Professional Competence in Context – a Conceptual Study

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In previous research at attempt has been made to create some structure in the jungle of publications on competence and competence development (Mulder, 2011; 2014). Three approaches of competence were distinguished, which signify the theoretical development regarding the construct of competence, and the application of it in practice. These three approaches were: 1. Competence and behaviouristic functionalism; 2. Competence as integrated occupationalism; 3. Competence as situated professionalism. The latter approach is the most current in the advancement of competence theory and research, and points at the importance of the context of use of the concept. This conceptual-contextual connection is visible both in theoretical underpinnings of competence and in professional contexts. A major constituent of the meaning attributed to competence in theory is the discipline, specialisation and epistemology of scientists who are using or developing competence theory. For example, we see that this differs for 1. motivation psychology (White, 1959), in which the academic construct of competence emerged as performance motivation; 2. intelligence testing theory which showed that the predictive validity of testing for competence was higher than for testing intelligence McClelland (1973); 3. performance management theory, which indicated that competence and performance were strongly related, and that competence enables performance without necessitating an excessive amount of effort and costs (Gilbert, 1978); 4. educational science in which competence-based education was conceptualized as a system which is aimed at producing competent graduates who are certified based on demonstrated performance (Grant et al, 1979).

As said, the situated professionalism approach is the most current approach of conceptualizing competence. A major constituent of this approach is the appreciation that a certain competence representation can mean something totally different for a one job holder or job situation than for another. Furthermore, important notions are that the agency of a person and the affordances of a job context (Gibson, 1979) enable the development of competence or effectivities (Shaw, Turvey, and Mace, 1982), that this approach is based on notions of situated cognition (Brown, Collins and Duguid, 1989), the idea that the work context takes shape as a community of practice in which players interact and share and negotiate meaning (Lave and Wenger, 1991; Wenger, 1998; Wenger, McDermott and Snyder, 2002) and that personal epistemologies (Hofer and Pintrich, 2002) have a stronger influence on professional development than mere skills training. Finally, it also acknowledges that desired competence is defined by what key stakeholders in a professional context expect in terms of professional action.

This paper is aimed at further elaborating the conceptual foundations of various competence theories and practices. The question which will be addressed is: what are the differences in the meaning of competence in varying professional contexts? This question is important because of the confusion in defining competence, which can be to a large extent be explained by the specific situation in which the construct is used.

The research method used in this paper is a review of the literature in which frameworks for professional competence have been developed. The frameworks will be analysed based on dimensions of definitions of the competence construct which have been published before (e.g. generic-specific, core-peripheral, task-behaviour, function-role, etc.). Examples of research that will be included for analysis are the studies in the medical profession (Frank et al, 2005), the purchasing profession (Mulder et al, 2005), extension (Karbasioun et al, 2007), rural development (Brinkman et al, 2007), interdisciplinarity (Spelt et al, 2009), open innovation (Du Chatenier, 2009), entrepreneurship (Lans, 2009), environmental education (Wesselink and Wals, 2011), teaching competence in regional learning arrangements (Oonk et al, 2011), argumentation (Noroozi et al, 2012), teacher competence on inquiry-based science teaching (Alake-Tuenter et al, 2012), corporate social responsibility (Osagie, 2012), intercultural communication (Popov et al, 2012).

In the paper the various frameworks will be compared using the dimensions mentioned above. The major result of this analysis is that competence frameworks vary by professional context and that the context defines the functionality of these frameworks to a large extent. The paper is concluded by stating that criticism on *the* competence development approach need to account for this contextual diversity, as there is *no one* approach.

A generic model of competence – Bartram's great eight competency framework

Throughout the last half century, various researchers have made attempts to construct one model of competence for given professional groups, such as managers, medical doctors, teachers, and purchasing professionals. To a certain degree these can be characterized as attempts to arrive at context-free competence frameworks. The most outspoken proposals for a generic competence framework if the one developed by Bartram (2005), who conducted a meta-analysis on a series of 29 competence research studies with a total research group covered of 4,861 participants. This is by far the largest empirical and relatively recent study on generic competencies. For this study competencies are being defined by Bartram Robertson and Callinan (2002) as 'sets of behaviors that are instrumental in the delivery of desired results or outcomes" (op cit, p. 7). It used the so-called Great Eight competency framework developed by Kurz and Bartram (2002).

Box 1 – Competencies and competency definitions as presented by Bartram (2005)

1. Leading and Deciding
Takes control and exercises leadership. Initiates action, gives direction, and takes responsibility.

2. Supporting and Cooperating
Supports others and shows respect and positive regard for them in social situations. Puts people first, working effectively with individuals and teams, clients, and staff. Behaves consistently with clear personal values that complement those of the organization.

3. Interacting and Presenting
Communicates and networks effectively. Successfully persuades and influences others. Relates to others in a confident, relaxed manner.

4. Analyzing and Interpreting
Shows evidence of clear analytical thinking. Gets to the heart of complex problems and issues. Applies own expertise effectively. Quickly takes on new technology. Communicates well in writing

5. Creating and Conceptualizing
Works well in situations requiring openness to new ideas and experiences. Seeks out learning opportunities. Handles situations and problems with innovation and creativity. Thinks broadly and strategically. Supports and drives organizational change.

6. Organizing and Executing
Plans ahead and works in a systematic and organized way. Follows directions and procedures. Focuses on customer satisfaction and delivers a quality service or product to the agreed standards.

