimension encourages normative behaviour based on trust, reciprocity, obligations and expectations (Adler, 2001; Adler and Kwon, 2002; Nahapiet and Ghoshal, 1998). In an organisational context, social capital represents the relational anticipation of value attainable by individual actors through social networks (Tsai, 2000). According to Coleman (1988) norms provide symbolic gestures of goodwill which are most commonly found in cohesive networks. Trust is regarded as the most important norm because it facilitates 'the exchange of resources and information that are crucial for high performance' (Uzzi, 1996:678). Reciprocity is concerned with the repeatability of social interaction (Coleman, 1988); obligations present a binding property for developing social interaction (Tsai and Ghoshal, 1998); expectations focus on the anticipation of future exchanges between actors (Nahapiet and Ghoshal, 1988).

Cognitive social capital refers to the capability of actors to develop mutual interpretive frameworks based on language, codes and narratives (Nahapiet and Ghoshal, 1998). Adding a cognitive dimension to social capital fosters the development of shared interests and values (Fernandez, 2002; Tymon and Stumpf, 2002). Individual network

actors have shared language and codes that are the basis of efficient verbal exchanges and communicative linkages (Watson and Papamarcos, 2002). Narrative, organisational stories and myths can also help the exchange of information by providing informality to interaction (Baron and Markman, 2000). Meaningful contexts of communication amongst actors co-ordinates motivation, enhances trust and develops co-operation in accordance with individual interpretive understanding (Nofsinger, 1991). Communicative language not only transmits information it also influences perception of meaning and reality in relationships (Youndt and Snell, 2004). Previous research has shown that the overall structure and relational norms of social networks determine the diversity of resources (Granovetter, 1992). Strong ties can provide trustworthy resources (Coleman, 1988) and non-redundant ties (structural holes) allow actors to connect with other networks (Burt, 1992). However, little is known about individual actors' capabilities when creating cognitive social capital. In this sense, the influence of communicative language, codes and narrative has not been explored empirically.

Face-to-face communication creates a 'bond' between actors facilitating the storage and retrieval of information (Zack, 1993). Some authors posit that electronic communications can increase opportunities for seeking diverse knowledge and facilitate the flow of useful information (Kavanaugh and Petterson, 2001; Wellman et al, 2001). Ideas from information richness theory (IRT) help provide a more integrated understanding of entrepreneurs 'meaningful contexts of communication' in the development of cognitive social capital. Moreover, IRT addresses the extent to which face-to-face and electronic communication convey rich contexts of meaning which are important for the creation of cognitive social capital. Incorporating IRT helps reveal how meaning is created and the way in which communicative language, codes and

narratives assist entrepreneurial learning. IRT is concerned with social actor's choice of communication medium (Daft and Lengel, 1986). The theoretical focus provides a conceptual framework for ranking communication mediums in terms of their richness. The critical element of IRT is the carrying capacity which entails classifying communication medium as rich or lean in terms of their capacity to transmit information and understanding (Daft and Lengel, 1986). Face-to-face communication is effective for generating shared meaning in organisations by transmitting rich social cues (O'Sullivan, 2000; Harwood, 2000). In contrast, electronic mediated communication is not considered as rich for conveying social cues and facilitating shared meaning (Zack, 1993). Whilst face-to-face communication is most appropriate for clarifying ambiguities, electronic mediated communication is less effective for clarification of complex statements (Lee, 1994).

During face-to-face communication the attitude of actors can become more positive (Daft and Lengel, 1986). In terms of effective face-to-face communication actors are primarily concerned with enacting shared meaning. Zack (1993) suggests that such meaning provides an awareness of the likely value of face-to-face communication with a particular partner. During face-to-face communication a number of social factors and behavioural properties convey meaning (Nofsinger, 1991; Daft and Lengel, 1986). More recently, theorists believe electronic communication provides information benefits from participating and completing tasks on-line (Wellman et al, 2001; Macpherson et al, 2005). Co-operation derived from actors sharing similar interpretive frameworks elucidates the importance of the cognitive dimension of social capital. This paper adopts a qualitative approach to examine the nature of NES and SEC entrepreneurs' informal social network relationships. This research reports

entrepreneurs' actual experiences when communicating face-to-face and electronically. The research concentrates on answering the following question: what is the role of cognitive social capital in the development of nascent entrepreneurs?

