

HARM TILLEMA, GERT J. VAN DER WESTHUIZEN AND
MARTIJN P. VAN DER MERWE

1. KNOWLEDGE BUILDING THROUGH CONVERSATION

Mentoring is about meaning making ...

... we shall be able to interpret meanings and meaning-making in a principled manner only in the degree to which we are able to specify the structure and coherence of the larger context in which specific meanings are created and transmitted. (Bruner, 1973)

Three questions may guide our efforts to discover how people come to grasp conceptual distinctions

- A: How do people achieve the information necessary for isolating and learning a concept?
- B: How do they retain the information gained from encounters with possibly relevant events so that they may be useful later?
- C: How is retained information transformed so that it may be rendered useful for testing a hypothesis still unborn at the moment of first encountering new information. (Bruner: *Beyond the information given*, 1973:132)

Mentoring is an aid to go “beyond the information given” and to gain “knowledge”. Mentors, therefore, must have a conception of knowledge. This chapter explores prevalent conceptions of professional knowledge to appraise their relevance for mentoring. The chapter also lays the foundation for the rest of the book, given the centrality of knowledge in mentoring.

KNOWLEDGE AND KNOWING

The process of learning to become a professional unfolds typically as immersion into the shared knowledge among professionals, intensified by deploying agency in the personal adaptation and renewal of that knowledge in professional practice (Edwards, 2013). Knowledge therefore is the key to entry and retention in the profession. And mentoring is a way to gain access to and provide maintenance of that knowledge during professional practice. How then, is knowledge building for the profession looked upon, and learning for the profession manifested by means of mentoring? This chapter previews different conceptualisations of professional

knowledge and develops a case for looking at knowledge through the lens of professional conversation. Knowledge building is regarded as a discursive activity enacted in interaction between people, aiming for the construction of professional knowledge. Mentoring, then, is supposed to provide the opportunities for knowledge building to flourish.

Professional Knowledge: A Reconsideration

Differing views on the nature of professional knowledge have led to diverse interpretations on how professionals act in, and learn from their practice (Edwards, 2013; Stoll & Louis, 2007; Loughran, 2004). However, most of these views on knowledge fall short, as will be argued, in the recognition of the *distributed* and *embedded* nature of professional knowledge (Eraut, 1997). In our view, being a professional is to use knowledge to produce solutions *for* action, and to continuously build (i.e., renew and improve) knowledge *in* practice. This duality (i.e., “for” and “in” practice) governs the way knowledge is viewed and enacted upon by professionals. In certain views, however, knowledge and action are seen as distinct or disconnected entities, (i.e., in teaching, as described by Day, 1999) and, consequently, the building of expertise is being divided into different acquisition paths, i.e., as it happens in teacher education (Bromme & Boshuizen, 2003). These views typically foster an education or training for the profession recognized by a division between simulation (i.e., training, theory before practice), and participation (i.e., enactment later on “in” professional practice) (Grossmann, 2009; Tillema & Orland-Barak, 2006).

Although several important educational thinkers have stressed the importance of merging ‘*talk and walk*’, i.e., knowledge and action, for instance through advancing notions like: “wisdom of practice” (Shulman, 1987), “thoughtful teaching” (Clark, 1995), “reflection in action” (Schon, 1983) and ‘*situational understanding*’ (Bereiter, 2002), these viewpoints have nevertheless not conclusively resulted in a coherent and widely accepted understanding on how professionals become knowledgeable or develop their knowledge progressively. This inconclusiveness is especially worrying in the case of mentoring which is meant to be a space of professional learning and development. We contend therefore that in mentoring it is important for a mentor to take position on the nature of professional knowledge and to have a view on how it will be acquired in order to warrant one’s role as a mentor. It is also important for a mentor to take responsibility for the way in which the mentoring process is (conceptually) organized. We adopt here a view regarding mentored learning based on the understanding that knowledge in professional action is discursive, i.e., communicative in nature (Edwards & Potter, 1992, 2012; Lehrer, 2002). From this viewpoint we highlight the shortcomings of currently prevailing cognitivist/mental models of knowledge. A discursive or “distributed knowledge” position (Clark, 2004; Edwards, 2013; Bereiter, 2004) on knowledge building argues that knowledge in the profession is displayed and modified in interactional terms and responsive to the conversational setting in which it is being used (Heritage,

2008). *Knowing* instead of knowledge (Bruner, 1973) may thus be a more adequate label to capture the nature of expertise a professional holds. *Knowing* unfolds by way of a *progressive discourse* among professionals and is characterized by *informed participation* (as knowledgeable action in practice situations). Both features presuppose a collaborative building of knowledge in action (Bereiter, 2002; Lipponen, 2000; Sfard, 1998). This notion of discursive practice that coincides with ‘knowing’ (Edwards, 1997; Wiggins & Potter, 2008; Edwards & Potter, 2012) has vivid implications for mentored learning. The view may be best explicated by three axioms:

