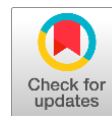# Exploring competency: Corporate framework, learning theories, and a cognitive development model

Anuj Jajoo[a] ✉ | Pooja Deshmukh[a]

[a]MGM Institute of Management & Research, Aurangabad, India.

Abstract This review paper delves into the cognitive aspects of corporate learning and competency development, focusing on various theories and models explaining neurocognitive and behavioral psychology. This paper explores "Maslow's hierarchy of needs", "Affective, Behavioral, and Cognitive (ABC) Model of Attitude", "Expectancy Value Theory", "NLP Communication Model", "Social Cognitive Learning Theory", "Knowles' theory of Andragogy", "NLP Neurological Levels", "Theory of Planned Behavior", "Cognitive Load Theory", "Cognitive Learning Principles Underlying the 5E Model", and "Constructivism Theory". While these theories individually address specific aspects of human behavior, they have limitations in their individual scope when applied to the corporate competency development process. This paper constructs the "Cognitive Competency Development Model (CCDM)", which integrates the examined theories and models, providing a cohesive framework for understanding competency development within organizations. This paper briefly discusses the meaning of competency and a typical competency development framework used by corporates. The CCDM emphasizes the multifaceted nature of competency development. It considers the intricate interplay of individual, social, and environmental factors in shaping competency development. It begins with the mental filtering of learning stimuli by various expectancies, neurological factors, and hierarchies of needs. This filtered information forms a perception and knowledge construct, leading to competency development. Competency may affect attitudes and intentions, resulting in behavioral change and better performance at work. The paper concludes by highlighting the potential of the model to inform the design of more effective learning and development interventions. By understanding how the brain influences learning and development, organizations can improve their training programs and create a culture of continuous learning.

Keywords: learning and development, behavioral psychology, corporate training effectiveness, cognitive competency

1. Introduction

1.1. The meaning of Competency

Hoffmann (Hoffmann, 1999) classifies individual competencies into the following two categories:

i. Output-based competencies: These competencies are typically applied to straightforward job roles, focusing on performance and standards. Performance refers to the expected behaviors for efficient job execution, serving as evidence of competency, while standards define the quality of performance.

ii. Input-based competencies: These are commonly utilized for diverse job profiles, focusing on individual characteristics and job demands. Individual characteristics define job competency based on an individual's traits, contributing to effective job performance, while job demands articulate specific job requirements based on environmental factors.

Competency is a combination of knowledge, skills, and behaviors that are required for success in a particular role or industry. (Society for Human Resource Management, 2023).

1.2. Corporate Competency Framework

A learning organization, in business management, is an organization that continuously facilitates the competency development of its employees (Pedler et al., 1997). Organizations establish a competency framework (Ali, 2021) as a structured approach to defining and organizing the competencies required for addressing business needs effectively in various roles within the organization. The following is a typical corporate competency framework (Figure 1).

This framework categorizes organizational competencies into clusters, such as functional, personal effectiveness, technical, management, and academic competencies (Building Blocks for Competency Models, n.d.).

There are two types of role competencies (IAEA, n.d.):

    i. Core: These competencies contribute to the organization's differential advantage (for example, teamwork, decision making, problem solving, and adaptability).

    ii. Functional: These competencies are the professional ones necessary for quality outcomes (for example, data analysis, engineering, programming, accounting)

Each competency is defined with an expertise level. For instance, leadership competency for a managerial role requires a greater expertise level than that of a junior role.