7. Adapting and Coping
Adapts and responds well to change. Manages pressure effectively and copes well with setbacks.

8. Enterprising and Performing
Focuses on results and achieving personal work objectives. Works best when work is related closely to results and the impact of personal efforts is obvious. Shows an understanding of business, commerce, and finance. Seeks opportunities for self-development and career advancement.

These 8 competencies are differentiated and further defined in 112 more specific competencies. Examples are:

- Leading and deciding is divided into deciding and initiating action and leading and supervision. Deciding and initiating action is devided in six competencies, such as making decisions, taking responsibility and acting with confidence.
- Analyzing and interpreting is divided in writing and reporting, applying expertise and technology, and analyzing. Writing and reporting is subdivided in writing correctly, writing clearly and fluently, writing in and expressive and engaging style and targeting communication.
- Organizing and Executing is divided in planning and organizing, delivering results and meeting customer expectations and following instruction and procedures. Delivering results and meeting customer expectation is subdivided in focusing on customer needs and satisfaction, setting high standards for quality, working systematically, maintaining quality processes, maintaining productivity levels, and driving projects to results.

As will be clear, all these competencies are behavioral in nature and context-free, which is understandable, because the intention of the study is to provide a generic framework of competence.

The review study addresses the relationships between personality and ability as predictors and competency-ratings of on-the-job performance by managers. It also goes into the prediction of on-the-job performance (OJP). In 10 studies manager ratings of OJP and ratings of all eight of the competencies were available. Regression analysis was carried out for these studies, and there were five competencies which related to OJP to a relatively high degree (with mean βs of 0.26-0.12): analyzing and interpreting, organizing and executing, enterprising and performing, leading and deciding, and creating and conceptualizing. The other competencies (with mean βs of 0.06-0.03), supporting and cooperating, adapting and coping, and interacting

and presenting were related to a lesser degree. Bartram calls these lesser related competencies 'more contextual'. This lead the author to the suggestion that '...OJP ratings are primarily influenced by task performance competencies', and that '...competency factors that influence judgments of OJP do vary from situation to situation' (op cit, p. 1196). The meaning of the distinction between task performance competencies and other competencies however, is not completely clear. OJP ratings in most cases task-specific, which is understandable, because the presence of competence is generally inferred by either direct or indirect on-the-job performance appraisal, but how this differentially relates to different fields of competence is still unclear.
So although the Great Eight Competencies framework is a generic framework, the author acknowledges that the meaning of competence is situation- or context-specific. The Great Eight Competencies framework is largely based on research conducted with management professionals or management trainees. This may have caused bias, but the author maintains that the framework is '...intended to be generic' (op cit, p. 1200). He concludes that further research is needed to establish the validity of the framework for other job levels. It would probably also be good to investigate whether the model would hold for other professional domains, such as medicine, agriculture and law.
To conclude, the general message of this study is that there are certain relationships between personality and ability factors, and competence and on-the-job performance ratings. The study shows that applying criterion differentiation yields better and more precise predictions, which points at the benefits of using a more contextual understanding and measurement of competence and performance.

A task-based model of competence – The CanMEDS framework for the medical profession

An example of a clearly task- or content-oriented framework of competence is the one of the Royal College of Physicians and Surgeons of Canada, the so-called CanMEDS 2005 Framework (Frank and Jabbour, 2005). This framework is being used for education and training in the medical profession worldwide. It exists of the following components:

- A definition of the professional roles of physicians
- A description of the roles
- The key competencies needed for the roles
- The enabling competencies for the roles

The various roles of the physicians which are distinguished, are:

- Medical expert
- Communicator
- Collaborator
- Manager
- Health Advocate
- Scholar
- Professional

For the role of Medical expert, the definition of the role is: 'As Medical Experts, physicians integrate all of the CanMEDS Roles, applying medical knowledge, clinical skills, and professional attitudes in their provision of patient-centered care. Medical Expert is the central physician Role in the CanMEDS framework'(op cit, p. 1).

The description of the role of the medical expert follows, and describes the various components of the role: 'Physicians possess a defined body of knowledge, clinical skills, procedural skills and professional attitudes, which are directed to effective patient-centered care. They apply these competencies to collect and interpret information, make appropriate clinical decisions, and carry out diagnostic and therapeutic interventions. They do so within the boundaries of their discipline, personal expertise, the healthcare setting and the patient's preferences and context. Their care is characterized by up-to-date, ethical, and resource-efficient clinical practice as well as with effective communication in partnership with patients, other health care providers and the community. The Role of Medical Expert is central to the function of physicians and draws on the competencies included in the Roles of Communicator, Collaborator, Manager, Health Advocate, Scholar and Professional' (op cit, p. 1).

As can be seen, within CanMEDS competencies are defined in terms of knowledge, skills and attitudes, which is in line with the way in which we define competence. But the point of discussion here is the task/content specificity of the competence framework, and as is clear, the core of the role of medical expert is the delivery of diagnostic and therapeutic interventions. This is still quite general, but since this should be based on defined knowledge, skills and attitudes, this role is formulated in a more task- and content-oriented way. This also emerges from the description of the key competencies: 'Physicians are able to ... 1. Function effectively as consultants, integrating all of the CanMEDS Roles to provide optimal, ethical, and patient-centered medical care; 2. Establish and maintain clinical knowledge, skills and attitudes appropriate to their practice; 3. Perform a complete and appropriate assessment of a patient; 4. Use preventive and therapeutic interventions effectively; 5. Demonstrate proficient and appropriate use of procedural skills, both diagnostic and therapeutic; 6. Seek appropriate consultation from other health professionals, recognizing the limits of their expertise' (op cit, p. 1).