Researching Cognitive Social Capital

Quantitative methods are widely used to identify the structural, relational and cognitive dimensions of social capital (Tsai and Ghoshal, 1998; Liao and Welsch, 2005). We argue that there is a need for qualitative approaches to understand the dynamics of social interaction and the meaning individuals attribute to the level of experience. Ragin (1994:84) posits that qualitative research can be useful in advancing theory: 'this shift requires an elaboration and requirement of the concepts that initially prompted the study or the development of new concepts'. In this paper we consider how cognitive social capital contributes to the creation, development and maintenance of social relations. This is done by examining links between the dynamics of 'meaningful communication' and entrepreneurial learning. Furthermore, this research draws on the discursive statements of entrepreneurs giving them voice (Neegaard and Madsen, 2004) to explain the impact of language, codes and narrative on learning to use their social networks.

Sampling Procedure

The study, into the importance of cognitive social capital, examines six nascent entrepreneurs from two very different HEI-based training programmes. All the entrepreneurs had ventures that were less than two years old at the time of interview. The respondents were selected according to the procedure of purposive sampling (Strauss and Corbin, 1990). A unique feature of purposive sampling is that it

facilitates comparisons between different groups (Ragin, 1994). Table 1 illustrates brief biographical details of the six nascent entrepreneurs. The NES (new entrepreneurship scholarship) group completed a six month training programme in MMUBS and their business are categorised as creative services. The MSEC (Manchester science enterprise challenge) group graduated from a postgraduate programme at the University of Manchester and are engaged in technology-based businesses. All three of the MSEC entrepreneurs had progressed from undergraduate science degree to a Masters degree in enterprise (Table 1). The three NES scholars had obtained a diploma for completion of their training course but Anna was the only one with a degree (BA in French). In addition, the MSEC entrepreneurs appeared to have higher levels of knowledge and skills obtained outside the education system. The NES entrepreneurs had some relevant experience but it was associated with practical skills rather than the more technical knowledge of the MSEC group.

TABLE 1 HERE

Data Collection and Analysis

Semi-structured interviews were used to establish the entrepreneurs' perceptions of their modes of communication and access to resources. This 'conversation with a purpose' (Sapsford and Jupp, 1996) allows the researcher to develop a number of pre-determined themes and to pursue emerging themes during the interview. Each interview lasted at least two hours; this material was then transcribed and coded resulting in the identification of five categories (Table 2). Each of the codes was linked to either perceptions of face-to-face (Face) or electronic communication (Electronic). Coding allowed us to identify common patterns and differences between

the samples (Ragin, 1994). Quotations were then selected to illustrate variation in the perceptions of the NES and MSEC entrepreneurs. It is important to note that we do not claim that this analysis is value-free (Denzin, 1994). Rather, our objective is to use the data to demonstrate the key role played by cognitive social capital in providing nascent entrepreneurs with access to the resources necessary to develop economically sustainable businesses.

TABLE 2 HERE

Entrepreneurs and Social Capital

Entrepreneurs with a scientific background may display higher level learning than their counterparts in creative sectors (Armstrong, 2001). Consequently, this section summarises similarities and differences between the communication strategies of NES and MSEC entrepreneurs. We intend to demonstrate that there are strong links between patterns of communication, the creation of cognitive social capital and effective entrepreneurial learning. As pointed out by Rae (2000) learning is a continuing process as entrepreneurial experiences are transformed into ‘action’ and ‘doing’.