The learning and development (L&D) unit is responsible for assessing competency gaps and designing development programs. Behavioral psychology plays an important role in the competency development process. This paper reviews several popular psychological theories and models in the Literature Review section. While these theories individually address specific aspects of human behavior, they have limitations in their individual scope when applied to the corporate competency development process. In response, the paper introduces the "Cognitive Competency Development Model", which integrates the examined theories and models, providing a cohesive framework for understanding competency development.
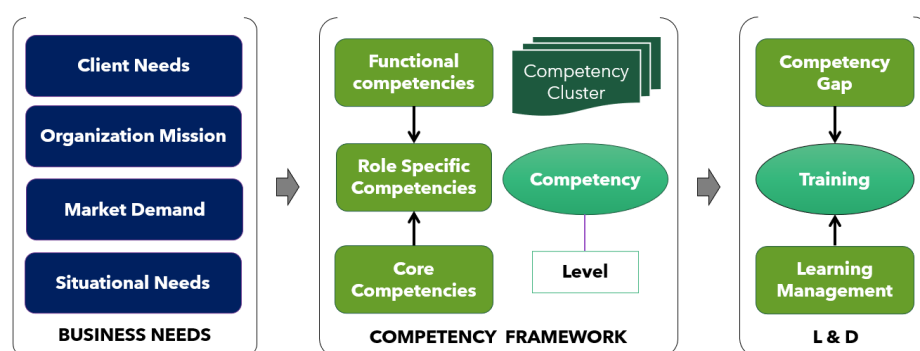

Figure 1 Corporate Competency Framework.

2. Literature Review

In this section, popular behavioral psychology theories and models are reviewed and critically evaluated from the corporate competency development perspective.

2.1. Maslow's Hierarchy of Needs (Maslow, 1954)

This theory proposes that people are motivated to fulfill certain needs in a hierarchical order. These needs range from basic physiological needs to higher-level needs such as self-actualization (Figure 2).

The present status of employees in the hierarchy of needs can influence their sense of purpose behind developing a competency. When employees' lower-level needs, such as physiological needs and safety needs, are met within the workplace, they can focus on next-level needs such as self-actualization, esteem, and belongingness. As they progress up the hierarchy, their sense of purpose may shift from fulfilling basic needs to seeking personal growth, fulfilling, and contributing to something greater than themselves.

Needs	Purpose	Competency Example
Self-Actuation	Living to the highest potential	Entrepreneurship, Leadership
Esteem	Achieve- Honour, Recognition	Managerial, Branding
Love and Belonging	Establish- Meaningful Relationships	Communication, Team Skills
Safety	Gain- Health and Safety	Security Mindset, Resilience
Physiological	Get- Clean Air, Water, Food, Shelter	Basic Functional

Figure 2 Hierarchy of needs with purpose and competency.

2.1.1. Strength(s)

The hierarchy of needs provides a holistic framework for understanding employee motivation and behavior, which can be valuable for designing corporate learning programs that address diverse needs.

2.1.2. Limitation(s)

Limited Predictive Power: The theory's hierarchical nature may not always accurately predict or explain the diverse and dynamic motivations of employees in a corporate setting.

2.2. ABC (affective, behavioral, and cognitive) model of attitude (Rosenberg & Hovland, 1960)

This psychological framework posits that attitudes are composed of three key components (Figure 3):
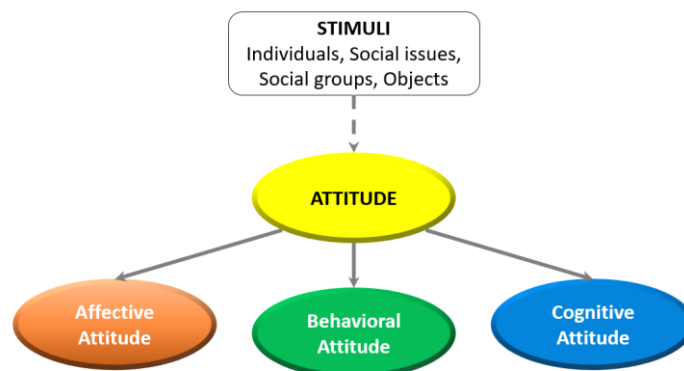

Figure 3 ABC model block diagram.

i.   Affective component: This deals with the emotional aspect of an attitude. It encompasses a person's emotions or feelings toward an object, person, issue, or event.

ii.   Behavioral component: This component focuses on how a person acts or behaves in relation to an attitude object. It refers to the actions or intended actions a person takes regarding the attitude object.

iii.   Cognitive component: This relates to an individual's beliefs, thoughts, and knowledge about an attitude object. It encompasses the person's understanding and beliefs about the object.

According to the ABC model, these three components are interconnected and influence each other on the occurrence of a stimulus.

