

Competence, empirical insights from a small-business perspective¹

Abstract:

During the last decade the issue of competence has been received with enthusiasm as well critical stance among researchers and practitioners. The ongoing debate has resulted in new notions of competence which can be seen as the continuous search for more comprehensive conceptualizations of competence in order to contrast them clearly with the disintegrative and reductionist models of competence popular in the nineteen eighties. One strategy in this regard is to adopt a multi-method orientation to competence. Multi-method approaches are differentiated from classical competence approaches in the sense that they not only incorporate generic worker attributes but also deploy a more fine-grained analysis of actual work activities, work context and related organizational goals and strategies. This paper summarizes the findings of three empirical studies in which a multi-method approach to competence was used to study entrepreneurial competence in small firms. The results show that even though competencies are partly idiosyncratic, situated, constructs, it is possible to formulate steppingstones for competence (i.e. competence domains). Furthermore, a more fine-grained analysis of a specific task and associated situations can assist researchers as well as practitioners with disentangling the complex relationships between competence and (small-business) performance.

Key words: competence, small-business, competence development, performance

Authors and/or co-authors short biographical statement:

Dr. Martin Mulder is Professor and Head of the chair group of Education and Competence Studies at Wageningen University in the Netherlands, (www.socialsciences.wur.nl/ecs). He is an expert in vocational education and training, human resource development and competence theory and research. He has conducted many research projects in these fields, and published extensively about these projects. He is editor of the Journal of Agricultural Education and Extension, and member of the editorial advisory boards of different journals in the field of vocational education and training.

Dr. Thomas Lans is assistant professor at the Education and Competence Studies Group at Wageningen University, the Netherlands. He conducts research and teaches classes in the fields of entrepreneurial learning, entrepreneurship education and human resource development in small organisations.

¹ A draft of this contribution will be presented and discussed at the Decowe Conference: Ljubljana, Slovenia, 24-25 September 2009.

Introduction

During the last decade the issue of competence has received a great deal of attention. This attention has mainly focussed on larger organisations, using competencies to manage and implement change (Mulder, 2001). However, increasing use is being made of competencies in other contexts; the competence concept has become a central theme in the debate on the development of vocational education and training, scientific education and in organisations (Mulder, 2004; Brockmann et al., 2008). Although the concept of competence appears to be quite old – Mulder et al. (in press) traced it back even to ancient Persian, Greek and Roman times – discussions about its definition, identification, use and development are still ongoing (c.f. Hager, 2004; Stoof et al., 2002; Westera, 2001). These discussions are sometimes labelled as counterproductive or fuzzy but they sharpen current thinking about competence in relation to learning and professional development (Hager, 2004). Accordingly, before starting a detailed discussion about the available number of definitions of competence (more than 40 definitions have been documented according to Mulder, 2001), it is important to take a step back and first try to define the underlying learning theories that have shaped thinking about competence in a particular research tradition. Clarifying its theoretical underpinnings is not only important for defining competence in itself (for instance as in competence-based education), but also helps to further specify the relation between competence and its development; learning theories and ideas about professional competence can be found in fundamentally different schools on human thought and action, for instance more behaviourist, cognitive or social constructivist. A dearth of elucidation of underlying epistemologies on knowledge and learning that shape the understanding of competence is, according to Hager (2004), one of the reasons why competence-based research has been received so critically.

In the following sections, the different theories that underpin competence are described. This description is not meant as a complete history of the concept. The description is based on its relevance for a specific context that will be the focus of the empirical work that is described subsequently in this paper: the context of professional development of entrepreneurship.

Competence as fragmented behaviour

An influential stream of research that has shaped current thinking about competence can be traced back to what is called the functional-behaviourist approach to competence (Neumann, 1979). This tradition of competence has its origin in the beginning of the twentieth century, a period heavily influenced by World War I and the industrial revolution. The need for many trained military men, as well as workers for industry (both military and civil) demanded highly effective, transparent training programmes. Frederick Taylor's theory of scientific management based on time and motion studies played an important role in this period. Scientific management can be seen as a set of principles that focus on efficacy and standardization of processes – for instance by finding the fastest way to assemble cars. Subsequently, these work tasks are simplified as much as possible, described and, when necessary, taught to others.