- Professional learning (or better called, knowledge building in practice) must be regarded as a collaborative enterprise in learning partnerships (Stoll & Louis, 2007) in which conversation acts as vehicle for learning (Tillema & Orland-Barak, 2006);
- Professional perspectives and personal theories (i.e., “meanings”) of individual professionals come into play in such a joint process of building knowledge, and act to embed the shared knowledge (Pajares, 1992), and
- To critically renew knowledge and knowing, professionals need practice- and solution-oriented ways of (mentored) learning which favor a progressive discourse and informed participation through conversation about practices.

(These three axioms represent our response to the three questions Bruner raises – see Introduction to this chapter.)

To further explicate our position, we would like to evaluate the prospects of competing prevailing views on the nature of knowledge and their implications for professional practice, followed by a more explicit account of our argument, that is: professional knowledge building happens in and through conversations.

THE NATURE OF PROFESSIONAL KNOWLEDGE

A View on Professional Knowledge as Individual(ly owned) Knowledge

To date, professional knowledge has been studied for the most part through the paradigm of the individual reflective practitioner (Schon, 1983). This position claims the professional to be a resource who ‘possesses’ personal, implicit knowledge which needs (and can!) be made explicit or less tacit through reflection. Individual reflection, then, is the main vehicle to express and build knowledge which can subsequently be distributed as ‘objects of knowledge’ through exchange and dialogue (or even training – i.e. Korthagen, 2002). Having this ‘objectified’ knowledge is a hallmark of being acknowledged as a professional (Loughran, 2004; Eraut, 1997).

This position on professional knowledge (and knowledge building by way of reflection) raises a number of concerns. For instance, although substantial research on reflection has been conducted over time, it is repeatedly being found that professionals hardly reflect, are even reluctant to do so; and training to reflect does

not seem to assist in developing professional knowledge (Mena Marcos Sanchez & Tillema, 2009, 2010). Studies that advocate reflection as a vehicle of learning are mostly restricted to retrospective accounts of individual professionals who rationalize their past experiences ‘on action’. These accounts constitute, as Kane, Sandretto and Heath (2002) argue, only ‘half of the story’. The other, ‘dark side’ (Orland Barak & Tillema, 2006), however, could disclose that professionals are embedded in real practice settings, and that is where they communicate and work together with their colleagues to construe situational understandings (Bereiter, 2004) of their practice and build these into professional “knowing”. Studies on reflection ‘in concert’, i.e., collaborative reflection in and on real settings (Engestrom, 2001) are rare and would be able to constitute an ‘untold story’ (Mena Marcos, Gonzalez, & Tillema, 2011).

This individualistic reflective perspective forwards the notion that professional knowledge is classifiable and ‘object’ified; that is, knowledge which can be explicated, generalized and transferred. In essence, this view claims that professional knowledge is capable of being transmitted and ‘transferred’ among professionals through telling, explaining and externalization (Simons & Ruyters, 2004). From a discursive or distributed perspective, the limitations of such a cognitivist view of knowledge have been criticized, mainly for not accounting for the collaborative and participative nature of professional life (Edwards, 2011; Van der Westhuizen, 2012).

A View of Professional Knowledge as Collaborative Practice

The view expressed in the reflective perspective, contrasts with the view which identifies knowledge as situational understanding (Bereiter, 2002), i.e., linked to the immediate activities a professional is engaged in (Gilroy, 1993; Edwards, 2011). Such a view accentuates knowledge building from direct practice activity by means of exploration, meaning seeking in context, and most of all, specifies a (re)searching stance to understand activity. Such a view regards knowledge as largely embedded within the situational constraints in which professionals act and from which they learn by informed participation. Through informed participation, a progressive discourse between colleagues becomes possible (Palonen, 2004; Tillema & Van der Westhuizen, 2006). In this way, knowledge is distributed, will acquire its meaning and becomes truly *knowing*. This position proposes that professional learning is collaborative, i.e., shared among professionals who work together. In this sense, the literature often refers to (since learning is occurring in) communities of practice (Wenger, McDermott, & Östman, 2002). The distributed view on knowledge, in opposition to the reflective perspective, highlights an understanding of knowledge as being embedded in practice and involving agency (Tillema & Van der Westhuizen, 2006; Edwards, 2013).