2.2.1. Strength(s)

Predictive ability: Predictive ability aids in predicting and comprehending human behavior based on attitudes, as it takes into account the interplay between thoughts, emotions, and actions.

2.2.2. Limitation(s)

Lack of specificity: The model does not encompass the specific conditions or contexts that may influence the relationships between the components of attitudes.

2.3. Expectancy Value Theory (Vroom, 1964)

This theory proposes a psychological concept that explains the driving forces behind decision-making (Figure 4). It posits that an individual's motivation to undertake a specific action is influenced by the following two factors:

i.   Expectancy: This is the anticipation of achieving a desired outcome. According to this theory, people are inclined to act in a certain manner if they believe that their endeavors will yield the intended outcome.

ii.   Value: the significance attached to that outcome, i.e., when they perceive that outcome as valuable. The value can be external (e.g., financial, career) or internal (e.g., happiness, contentment).
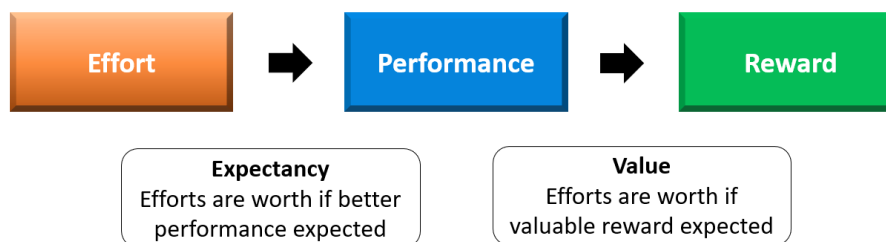

Figure 4 Expectancy value theory block diagram.

2.3.1. Strength(s)

Predictive power: The theory has been found to effectively predict and explain individuals' motivation and decision-making in various contexts, including corporate training.

Practical applications: This study can help educators understand and enhance students' motivation.

Individual differences: The theory acknowledges and accounts for individual differences in how people perceive the likelihood of achieving outcomes and the value they place on those outcomes.

2.3.2. Limitation(s)

Simplification: The theory oversimplifies the complexity of human motivation and decision-making by reducing them to the expectancy and value components, potentially overlooking other important factors such as environmental factors and their effects on motivation and behavior, as it primarily focuses on individual beliefs and values.

Measurement challenges: It can be challenging to accurately measure and quantify individuals' expectations and values.

2.4. NLP Model of Communication (Bandler & Grinder, 1975)

This framework describes how individuals perceive and process information and how this influences their behavior and communication. The neuro-linguistic programming (NLP) communication model, as illustrated in Figure 5, introduces the idea of mental filters. External world information passes through various filters, such as memory, decisions, beliefs and values, metaprograms, strategies, and attitudes. These filters cause deletion, distortion, and generalization of the information, resulting in the shaping of perception/internal representations. An individual's state of mind is a blend of cognition, emotions, and physiological conditions. Eventually, behavioral reactions are generated.
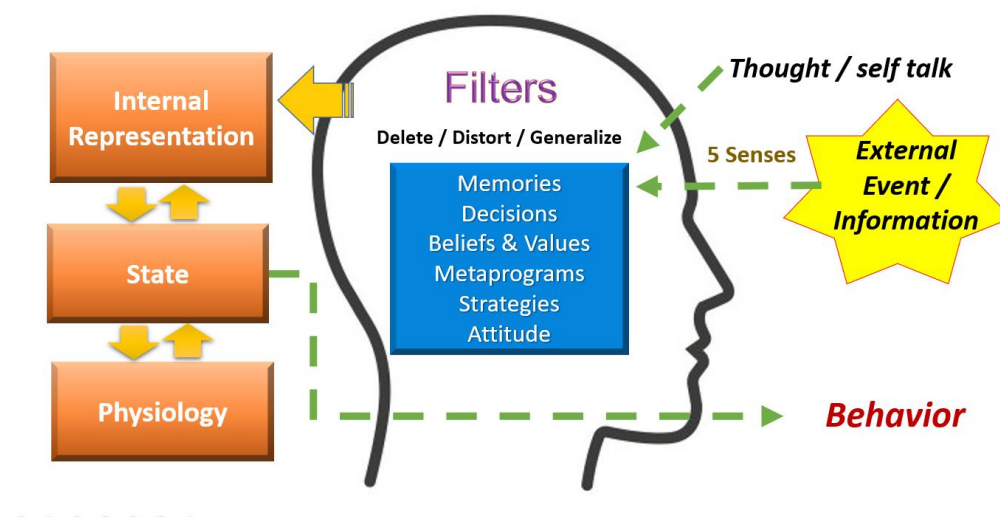

Figure 5 NLP communication model.