In fact, the key competencies defined are expressions of capabilities embedded in the description of the role. So the role is defined and described, and via decomposition and the addition of the phrase 'physicians are able to...', the content of and tasks within the profession are expressed in competencies, essentially specifying the capabilities to effectively perform the tasks which they are expected to do.

The description of the enabling competencies goes a lot further in detail. The enabling competencies of the role of medical expert specified within the key competency statements. So all six key competencies are specified this way. The numbers of enabling competencies by Roles are: Medical expert 28, Communicator 17, Collaborator 16, Manager 13, Health

advocate 13, Scholar 25, Professional 13. It is not unusual to find these numbers for clustered competencies for professions. The whole framework is eleven pages long.

To give an example of the enabling competencies within the role of medical expert, those listed within the fourth competency will be shown. This is the key competency '4. Use preventive and therapeutic interventions effectively'. For this domain, the following enabling competencies are defined:

> 'Implement an effective management plan in collaboration with a patient and their family;
>
> Demonstrate effective, appropriate, and timely application of preventive and therapeutic interventions relevant to the physician's practice;
>
> Ensure appropriate informed consent is obtained for therapies;
>
> Ensure patients receive appropriate end-of-life care' (op cit, p. 2).

Clearly, this competence framework is oriented towards the tasks and content of the profession. The body of knowledge within the profession is leading the specification of what is needed in terms of competence of the professional. As such it is seen as a set of context-specific performance requirements, the context being the professional context of the medical expert. Of course, this context can vary by organisation, work unit, and even within work units across work situations, depending on the dynamism of professional work, but this content-driven framework is quite different from the generic competency framework described in the previous section.

A study which stressed context-specificity of entrepreneurial competence framework

In a series of studies conducted by Lans (2009), a line of reasoning regarding competence was development which appears to be worthwhile in various contexts such as in greenhouse horticulture, but also in other professional contexts. It is a line of reasoning which stems from the genesis of competence theory during the 1980s and 1990s. During those decades competence frameworks were developed for professional licensure, such as for educators, psychotherapists, pilots and financial advisors. Professional associations were the holders of licensure schemes, and candidates had to comply with the competence standards before they were licensed professionals. Basically, registered assessors and supervisors evaluated the job performance of candidates and after a period of guided practice and sufficient results candidates were licensed. However, there were also associations which developed competence frameworks for self-assessment and personal development. This was for instance done in the sector training and development, in which a competence framework may be less prescriptive than in the medical, nuclear of aviation sector. Through mirroring one's own performance and underlying competencies by a given professional framework of ethical

standards, outputs, roles and competencies, candidates could define development priorities and engage in continuous professional development.

An important argument in the study of Lans was that entrepreneurs in greenhouse horticulture were not aware of the fact that they possessed a competence profile, that competence is related to performance, that competence can be developed, and that the same holds for co-workers in the company. Competence development could be seen as an option to operationally transform a farm into a learning community. What was discovered however, is that generic competence statements as derived from the literature were *Fremdkörpers* for the farmers. Many statements were quite meaningless. In the next section it will be explained how one specific study (Mulder, Lans, Verstegen, Biemans and Meijer, 2007) was conducted, and it will be shown how competence statements were brought alive and became meaningful for the entrepreneurs.

The objective of the study was to explore the entrepreneurial learning in an authentic context, and to look into the way in which entrepreneurs assess their own competence profile, how others assess that, what the strengths and weaknesses were in their competence profiles, and what are the learning activities they were conducting. Since the context of the entrepreneurs was included in the study, the first analysis included only ten participants. They assessed their own competence profile, as did one of their co-workers and an external advisor who regularly consulted the entrepreneur, so who was well-informed about the history and current status of the company. In follow-up interviews the assessments were discussed and related to specific and significant innovations which the entrepreneurs implemented, which were then related to learning activities which they carried out. The competence framework which served as input for the competence-assessments was derived from the literature on entrepreneurship competence. Competencies which were included in the study were: Learning orientation, Self-management, Planning, Market orientation, Result orientation, Networking, Leadership, Problem analysis, Organizing, Conceptual thinking, Negotiating, Persuasiveness, Vision, General awareness, Management control, Value clarification, Judgement, Team work, Strategic orientation, HRM/HRD, and International orientation. When asked to think about specific major decisions during the last period, and invited to share experiences regarding the way in which they learned important lessons which had an impact on business processes and performance, various interesting examples were given, which contextualized the interpretation of competence development (source: Mulder et al, 2007) (see Box 2).

Box 2 – Learning lessons of entrepreneurs – key to contextualized competencies development[1]

Acquiring knowledge through training
After following a course in personnel management I have tried keeping official functioning meetings, but my staff got so stressed by this idea that I decided to do it in a far more informal way.
Asking a specific question
I called my advisor to check what price he would give for buying my neighbour's company. He gave me a price indication that was 50.000 Euro below the price I had in mind. At the end of the day I could buy the company for a much lower price.

Checking information
I knew they once wrote a report on the introduction of a new concept that failed; I looked up all the details and knew that I could not pull off this opportunity all by myself.
Conversation
I once lost two good buyers because I did not know their demands. Now, before the introduction of a new chain concept, I first talk to my potential clients.
Discussion
After being cheated by one of my own employees I discussed this with my other staff, who argued that I have far too much faith in people, and that I should change my behaviour and be more strict; I should directly let them pay for things they want.
Experiment
We are experimenting now with a new marketing concept for potted plants.
Holding on to personal vision
I never do too much with regard to complying with rules and regulations. I took some risks with that, but that always outweighed the benefits.
Observation
When I was still working as an employee at a firm, I saw that I could do these things for myself as well, so I decided to start my own firm.
Performing occupational tasks
Introducing bit by bit elements to improve employees' motivation; this works well.
Receiving feedback
We have regular meetings with our large buyers to evaluate what went well and what went wrong, so that we can do things differently in the future.
Reflection
When I manage people they have to understand very fast what I want, often too fast, because for me it is something automatic, for the others it is not, and I find that difficult, that's why I stopped managing my staff.
Replication
I copied the way colleagues handled staff, but after a few failures I changed the strategies and now it works.