However, within this distributed viewpoint on professional knowledge an important distinction has to be made between two quite different interpretations regarding the nature of learning, having to do with how knowledge is acquired or ‘learned’, and how communities of practice really operate. One way of viewing is

that knowledge is acquired through distributed practice characterized by shared activities, along common goals, and supported by, that is embedded in, situational affordances (Lave & Wenger, 1996). This “situationist” perspective can be contrasted to a viewpoint which stresses a more deliberate and informed practice which perhaps is better labeled as “Communities of Inquiry (Baxton, 2004; Bereiter, 2004; Birenbaum, 2006). This interpretation of collaborative learning does not just look upon participants in knowledge building as “context-embedded” agents who look back on and learn from their work routines as (patterned) social behavior, but sees them act as researchers or designers of their professional environment who will build understandings of their situation to renew their practices (Huberman, 1995; Farr Darling, 2001).

The collaborative viewpoint(s) on professional ‘knowledge building’ (a labeling that exceeds the notion of ‘learning’ – see Bereiter, 2004) is in opposition to an individualistic picture of knowledge construction as reflective thinking, and stresses the complexities and embedded-ness of knowing one’s practice. But at the same time the two viewpoints differ with regard to the inquisitive and deliberate nature of learning entrusted to professionals, which clearly has implications for the nature of mentoring. An illustration with regard to mentoring conversations might show how different these implications are with regard to how each of these perspectives interprets learning, for example, when a mentor asks a mentee to look back on past performance. In a reflective paradigm, verbalizations as a result of reflection most often (Mena Marcos, 2006) resemble a kind of ‘rationalizations’, as participants in a mentoring conversation adhere to and refer back to prior beliefs and general impressions, with little or no mentioning of knowledge that actually occurred or was present at the time of action. As a result, mentor and mentee, while staying in their ‘comfort zone’ may only verbalize knowledge in terms of their own prior conceptions, i.e., “talking the talk” (Tillema & van der Westhuizen, 2006; Mena Marcos & Tillema, 2007). But when mentoring is considered as a collaborative activity, the participants most often have shared experiences as professionals about their own practice, and (afterwards in conversation) take part in a mutual activity to study and scrutinize their practice. Positioning such a joint inquisitive enterprise as a mentoring process would follow most often the specific patterns of research activity, i.e., “talking the walk”, that could specifically articulate and scrutinize current performance against goals or standards set by participants in conversation (Mena Marcos et al., 2009, 2010).

To explicate our position in a more refined way, a comparison is made between the mentioned perspectives on knowledge building in terms of a specific set of criteria which include the nature of professional knowledge, the prospects of developing such knowledge, and the conceptual concerns attached to adhering to each of these views. For clarity reasons we also added another viewpoint, the Transmission View of Knowledge (which was previously dominant but still to be found in professional training, and now heavily criticized conceptually in the literature – Cochran-Smith & Zeichner, 2005 – as an essentialist view – see [Table 1](#)). The more recent discussions

on professional knowledge favour a transformative, constructivist stance on learning (see Hakkarainen, Paavola & Lipponen, 2004; Fenstermacher, 1994). Table 1 summarizes the prevailing views about professional knowledge building:

Table 1. Perspectives on professional knowledge building

<i>Nature of knowledge</i>	<i>Knowledge development</i>	<i>Critical issues</i>
<p><i>Transmission view</i> Knowledge is objective and explicit, ‘out there’ – not constructed but real Knowledge can be made overt as content packages; to be codified in a knowledge base</p>	<p>transmission, and transfer by telling, in-service training, teaching by talking</p>	<p>Is there a fixed body of knowledge, is it value and context neutral; and cross culturally generalizable? How is knowledge transfer accomplished, or even possible between different settings and professionals?</p>
<p><i>A) Reflective knowledge</i> Knowledge is tacit, hidden and not easily articulated therefore it needs explication either (be)for(e) or after action (not “in” action) Knowledge is personal and individual and ‘owned’</p>	<p>Reflective activity on action either (be)for(e) or after action Going from implicit to explicit and vice versa Knowledge externalization is a key to learning</p>	<p>How can knowledge be reflected upon when it is hidden or tacit? And personal? Can knowledge be dependent on the quality of reflection? How can knowledge be reflected upon, and by what method How can explicit or articulated knowledge be used in action or stay connected to implicit direct, immediate action?</p>
<p><i>B) Contextual knowledge or situated cognition</i> Knowledge is embedded in practice, i.e., situated and social; it is being part of a community of practice. It is shared and therefore valid (only) among colleagues</p>	<p>Sharing of collective understanding, Convergence of implicit and explicit meanings among stakeholders. “Peripheral approximation and socialisation” (Lave), Critical illumination</p>	<p>How can knowledge that is shared become externally validated and accepted beyond the individual and situational realm i.e., beyond being local, relative, and subjective?</p>
<p><i>C) Distributed Knowledge</i> Knowledge is distributed or enacted through activity, i.e. not in the mind but rests in situational understandings and is embodied in tools of professional practice</p>	<p>Building knowledge through progressive discourse and informed participation Creating conceptual artefacts or tools for practice</p>	<p>Knowledge is embedded in tools and activity (“by doing”); but who possesses knowledge, who knows what? How ‘knowledge productive’ are conceptual tools i.e., different from routines</p>

(Adapted and modified from Tillema & Orland-Barak, 2006).