2.4.1. Strength(s)

The NLP communication model provides valuable insights into mental filtering and the generation of perceptions. This can be leveraged to enhance corporate learning effectiveness.

2.4.2. Limitation(s)

This model is criticized for the lack of empirical evidence, controversial aspects, and potential overemphasis on techniques when utilizing the model in practice.

2.5. Social Cognitive Learning Theory (SCLT) (Bandura, 1977)

SCLT posits that individuals acquire behaviors from models (others) through the processes of observing, mirroring, and modeling in three ways:
  i. By observing the behavior of live people (live modeling).
  ii. By acquiring a behavior from the verbal depiction of a behavior (Verbal instructional modeling).
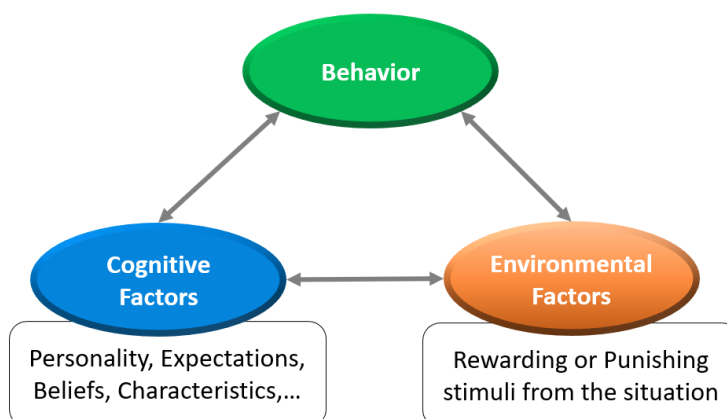 iii. By observing the conduct of fictional characters in the literature or movies (symbolic modeling).

Figure 6 SCLT block diagram.

Bandura suggested that environmental factors, cognitive factors, and behavior are interconnected and mutually influential (Figure 6). Cognitive components encompass characteristics, beliefs, personality traits, and expectations. The environmental factors represent the circumstances that supply stimuli, whether rewarding or punishing. Behavior encompasses all actions undertaken by individuals within their environment. As a result of environmental and social factors, the actions that receive rewards are more likely to be replicated, while those that are punished are more likely to be discontinued. Bandura also emphasized the significance of the individual's mental state in the learning process.

2.5.1. Strength(s)

Observational Learning: Learning through observation and modeling can be valuable for employees to learn from successful peers or mentors, leading to improved competency development.

Environmental factor: The theory emphasizes the effect of environmental factors. Factors such as organizational culture and leadership style can encourage the development of competencies.

Cognitive Factors: According to Bandura, self-efficacy beliefs play a crucial role in determining how people think, feel, motivate themselves, and act. These beliefs influence individuals' choice of activities, effort, persistence, resilience to adversity, and level of performance.

2.5.2. Limitation(s)

Bandura's theory provides broader influencers; however, this theory has to be studied in combination with other theories to understand influencers at the micro level.

2.6. Knowles' theory of Andragogy (Knowles, 1984)

This theory emphasizes the distinct characteristics of adult learners and how they differ from child learners. The following are the fundamental Andragogy principles:

i. Self-concept: Adults perceive themselves as responsible for their own decisions and are motivated to learn when they see the learning as relevant to their goals. Involve them in planning their learning.

ii. Experience: Adults bring a wealth of experience to the learning environment. They prefer learning activities that build on their existing knowledge and life experiences.

iii. Readiness to learn: Adults are typically ready to learn when they believe that knowledge or skills will help them perform tasks or solve problems they encounter in their lives.

iv. Orientation to learning: Adults are more task-oriented and prefer problem-centered rather than subject-centered learning.

v. Motivation: Adults are motivated to learn by internal factors such as self-esteem, social status, and quality of life. They are motivated by the purpose behind the learning. They are less motivated by external factors such as grades or approval.

