

The Application of Competency Modeling for Human Resource Management: A Holistic Inquiry

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Abstract

Over fifty years that considerable interest in management has been given to competency movement. Some treat the effort like a panacea, while others as a pariah. This paper intends to clarify this faddish confusion by covering major areas that contribute to the formulation and implementation of competency efforts. Four key issues are discussed: introducing related terms and definitions, identifying competency modeling, validating competency modeling, and translating the model into human resource management subsystems. In addition, a short discussion of lessons learned from best practices, critical success factors in applying, and future trends is elaborated.

Introduction

To compete in a rapidly changing environment, today management cannot rely on particular strategies as a guarantee for organizational success. However, over the past decade, increasing management concern in the new economy seems to agree that human capital is the major foundation for business competitive advantage. Most organizations thus try to establish strategies to identify, develop, and retain their human scorecard. Central to this belief is that capable, agile, and

¹ *School of Public Administration, National Institute of Development Administration. The author would like to thank Dr.Somphoch Nophakoon Dr. Toni Ivergard, Capt. Sansern Suwanprathes, RTN, and Ms. Sabrina Gyrovary for their invaluable comments on reviewing this article.
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motivated workforce will create business values added in support of organizational strategies and vision.

As a result, a hallmark of modern human resource management systems in business, government, military, health, and educational settings lies in their comprehensive applications of competency to human resource activities. Competency modeling becomes a popular management topic (Alldredge, & Nilan, 2000; Bartlett & Ghoshal, 1997; Kochanski, 1997; Mirabile, 1997; Pickett, 1998; Punitamai, 1996; Shippman, Ash, Battista, Carr, Hesketh, Pearlman, Prien, & Sanchez, 2000; Winterton, & Winterton, 1999). Thousands of organizations throughout the world have joined the quest for competencies studies (Bernthal & Wellins, 2001; Cooper, 2000; Dubois, 1998). Executives and human resource professionals put faith on these studies for decisions about selecting, appraising, promoting, developing, and other HRM activities.

Survey results showed that two-thirds of 292 U.S. respondent organizations reported that they have been using competencies (Cook & Bernthal, 1996). It is pity that at its infancy stage, competency applications have remained in doubt, debate, and disagreement among researchers and practitioners (Dalton, 1997; Briscoe & Hall, 1999). One of the reasons resulted in a proliferation of different definitions, tools, models, and applications which are contingent on one's discretion (Cooper, Lawrence, Lynch & Luce, 1998). In addition, an extensive review of the existing literature and data bases reveals clear evidence that their practical applications especially in the private sector areas are far ahead of limited empirical research studies (Shippmann, et al., 2000).

This paper is intended to be a general inquiry into the competency movement and applicability. First, it will introduce clarifications to terminologies. Then, explanation on methodologies to establishing and validating the competency modeling will be elaborated at a greater extent. After that, the article will attempt to shed some light on integrating the models into human resource management subsystems. Views on lessons learned from best practices of leading private and

public agencies will also be shared. Moreover, some attention to critical success and failure factors in applying the competency model into human resource management is examined. Finally, the paper will envision future prospects of competency modeling. As an overview, Figure 1 gives practitioners a so called “5W1H3” strategic framework for competency modeling which captures key ideas delineated in this paper.