(1) NES Entrepreneurs

Face-to-face language

Face-to-face communication transmits eye gaze, hand movements and facial expressions. Mutual eye-contact between social actors indicates attention, support and acceptance of meaning. In addition, gestures can emphasise or accentuate verbal utterances. For example, Anna (NES) stated that eye-contact influences her enactment of meaningful communication and decisions about whether or not to bond with an actor. She also enacts meaning when contacts make certain hand gestures which help

her to recognise cues when talking. A combination of eye-gaze and hand movements helps Anna differentiate between approval and disapproval which helps bonding:

‘I think its just being able to gauge peoples manner really, I think it’s easier to see the way they approach life. I prefer to have, you know, the hand movements and the eye contact, if you were there to finalise a deal it would be nice to have that closure’.

Disclosure allows the entrepreneurs to refuse unreasonable requests, display uncertain feelings as well as the ability to initiate or terminate conversations. This is especially pertinent where certain expectations and reciprocity are common amongst the entrepreneur’s contacts. Disclosing information can reveal a preferred style of communication enacting meaning which is open and encourages commitment. Anna suggests that communicative language is a basis of self-disclosure through frank and meaningful talk:

‘If I feel people are quite open and honest about things they do I can warm to that. I can understand and see if someone’s taking the time to make sure that I am following or that I’m keeping up with their train of thought’.

Face-to-face codes

Harry (NES) notes his ability to enact meaning from body language as well as pursuing distinctive verbal lines of inquiry when engaging in bonding. More particularly, the timing of non-verbal body language helps Harry understand the affective state of face-to-face talk with regards to enacting codes for a change of conduct. Body language emphasising the cognitive condition of social capital can help actors forge bonds when communicating face-to-face. Harry established codes of conduct and created ‘buildability’ through dialogue:

‘You can actually tell by the way they talk to you and the way that they gesture when they’re interested in what you’re saying. Face-to-face gives you that element of knowing, you know, once it gets to a certain point where you can close the deal, then you can introduce different lines of communicating something else’.

Face-to-face narrative

Narrative language in the form of stories and anecdotes can create a friendly atmosphere. Anna (NES) sees the use of anecdotes and stories as an ‘ice breaker’ which

complements the discursive statements discussed above. Certain informal stories are used by Anna during social interaction so exchange partners regard them as a type of bonding mechanism. The use of narratives is likely to attract favourable changes in the attitudes of other social actors, which may be the basis of more beneficial interaction:

‘I do actually really like anecdotal evidence and stories...It’s an ‘ice breaker’, it can help you access things, for example when you are trying to do a close or something like that’.

Electronic communication

While many entrepreneurs routinely use electronic communication to create and maintain relations, complete tasks and seek advice, NES participants reveal a negative attitude towards e-mail. Harry has a tendency to use only face-to-face communication to create meaning during social interaction. He acts in accordance with a clearly recognised set of motivations for face-to-face communication when seeking to create bonds with other actors:

‘If you are doing it electronically its all ‘yes’ or ‘no’ and it’s all too clinical. It’s a bit too clinical for what I like, the only way you can get the work done is to talk to people face-to-face, show them what you do and show enthusiasm’.

Michelle (NES) reveals a limited belief in her skill to create an enduring positive experience from electronic talk. She avoids using e-mail to carry out the most mundane tasks such as sending client specifications to her casual staff. Rather, she prefers meaningful communication through face-to-face talk. The lack of immediate feedback and social presence can have a significant negative impact on the potential resources and goodwill available through virtual communities:

‘I am still quite scared of it and I’ve sent so many e-mails to people in the past and had nothing back for ages. I think face-to-face is a lot more important because people do remember you a lot more, it is quite easy to forget just an e-mail that has been sent’.

Accessing network contacts

A strong cohesive network is important for the NES entrepreneurs in their preference for using face-to-face communication. Rich social cues and visual presence of face-to-

face talk enacts the most meaningful communication. Bonding created through face-to-face talk repeats effective communication between strong contacts. In the case of Harry, he makes personal visits to see Tony and Paul (friends/former colleagues) who are integral for obtaining resources. The combination of body language, disclosure, openness and narrative enact most meaning. The NES entrepreneurs actively seek out situations when face-to-face communication is accessible for accruing advice and knowledge. In other words, Harry provides a unique example of creating cognitive social capital when speaking face-to-face about printing queries:

‘Tony and Paul are happy for me to pop in anytime and speak to them directly face-to-face for advice or to look at something, which is a big help. I can call in if I have any queries on copyrighting or promotion things like that’.