In order to appraise the above perspectives on professional knowledge building for mentored learning, and to advance an understanding of the limitations of these views in the practice of mentoring, we have constructed a framework for analyzing the prospects and possibilities of each of these perspectives for professional knowledge building in mentoring. For this purpose we use three criteria to evaluate the respective viewpoints, keeping in mind the overall purpose of mentored learning, that is “climbing the mountain”, or guiding and scaffolding the learner/mentee to become more proficient in his or her professional practice. The three criteria are specifications of the concept of Knowledge Productivity (Tillema & van der Westhuizen, 2006) which refers to an outcome measure of professional learning. By Knowledge Productivity we mean (Tillema, 2004): the competence of a professional to generate, adapt and renew professional tools (‘solutions’) for practice; which rests on the following abilities:

- ‘Problem understanding’ – The ability to attain and appraise relevant knowledge relative to the issue at hand.

As a criterion for evaluation, the question to ask would be: Does a viewpoint on professional knowledge explicate how an increase in knowledge of professionals is achieved? Concretely: Does the learner acknowledge that the issues spoken about during mentoring are relevant and adding to their insights?

- ‘Perspective shift’ – The ability to evaluate and scrutinize different points of view relative to the problem at hand.

As a criterion for evaluation, the questions would be: Does a viewpoint on professional knowledge clarify how perspectives and beliefs are modified and altered, so as to make a closer alignment with new ideas and knowledge possible? Concretely: Does the learner find the ideas, brought forward, acceptable and trustworthy?

- ‘Commitment to apply’ – The ability to utilize and commoditize understandings for professional practice.

As a criterion for evaluation, the question here is: Does a viewpoint on professional knowledge instigate involvement and adoption for a renewal of the learner’s practice? Concretely: Is the learner interested in actively following up recommendations?

These questions are congruent with the three questions put at the start of this chapter.

Using these three knowledge productivity criteria a characterization can be given of each views on knowledge building and in this manner appraise their “knowledge productive” position in relation to mentoring.

A. Reflective knowledge. The Reflective Practitioner perspective emphasizes building of *reflective knowledge*, and in this view it is noted that prevailing knowledge can be viewed as objects of articulation to be subjected to externalization

(Nonaka & Takeuchi, 1994). According to this view, explicit articulation of knowledge is needed, since this will initiate active study (i.e., reflection) on action and will support a personal process of deliberate thought. Articulation or explication (Ruyters & Simons, 2004) triggers the unfolding of what otherwise remains implicit. Tacit knowledge then can be cognitively reinterpreted and framed into a professional more objectified language. In this way, reflections are, in essence, reconceptualizations of action (Kane & Sandretto, 2003), and as such contributed to problem understanding, preferably nurtured by ‘theory’ (Loughran, 2004; Day 1999; Korthagen, 2003). A sharing of ideas among professionals, for instance, in a discussion with colleagues would be in itself not necessarily fruitful and can even be a cumbersome matter, since it easily leads to misunderstandings, and suffers from a likely incommensurability of perspectives and beliefs that the different collaborators hold. In mentoring, however, it is important that shared beliefs in a dialogue lay the foundation for a fruitful talk on learning about practices.

Applying, then, the three criteria on knowledge productivity to the reflective knowledge perspective, we conjecture that in terms of ‘*problem understanding*’, one would expect positive outcomes in mentoring because of the opportunities for deliberate articulation of expressed thoughts. Reflection can act contributive to an increase of individual knowledge. This is the kind of benefit often advocated in the reflective paradigm (Korthagen, 2002). In terms of ‘*perspective shift*’, however, it is highly questionable to what extent a reflective practice in mentoring brings about shifts in personal views; may be a gradual modification is more often the case (Mena Marcos, 2007). We would argue that only in cases of a close alignment of ‘talk and walk’, the existent knowledge might ‘change’. Moreover, no major shift in thinking, or for that matter in practice, is likely to occur in case of a mismatch between reflection and action. In effect, this would imply a conservative impact of reflection on knowledge development (Gilroy, 1993). In terms of ‘*commitment*’ or willingness to change one’s practice as a result of reflection, we could argue that sharing of thoughts, for instance during mentoring conversations, could potentially be beneficial under a reflective paradigm; yet this would largely depend on the fruitful input by those participating in a sharing of reflections on practice.