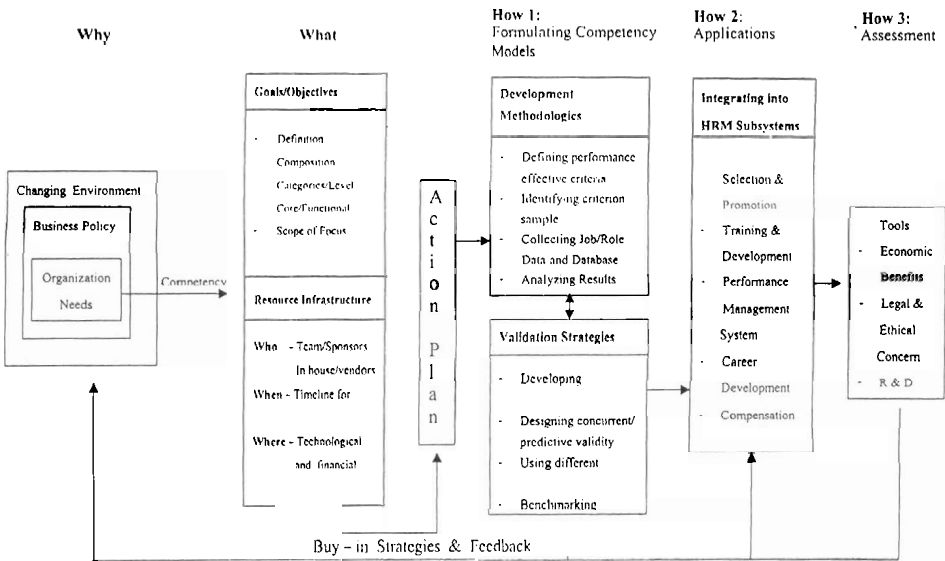


Figure 1: A strategic framework (5W1H³) for competency formulation and implementation

Understanding Competencies

Those who spend efforts in examining competency are immediately struck by the lack of uniform definitions, compositions, and methodologies which, of course, lead to misunderstanding, wandering, and waste (Cooper, 2000; Dalton, 1997). Its meanings defined by standard dictionaries are broad, vague, and inferred which subject to a variety of interpretations. Trying to draw a fine line among the (buzz)words such as proficiency, capability, capacity, competence, competency, and competencies is even more difficult and creates confusing (see examples in Byham & Moyer, 2000; Cooper, 2000; Mirabile, 1997). It should be noted herein that clarity in an operational definition of competency is a sine qua non to methodologies used in achieving valid and useful competency models. Credibility of the models begins from clear definitions.

However, since early pioneering investigations, it is generally agreed that competency can be clinically defined as “ a person’s underlying characteristics that are related to effective or superior performance in a job or situation” (Boyatzis, 1982; 1996; Klemp, 1980; Spencer & Spencer, 1993). Superior job performance is characterized as exhibiting more often in several job situations and yielding better results. This way of defining competency is later labeled as the clinical approach due to the difficulty to understand and use. When contemporary practitioners and scholars try to translate the competency concepts into action, more behavioral clarifications are called for.

Dissatisfaction leads to a behaviorally defined fashion. Decomposed it in a more developable, acceptable, and defensible manner, competency is described as “a cluster of knowledge, skills, abilities, behaviors, and attitudes related to job success and failure “ (Byham & Moyer, 2000; Cooper, 2000; Green, 1999; Lucia & Lepsinger, 1999; Parry, 1996). This new behavioral approach creates what “good” competencies might look like. Characteristics of a set of useful competency list are, for instance, 1) exhibiting job-relatedness, 2) observable and measurable against well-accepted job standards or criteria, 3) being

improved via training and development, and 4) providing insights on determining how capable or fitness a person is to a job and an organization.

Even though competency can be classified in three different types and three different levels or units of analysis (Byham & Moyer, 2000; Cook & Berntal, 1996; Zwell, 2000), there is strong movement among practitioners to delve on job and role competencies rather than on personal or organizational competencies. Many believe the former proved more applicable and most beneficial to human resource management. This is one of the reasons why most competency models being developed are built around identifying effective job behaviors in different job positions and work contexts.

Core competencies are another term of great interest when first introduced by Prahalad and Hamel (1990) to be meant as “organizational strengths and strategic competitiveness.” Subsequent interpretations assume that core competencies can be used to describe not only for the entire organization, but also at individual- and group levels. Successful world-class companies do have their unique core competencies which allow them to sustain business competitive advantages.

In practice, after determining scope of investigation, outlining an action plan and seeking top management blessing, HR professional teams – under close supervision of competency experts – work closely in formulating two types of job/role competencies. One is called core competencies and the other named specific or functional competencies. These two categories will be used as the basis for establishing desirable competency models. As a company for product innovation, 3M requires its employees to express work-related creativity. Thus, functional competencies for 3M programmers may relate to web concepts, programming languages, or product software system development. Figure 2 illustrates how each competency level affects organization effectiveness under contexts of strategic human resource management .