This idea of job analysis plays a central role in the functional-behaviourist approach to competence. A job analysis means in this tradition a meticulous investigation of an occupation, in which the analysis breaks down each trade into a number of jobs. The jobs are further broken

down into a series of activities in the job, which in turn are broken down into duties, tasks and sub-tasks where appropriate. An illustrative example of an application of the functional-behaviourist approach to competence can be found in the professional development programmes of teachers in the USA in the nineteen seventies and eighties. The American teacher-training programme was based on a thorough job analysis (consisting in the first instance of more than two million activities!), which later became known as the 1001 activities of American teachers (Neumann, 1979).

Although Taylor's concept proved to be very useful for selection purposes (e.g. task descriptions), the impact it had on the training of employees was perhaps even bigger (Neumann, 1979). According to Neumann (1979), Taylor himself never explicitly worked on the relationship between the dissection of jobs and functions and an instruction theory; it was others who suggested that the 'scientific manner' was not only the most efficient way to carry out a task, but also the most efficient way to train someone in it.

Because of the fragmented descriptions of professional competence and its clear relation with scientific management, competence as a concept became very much associated with behaviourism, mastery learning and modular teaching in the Commonwealth countries (Mulder, 2004). A fundamental critique of this approach was that a list of atomized work descriptions does not indicate whether the worker is indeed able to accomplish the job efficiently in practice. Furthermore, these models have been criticized for their mechanistic view on work, ignoring workers' autonomy and identity, undervaluing the role of tacit knowledge and generating relatively conservative models of competence (Eraut, 1994; Cheetham & Chivers, 1996).

Competence as the (development of) worker-oriented capabilities

Unlike the fragmented functional-behaviourist approach, the worker-oriented view on competence considers competence in terms of attributes of the individual necessary to accomplish a certain role or task. So whereas the focus in the functional-behaviourist approach was on a detailed analysis of what work looks like, the worker-oriented approach looks at the individual who should accomplish a specific role, function or task. This stream has different traditions, depending on the role of knowledge as an essential element in developing these capabilities (Sandberg & Pinnington, 2009). Two influential streams in this fashion are stage-model theories on professional competence and the KSA (knowledge, skill, ability) approaches to competence.

In stage-models of professional development, competence is seen as the movement from novice to expert (Dreyfus & Dreyfus, 1986). One of the most straightforward theories in this approach comes from cognitive psychology, in which professional development is described as an increase in (situation-) specific knowledge. From famous studies on expertise in chess, it is known that chess masters showed considerable breadth and depth of possible moves and countermoves; however, so did lesser-ranked chess players (De Groot, 1965; Bransford et al., 2000). Unlike novices, experts had highly developed organized structures for a particular domain ('chunks'), therefore developing sensitivity to patterns of meaningful information which permitted successful non-routine problem solving. Besides in chess, similar results have been found in other domains such as mathematics, computer programming, radiology, etc. (Billett, 2001). Two basic assumptions underlie the development from novice to eventually expert level:

firstly, the idea of moving from the use of abstract principles towards using concrete experiences as a frame of reference in situations; secondly, change of skilled performance in what Benner (1982) describes as change in perception and understanding of demanding situations. Rather than viewing challenging situations in bits and pieces that are all equally important, situations are viewed as a whole in which only certain aspects are prioritized and regarded as important. In the transition from novice to expert, experts have learned to focus attention only on the key dimensions: those dimensions most relevant to the action they are performing.

In contrast to cognition-oriented theories on professional competence, KSA or generic approaches to competence broaden the conceptualization of competence by adding other elements to professional competence, such as skills, abilities and sometimes other personal characteristics related to effective work performance (e.g. motives, values, social roles, dependent on the exact view). Competencies are elicited by behavioural event interviews to identify those behaviours distinguishing average from best performers. One of the most quoted applications of this theory can be found in the work of Boyatzis, which is grounded in the work of personality psychologists such as McClelland, McLagan, and Spencer and Spencer (Rothwell & Lindholm, 1999). Competency is in this tradition 'an underlying characteristic of an employee (i.e. motive, trait, skill, aspect of one's self-image, social role or a body of knowledge) which results in effective and/or superior performance in a job' (Boyatzis, 1982: 21).