B. Contextual knowledge. The “situationist” view interprets professional knowledge as anchored and situated in *communities of practice*. Knowledge, according to this view, is embedded in activity which is inherently social (or socially construed). A deliberate exchange of knowledge between professionals through transfer of information would be external or alien to deep-rooted activity structures and in itself not particularly fruitful when separated or disconnected from the activity itself (it would be knowing *that*, instead of knowing *how*). According to the situated view, the more knowledge becomes detached from a setting from which it originates or in which activity is embedded, the less would be gained from it. Reflective articulation and exchange of knowledge ‘as such’ would be unfit for action and not particularly informative for practice. Explicit knowledge would be

classified as ‘codified’ “theoretical” knowledge which cannot be directly operated upon. Situating and enacting knowledge could indeed build an environment for interpreting events and give meaning to situations encountered, and would thus be rated in more favorable terms.

In applying the knowledge productivity criteria to this situated viewpoint, we could argue that *problem understanding* as a focus in mentoring would be less urgent or immediate and perhaps even unfavorably rated since most opportunities for learning in action remain implicit and dependent on affordances and space to attend to them. Situated learning thrives on setting-attached (i.e., directly work-related) processes of professional learning. Although “off work” discussion and exchange among professionals, for instance in a mentoring conversation, could prove to be helpful; it still entails the danger of being ‘talk’ instead of ‘walk’. In terms of *perspective shift*, real and lasting change in thinking (and action) would occur when mentor and mentee are working closely together on a regular basis, preferably sharing the same setting/practice since it provides a common ground for talk and would trigger conversation about jointly encountered problems (Engestrom, 2003). In terms of *commitment*, we would argue that working closely together under similar work-based conditions would lead to high involvement and raise interest in the outcomes of a conversation. In this respect, mentoring conversations can provide an authentic platform for raising the level of ‘situatedness’ and create an awareness for learning.

C. Distributed knowledge. The distributed knowledge view focuses on professional knowledge as being acquired through *progressive discourse and informed participation*. Characteristic is the importance attached to scrutinizing one’s practice for the sake of creating tools for (an improved) practice. Collaborative inquiry would be a valid route to generate, adapt and renew ‘knowing’ under the condition that there is a sufficiently grounded professional language or knowledge base available to help participants frame their thoughts and identify key issues for discourse and conversation. Aim of conversation and sharing is to build artifacts for improved agency which ultimately can be used for practical action. Articulation and inquiry are sources of knowledge building. The resulting success would vary depending upon the conceptual frames or constructs delivered throughout the exchange. Conversation, then, provides a crucial condition for discovering and exploring situational understandings that emerge from and prevail in the group. Conversation would primarily focus on seeking tangible solutions, and on finding a common shared core of interpretative concepts to understand or inform one’s practice.

In terms of the three knowledge productivity criteria, it can be maintained that *problem understanding* is facilitated through inquisitive collaboration and by working together. Mentoring would constitute an ideal setting to do so. Its conversational approach could enhance the creation of artifacts, i.e., solutions for practice. Conversation would, in addition, add to the attainment of new insights and create understanding of situations and problems encountered in

practice. *Perspective shift* would in this view be the primary target of a mentoring process. Mentors would, for example, select cases or instances which offer a clear or explicit structural problem or offer a framework to evaluate encountered problems, all meant as a source of mutual learning during the discourse. In the case of *commitment*, the distributed view would stress a real investment in mentoring in scrutinizing one's practice and establish a critical involvement in solution oriented group discussions. In this sense mentoring conversations are the main vehicle for learning.

We then could summarize the way mentoring conversations are likely to contribute to the enhancement of professional knowledge in the following way (Table 2). In addition to the three outcome criteria of knowledge productivity we also gauge: adhering to prior knowledge and importance attached to interaction, as of interest to a mentoring conversation. It shows that the three views on professional knowledge differ in the way they would arrange mentoring conversations and value in distinct ways the interactional and implicit nature of professional knowledge.