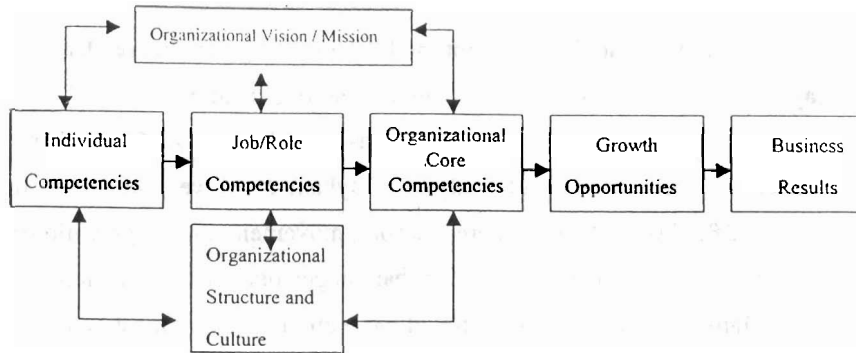


Figure 2: Impact of three-level competencies on business results

Developing Competency Modeling

Competency modeling is a process of determining what competencies are necessary for successfully performing a job or a role. In other words, it may be virtually called elsewhere as “competency profiling or competency mapping.” As depicted in Figure 3, the competency models are normally linked to organization’s strategic purposes for achieving results. Valid competency models help to strengthen HR systems, improve overall performance, and increase business impacts over time (Cook & Bernthal, 1996; Parry, 1996, 1998) A variety of a profile and its applications varies according to a diversity of business results, target groups, job/roles, and positions.

The models always comprise of associated knowledge, skills, abilities, and other characteristics abbreviated as KSAOs which represent effective work behaviors (Kierstead, 1998). These KSAOs are grouped into clusters, labeled, and defined in a systematic manner. For instance, each competency may have associated behavioral indicators subdivided into 3–7 levels of performance proficiency. Interested readers are referred to Briscoe and Hall (1999), Byham and Moyer (2000), and Mansfeild (1996) for more details of approaches to establishing competency models. The models can be developed through in-house or imported, started either from scratch or with a validated competency model or both (Alldredge & Nilan, 2000; Lucia & Lepsinger, 1999).

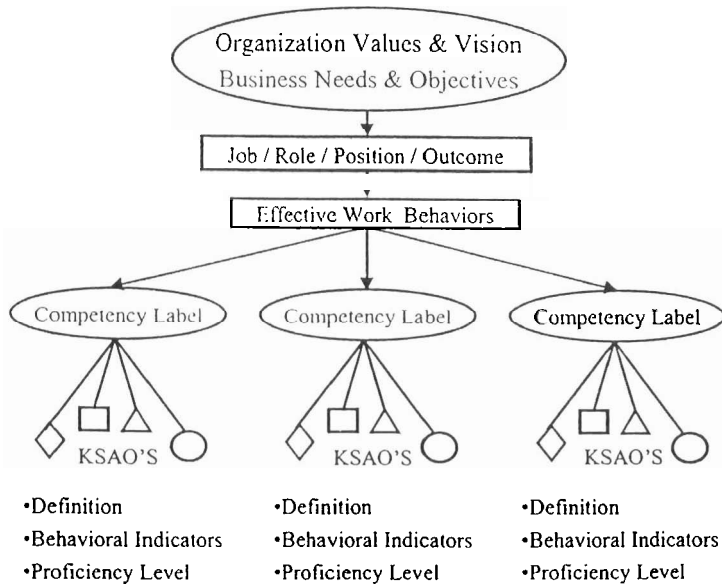


Figure 3 : A conceptual cascade for developing competency modeling

A competency model can be designed for an organization overall or for a position, role, level, function, or job within the organization (Zwell, 2000). Generally a number of “hard and soft” approaches is proposed to create competency models. Each of the major competency approaches has advantages and disadvantages. Given the fact that, there is no one single correct way to develop competency models. Professional judgement is called for weighing its return-on benefits before employing any approach. Consulting with other competency advocates or a business case analysis is a smart start.

Four primary models are briefly discussed in Table 1 to describe core activities, pros and cons of each model approach. Which type of model an organization employs depends on its needs and objectives. While all are valid approaches, some lend themselves better than others to particular HRM subsystems (Cira & Benjamin, 1998).

At first glance of Figures 1 and 3, one may think that the development of competency models can be done in a relatively simple process. In fact, that is not quite true. Several organizational context factors and other operational parameters, for examples, - timeline, financial and personnel resources - need to be taken into accounts. A matter of how it is done should carefully incorporate these enabling factors. It is reported that by 1991 more than 100 researchers from 24 countries had contributed to a database of approximately 1,000 competency models (Spencer, Jr., 1997).