One of the strengths of this model of competence is that much effort has been put into testing it on a large scale with a wide variety of practitioners, using a wide range of psychometric techniques to measure the reliability and validity of the constructs (e.g. Bartram, 2005). This quest to measure and define competence as objectively and universally as possible is also seen by some as a clear disadvantage, since it results in the creation of abstract, unrecognizable descriptions of competence which ignore the complexity of work and work contexts (Delamare-LeDeist & Winterton, 2005). What seems to be tricky here is that the model assumes a single type of good practitioner, independent of the context, which is not very likely (Eraut, 1994).

Competence as situated professionalism

The cognitive and generic perspectives on competence have clearly gained ground in researching professional development. Nevertheless, many authors warn that a conceptualization of competence in these two fashions still falls short of addressing the situated nature of professional practice (Billett, 1996; Lave & Wenger, 1991; Brown et al., 1989); this is problematic since people and their world(s) are inextricably related: workers and their work blend together in the execution of activities, with workers experiencing them and making sense of them (Sandberg, 2000). In the jargon, the cognitive and generic perspectives on competence embrace a so-called container view of practice (Dall'Alba & Sandberg, 2006). Theories that do not support this view take a socio-cultural conception of professional learning and development as their point of departure, addressing learning and expertise as activities of more centred participation, stressing the importance of the evolving bonds between the individual and others and the importance of viewing learning as an ongoing activity in a particular practice (Sfard, 1998).

For instance, Tyre and Von Hippel (1997) focused specifically on the physical setting of the workplace in disentangling the nature of adaptive learning around new technologies in organizations. On the basis of in-depth interviews with users and engineers of new machines,

they showed the importance of the physical location for developing problem-solving activities. The physical location not only influenced the direct skills they could apply, but also revealed many clues about the machine and its problems which were embedded in the specific setting (i.e. their workplace) – clues that could only be recognized by expert engineers on the spot (only in 2 of the 27 described cases were the experts able to grasp the nature of the problem without direct confrontation of the problem in its specific work environment). One of the conclusions drawn from this research was that part of the engineer's competence is the ability to use specific tools in specific settings: 'the act of getting into coordination with the artefact constitutes expert performance' (Tyre & Von Hippel, 1997: 78). To emphasize the difference in thinking about learning, this stream of theories on learning is accompanied with, again, different vocabularies to describe professional development, such as practice, discourse and knowing (Sfard, 1998).

At present, modern interpretations of competence, which have their basis in educational and HRD literature, have tried to deal with the critiques on the various approaches discussed above. Strategies to do so include the adoption of multi-method orientations to competence (Lievens et al., 2004; Shippmann et al., 2000) and, more fundamentally, investigating competence from an interpretive perspective (Sandberg, 2000) or studying it as professional identity, as a way of being (Sandberg & Pinnington, 2009). This diversity of new notions of competence can be seen as the continuous search for more comprehensive conceptualizations of competence in order to contrast them clearly with the disintegrative and reductionist models of competence described earlier. Comprehensive in this sense refers to integrated clusters of knowledge, skills and attitudes, conditional for accomplishing task performance, problem solving and functioning within a specific position and context (Mulder et al., in press). Competence in its most elementary form can be operationalized as a fit between existing ability and the demands of a certain task in a certain context (Brinckmann, 2007). Furthermore, on the basis of an inventory compiled by Van Merriënboer et al. (2002), Biemans et al. (2004) suggest that a comprehensive view on competence implies that competencies, the constituents of competence, are subject to change, subject to learning and development processes and that they are interrelated.

Experiences from a multi-method approach to competence in small-business

Consistent with a comprehensive view on competence this paper describes an example of adopting a multi-method approach. Multi-method approaches are differentiated from classical competence approaches in the sense that they not only incorporate generic worker attributes (what is necessary) but also deploy a more fine-grained analysis of actual work activities, work context and related organizational goals and strategies (what work looks like) (Lievens et al., 2004; Shippmann et al., 2000).

The setting for adopting a multi-method approach to competence comes from the field of entrepreneurship education and training. This paper, however, does not focus on the stimulation of new start-ups but on making existing small business owner-managers more entrepreneurial competent. Small and medium-sized enterprises are often referred to as the engines for economic development because of their diversity and flexibility, and the fact that, together, they account for a large portion of the gross national product and employment: 92% of

all European enterprises have less than 10 employees (Observatory of European SMEs, 2003). In order to survive and grow in dynamic environments that are characterized by changing consumer patterns, globalization, sustainability, and so on (Macpherson & Holt, 2007) small business owner-managers increasingly need to identify and pursue (new) business opportunities. Contemporary studies argue that entrepreneurial processes in small firms are enabled by specific entrepreneurial competencies (Ucbasaran et al., 2008). Entrepreneurial competence is not only a matter of predisposition, but also assumed to be influenced by learning and experience (Baron & Ensley, 2006; Detienne & Chandler, 2004). It is therefore relevant to appreciate the complex ways in which small business owner-managers learn and develop entrepreneurial competence in order to identify and pursue new business opportunities.