Table 2. Appraisal of mentoring conversations based of different views on professional knowledge building

	<i>Resulting evaluation on the three knowledge productivity criteria</i>	<i>Prior knowledge base of individual learner</i>	<i>Process of exchange and communication</i>
A) Reflective knowledge	Problem Understanding (PU) = positive Perspective Shift (PS) = negative Commitment to apply (CA) = negative	<ul style="list-style-type: none"> ● helpful in looking back, making explicit what occurred ● articulation of what was considered ● valuable for clarification 	<ul style="list-style-type: none"> ● not particular useful, occurrence of misunderstanding, interpretation problems, negotiations
B) Situated, cognition	PU = negative PS = negative CA = positive	<ul style="list-style-type: none"> ● not helpful as it is disengaged, too far away from actual practice ● knowledge difficult to articulate; misunderstandings ● not particularly essential for practice 	<ul style="list-style-type: none"> ● important to clarify thoughts, needed for working towards a common understanding
C) Distributed knowledge	PU = positive PS = positive CA = positive	<ul style="list-style-type: none"> ● only relevant for creating mutuality in personal understandings ● focus on core ideas 	<ul style="list-style-type: none"> ● only when agreement on shared concepts, based on informed participation

Key: PU = problem understanding; PS = perspective shift; CA = commitment to apply

KNOWLEDGE BUILDING THROUGH CONVERSATION

The abovementioned table distinguishes clearly the differing views on the nature of professional knowledge building and how it affects learning through conversations. Therefore, we like to explore in more detail what prospects a collaborative, inquiry oriented, and participative mode of learning, i.e., our position on distributed knowledge, has for mentoring as offering learning conversations.

KNOWLEDGE BUILDING IN COMMUNITIES OF INQUIRY

How professionals learn from each other through professional interactions can be understood by studying learning in communities of inquiry (Lipponen, 2000; Stoll & Louis, 2007; Birenbaum, Kimron, Shilton, & Sharaf-Barzilay, 2009). These studies on collaborative learning examine how conversations as vehicles of exchange, particularly those in which study and deliberate (re)search are used, scaffold a process of gaining insights from the challenges of practice (Palonen, 2004). Participants in such communities – and we like to see mentoring as such a community – typically engage one another with deliberate notions about improving practice and have thoughtful solutions in mind when they address challenges in their practice, all for the sake of developing and implementing tools and artifacts that can help to improve performance (Bereiter, 2002; Tillema & Van der Westhuizen, 2006). Evident from different approaches to collaborative learning (Stoll & Louis, 2007) is that the arrangement of conversations is crucial to lead to fruitful, tangible and prospective solutions, i.e. becoming knowledge productive (Lipponen, 2000).

The way, then, conversations are arranged establishes how participants will be brought to scrutinize and articulate their practice. Functioning as a community of inquiry, participants will develop among themselves multiple connections (Edwards, 2013). As conversations evolve, the ‘community’ members (e.g. in mentoring conversations the two members involved) adopt each other’s solutions to practices that become ‘distributed’, i.e., that reflect their joint personal connections. As a result, conversation in such communities mounts up to knowledge building from multiple perspectives. For this we coined the metaphor “Climbing the Mountain” (see Chapter 2).

We contend that this kind of professional knowledge building, i.e., mentoring as a community of inquiry, is particularly beneficial for the improvement of professional action; in that participants exhibit a strong drive to generate, modify and apply knowledge in practice, and to learn from each other (Tillema & Orland Barak, 2006). “Mentoring for learning”, as this may be called, is characterized by interactions in communities of inquiry that provide a physical or virtual space for scrutinizing practices (Stoll & Louis, 2007). Such mentoring also allows for exploring joint goals, providing availability for help and advice; creating encounters that bring about occasions for applying skills, designing solutions (tools for practice), making decisions, using creativity, and for developing collegial interactions in the larger professional community (Stoll & Louis, 2007; Birenbaum et al., 2009).

We could summarize, then, our position as follows:

Professional knowledge building is initiated and sustained through on-going, progressive discourse, developed by informed participation, and leading to knowledge productivity. We consider conversation to be the main vehicle for knowledge building in that it encourages professionals as learners (and mentors) to make their knowledge productive.

This position stresses the notion of ‘articulate’ knowledge, i.e., one of search and inquiry on knowledge ‘in use’, while at the same time attributing importance to the discourse on knowledge that is expressed through interactions and conversations with others. Specifically, emphasizing the role of conversation in knowledge building illuminates a number of critical elements that may open further thinking towards reconsidering some of the premises on mentoring for learning. We can ask, for example: ‘How does conversation generate productive knowledge?’, ‘Why is articulation of concepts and beliefs hard to specify and lead to change in professional work?’ ‘How does talk, i.e., advice, lead to following recommendations?’ And also address issues in mentoring like: ‘How does conversation put knowledge into action?’ or ‘match beliefs to practice?’.