2.6.1. Strength(s)

Relevance: Andragogy emphasizes the importance of making learning relevant to adult learners' goals and experiences, which can enhance the effectiveness of corporate training programs.

Experience Integration: The theory encourages the integration of adults' existing knowledge and experiences into the learning process, making the learning more practical and applicable to their work.

2.6.2. Limitation(s)

The theory's assumptions about adult learners may not universally apply to all adults, as individual learning preferences and motivations can vary widely.

2.7. NLP Neurological Levels (Dilts, 1990)

This model, developed by Robert Dilts, offers a framework for understanding and addressing different levels of experience and change within an individual or a system (Figure 7).

Levels	Description
Purpose	Higher purpose, connection to greater than self
Identity	Sense of self, self-image, roles, and relationships
Values & Beliefs	Beliefs/Values that guide a behavior and shape identity
Capability	Competencies that enable a behavior
Behavior	Actions / reactions within their environment
Environment	External context in which a person operates

Figure 7 NLP neurological levels.

Robert Dilts suggests that creating change at a higher level in the hierarchy can lead to more profound and lasting change at lower levels. For instance, altering a person's beliefs and values can result in changes in behavior and competencies. This model is commonly utilized in coaching, therapy, and personal development to help individuals comprehend and address issues at different levels of experience.

2.7.1. Strength(s)

Holistic Understanding: The model provides a holistic framework for understanding individuals, allowing corporate trainers to address learning and development at multiple levels simultaneously.

Alignment with Organizational Goals: The model can help ensure that individual learning and development efforts align with the broader goals and values of the organization.

Personalized Development: This allows for a personalized approach to employee development, recognizing that change and growth occur at different levels for different individuals.

2.7.2. Limitation(s)

Time-consuming: Addressing change at multiple levels may require more time, resources, and expertise, which may not be present in all the training.

Subjectivity: Assessing and addressing beliefs, values, and identity can be subjective and may vary greatly from person to person, making it challenging to create standardized learning programs.

2.8. Theory of Planned Behavior (TPB) (Ajzen, 1991)

According to this psychological theory, an individual's intention to engage in a behavior is the primary determinant of whether the behavior will be performed. Intention is influenced by three key factors (Figure 8):

i. Attitude toward the behavior: This encompasses the individual's positive or negative assessment of the behavior, including beliefs about the outcomes of the behavior and the value placed on those outcomes.

ii. Subjective norms: This reflects the perceived social pressure to perform or not perform the behavior, including the influence of significant others and the person's drive to adhere to these influences.

iii. Perceived behavioral control: This represents the individual's perception of the simplicity or complexity regarding the execution of the behavior, including beliefs about personal capabilities and the presence of facilitating or inhibiting factors.

2.8.1. Strength(s)

Predictive power: The theory can help organizations predict and understand employee behavior, allowing them to design training programs and interventions that are more likely to be effective.

Focus on intention: The theory encourages organizations to address the factors that influence employees' willingness to engage in learning and development activities.

2.8.2. Limitation(s)

Complex Determinants: The model's reliance on attitudes, perceived behavioral control, and subjective norms may oversimplify the multitude of factors that can influence employee behavior. A broader range of internal and external factors can impact learning and development initiatives.
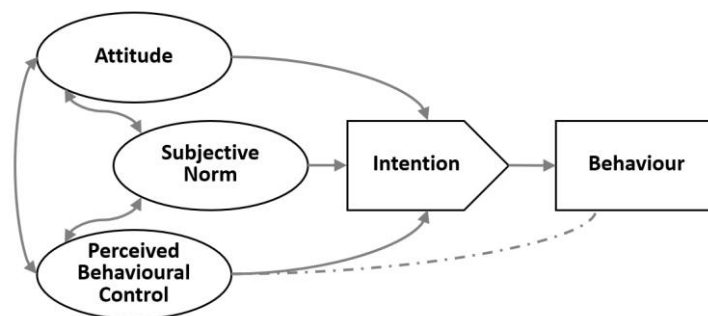

Figure 8 TPB block diagram.