Essentially, methodologies used to designing the models involve 1) analyzing target job or position under changing business strategies, 2) identifying effective and ineffective behaviors from below, average, and “star” performers, 3) collecting data by using balanced approaches, 4) analyzing the data and formulating an interim competency model, and finally 5) validating the appropriateness of the model.

Table 1: Comparing Approaches to Developing Competency Models

Categories of Competency Model	Major Characteristics	Advantages & Disadvantages
1. Core Competency model (one-size-fits-all model)	<ul style="list-style-type: none"> - closely aligned to vision, values, and mission - applies to all levels/ jobs and functions - provides broad, quick, and consistent impacts 	<ul style="list-style-type: none"> - helps to catalyze changes - can be used with many groups - modest cost but longlast impacts - not specific to particular job - more difficult to implement - best for homogeneous work
2. Functional Competency Model	<ul style="list-style-type: none"> - built around key business areas - applies to all employees in target functions 	<ul style="list-style-type: none"> - focused and specific efforts - considers on technical aspects - often used for a single job or position
3. Job/Role Competency Model	<ul style="list-style-type: none"> - applies to specific roles in organizations - identifies both core and specific competencies 	<ul style="list-style-type: none"> - unifying, useful in a team-based organizations - narrow if applied to a single job less cost effective if outdated - time consuming
4. Multiple-Job Model	<ul style="list-style-type: none"> - provides a common set of generic competencies - can be used with several jobs for a longer period - applied to a wide range of employee groups 	<ul style="list-style-type: none"> - getting popular but most difficult to implement and explain - needs close management supports and HR champions - a quick, low-cost approach - customized for individual jobs

A competency profile is the product of holistic views on business needs defined under turbulent environment. Its development requires in-depth thinking and analysis. Valid competency models can provide several benefits to an organization. Most fundamentally, they provide directional guidance in behavioral terms what people at every level need to do in delivering results. Second, when properly

defined, their measurability helps to differentiate effective performance from those average and substandard. The assessment information can also be used to benchmark management effectiveness between organizations. Third, competencies regarded as critical to business survival and success can be learned and improved. Lastly, good competency models provide comprehensive integration into many human resource practices.

Validating the Competency Models

Organizations should validate the models to avoid risks of having irrelevant and outdated profile which may lead to legal implications. The more extensive applications of the models to HRM activities, the greater degree and time require for the validation. It is suggested that organizations begin the validation process as early as possible as they go along the development phase.

It is professionally unethical to use the interim competency models without prior verifications and refinement. There are several techniques to verify the usefulness, the appropriateness, and the meaningfulness of the models. To mention a few, some less onerous examples are informal feedback from observations, employee survey, audit sampling, and managerial validation. However, popular methods and exercises in use are a combination of several tools such as a focus group, a behavioral event interview, 360-degree validation, best practices, stakeholder interview, and a survey method.

Validation is a long-term process to realize the actual effectiveness. Many practitioners incline to prefer content validation approach to statistical or criterion validation. The former methods systematically examine content representativeness of the interim model. While the latter focuses on correlation indices between a given competency and measures of individual performance. In addition to that, output benefits such as profits, productivity, and client satisfaction are tracked. In fact, using balanced validation approaches enhance the credibility and the validity of the models in practice.

To ensure effectiveness, a validation activity should be conducted by including a number of relevant stakeholders. And to enhance buy-in impacts, line managers, executives, incumbents, and professionals who are familiar with business work and validation methodology should be invited to involve in the activity.

Due to a rapidly changing nature of jobs and business competition, it is recommended that the appropriateness of the original competency models in use be periodically modified or updated. The revision deem particularly necessary if policy and purpose of usage is changed (Alldredge & Nilan, 2000).

Applying the Competency Models to Human Resource Management

Shifting from day-to-day organizational operations to competency-based ones is a big challenge. Competency-based management (CBM) can be regarded as an approach to managing employee performance based on both the “what” is achieved and the “how” results are derived. Applying the competency models to human resource management is a strategic choice. Thus, organizations implementing CBM have to consider whether to adopt a common profile across the entire organization. However, at the initial stage, organizations do not have to apply CBM in a full-fledged manner to all human resource areas. In fact, some have started out by first applying CBM in staffing or training initiatives. When employees become familiar with the application then CBM is introduced to other critical HR areas. Table 2 illustrates ten areas of CBM application.