The bonding aspect of cognitive social capital produced through face-to-face communication ensures a ‘failsafe’ mechanism. Michelle (NES) visits her sister-in-law Vikki to seek advice. Thus, her actions maximise face-to-face communication with a strong contact to build an important bond for trustworthy and reciprocal exchange. Her father actively encourages her to seek advice and support from family members. The tie between herself and Vikki remains strong and there is a feeling of solidarity and support created through face-to-face talk:

‘I constantly have to visit and seek advice from, well she reminds me and it’s probably a very good thing, my sister-in-law who is an accountant. She offers to help me look through my files, accounts and books just to make sure that its all in the right order’

(2) MSEC Entrepreneurs

Face-to-face language

Adam (MSEC) revealed similar experiences to Anna (NES); the combination of eye contact and changes in facial expression enact meaning within his sensemaking processes. Actors who are particularly facially expressive when interacting may signal

a change of conduct. Adam enacts meaning from body language in the form of eye gaze and facial expressions which encourage contacts to be 'franker' and 'more open'.

'I mean you might see someone lifting their eyes for example...there might just be a subtle change in their expression and then that's when you need to tease something out of them for example...its taking that sort of visual cue to say, well look do you actually mean yes'.

Victor (MSEC) also reveals a preference for open exchange through face-to-face interaction. Moreover, self-disclosure relates to the amount of information provided by the entrepreneur. Honesty and openness in self-disclosure provides more informative meaning for the entrepreneurs. Victor also revealed that discussions about sensitive thoughts and feelings help access deeper sensemaking. Disclosure can prove more meaningful than a shallow, restrictive form of face-to-face communication:

'I think there is no need to hide anything, how can people advise you if you don't tell them what you're really thinking...if you just tell people what you think you get a much easier and quicker response'.

Face-to-face codes

Similar to NES respondents, Victor (MSEC) favours a code of conduct which is adhered to by contacts. Informal talk at the start of a meeting can encourage friendliness and enthusiasm. The level of bonding between actors increases as a result of casual and informal chat which may attract favourable exchange and provide the basis for more beneficial interaction. Victor sees the use of informal and casual talk at the very start of a meeting as integral for favourable face-to-face conversation:

'I think a lot of the time they're quite genuine in the fact that they don't need to get straight to business because they're experienced enough to know that they can be informal and they won't damage the relationship'.

Face-to-face narrative

Adam (MSEC), when asked to describe the use of narrative, indicated that the level of bonding helped encourage commitment for exchange. He has strong self-beliefs and a desire to establish social relationships quickly and efficiently. Jokes and stories help

him to obtain important information from receptive social contacts. Adam sees the use of humorous clichés and stories into face-to-face communication which provide bonding or ‘buildability’:

‘You know, basically you have certain jokes and stories that you know make people laugh and puts them at ease, again it is just something that intrinsically just happens’.

Electronic communication

An important difference evident in the MSEC entrepreneur’s discursive statements is the motivation for enacting meaningful communication electronically. The interpretive framework that MSEC entrepreneurs enact when creating cognitive social capital are richer and more diverse than their NES counterparts. The ability to enact more diverse contact is a direct benefit of electronic talk. Bruce (MSEC) reveals a personal motivation for meaningful communication *via* e-mail. He evaluates potential bonding directly against his learning from experience and personal skill acquisition:

‘E-mail is fine, the only reason I prefer face-to-face is that there is less misunderstanding which leads to risk, personally I don’t think there is much more it can achieve over e-mail. I can probably achieve all the things you mentioned through any medium’.

MSEC entrepreneurs are proactive in implementing electronic communication into their daily routines. This is very different to the approach adopted by the NES group. For example, Victor is not spatially or temporally restrained and actively engages in electronic talk to complement face-to-face talk. It appears that a positive attitude to electronic communication creates an approach for establishing online chat that is efficient and effective:

‘Well a lot of internals with the board are electronic and quite a few outside also. If it is something that can be done electronically then I will. Doing it electronically saves us a lot of time and resources.’