This paper summarizes the findings of three empirical studies in which quantitative and qualitative methods were used to study entrepreneurial competence in small firms and which included a total of 475 participants. For the details on the individual studies we refer to Lans et al. (accepted), Lans et al. (2008) and Mulder et al. (2007). The three studies differed in their approach to investigate entrepreneurial competence among the target group of small business owner-managers. These differences are described shortly below.

The first study used a more generic, worker-oriented, competence approach to investigate whether entrepreneurial competencies are recognizable and worth researching in small firms. In this study two concepts, self-awareness and beliefs about improvability of competence, were explored among 36 owner-managers of small firms. This was done by means of a multisource assessment, i.e. an assessment in which the subject is rated by multiple individuals with whom the subject has varying relationships. Owner-managers had to assess themselves on twenty competencies which represented the spectrum of entrepreneurial competence. For each of the twenty competencies the respondents had to indicate to what extent they have mastered it and to what extent they think they can develop it further over the coming five years. Two other assessors (internal and external) were asked to assess the owner-manager on the same set of competencies.

In the second study more comprehensive sets of entrepreneurial competence were formulated. The starting point for these comprehensive sets were sought in theory (Man et al., 2002). Based on theory, six comprehensive sets for entrepreneurial competence were discerned. These sets were empirically tested. To do so, quantitative data was collected from 348 small business owner-managers who participated in a training programme established to pursue new business opportunities. A survey containing 57 statements related to the six sets served as the starting point for this training programme. The answers the owner-managers gave to the 57 statements were analysed through explanatory and confirmatory factor analysis to create empirically meaningful domains of competence which were compared with the sets originally found in theory.

The third study focussed on the entrepreneurial task itself: the identification and pursuit of opportunities. Based on organizational learning literature and the results of the second study concrete work activities associated with the entrepreneurial task were formulated. These work activities were used as descriptors for the use and development of entrepreneurial competence. A case-study was conducted among 19 small firms in which questions about the use and development of these work activities by the owner-managers were combined with quantitative

firm performance data from 2004-2007. Furthermore, based on the differences between high- and low-performing firms, propositions were formulated that further specify the relationship between the owner-managers' competence, the perceived development of competence and entrepreneurial firm performance over this period of time.

Results

The results of the first study, the multisource assessment, shows that a more generic approach to competence has advantages as well as disadvantages. The data illustrates the tacit nature of much of what has been learned during work and suggests lack of feedback on entrepreneurial accomplishments of small-business owner-managers. However, the data also suggest that what is viewed as developed and improvable are not only 'objective' personal judgements, but most likely influenced by what is valued and promoted in a particular practice. Conceptions of entrepreneurial competence were not uniform within workplaces: elements of what is developed and can be developed further are partly idiosyncratic. From a practical point of view multisource assessments as adopted in this study can help owner-managers raise their self-awareness, provide them with a language to discuss about entrepreneurial strengths and weaknesses and consequently help them bypass some of their often costly trial-and-error learning.

The results of the second study show that theoretical models of competence do not necessarily match empirically derived ones. The empirically derived models of competence make a distinction between getting ahead and getting along. Moreover, what is often separately conceptualized as meta-competencies (e.g. Delamare Le Deist & Winterton, 2005) did not seem to constitute a separate domain, but elements of this cluster returned in all discerned domains.

Finally, the cases studied in the third study support the conclusion of earlier studies in other sectors that business performance at the small firm level is related to entrepreneurial competence and competence development at the individual level. Results obtained through comparing high and low performing firms, focussing on the task itself and using concrete work activities as descriptors for competence, suggest that the relation between entrepreneurial performance and competence is not only influenced by business goals but also by the owner-managers' competence awareness. The results of the case studies illustrate interdependence between existing competence and competence development within competence domains (horizontal development), and between competence domains (vertical development).