2.9. Cognitive Load Theory

The article on 'Neurophysiological Basis of Memory' (Camina & Güell, 2017) explores different types of human brain memory, as illustrated in Figure 9. The sensory memory stores information for a very short time. Short-term working memory allows the processing of information for a short period. Long-term memory allows the storage of information for long periods of time. It can be further divided into explicit memory, which we can consciously recall, and implicit memory (unconscious competence), which we cannot consciously recall.

Working memory has limited capacity for processing the information received. When the received information exceeds the processing capacity, cognitive overload occurs, which affects the learning and retention of the information. There are 3 types of cognitive load. An intrinsic load is caused by the complex nature of the information. The extrinsic load is caused by unnecessary clutter along with the information. A germane load is essential for learning because it leads to neural connections (Sweller, 2019).
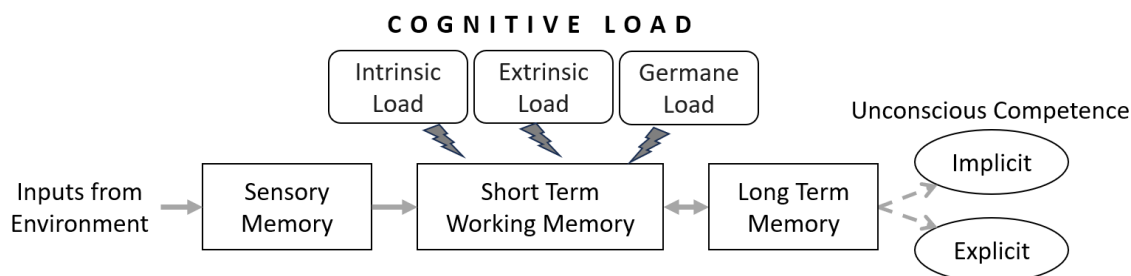

Figure 9 Memory and cognitive load block diagram.

2.9.1. Strength(s)

The study of long-term memory creation is essential for corporate competency development.
The understanding of cognitive load helps in optimizing it with better instructional design.

2.9.2. Limitation(s)

The article does not directly delve into competency development; however, it helps in forming the basis for other explanations.

2.10. The cognitive learning principles underlying the 5E Model (Ruiz-Martín & Bybee , 2022)

This theory posits a possible link between cognitive science principles and the theoretical framework of the 5E Model. Figure 10 provides a summary of the 5E phases, the activities to be facilitated, and the underlying cognitive processes as explained in the article.

5E Stage	Activity	Cognitive Process
Engage	Captivating phenomenon, mystery, or question presented	Activation of prior knowledge
Explore	Hands-on investigations, experiments, or observations	Promote connection between prior and new information
Explain	Scientific explanations for observations	Knowledge construct
Elaborate	Practice applying the learned concepts to novel situation	Synthesize learning, making connections across contexts
Evaluate	Assessment of knowledge and ability	Retrieval of information improve conceptual organization

Figure 10 5E Model – stages, activities, and cognitive processes.

2.10.1. Strength(s)

Engagement and active learning: The 5E model's hands-on approach promotes participation and keeps learners actively involved in the learning process. This can be particularly impactful in corporate settings where traditional training methods may feel passive or monotonous.

Constructivist learning: The model aligns with constructivist learning theory, encouraging individuals to build their understanding based on existing knowledge and experience. A schema (mental framework) becomes the basis for teaching, learning tools, and instructional design (Maj, 2022). This helps in developing a personalized approach for adult learners with diverse backgrounds and knowledge levels compared to a one-size-fits-all training approach.

2.10.2. Limitation(s)

Adapting to diverse needs: While the model offers flexibility, tailoring it to different competency levels, learning styles, and specific needs of a diverse workforce can be complex.