To concentrate further on the critical role of conversation in knowledge building, we borrow the notion of *situational understanding* (Bereiter, 2002) to capture what professionals encounter during a process of mentoring for learning. In this notion, knowledge building in conversation is not interpreted as moving packages of objectified knowledge (i.e., transfer of explicit knowledge), but rather as an active search for and (de)construction of valuable meanings through inquiry and progressive discourse between colleagues based on experiences drawn from practice contexts. The notion of situational understanding helps to interpret more explicitly how professionals come to (re)value their work-related experiences (Wang & Odell, 2002). In contrast to the notion of situated cognition (see [Table 1](#)), *situational understanding* adds the idea of a *progressive inquiry of performance in situ*. This view aligns with Shulman’s notion of ‘wisdom of practice’ (Shulman, 1987), as ‘contextual understanding’: from which we conclude that professionals ‘know’ in an embedded and distributed sense. Based on this conceptualization, we look in more depth at the discursive nature of mentoring conversations.

APPROACHING MENTORING AS CONVERSATION

An appropriate entry point for exploring the discursive nature of conversations lies in the tradition of conversation analysis research. This tradition draws on social interaction theory (Goffman, 1974; Rawls, 1984) and contends that meanings are created through what Goffman (1969a) calls “interactional performance”. Meaning making, as for instance is the case in mentoring, is shaped by social and cultural resources in which professionals operate (see also Drew & Heritage, 1992). Such meaning making in interactions is dialogic in nature, i.e., negotiating meaning in

interaction. Participation in dialogue signifies the importance of a collective search for meaning. From this position we can pursue how professional knowledge building is developed in interactions with a mentor. This position states that conversation is the vehicle for knowledge building as well as the framework thereof. A closer conversation analysis look can reveal how meaning making and situational understanding unfold.

It is becoming clear from studies on Conversation Analysis (CA) that what participants say in conversations is not a mere reflection of internal mental representations, i.e., a virtual window into their cognitive state (Edwards, 1993: 211); rather, professional knowledge is displayed discursively (in communication), and demonstrated through concepts used during exchange that represents “flexible components of situated talk” (Edwards, 1993: 209). How knowledge building comes into play during interaction is a function of the actual setting and participants involved, and constructed and oriented to, in interaction, along the way (Wiggins & Potter, 2008: 79; see also Heritage & Raymond, 2005). In a discursive practice, discourse and conversational interaction have a meaning-construing nature (Edwards, 1997). As such, mentoring is a mindful process where, as noted by Edwards, 1997: 33, the apparently private process of learning and thinking of learners are realised in interaction and openly. Unfolding this argument further we draw, in particular, on five major insights from the conversational analysis literature to identify ‘knowledge productive’ learning conversations that, as is the case in mentoring, may help to structure talking together.

A) Talk in conversation are *open*, varied, and done in accountable ways – open in the sense of disclosing positions and recognizing roles; varied in the sense that each utterance is a response on what was said previously, and with participants responding in accountable ways to pursue the relevancy of talk at hand. As such, conversation is an inquisitive knowledge making procedure (Edwards and Potter 1992; Birenbaum et al., 2009). When mentors and mentees are in conversation about practices for example, they make their knowledge open by responding to what the other says, and by using the conversation as vehicle to articulate what they know (Engestrom, 1994).

B) Conversational interaction is *intersubjective*, and shared knowledge is a performative category, i.e, must lead to solutions for practice; be knowledge productive. This implies that talk is not just mediated interaction, but social action which involves assumptions, beliefs, understandings, that “are attended to, implied, made relevant, etc., as part of whatever business talk is doing” (Edwards, 2004b: 41). Intersubjectivity is a feature of talk characterised by turn taking, uptake, and how participants design their responses (Edwards, 2004a). Knowledge building in mentoring conversation should therefore be looked at as a collaborative and reciprocal enterprise, and conducted in what Engestrom (1994) called, their language of conversation.

C) During conversations, participants do not simply draw on and exchange “predetermined categories of speech” (Pike, 2010: 164) but engage in an *advancement*

of knowing or a ‘progressive discourse’. This means knowledge building happens gradually in terms of turn-by turn interactions; ultimately to climb to higher levels of understanding. Learning is contextualised in the mentoring setting, a joint activity that relies on presuppositions participants have of utterances made by the other in the interactional development zone a mentoring setting constitutes (Mercer, 2000; Pike, 2010: 164; Addison Stone, 1993). In such zones, knowledge becomes apparent as essentially embedded in unique episodes of interaction. Knowledge building draws on these sequences of verbal interactions – i.e., turn-taking, responding and exchanging utterances – not simply to duplicate experiences and conceptualisations, but taking the form of constructive and reconstructive rich understandings shaped and adjusted by participants (Lindfors, 1999; Rodgers & Raider-Roth, 2006; Magano, Mostert, & Van der Westhuizen, 2010).