[1] Source: Mulder et al, 2007

Transcriptions of the interviews were analysed based on learning activities which were distilled by a bottom-up process of categorization learning experiences. The top four of these were reflection (19.8%), observation (15.1%), experimentation (11.3%) and performing occupational tasks (10.4%).
The learning activities were linked to the key entrepreneurship competence domains which were defined in the course of the study. These were (in order of decreasing percentages of learning activities by competence domain): strategic (26%), opportunity (20%), organizational (20%), technical-occupational (18%), relational (9%), commitment (5%) and conceptual competence (2%).

Most interesting though, for the purpose of this paper on the context-specificity of professional competence, is that entrepreneurs, greenhouse farmers in this case (and it has to be appreciated that greenhouse farming is a form of knowledge-intensive work, regarding asset management, venture capital, high-tech innovation, genetics, operations and chain integration, and scale enlargement), only attributed meaning to competencies once they were embedded in their context. Competencies have the tendency to generically express an attribute

of professional competence whereas the professional themselves do not think in these discrete competence categories.

Box 3 – Open innovation competence framework[2]

Competences; is able to:	Competencies; the open innovation professional therefore . . .
Cluster 1: Self-Management (basis for other tasks)	
Be committed	Appreciates the learning domain, has the motivation to learn, has a sense of urgency, and wants to learn from others.
Govern oneself	Has self-confidence, knows what his/her qualities are, does not take the position of the underdog.
	Is aware of, and regulates, own thinking and feeling.
	Has perseverance, keeps on thinking positively, having end-goal in mind.
	Manages tensions created by multiple accountabilities, tasks and roles.
Cluster 2: Interpersonal management (main task inter-organizational collaboration)	
Build trust	Is honest: possesses high levels of integrity, authenticity, sincerity, and genuineness. Can be counted on to represent situations fairly.
	Is open: shares information freely with others. Even when he is not sure. With a feeling for boundaries, knowing value of knowledge.
	Is competent: able to perform the tasks required by ones position. Is professional, takes a role in the group, works independently, clear about own role.
	Is benevolent has the best interests at heart for others, protects their interests, shares successes, allows people to make mistakes. Trusts the other party.
	Is reliable: ensures that the others can depend upon him/her to come through for them, acts consistently, follows through.
Have social astuteness	Understands social situations as well as interpersonal interactions. Is sensitive to the roles and responsibilities of all partners, aware of their collaborative motivations and expresses understanding and empathy. Knows how to play the political game.
Have inter-personal influence	Appropriately adapts, calibrates ones behaviour to each situation in order to elicit particular responses from others. Uses influencing skills (as opposed to instructing): position, coalition, stimulates, and knows who, when to inform.
	Is assertive, extrovert. Phrases own perceptions and feelings (in a diplomatic way). Is sometimes straightforward.
Be a social person	Develops, maintains, uses effective networks. Is approachable, develops friendships easily and strong beneficial alliances and coalitions. Develops a team spirit.
Cluster 3: Project management (main task: overall innovation process)	
Be inventive	Seeks novelties, experiments. Is sensitive to environment and market oriented. Manages ambiguous situations, takes risks, is result oriented, pragmatic.
	Picks up signals, sees chances, has intuition for innovation, creates a vision. Is pro-active. Comes up with ideas him/herself and takes initiatives.
Control and coordinate	Establishes specific, challenging, accepted team goals. Diagnoses, formulates learning objectives in performance outcomes not too soon.
	Coordinates and synchronizes activities, information, and tasks between team members. Designs a plan of

	strategies. Carries out the plan systematically and sequentially. Feels responsible for the team and acts as such.
	Identifies human, material, and experiential resources for accomplishing various kinds of learning objectives. Organizes complementarities. Identifies situations for participative group problem solving, using the proper degree of participation, and recognizes obstacles and corrective actions.
	Monitors, evaluates, and provides feedback on overall team and individual performance. Accepts feedback about his/her performance non-defensively. Collects evidence of accomplishments. Asks many critical questions.
Cope with chaos and un-certainties	Has an overall picture of the project and influencing factors. Understands and manages complexity. Supports many things on his/her mind at the same time.
	Balances short and long term goals. Finds problem. Discerns sub from main issues.
	Deals with unexpected situations, is flexible with plans, deadlines, improvises. Is not too systematic, rigid. Deals with a flexible team composition.
Cluster 4: Content management (main task: collaborative knowledge creation process)	
Externalize	Recognizes open and supportive communication methods.
Interpret	Has good reflective skills, and techniques of analysis. Is critical, but constructive.
	Possesses basic knowledge and perceptions, of various technical/professional areas and languages. Is experienced in partnership working.
	Listens actively: listen with a view to being influenced, not closed. Is curious.
Negotiate	Openness: treats differences as important opportunities. Respects, values, appreciates people's ideas.
	Is competent in techniques of lateral thinking or divergent thinking.
	Combines high advocacy (egocentrism) with high inquiry. Is aware that he represents an organization, refuses to accept less.
	Explores assumptions by knowing when and how to interrupt automatic functioning and brings theories of action into awareness.
	Recognizes types and sources of conflict, encourages desirable, but discourages undesirable conflict.
Combine	Employs integrative (win–win) negotiation strategies rather than distributive (win–lose) strategies. Brokers solutions or outcomes. Thinks in ways that differ from established lines of thought. Agrees to disagree (lose–lose). Considers common goal as most important. Adapts without violating own ideas.