Accessing network contacts

When Harry (NES) sought advice from Tony and Paul (friends/former colleagues) he preferred face-to-face communication to interpret visual cues and frank and open

language. Victor (MSEC) also obtained information, advice, financial and physical resources through Richard a close business contact. A brokerage opportunity developed from the face-to-face communication. Richard, a strong network contact, put Victor in contact with two investors who provided increased benefits. The bonding aspect of face-to-face communication between Victor and Tony facilitates brokerage opportunities. With face-to-face communication creating a meaningful context the bridge to the two investors was spanned:

‘I mean Tony who we see often was quite influential in seeing us get additional contacts, office space, financing and all sorts of other resources like partners and investors who can provide us with the things we need’

The main difference between the two groups is the enactment of meaningful communication *via* e-mail. Victor (MSEC) can reach separate clusters of network contacts through online communication. The lack of social cues and presence when communicating electronically does not restrict the enactment of meaning. Victor’s numerous electronic contacts enrich his ability to accrue information from speculative communication with diverse weak contacts. Multiple contacts that exist online provide him with a spatially diverse virtual network of resources and information:

‘I think you can seek much more work because of e-mail, it does not reduce the volume of work, it probably increases it...I guess a lot of the time when communicating it is just gut instinct, you just see the information there as information to get’.

E-mail communication creates a complementary interpretive understanding through which the MSEC entrepreneurs access information. Adam (MSEC) sees these sparse online ties important for the transfer of new and diverse forms of information. The technology-based mechanisms for creating and maintaining virtual contact with diverse ties provides a range of additional benefits. Adam can readily access cutting-edge market and industry information which is important for the development of his business. Virtual contact with diverse and physically distant ties complements the enactment of meaning from face-to-face communication:

‘The Myers Group which we are signing up to as a small business is essentially an online resource for marketing managers in London to find creative agencies, so we are not just tentatively starting at the moment, we are a bit ahead of schedule. We had not planned to start doing this yet but things have been really going well so we thought why not’.

To summarise, connections between enacted meaning and accessing network ties emerged from the empirical analysis. Strong ties were predominantly maintained face-to-face by both groups and created of a number of key benefits. Sparse ties were predominantly accessed by MSEC entrepreneurs through electronic communication which provided a number of complementary benefits. Similarities and differences between the two groups are shown in Table 3. It appears that MSEC entrepreneurs, similar to NES entrepreneurs, access cognitive social capital from strong and cohesive ties and face-to-face communication. The traditional means of face-to-face communication creates a social presence, immediate reference and feedback and closeness which MSEC entrepreneurs’ value.

TABLE 3 HERE

Discussion: Entrepreneurial Learning and CSC

Traditional ‘learning theories’ (Burgoyne and Stuart, 1976; Kolb, 1984) are based on the individual rather than the social dynamics associated with the acquisition and utilization of new knowledge. The importance of social factors in learning is increasingly acknowledged in the literature. Much of this interest focuses on the concept of ‘communities of practice’ which has become a key explanatory factor for both individual and organizational learning. Lave and Wenger (1991:35) draw attention to the fact that learning is situated within everyday work activities and is ‘an integral part of generative social practices in the lived-in world’. David Kolb, widely criticized for concentrating on individual forms of learning, now acknowledges the ‘relational aspects’ of conversational learning (Baker *et al*, 2005: 412). This trend has