Discussion and conclusions

Firstly, the added value of using more generic approaches to competence is not found in generating 'true' competence scores, but in using the assessment scores as starting points for discussion (explanatory discourses, Capaldo et al., 2006) and further action (Messick, 1995). A multi-source assessment like this can assist owner-managers (who are generally not involved in formalized HR practices) by providing them with an initial language for discussing their entrepreneurial strengths and weakness. Such activities can help owner-managers to raise their self-awareness, and consequently help them bypass some of their often costly trial-and-error learning. In this process it is fundamental that competence is treated as an item for discussion and interpretation, rather than as a fixed template of boxes to be ticked (Lans et al., 2008).

When applying item-level descriptions of competence to the study of competence, it is possible to address the problem of atomization and fragmentation. Through factor-analysing item-level competence-related statements into broader competence domains, empirically meaningful domains of competence can be created. Such domains come close to what Hodkinson (1995) refers to as structures of competence which addresses the problematic issue of atomization and fragmentation. Practically, such domains can provide professionals active in sector development and (vocational) education with clear steppingstones for developing competence-based curricula and learning-oriented assessments.

Finally, to become aware about the relationships between competence, development and business performance it is necessary to focus more on the activities that involve the tasks itself and to include more qualitative, situative, methods to investigating the use and development of competence. This is an area of research which is still, in small business and entrepreneurship literature, in its infancy and which deserves more attention (Capaldo et al., 2006).

Literature

- Baron, R. A., & Ensley, M. D. (2006). Opportunity recognition as the detection of meaningful patterns: Evidence from the comparison of novice and experienced entrepreneurs. *Management Science*, 52(9), 1331-1344.
- Benner, P. (1982). From novice to expert. *The American Journal of Nursing*, 82(3), 402-407.
- Biemans, H., Nieuwenhuis, L., Poell, R., Mulder, M., & R. Wesselink, (2004). Competence-based VET in the Netherlands: Background and pitfalls. *Journal of Vocational Education and Training*, 56, 523-538.
- Biemans, H., Wesselink, R., Gulikers, J., Schaafsma, S., Verstegen, J., & Mulder, M. (in press). Towards competence-based VET: Dealing with the pitfalls. *Journal of Vocational Education and Training*.
- Billett, S. (1996). Situated learning: Bridging sociocultural and cognitive theorising. *Learning and Instruction*, 6(3), 263-280.
- Billett, S. (2001). Knowing in practice: Re-conceptualising vocational expertise. *Learning and Instruction*, 11(6), 431-452.
- Bransford, J. D., Brown, A. L., & Cocking, R. R. (2000). *How people learn: Brain, mind, experience, and school*. Washington, DC: National Academy Press.
- Brinckmann, J. (2007). *Competence of top management teams and success of new technology based firms*. Wiesbaden: Gabler.
- Brockmann, M., Clarke, L., & Winch, C. (2008). Knowledge, skills, competence: European divergences in vocational education and training (VET) – the English, German and Dutch cases. *Oxford Review of Education*, 34(5), 547-67.
- Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, 18(1), 32-42.
- Capaldo, G. Iandoli, L., & Zollo, G. (2006). A situationalist perspective to competency management. *Human Resource Management*, 45(3): 429-448.
- Cheetham, G., & Chivers, G. (1996). Towards a holistic model of professional competence. *Journal of European Industrial Training*, 20(5), 20-30.
- Dall'Alba, G., & Sandberg, J. (2006). Unveiling professional development: A critical review of stage models. *Review of Educational Research*, 76(3), 383-412.
- De Groot, A.D. (1965). *Thought and choice in chess*. The Hague: Mouton Lievens.
- Delamare Le Deist, F., & Winterton, J. (2005). What is competence? *Human Resource Development International*, 8(1), 27-46.