The most valuable impact of the verified competency models comes from integrating multiple systems around core competencies in unifying and synergistic efforts. That is, the competency use in selection assessment may yield benefits for training needs.

Table 2: Classifications of CBM Applications

Human Resource Areas	Roles of Competency Modeling*
1. Job analysis & Evaluation	- Shift the unit of analysis from a job and associated tasks to a person and what he/she is capable of
2. Selection and Promotion	- Serve as a means to determine appropriate assessment tools after identifying that competencies are job-related.
3. Lay-off	- Used as qualifications to determine order/reasons to be laid off.
4. Deployments	- Serve as requirements and justifications to appointments
5. Resourcing Activities	- Be a tool for assessment with indicators and proficiency level.
6. Human Resource Planning	- Address rising marketable skills in demands or in shortage.
7. Training and Development	- Used to identify training needs, self-development, evaluating.
8. Performance Management	- Establish 360-degree feedback system & performance standard.
9. Compensation	- Least often used, reward performance/skill-based pay for team.
10. Career, Succession, Placement	- Support for career mobility and individual development plan.

*For more details, see Byham & Moyer, 2000; Dubois, 1998; Lucia & Lepsinger, 1999; Zwell, 2000

Lessons Learned from Best Practices

Competency efforts cost heavily in terms of finance, workforce labor, and expertise no matter that the models are internally developed or selected “off-the-shelf.” Simply importing the competencies of other organizations that sound right without proper validation from stakeholders may be less costly but at risk of being disconnected from real organizations needs. Cost savings at the front end could be negated when the profile is invalid and irrelevant. Consulting and learning from experiences of other users with regard to models’ efficiency and effectiveness is strongly recommended at every phase of their development.

Lessons learned from the experience of driving competency efforts in both the public and private sectors (Dubois, 1998; The Treasury Board of Canada Secretariat and the Public Service Commission, 1999) can be summarized as follows

1. The presence of organizational culture that fosters change, excellence innovation, participative decision-making, and continuous learning will greatly enable the application of CBM to success.

2. It is important that all levels of management exhibit a strong leadership, understanding, and championship roles in the long term. These critical management jobs are providing platforms for decision-making, confirming business objectives, determining strategic direction, and building buy-in. Maximizing involvement to ensure the buy-ins and use multiple inputs in creating the context are the keys.

3. Senior management have to agree on the specific direction that is consistent across the organization. "Just-get-it-done" or "jumping on with the bandwagons" mentalities will be proved as a big waste and deteriorate workgroup morale. Work culture of organizations should encourage all line -not only HR - managers to take ownership and drive the process throughout the implementation cycle.

4. The project should have plans to seek on-going commitment, participation, and long-term buy-in from key stakeholders. Holding meaningful consultations with employees throughout the development and implementation of CBM ensure ownership in a decision making process.

5. The organization needs to have a strong communication strategy in place to ensure that employees understand the reason for implementing the CBM and how it can help to deliver business results. Keep the model simple, user friendly, and flexible.

6. Last but not least, competencies need to be applied correctly, if not, they become meaningless. If developed and applied in a methodical and

strategic manner, competencies can help human resource activities to deliver expected results.

Critical Success and Failure Factors in Developing and Applying the CBM

In addition, in practice, six other key factors identified as contributing to the success or failure of competency projects which include: (1) competency - related knowledge and experience team members and their commitment, (2) a strategic linkage of competency models to organization vision and business results, (4) the close ties of competency efforts to other management subsystems especially performance evaluation and rewards, (5) multiple communication strategies for infusing, leveraging, and sustaining the growth of competencies, and lastly (6). flexibility in providing choices about whether when, and how to implement.

Future Trends and Concluding Remarks

Competency models will be in vogue both in the public and private sectors with promising applications. Competency technologies and resources continue to be utilized lead to credible methodologies. Graduate studies of many fields of study are directed to competency - based curriculum design (Denhardt, 2001; SIOP, 2001).

Hopefully, it is realized, by this paper, that there is no right answer to competency issues. What is important for organizations is adopting definitions, models, and approaches that make sense, meet their needs, and used them consistently. If so, trying to apply competency models to HRM is not like trying to understand the concept of an elephant and the six blind men, but fruitful and cost effective efforts.