[2] Based on Du Chatenier et al (2010)

The issue of generality versus specificity further elaborated

In the beginning of her study regarding open innovation competence, Du Chatenier (2009) developed a tentative open innovation competence framework aimed at describing competencies open innovation professionals need for their performance in open innovation teams (see Box 3). The ambition was to define a competence framework not necessarily unique, but still specifically valid for open innovation professionals.

The development of this framework was done in a very careful way. Competence literature was screened from which various competence domains were selected which were perceived as being relevant for open innovation. Open innovation is a field which is heavily studied by Chesbrough (2003). The central notion of his view is that organizations need internal and external input for their sustainable success, which is often operationalized in terms of cooperation of different partner organizations in innovations. A compelling example is that a coffee producer and a manufacturer of kitchen appliances engaged in a joint venture to produce coffee machines which used coffee pads for individual cups of coffee. Such innovations needs a lot of care in terms of politics, diplomacy and risk taking, as competition between both parties may win from cooperation between them.

The competence domains for open innovation which were selected from the literature (which were related to challenges in open innovation) are: boundary spanning (Williams, 2002), novelty generation (Schweizer, 2006), learning (Bolhuis and Simons, 2001), negotiating (Friedman and Antal, 2005), trust (Tschannen-Moran and Hoy, 2000) coping with chaos (Eoyang, 1997), politics (Ferris et al., 2005), self-directed learning (Knowles, 1990), and teamwork (Stevens and Campion, 1994).

Next to the literature study, expert interviews were held and focus groups were organized to discuss the relevance of the competence statements and based on this the open innovation competence framework (or profile) was established (Du Chatenier, Verstegen, Biemans, Mulder and Omta, 2010). The premise was that using this framework in innovation management success of the innovation processes would increase. The suggestion of the study was that brokering and social competence were important in achieving results in open innovation teams. Organizations were advised to aim their effort on these competencies in open innovation team support (op cit).

The tentative open innovation competence framework is being used here to comment on a number of issues, common in competence framework development. First of all some general and minor issues will be addressed after which the main issue of the framework will be discussed, which related to the context-neutrality of this framework.

Several remarks can be made regarding the formulations in the framework. Given the definitions of competence (Mulder, 2014), it is erroneous to amalgamate ‘be’, ‘has’ and ‘can’ expressions in competence descriptions. Based on various studies done since the one which is discussed here, it is advised to stick to ‘can’ expressions when competencies are being formulated. Secondly, it is also advised to maintain the terminology of competence,

competency and competencies. Since competence is the generic capability of a professional, a person cannot have two or more sets of competence, or competences. Competency is a part of competence, and competencies the plural of that. Thirdly, competence frameworks should be inclusive; that means that competence domains of a certain profession should cover the whole profession, and not part of that. In this framework the emphasis is too much on various components of management, whereas open innovation clearly goes beyond management. Being able to take calculated risks for instance requires more than management of risk taking.

The main issue though is the generic nature of this framework. Whereas it is intended to cover open innovation competence, the largest part of the framework would also hold for innovation as such. Or for cooperation in non-innovation processes. Or for internal project management. High-stake projects also require commitment, self-governance, building trust, endurance, interpersonal influence and a social attitude. One could even say that most of the competencies listed hold for politics and diplomacy.

This competence framework obviously suffers from generality. That does not mean though that is cannot be used in practice. Frameworks like these are typically useful in corporate strategy or human resource management practice. In corporate strategy development the concept of 'core competence' was quite popular in the 1990s when it was introduced by Prahalad and Hamel (1990). Basically these core competencies were metaphors of the key strengths of the organization, and summarized to one-liners, which were also found in our own research in the 1990s (Mulder, 2000). Packaging gas in glass, miniaturization, turning planes were such metaphors for lighting, consumer electronics and aviation enterprises. In job profile research we found that human resource management professionals tended to aggregate competence statements into only a few which could then be used for prioritizing development goals based on annual performance reviews, which were then included in annual personal development plans. Typically, there are competence menus of around 25 generic competencies of which one or two can be ticked for such development practices. These competence are often of the nature of the one included in the competency framework presented by Bartram (op cit).

In the education and training context such generic competence statements are insufficient. In this context competence statements need to be much more specific to get meaning. We have seen this in a situation in the 1990s in which the management of a nursing home found that the personnel of the organization needed to act more client-centred. A training organization was asked to deliver a short course for a mixed group of employees, whereby the philosophy was that members of the group would make the training content specific for their situation and that they would act according to the theory taught in the course. The course was an absolute failure, as the translation of the general theory of the course was problematic for the employees involved. Client-centred working meant very different things for the nursing physician and nursing assistants who were taking part in the course compared to management, receptionists and secretaries, who were also participating. Had the training content selection been preceded by an analysis of the meaning of client-centeredness for the different job holders involved, the content would have been much more aligned with what they do in daily practice, and thus, chances would have been higher that the course would

have had the desired effect. However, if co-workers in teams are being invited to discuss the implications of client-centeredness in their own situation, and if they would have been given the time to define them for themselves, training would nog have been necessary anyway, because open quality improvement-oriented work meetings can be as effective than other human resource development interventions.