3. Cognitive Competency Development Model (CCDM) for Corporate Employees

The current theories and models each emphasize a specific aspect of how learners process information. Constructivism theory posits that the human brain constructs knowledge when it encounters new information (Steve , 2015). Upon studying various teaching-learning models and theories, a new model called the Cognitive Competency Development Model emerged. The CCDM (Figure 11) represents a comprehensive integration of the theories and models reviewed in the literature review section.
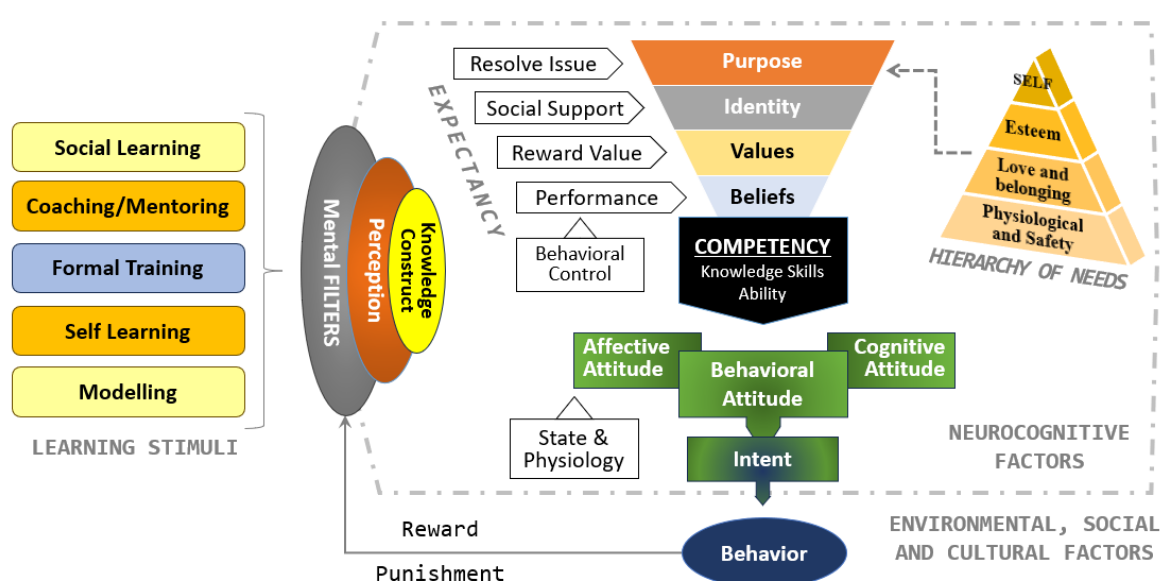

Figure 11 CCDM block diagram.

Learning stimuli: Employees receive learning inputs from various formal and informal channels, including formal training from L&D, coaching/mentoring, self-learning, and social learning. Employees also learn behavior by way of modeling (Bandura, 1977). Experiences, including learning from mistakes, serve as a foundation for adult learning (Knowles, 1984).

Mental Filter and Perception: Stimuli are received in sensory memory. According to the NLP communication model (Bandler & Grinder, 1975), all sensory inputs and internal thoughts undergo a mental filtering process (in short-term memory), leading to cognitive interpretations that ultimately shape an individual's perception of the new information. Emotions, when triggered during this process, have a greater impact on memory formation. (Kahneman, 2011)

The perception facilitates the knowledge construct, which goes to long-term memory and becomes part of the competency.

At the neurological level (Dilts, 1990), higher-order factors, namely, purpose, identity, values, and beliefs, significantly influence competency development. The transformation of learning inputs into competency development is influenced by these higher-order neurological factors as follows:

i. *Motivation of learning (Purpose):* The hierarchy of needs (Maslow, 1954) can influence an employee's sense of purpose by shaping their motivations and aspirations as they progress through the different levels of the hierarchy, ultimately impacting their approach to competency development within the organizational context.

Issues or difficulties at work can also motivate employees to learn in order overcome them. According to Knowles' theory of Andragogy (Knowles, 1984), adults are typically ready to learn when they believe that knowledge or skills will help them perform tasks or solve problems.

ii. *Support Expectancy (Identity):* Learners may consider how much social support they will receive for a behavior (Ajzen, 1991). When employees believe that they have the support of their colleagues, supervisors, and the organizational culture, it can positively influence their sense of self within the corporate environment. This support can contribute to a stronger sense of identity, confidence, and belonging, which are essential for their competency development. Identity, as a higher-order neurological factor, has a profound influence on beliefs, values, and, in turn, competency development (Dilts, 1990). For instance, when a newly promoted supervisor adopts the identity associated with their new role, it leads to the formation of new beliefs and values which support the learning and development of the necessary managerial skills.