also developed in the area of entrepreneurial learning with acknowledgement of the importance of 'networks' as sources of information and knowledge (Taylor and Thorpe, 2004). The significance of entrepreneurial networks has also been widely acknowledged in the social capital literature. As discussed above, much of the debate centres on distinctions between open and closed networks. Strong ties (closed networks) are regarded as central to the creation of trust and reciprocal obligations which form the basis of access to resources for new entrepreneurs (Davidsson and Honig, 2002). The opposing view is that open networks, typified by 'structural holes', provide access to much more extensive resources (Burt, et al, 2000). Others suggest a more evolutionary process as new entrepreneurs rely on strong ties in the early stages of business start-up but gradually extend their network as their need for resources increases (Hite and Westerly, 2001). The argument proposed in this paper is that 'cognitive social capital' is a key factor for those entrepreneurs attempting to develop a dynamic business with the potential for long-term growth. Establishing new network relationships depends, at least in part, on the extent to which 'meaningful communication' facilitates understanding between actors. Developing this mutual 'interpretive framework' based on communicative language, codes and narratives is the essence of cognitive social capital (Nahapiet and Ghoshal, 1998).

By comparing nascent entrepreneurs from two very different training programmes we examine the contextual influences on cognitive social capital. Drawing on the entrepreneurs' discursive statements, we extend the work of Larson and Starr (1993) by illustrating the role of cognitive social capital in the transition between the three stages of their network model. Stage one, focusing on essential dyads, refers to contacts with family, friends, friends of friends, colleagues and close acquaintances (Granovetter,

1973). Our research shows that cognitive social capital is created, by both groups, in close social networks where the entrepreneurs predominantly use face-to-face communication. We add to the work Nahapiet and Ghoshal (1998) by identifying body language as an important element of cognitive social capital (CSC). Face-to-face communication creates rich social cues and meaningful contexts through body language such as eye gaze, facial expressions, hand movements and posture. This is in addition to the verbal elements of CSC identified by Nahapiet and Ghosal (1998): language which indicates self-disclosure, openness and honesty; narratives including stories, jokes and anecdotes. Meaning created through face-to-face social interaction is similar for the MSEC and NES entrepreneurs during the transition to stage two (Figure 1). Bonding factors based on body language, verbal language, codes and narratives, allow entrepreneurs to begin the process of convert social relations into economic relations.

As we demonstrate in Figure 1, supplementary stocks of cognitive social capital are created in sparse social networks where entrepreneurs exploit weak ties and structural holes by means of electronic communication. Diverse network ties are used by the MSEC group to provide access to knowledge and information which extends their learning capabilities. Whiles NES entrepreneurs incrementally develop their face-to-face communication they do not engage in the layering process associated with the wider search for information and knowledge (stage three). The MSEC entrepreneurs begin to build a more extensive network of contacts during stage two. In particular, they make extensive use of electronic communication to establish a wide-range of virtual interactions which provide access to an extensive range of resources. Meaning enacted during electronic interaction helps the MSEC entrepreneurs complete projects on-line, gather diverse information and maintain relationships that are not spatially

constrained. Electronic communication provides a set of tools for extending the network boundary into stage three: 'the complexities of multiple spheres of exchange and the sheer number of communications required demand that more people be included' (Larson and Starr, 1993:10).

Important differences in the entrepreneurs' backgrounds and socialisation influence their perceptions of communication media and approach to learning. Perhaps because NES entrepreneurs lack human capital and technological expertise they are resistant to the use of e-mail. In contrast, MSEC entrepreneurs regard electronic communication as a key tool for accessing information and resources. Hence, there are remarkable differences in the aspirations of the two groups. MSEC entrepreneurs actively seek out brokerage opportunities through use of e-mail. Their routine behaviours also relate to their aspirations for development of their business ideas. As Politis (2005) argues, entrepreneurs can exploit their pre-existing knowledge or they can choose to access new knowledge. Although our sample is limited, it does demonstrate clear differences between NES and MSEC nascent entrepreneurs in terms of willingness to extend their network relationships and operate on 'the edge of their competences' (Kanter, 1983). The three NES scholars had very limited horizons in terms of enhancing their abilities and in the objectives for developing their respective businesses. Network relationships were typified by strong ties to family and close friends and there was an aversion to the use of IT to open-up those networks. Some of that reluctance could certainly be attributed to a lack of human capital and unfamiliarity with electronic communication.