So in general, competence frameworks for education and training purposes need to be more expanded than those used in corporate strategy and human resource management. An important reason for that is that generic competencies like entrepreneurship or innovation cannot be acquired as such. They always need a certain content and context to be learnable. Furthermore, the learning content can be quite elaborate, and one content is linked to competence, the competence frameworks can get quite big. The danger of this is that competence frameworks are being made too specific. Over-specification of competency-frameworks was one of the failures of early attempts to implement competency-based higher education programmes. Detailed specification of components of competence, certainly in the knowledge and skills domain, can of course be very relevant, such as in technical occupations like engineering or machine maintenance. Some technical installations, for example complete process installations in the chemical industry, large computing systems in airline organizations, or complex surgery systems, require detailed protocols and related competence frameworks.

The issue of generality versus specificity cannot be easily settled by stating how general or specific competence frameworks need to be. That is context-dependent. The general rule is that over-generalization and over-specification in a given situation should be avoided. The essential criterion by which this can be avoided is functionality. In other words, in each situation, be it competence-based organizational strategy development, competence-based performance management, competence-based education and training, or competence assessment and accreditation, users have to define the level of desired specificity. In all cases, competence statements should be recognizable and understandable by the users.

Improving contextual relevance with narrative job pictures

Now that it is clear that the meaning of competence is context-specific, and that contextual specification of competence can be a pitfall, the question arises whether using generic competence frameworks still make sense. The answer is, yes, it does. Generic competence frameworks define a certain field of professional activity, like teaching, medicine, law, engineering, or construction work. Some occupations are even defined by law, although this differs by country. In Germany there are so-called ‘anerkannte Berufe’ (recognized occupations), which are regulated by federal government. Theses frameworks provide a professional language in which expectations of the stakeholders regarding certain occupations are expressed. This makes it possible to hold a professional dialogue about the content of these expectations and to determine whether candidates who want to enter a profession are ready for licensure. Nevertheless, elements of the these frameworks are subject of personal and contextual interpretation. Being pedagogically competent means different things for

teachers of social science in inner-city schools with a majority of immigrants or teachers of mathematics in private colleges. Being able to effectively communicate with parents also differs a lot, depending on the intensity of their life challenges and those of the students.

Typically, lists of competence statements in job profiles can suffer from alienation from practice. In the next project which is described here an example will be given in which a job profile was made more recognizable (Mulder, Wesselink and Bruijstens, 2005). Actually, this was done by using narrative job pictures. The project which is referred to took place in the field of purchasing management. A job analysis was conducted by which the whole occupational field of purchasing was mapped. Actually, the study went into research methodological issues in job-profile research, such as population stratification, sectoral differentiation of job tasks, the way in which job profiles can be formatted, and the relative value of broad job surveys versus concise in-depth focus-interviews. The study concluded: '...small-scale, context-related analyses of jobs add most value' (op cit, p. 185). Four levels of purchasing work were differentiated: assistant buyer, buyer, senior buyer and purchasing manager. Five economic sectors were distinguished in which most purchasing professional were working: industry, service sector, public administration, trade and healthcare. Four domains of purchasing activities were differentiated: operational purchasing, initial purchasing, information and communication and purchasing management (see Box 4).

Box 4 - Job profiles for the field of 'Initial Purchasing' (source: Mulder et al, 2005)

		Occupational levels[1]			
Task 1. Specifying the purchasing need		**PM**	**SB**	**B**	**AB**
1.1	Supporting and advising the development of functional and technical specifications of purchasing needs with the internal customer.	●	●	●	●
1.2	Supporting and advising the development of functional and technical specifications of purchasing needs with the internal customer.	●	●	●	●
1.3	Verifying whether what has to be purchased measures up to functional and technical specifications of the organisation.		●	●	●
1.4	Determining the amount that has to be purchased. .		●	●	●
1.5	Offering advice to and taking part in the decision making process in new or strategic purchasing trajectories.	●	●	●	
1.5.1	Offering advice to and taking part in the decision making process in make-or-buy decisions	●	●	●	
1.5.2	Offering advice to and taking part in the decision making process in decisions about buying or leasing.	●	●	●	
1.5.3	Offering advice to and taking part in the decision making process about investments in goods.	●	●	●	
1.5.4	Offering advice to and taking part in the decision making process about co-makerships.	●	●	●	
1.6	Contributing expertise on purchasing to new products or processes from the beginning of projects.	●	●	●	
1.7	Involving potential suppliers in new process and product developments.	●	●		
1.8	Making an inventory of internal expertise which is of importance to specific purchasing needs.	●	●		

[1] PM = purchasing manager; SB = senior buyer; B = buyer; AB = assistant buyer

Task statements resemble the way in which competence statements were formulated in the CanMEDS competence framework for the medical specialist. Many of these competencies are being defined by prepositioning a 'can'-expression in front of the task statement.

Since these job profiles are task content-specific, and regularly follow the logic of work processes (Boreham and Fischer, 2009), they tend to be quite lengthy. To aggregate the various job profile elements, a general job profile was constructed in which the inclusions of tasks statements were taken together and expressed in an average score of importance of the task domain in the job profiles of the four occupational groups.