References

- Allredge, M.E., & Nilan, K.J. 2000. 3M's leadership competency model: An internally developed solution. *Human Resource Management*, 39, 133 - 145.
- Appelbaum, L., & Paese, M. 2001. *What senior leaders do: The nine roles of strategic leadership*. Pittsburgh, PA: Development Dimensions International.
- Bartlett, C. A., & Ghoshal, S. 1997. The myth of the generic manager: New personal competencies for new management roles. *California Management Review*, 40, 92 - 116.
- Bernthal, P.R., & Wellins, R.S. 2001. *Leadership forecast 2001: A benchmarking study*. Pittsburgh, PA: Development Dimensions International.
- Boam, R., & Sparrow, P. 1992. *Designing and achieving competency*. A competency-based approach to developing people and organizations. London: McGraw-Hill.
- Briscoe, J. P., & Hall, D. T. 1999. Grooming and picking leaders using competency frameworks: Do they work? *Organizational Dynamics*, Autumn, 37 - 51.
- Boyatzis, R. E. 1982. *The competent manager: A model for effective performance*. New York: John Wiley & Sons.
- Boyatzis, R. E. 1996. Competencies for HR professionals: An interview by A.K. Yeung. *Human Resource Management* 35, 35 - 51.
- Byham, W. C. 1996. *Developing dimension-/competency-based human resource systems*. Pittsburgh, PA: Development Dimensions International.
- Byham, W. C., & Moyer, R. 2000. *Using competencies to build a successful organization*. Pittsburgh, PA: Development Dimensions International.
- Cira, D. J., & Benjamin, E. R. 1998. Competency-based pay: A concept in evolution. *Compensation and Benefits Review*, September/October, 21 - 28.
- Cook, K. W., & Bernthal, P. 1996. *Job/role competencies practices survey report*. Pittsburgh, PA: Development Dimensions International.

- Cooper, K. E. 2000. *Effective competency modeling and reporting: A step-by-step guide for improving individual and organizational performance*. New York: AMACOM.
- Cooper, S., Lawrence, E., Kierstead, J., Lynch, B., & Luce, S. 1998. A brief overview of development and application to public and private sectors. Ottawa: Public Service Commission. www.psc-cfp.gc.ca/research/
- Dalton, M. 1997. Are competency models a waste? *Training and Development*, October, 46 - 49.
- Denhardt, R. B. 2001. The big questions of public administration education. *Public Administration Review*, 61, September/October, 526 - 534.
- Dubois, D.D. 1993. Competency-based performance improvement: A strategy for organizational change. Amherst, MA: HRD Press.
- Durand, T. 1998. *The alchemy of competence*. p. 303 - 330. In G. Hamel and C.K. Prahalad (Eds.). *Strategic flexibility: Managing in a turbulent environment*. Chichester: Wiley & Sons.
- Ennis, S. 1997. *Assessing employee competencies*. p. 1 - 24. In S. M. Brown and C. J. Seidner. (Eds.). *Evaluating corporate training: Models and issues*. Boston: Kluwer Academic Publishers.
- Green, P. C. 1999. *Building robust competencies: Linking human resource systems to organizational strategies*. San Francisco, CA: Jossey - Bass Publishers.
- Harris, M. 1998. Competency modeling: Viagraized job analysis or impotent imposter. *The Industrial and Organizational Psychology*, October, 13 - 18.
- Henderson, F, Anderson, N, & Rick, S. 1995. Future competency profiling: Validating and redesigning the ICL graduate assessment center. *Personnel Review*, 24, 3, 19 - 31.
- Intagliata, J., Ulrich, D., & Smallwood, N. 2000. Leveraging leadership competencies to produce leadership brand: Creating distinctiveness by focusing on strategy and results. *Human Resource Planning*, 23, 12 - 23.