We suggest that there were also important institutional factors which discouraged the NES scholars from adopting a more proactive approach to the acquisition of new

knowledge and the development of wider network relationships. The NES course concentrates on building competences based on the preparation of a realistic business plan. In fact, qualifying for an end-of-course payment (£1500) depends on the ability to 'sell' their business concept to the NES programme team. Perhaps as a consequence of this focus on developing a realistic idea which will find favour with the evaluators of their business plan, NES scholars have limited ambitions. They appear content to *exploit* existing knowledge as the basis of their new businesses. Hence, the limited scope of their business ideas which hardly extended beyond self-employment. MSEC institutional policy clearly lays out the process of helping students move seamlessly from study to start-up. An incubation unit provides support in terms of office space, computer facilities and administrative assistance. This 'space' also provides regular opportunities for networking with other students, nascent entrepreneurs and senior staff from the MSEC programme.

The MSEC students were much more ambitious both personally and for the scope of their business ideas. That is, the MSEC group were constantly *exploring* the environment for new contacts, information, ideas and opportunities. Similarly, drawing on the work of Larson and Starr (1993) we can see that the NES scholars continued to rely on essential dyads primarily consisting of family and friends. In contrast, MSEC students had fully embraced stage two (ties to socio-economic exchanges) and were actively engaged with stage three (layering the exchanges). For example, Adam's electronic communication with the Haymarket Group has become a key linkage to a much wider range of contacts. These online contacts are important sources of market information and knowledge for his rapidly growing business. Cognitive social capital was a key element in this process of expanding the entrepreneurs' learning networks.

As Larson and Starr (1993) indicate, the exchange process was typified by reciprocity and faith in the good intentions of the new partners. In other words, students trusted those that they made contact with because they were introduced by senior members of the MSEC programme. Similarly, external actors (such as the Haymarket Group) were willing to engage with MSEC students because of their relationships with key members of staff. Hence, staff acted as 'trusted bridges' into more extensive networks which provide nascent entrepreneurs with access to a wide range of resources (Zhang *et al*, 2006). To summarise, the transformation of experience into knowledge (Politis, 2005) was very different between the two groups.

FIGURE 1 HERE

Conclusions

We combine social capital theory (Adler and Kwon, 2002) and information richness theory (Daft and Lengel, 1986) to demonstrate how nascent entrepreneurs can improve their learning by accessing a wider range of networks. This study shows that cognitive social capital helps illustrate how effective interpretive frameworks are created by means of rich language, codes and narratives from face-to-face communication. The discursive statements of both groups (MSEC/NES) reveal a preference for face-to-face communication when creating meaning. From a network perspective, this cognitive social capital facilitates entrepreneurs' movement between the various network stages. Another interesting outcome of the study was that electronic communication provided additional meaning between diverse social contacts (NES). One could argue that stocks of cognitive social capital can be supplemented by utilizing electronic communication. However, the NES programme provides little formal support on completion of the training programme. While there are some networking opportunities these tend to be *ad*

hoc and informal (Taylor *et al*, 2004). In addition, there are few opportunities to link into a broader range of social contacts which could offer wider experience, expertise and knowledge. In contrast, the MSEC community is different because of focus provided by the incubation unit. MSEC entrepreneurs also reveal a more reflective process regarding the implementation of actions and frames of reference for making electronic contact with weak ties. NES entrepreneurs lack reflection related to their internalised experiences regarding the value electronic communication. Quite simply, the NES programme does not provide the formal support and reinforcement which encourages e-mail contact and online communication:

‘Like I said with regards to e-mails and things like that it is something that people do use. I think though, like you said, about confidence and things like that, there were people in the class that were not confident and just doing a few classes in confidence isn’t going to change their personality over night’ (Michelle, NES)