Box 5 - Aggregated job profiles for purchasing professionals (source: Mulder et al, 2005)

	PM[1]	**SB**	**B**	**AB**
Management				
1. Developing purchasing policy	++[2]	+	-	-
2. Managing the purchasing organisation	++	+	-	-
3. Improving the purchasing organisation	++	++	+	+
Information and communication				
1. Communication with internal sectors	++	+	+	+
2. Communication with external sectors	+	++	+	-
3. Information technology	++	+	-	+
4. Globalisation	++	++	-	--
Initial purchasing				
1. Specifying the purchasing need	-	++	-	--
2. Selecting the suppliers	-	++	+	--
3. Contracting suppliers	-	++	+	-
Practical purchasing				
1. Ordering goods and services	--	-	+	++
2. Monitoring the purchasing process	--	-	++	++
3. After-care, evaluation and administrative conclusion of the purchasing process	--	-	+	++

[1] PM = Purchasing Manager, SB = Senior Buyer, B = Buyer, AB = Assistant Buyer;

[2] ++ = very important; + = important; - = unimportant; -- = very unimportant

Although aggregated job profiles like these tend to communicate the overview of the relative weight of task domains in occupations quite well, they do not convey a review of the competencies needed as performance requirements, nor do they give a contextual meaning of the job profile. In this project, the first is solved by formulating capabilities which purchasing professional need that have so that they can carry out the various tasks which are listed, and the second is solved by a narrative job picture.
Examples of competencies which were formulated are: 'The purchaser is able to consider all the aspects of and consequences for the organisation when actions are done and decisions have to be made', 'The purchaser is able to consider all the aspects of and consequences for the organisation when actions are done and decisions have to be made', and 'The purchaser is able to draw a conclusion at a general level from some specific actions or decisions'(op cit, p. 197).

The narrative job picture of occupations is not used widely, but they have the clear advantage of making more sense than a list of tasks or activities. In fact narrative job picture tell more about the context of the occupation that can be derive from tasks reviews. As an example the job picture of a senior buyer is included (see Box 6).

Box 6 – Job picture of senior buyer (source: Mulder et al, 2005)

'Senior buyers have delegated responsibilities for purchasing certain products or sets of products, or they are responsible for the supplies of a certain department in the organisation. Senior buyers usually are supervising purchasers of the purchasing department. They distinguish themselves from the purchaser because of their experience and more heavy purchasing responsibilities. Purchasing managers delegate tasks to senior buyers. On the other hand senior buyers assist in the development of a departmental purchasing policy, or they support purchasing managers with developing policies on specific areas. Senior buyers make decisions based on the goals of the purchasing department. Mostly senior buyers are specialists in a certain purchasing domain. Senior buyers implement proposals for improvement, initiated by purchasing managers or by themselves.
Senior buyers analyse needs, give advice to colleagues at several levels in the organisation. They are a member of multidisciplinary teams, which they assist by bringing in their purchase expertise. A big task is the external communication with important or even vital suppliers. Realising new relations, for instance co-makerships and strategic alliances, as well as providing suppliers with feedback, advice and support, are important tasks for a senior buyer. Senior buyers make as much as they possibly can use of international networks and they maintain these networks. They promote efficiency and effectiveness of the purchasing organisation by means of developing and using computerised systems. Senior buyers make use of the Internet whenever beneficial for the organisation.
Senior buyers try to get involved in projects for new products or processes early, to let other participants take advantage of their purchase knowledge. Another task is to involve potential suppliers in development projects early. In the case of a large or potentially hazardous purchasing deal, senior buyers negotiate with potential suppliers based on close cooperation with representatives of other disciplines in the organisation. Senior buyers make appointments about contracts and check whether everything is according to the agreement. Mostly, senior buyers are responsible for finalising the purchasing contracts. Besides they provide purchasing managers with advice in problematic situations when it comes to the operational purchase trajectory and inform them in which way this can be more efficient or effective'.

Improving contextual relevance by adding task and content specificity

The last example of attaching more contextual meaning to competence frameworks is from the project on corporate social responsibility (CSR) and the learning organization. In this project a link is being established between empirical research on characteristics of the

learning organization (Tjepkema, Stewart, Sambrook, et al, 2002), and the implementation of CSR policies which hinge upon human resource development infrastructures, policies and practices (Osagie, Wesselink, Blok, Lans and Mulder, 2014). In one of the studies of her research, Osagie identified individual competencies for CSR in order to measure the relationships between CSR policies, learning characteristics of the organization and competence development.

Box 7 – Competence framework of Corporate Social Responsibility (source: Osagie et al, 2014)