- Detienne, D.R., & Chandler, G.N. (2004). Opportunity identification and its role in the entrepreneurial classroom: A pedagogical approach and empirical Test. *Academy of Management Learning and Education*, 3(3), 242-257.
- Dreyfus, H.L., & Dreyfus, S.E. (1986). *Mind over machine: The power of human intuition and expertise in the era of the computer*. New York: Free Press.
- Eraut, M., (1994). *Developing professional knowledge and competence*. London: The Falmer Press.
- Hager, P. (2004). The competence affair, or why vocational education and training urgently needs a new understanding of learning. *Journal of Vocational Education & Training*, 56, 409-433.
- Hodkinson, P. (1995). Professionalism and competence. In P. Hodkinson & M. Issitt (Eds.) *The challenge of competence: Professionalism through vocational education and training*. (pp. 58-69). London: Cassell.
- Holton, E. F. (2002). Theoretical assumptions underlying the performance paradigm of human resource development. *Human Resource Development International*, 5(2), 199 - 215.
- Lans (2009). Entrepreneurial competence in agriculture: Characterization, identification, development and the role of the environment. Unpublished PhD-thesis. Wageningen: Wageningen University
- Lans, T., Biemans, H., Mulder, M., & Verstegen, J.(accepted). Self-awareness of mastery and improvability of entrepreneurial competence in small businesses in horticulture. *Human Resource Development Quarterly*.
- Lans, T., Hulsink, W., Baert, H., & Mulder, M. (2008). Entrepreneurship education and training in a small business context: Insights from the competence-based approach. *Journal of Enterprising Culture*, 16(4), 363-83.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.
- Lievens, F., Sanchez, J. I., & De Corte, W. (2004). Easing the inferential leap in competency modelling: The effects of task-related information and subject matter expertise. *Personnel Psychology*, 57(4), 881-904.
- Macpherson, A., & Holt, R. (2007). Knowledge, learning and small firm growth: A systematic review of the evidence. *Research Policy*, 36, 172-92.
- Messick, S. (1995). Standards of validity and the validity of standards in performance assessment. *Educational measurement, issues and practice*, 14 (4): 5-8.
- Mulder, M. (2001). Competence development - some background thoughts. *The Journal of Agricultural Education and Extension*, 7(4), 147 - 158.
- Mulder, M. (2004). *Education, competence and performance. On training and development in the agri-food complex*. Wageningen: Wageningen University.
- Mulder, M., Gulikers, J., Biemans, H., & Wesselink, R. (in press). The new competence concept in higher education: error or enrichment? *Journal of European Industrial Training*, 33(8/9).
- Mulder, M., Lans, T., Verstegen, J., Biemans, H. and Meijer, Y. (2007). Competence development of entrepreneurs in innovative horticulture. *Journal of Workplace Learning*, 19(1): 32-44.
- Neumann, W. (1979). Educational responses to the concern for proficiency. In G. Grant, P. Elbow, T. Ewens, Z. Gamson, W. Kohli, W. Neumann, V. Olesen & D. Riesman (Eds.), *On competence, a critical analysis of competence-based reform in higher education* (pp. 66-94). San Francisco: Jossey-Bass.
- Rothwell, W.J., & Lindholm, J.E. (1999). Competency identification, modelling and assessment in the USA. *International Journal of Training and Development*, 3(2), 90-105.
- Sandberg, J. & Pinnington, A.H. (2009). Professional competence as ways of being: An existential ontological perspective. *Journal of Management Studies*, in press.
- Sandberg, J. (2000). Understanding human competence at work: an interpretative approach. *The Academy of Management Journal*, 43(1), 9-25.
- Sfard, A. (1998). On two metaphors for learning and the dangers of choosing just one. *Educational Researcher*, 27(2), 4-13.

- Shippmann, J. S., Ash, R. A., Battista, M., Carr, L., Eyde, L. D., Hesketh, B., Kehoe, J., Pearlman, K., Prien, E. P., & Sanchez, J. I. (2000). The practice of competency modeling. *Personnel Psychology*, 53(3), 703-740.
- Stoof, A., Martens, R. L., Van Merriënboer, J. J. G., & Bastiaens, T. J. (2002). The boundary approach of competence: A constructivist aid for understanding and using the concept of competence. *Human Resource Development Review*, 1, 345-365.
- Tyre, M. J., & Von Hippel, E. (1997). The situated nature of adaptive learning in organizations. *Organization Science*, 8(1), 71-83.
- Ucbasaran, D., Westhead, P. & Wright, M. (2008). Opportunity identification and pursuit: does an entrepreneur's human capital matter? *Small Business Economics*, 30(2), 153-173.
- Van Merriënboer, J.J.G., van der Klink, M.R., & Hendriks, M. (2002). *Competenties: van complicaties tot compromis. Over schuifjes en begrenzers [Competencies: from complication to compromise]*. Den Haag: Onderwijsraad.
- Westera, W. (2001). Competences in education: a confusion of tongues. *Journal of Curriculum Studies*, 33, 75-88.