We demonstrate that entrepreneurial learning extends well beyond the classroom. Effective entrepreneurs are those who adopt an ELT approach (Kolb, 1984; Corbett, 2005) to the acquisition and exploitation of knowledge. Making effective use of communication, both face-to-face and electronic, is an essential element of that learning process. Hence, as Corbett (2005) points out, entrepreneurs can learn from their experiences and transform them into knowable actions. We also suggest that these electronic network linkages can provide nascent entrepreneurs with the knowledge to exploit their business ideas in a more effective manner (Shane, 2000). Our data demonstrate that those experienced individuals (trainers/lecturers) responsible for organizing particular entrepreneurial courses can open-up wider networks and learning for their students. These ‘bridges’ provide access to more extensive contacts for the capture of knowledge, information and resources. Findings suggest that the levels of cognitive social capital can be supported by institutions as well as informal social network contacts to support learning and growth. What the NES tutors do not do as

effectively as the MSEC tutors is open up the opportunities and mentoring for e-mail and on-line communication. So entrepreneurs' cognitive social capital seems to be dependent on managing social interaction between these key elements: perceptions of communication media, human capital and structures of course content.

To summarise, we acknowledge the limitations of this study as it is based on a restricted comparison of two very different HEI programmes designed to promote entrepreneurship. Although we have demonstrated clear differences between NES and MSEC entrepreneurs, this was not the primary objective. First, what we have tried to demonstrate is the role of CSC in providing access to resources as entrepreneurs move through the transformation process. Second, we illustrate the importance of electronic communication in providing nascent entrepreneurs with access to supplementary stocks of CSC. Third, we describe the importance of providing those entrepreneurs with appropriate institutional support via the learning environment as well as staff who can provide access to an extensive range of useful network contacts.

[8100 words]

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Table 1 The Entrepreneurs

Entrepreneur	Sector	Education	Experience
Adam (MSEC)	Software and business development consultancy company	GCSEs, A levels, BSC degree, MSC degree	Software consultant and experienced in the application of programming and various multimedia technologies.
Bruce (MSEC)	Electronics design and manufacturing company	GCSEs, A levels, BSC degree, MSC degree	No previous employment, however he is very proficient in designing circuit boards and applying new technology.
Victor (MSEC)	Energy management and consultancy company	GCSEs, A levels, BSC degree, MSC degree	No previous employment, however he is skilled in both product design and consultation when originally devising a business plan for a production firm.
Anna (NES)	Singing and songwriting company	GCSEs, A levels, BSC degree, HND, NES Diploma	Previous employment in administrative roles after her degree and then re-studied for a music HND which encouraged her start-up.
Harry (NES)	Printing design and consultancy company	GCSEs, NES diploma	Previous employment as a manual machine operator at a printing company and was made redundant.
Michelle (NES)	Portable bar service company	GCSEs, NES diploma	Previous employment as a bar tender and waiter at a number of establishments.

Table 2 Coding for cognitive social capital

Perceptions for: <ul style="list-style-type: none"> • Face-to-face social interaction • Accessing face-to-face network contacts; and ; • Exchange of any knowledge, information and resources 	Perceptions for: <ul style="list-style-type: none"> • Electronic social interaction • Accessing virtual network contacts; and; • Exchange of any knowledge, information and resources
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Table 3 Summary of Findings

Entrepreneur	Network Contacts (Face or Electronic)	Perceptions of Cognitive Social Capital	Benefits/Resources
NES and MSEC	Strong and dense ties maintained face-to-face with frequent contact such as: friends, family, business advisors, previous employees, local business community,	<p>Body language such as: eye gaze, hand movement, facial expression</p> <p>Verbal language such as: disclosure, openness, honesty</p> <p>Codes such as pursuing informal lines during social interaction</p> <p>Narrative such as: anecdotes, stories, jokes</p>	Advice, encouragement, personal development, planning information, financial information, physical equipment
MSEC	Diverse and sparse ties maintained electronically with infrequent contact such as: business associates in competing and non-competing organisations, suppliers, industry peripheral contacts, consultancy groups	<p>Enacted meaning for completion of specific projects</p> <p>Spatially diverse and temporal nature to relations</p> <p>Routine behaviour for increasing efficiency of work</p>	Tailored and customised information, formulation of strategy, execution of planning, market and industry information, cutting edge and operational innovation

Figure 1 Extending the Network Model of Organization Formation