Competencies	**Context-based quotations**[1]
1. Anticipating future developments regarding CSR-related challenges.	"Anticipatory competence is the ability to collectively analyse, evaluate, and craft rich 'pictures' of the future related to sustainability issues and sustainability problem-solving frameworks."
2. Understanding of the interdependency between systems and subsystems relevant for CSR practice.	"The ability to understand the interactions of natural, societal, and economic processes in accomplishing the sustainable exploitation and utilisation of resources."
3. Understanding CSR drivers, CSR standards, and CSR regulations.	"Understand the principles and importance of environmental legislation and identify the authorities responsible for its enforcement."
4.a CSR leadership competencies.	"Strategic competence is the ability to collectively design and implement interventions… This capacity requires an intimate understanding of strategic concepts…; In simple terms, this competence is about being able to 'get things done."
4.b Identifying and realizing CSR-related business opportunity.	"In a sense it is a bit of entrepreneurship. The financial component, which should be included in your list, is gaining more importance in this job. I think we are slowly but surely coming to a point that you should be able to understand business models and know how your company can make money with CSR."
4.c Managing CSR implementation.	"… formulate questions, plan projects, provide substantive and methodological guidance, integrate different viewpoints, and present results effectively."
5. Realizing CSR-supportive interpersonal processes in CSR integration.	"The important role that social and communication skills play for contributing to sustainable development was *confirmed*[2]."
6. Employing CSR-supportive personal characteristics and attitudes.	"…perseverance, hard-headedness, and patience were most important, followed by enthusiasm, commitment, and clear goals or visions (…) These responses show that sustainability-oriented values and personal involvement are important components of … environmental problem-solving ability."
7.a Ethical normative competencies.	" It often comes back to your personal values. For me CSR should be something that is embedded within yourself. What are your values? Something that you are intrinsic motivated about, and which is not forced upon you."
7.b Balancing personal ethical values and business objectives.	"I am constantly stressing addressing global sustainability challenges. However, you are working for a company, so you should also safeguard the continuity of the company. It is about balancing opposites. I sometimes felt that I had to make my personal values about sustainability digestible for the business context. My former CEO, who strongly believes in sustainability, sometimes called me his "internal NGO".
7.c Realizing self-regulated CSR-related behavior and active involvement.	" The leadership style from sustainability " leaders" like Al Gore, , the guy from Patagonia, and the guys from Unilever, their leadership styles facilitates the development of activities but mainly before the facilitating happens you need to inspire others, and you inspire by driving initiatives. And this is what these people have done. This means that you sometimes need to execute an initiative yourself, so you provide those who need to execute them with examples or you need to inspire others with what others have done. You do not have to do it, but you need to show what others have done and how they have done it and probably help with the translation to your own organization."
8. Reflecting on personal CSR views and experiences.	"Self-learning' and 'Ability to reflect on the professional role and responsibility as well as citizenship in relation to SD in a structured way."

[1] The original box of this adapted version contains more quotations and literature sources from which the competencies have been derived. [2] Typing error in the original publication corrected.

There are two solutions implemented to make this competence framework specific for the CSR profession: 1. contextualizing competence expressions by explicitly referring to the

domain of CSR; 2. including exemplary quotations of the contextualized meaning of the competencies. Both add meaning to the framework in the sense that the competencies are much more domain-specific. In this respect this CSR competence framework is significantly different from the one on open innovation (Du Chatenier, op cit) as described above.

Summary and conclusions

The main argument of this contribution is that the meaning of competence is situation-specific or context-bound. Simple examples make this clear: being able to be effectively communicate on paper means quite different things for a 6th grader, who has to write an essay, than for a PhD student who has to write a manuscript for a Q1 journal, or a director of corporate strategy who has to write the next strategic plan for the organization.
There are different levels of complexity, uncertainty and risks involved in different occupational contexts in which situation-specific competence is required. If fact this is the distinction between semantics and pragmatism. Competencies as literal verbal expressions of performance requirements get their actual meaning by the underlying communicative intentions. Competencies as written communication get their meaning as well by understanding what they imply in actual performance contexts.

Does this mean that the use of generic competence frameworks is redundant? No, there is still need for generic competence frameworks. Examples have been given: Bartram's generic Great Eight Competency framework (Bartram, op cit), the task-oriented CanMEDS framework for medical experts (Frank and Jabbour, op cit), the competence framework for entrepreneurship (Mulder et al, 2007; Lans, 2009), with which situation-specific meaningfulness was shown in interviews with small-business owners, the generic competence framework of open innovation (Du Chatenier, op cit), the competence framework of purchasing which included the use of narrative job pictures (Mulder et al, 2005, and the competence framework for corporate social responsibility (Osagie et al, op cit). All generic competence frameworks have their own merits. Most important is that they express the social expectations or even sometimes the collectively agreed requirements regarding a certain profession. For day-to-day use of competence frameworks however, a translation is necessary from the general competence expressions to the place-based meaning of those expressions, such as in education and human resource management. In education, curriculum and test developers have to further operationalize competence statements which naturally includes interpretations, consultations and decision making. Teachers and lecturers also have to operationalize competence statements in development terms, or otherwise competence frameworks become check-lists for students which miss the deeper intention of establishing longer learning lines which lead to a positive inclination towards career development which goes together with a process of life-long learning. In human resource development, competence self-assessments, competence ratings by self-selected colleagues, and self-reflections may be used as inputs for annual employee performance reviews. Views on competence and performance can be made specific in the performance review discussions by exchanging examples of performance which are then related to certain competencies.

Comparisons of views on competence levels of job coaches and co-workers can also be illuminating for both parties. In all cases competence statements serve as input for dialogue about performance which can point at competence development opportunities which are much more specific than training programs listed in course directories.

So there is need for generic competence frameworks, although overgeneralization should be avoided. This contribution showed that there are several ways out of the problem of over-generalization in competence frameworks, either by including narratives which describe certain occupations, or by including domain-specific references in the competence framework.

There are ample other examples of research that support this view, such as the study of competence in extension (Karbasioun et al, 2007), rural development (Brinkman et al, 2007), interdisciplinarity (Spelt et al, 2009), environmental education (Wesselink and Wals, 2011), teaching competence in regional learning arrangements (Oonk et al, 2011), argumentation (Noroozi et al, 2012), teacher competence on inquiry-based science teaching (Alake-Tuenter et al, 2012) and intercultural communication (Popov et al, 2012).

Critics state that the notion of competence is useless, be it contextualized or not. Those critics often stick to the first generation of competence-based education programs which were dominated by behaviouristic functionalism. Others point at the issues encountered in the implementation of competence-based education practices (Biemans et al , 2004; Biemans et al 2009) and start off from more recent developments.

This paper is concluded by stating that criticisms on *the* competence development approach need to account for this contextual diversity, as there is *not one* approach only (Mulder, 2014; Mulder & Winterton, forthcoming).

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