D) Knowledge building through conversation entails a *moral domain* with clear implications for conversational relationships among participants (Stivers, Mondada, & Steensig, 2011). Specific moral dimensions of knowledge in conversations can be identified (Stivers et al., 2011):

- *epistemic access*; that is: who owns knowledge (described in terms of who determines what constitutes knowing vs not knowing; by what degree of certainty are solutions for practice adopted; who provides knowledge resources; what is accepted as knowledge);
- *epistemic primacy*; that is: who decides on goals or direction of talk (described in terms of relative rights to know; relative rights to claim; relative authority of knowledge); and
- *epistemic responsibility*; that is: who concludes about the relevancy of talk (described in terms of what is knowable to act upon, how recipients design their actions and turn-taking).

Epistemic access is about ‘gate-keeping’ the information that will be talked about. By eliciting and claiming knowledge entries in a conversation and it presupposes willingness to interact (Stivers et al., 2011). In knowledge building, this plays out in the engagement of participants to interact for example working together in mentoring as a study team, (Tillema & Orland-Barak, 2006). Epistemic primacy in conversational interactions involves allowing recipients their relative rights to tell, inform, assert or assess something, and acknowledges asymmetries in the depth, specificity, or completeness of their knowledge (Stivers et al., 2011). In mentoring settings this would mean that conversations are shaped by prevailing norms of alignment and affiliation. In practice this may be observed in the ways in which professionals account for what they know, how certain they are about their knowledge, and how they exercise their right and responsibilities as contributors to the knowledge conversation (see Stivers et al., 2011: 9). Epistemic responsibility refers closure and opening; to conclusion and prospects of a talk, which entails a recognition of the fruitfulness and productivity of conversations for further action.

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Advice and guidance offered in mentoring need to be recognized as such in order to follow recommendations.

E) Conversation creates a *participative* ground for sharing knowledge. Drew's analyses of cognitive states in interaction offer evidence for the ways in which individual knowledge comes to the "interactional surface" (Drew, 2005: 176). In conversational interactions, utterances may be associated with recurrent and systematic patterns of merging 'cognitive states'. In professional interactions this means participants would use the conversation to stay tuned to the shared understanding, and allow for confusion to be clarified. Participation requires following the flow of communication in an attentive manner.

To abridge these highlights from Conversation Analysis research into a kernel characterization it can be posited that knowledge productive 'learning' conversations are constituted by:

- a. a progressive discourse (have A, B, C), and
- b. an informed participation (have C, D E).

To recognize such conversations additional analysis is needed (and one of the main purposes of this book and following chapters). Edwards' (1997: 45) notion of "analytical moves" may guide a more detailed and analytical inquiry into how mentoring conversation are conducted and how interactions evolve. Such moves in talks would involve for instance: identifying a topic of inquiry; allowing for explication; moving towards another theme. Studying knowledge building in mentoring conversations also would call for questions such as: What are the typical discourses in mentoring settings? How do they unfold? What patterns occur? How is a higher level in understanding attained? An inquisitive look at mentoring conversations as learning conversations (i.e., those which 'climb the mountain') would require for example detailed analysis of: What are the practices discussed? Where or when do they occur in a conversation? How do they vary across episodes, how are they organised in interaction, as part of participant accountability for participation in discourse? Analyses of moves in conversation might help (a mentor, for instance) to screen interactions and to focus on how utterances are constructed in a course of a conversation, and how it relates the practices under scrutiny (Edwards & Potter, 2012).

CONCLUSION

This chapter explored how knowledge building develops through conversation. Although differing views exist on the nature of knowledge building for professional practice, we put forward that the discursive nature of knowledge and 'knowing' is pertinent to understanding how professionals use conversations for building knowledge. Mentoring conversation is a vehicle for creating such a situational understanding. We have attempted to establish that knowledge building in mentoring

practice is interactional and collaborative, responsive to situational context, takes professional beliefs and perspectives into account, and need to be knowledge productive, i.e., solution oriented. Knowledge productivity appears not to be an innate individual's possession, which is reflected on and transferred through merely by telling, explaining and externalization. On the contrary, professional knowledge building leading to knowledge productivity is a function of the situated talk occurring in an actual setting between participants, i.e., in our case, between mentors and mentees, who should be intent on responding in varied and unique ways in creating professional knowledge. Ultimately, the knowledge built is framed and constituted through the way the participants manage and design and execute the conversation (Stoll & Louis, 2004). Mentors and mentees engaged in knowledge building through conversations are thus accountable to engage in constructing and reconstructing rich and meaningful conceptualisations that go 'beyond the information given' and shape unique episodes of knowledge productive interaction.

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Harm Tillema
Leiden University, The Netherlands

Gert J. van der Westhuizen
University of Johannesburg, South Africa

Martijn P. van der Merwe
University of Johannesburg, South Africa