- Kierstead, J. 1998. Competencies and KSAO's. Ottawa: Public Service Commission. www.psc-cfp.gc.ca/research/
- Klemp, G.O. 1980. *The assessment of occupational competence*. Washington, D.C.: Report of the National Institute of Education.
- Kochanski, J. 1997. Competency-based management. *Training and Development*, October, 41 - 44.
- Lucia, A. D., & Lepsinger, R. 1999. *The art and science of competency models: Pinpointing critical success factors in organizations*. San Francisco, CA: Jossey-Bass.
- Mansfield, R.S. 1996. Building competency models: Approaches for HR professionals. *Human Resource Management*, 35, 7 - 18.
- McClelland, D.C. 1973. Testing for competence rather than for "intelligence." *American Psychologist*, January, 1 -14.
- McClelland, D. C.1998. Using behavioral event interview to identify competencies *American Psychological Science*, 9, 331 - 339.
- Mirabile, R. J. 1997. Everything you wanted to know about competency modeling. *Training & Development Journal*, 51, August, 73 - 77.
- Morris, D. 1996. Using competency development tools as a strategy for change in The Human Resources function: A case study. *Human Resource Management* 35, 35 - 51.
- Parry, S. B. 1996. The quest for competencies. *Training*, July, 48 - 56.
- Parry, S. B. 1998. Just what is a competency? *Training*, June, 58 - 64.
- Pickett, L. 1998. Competencies and managerial effectiveness. *Public Personnel Management*, 27, 103 - 115.
- Prahalad, C. K., & Hamel, G. 1990. The core competence of the corporation. *Harvard Business Review*, May - June, 79 - 91.

- Punnitamai, W. 1996. *A competency-based model of the Thai "new wave" leaders: Strategies for identification and development of management talent*. A paper presented at the ASEAN Conference on the New Wave Leaders : Westin Hotel, Chaingmai, Thailand, August 23-28,
- Shippman, J.S., Ash, R.A., Battista, M., Carr, L., Eyde, L.D., Hesketh, B., Kehoe, J., Pearlman, K., & Sanchez, J. I. 2000. The practice of competence modeling. *Personnel Psychology*, 53, 703 - 740.
- Spencer, Jr., L.M. 1997. *Competency assessment methods*. p. 1-36. In L. J. Bassi, D. Russ-Eft (Eds.). *Assessment, development, and measurement*. New York: American Society for Training and Development.
- Spencer, Jr., L.M., & Spencer, S.M. 1993. *Competence at work: Models for superior*. New York: John Wiley & Sons.
- The Society of Industrial and Organizational Psychology (SIOP). 2001. *The science and practice of Industrial and Organizational Psychology*. Alexandria, VA: www.siop.org.
- The Treasury Board of Canada Secretariat & the Public Service Commission. 1999. *Framework for the competency-based management in the Public Sector of Canada*. Ottawa: www.tbs-sct.gc.ca.
- Ulrich, D., & Brockbank, W. 1995. Human resource competencies: An empirical assessment. *Human Resource Management*, 34, 473 - 495.
- Winterton, J., & Winterton, R. 1999. *Developing managerial competence*. London: Routledge.
- Zwell, M. 2000. *Creating a culture of competence*. New York: John Wiley & Sons.

- Punitamai, W. 1996. *A competency-based model of the Thai "new wave" leaders: Strategies for identification and development of management talent.* A paper presented at the ASEAN Conference on the New Wave Leaders : Westin Hotel, Chaingmai, Thailand, August 23-28,
- Shippman, J.S., Ash, R.A., Battista, M., Carr, L., Eyde, L.D., Hesketh, B., Kehoe, J., Pearlman, K., & Sanchez, J. I. 2000. The practice of competence modeling. *Personnel Psychology*, 53, 703 - 740.
- Spencer, Jr., L.M. 1997. *Competency assessment methods.* p. 1-36. In L. J. Bassi, D. Russ-Eft (Eds.). *Assessment, development, and measurement.* New York: American Society for Training and Development.
- Spencer, Jr., L.M., & Spencer, S.M. 1993. *Competence at work: Models for superior.* New York: John Wiley & Sons.
- The Society of Industrial and Organizational Psychology (SIOP). 2001. *The science and practice of Industrial and Organizational Psychology.* Alexandria, VA: www.siop.org.
- The Treasury Board of Canada Secretariat & the Public Service Commission. 1999. *Framework for the competency-based management in the Public Sector of Canada.* Ottawa: www.tbs-sct.gc.ca.
- Ulrich, D., & Brockbank, W. 1995. Human resource competencies: An empirical assessment. *Human Resource Management*, 34, 473 - 495.
- Winterton, J., & Winterton, R. 1999. *Developing managerial competence.* London: Routledge.
- Zwell, M. 2000. *Creating a culture of competence.* New York: John Wiley & Sons.