iii. *Performance, Control and Value expectancy (Beliefs and values*): This encompasses learners' anticipation of performance success, perceived behavior control, and perceived value of the performance reward for them (Vroom, 1964).

iv. *Competency (Capability):* Competency in the corporate context is the ability to perform a task or achieve a goal effectively. It is a combination of knowledge, skills, and behaviors that are essential for success in a particular role or industry.

v. *Behavior:* Competency translates into behavior when attitudes and intentions are aligned with it, as described in the theory of planned behavior (Ajzen, 1991). Additionally, subjective norms (social factors) and perceived behavior control (belief) also contribute to creating intention for a behavior. Attitudes include all 3 types—affective, behavioral, and cognitive—as listed under the ABC model (Rosenberg & Hovland, 1960). The state of mind affects attitudes (Bandura, 1977).

vi. *Environment:* The organization culture, leadership style, contextual factors, etc., form the environment where the employees execute behavior. Feedback, whether in the form of reward or punishment, from social and environmental factors, influences the likelihood of behavior being repeated or discontinued (Bandura, 1977).

Competency development is an ongoing process that requires employees to continuously acquire new knowledge, skills, and attitudes to remain effective in their roles.

4. Final considerations

In conclusion, the exploration of the cognitive aspects of corporate learning and development through the study of various theories and models has provided valuable insights into the competency development process within organizations.

The review of various teaching learning models and theories reveal both, the strengths and limitations of each individual theory in addressing the complexities of corporate competency development.

The culmination of this review led to the development of the CCDM, which represents a comprehensive integration of the various theories and models examined. This model emphasizes the multifaceted nature of competency development, acknowledging the influence of learning inputs, mental filtering, perception formation, knowledge constructs, higher-order neurological factors, attitudes, intentions, behavior, and the environment on employee competency development within the organizational context.

It is evident that competency development is an ongoing process that necessitates the continuous acquisition of new skills, knowledge, and abilities to ensure the effectiveness of employees in their respective roles. The 'cognitive competency development model' serves as a valuable framework for understanding and facilitating this ongoing process, providing a holistic perspective that considers the intricate interplay of individual, social, and environmental factors in shaping competency development within organizations.

Moving forward, this model can be used to design effective learning and development approaches for competency development and cultivate organizational cultures that are conducive to behavioral transformation to support the corporate competency framework. This can help employees grow and succeed in today's rapid-paced world of business.

5. Scope for Further Research

Competency development is a multifaceted area of study. The cognitive competency development model, while built upon existing theories and models, would benefit from further empirical enhancements. The following suggestions outline potential avenues for future research. Every individual is unique. Deeper understanding of these individual differences can help tailor learning and development initiatives to better meet the diverse needs of employees.

Ethical considerations

Not applicable.

Conflict of interest

The authors declare that they have no conflict of interest.

Funding

The authors declare that they have no funding.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*. doi:https://doi.org/10.1016/0749-5978(91)90020-T

Ali, M. M. (2021). Competency Framework Development for Effective Human Resource Management. *SAGE Open*. doi:https://doi.org/10.1177/21582440211006124

Bandler, R., & Grinder, J. (1975). *The Structure of Magic I: A Book about Language and Therapy.* Palo Alto, California: Science and Behaviour Books.

Bandura, A. (1977). *Social learning theory (pp. 16-55).* Englewood Cliffs, NJ: Prentice-Hall.

Building Blocks for Competency Models. (n.d.). Retrieved February 18, 2024, from U.S. Department of Labor, Employment and Training Administration: http://www.melvinhenry.org/generic-model.pdf

Camina, E., & Güell, F. (2017, June 30). The Neuroanatomical, Neurophysiological and Psychological Basis of Memory: Current Models and Their Origins. *8*(438). doi:https://doi.org/10.3389/fphar.2017.00438

Dilts, R. (1990). *Neurological Levels.* Capitola, CA: Meta Publications.

Hoffmann, T. (1999). The meanings of competency. *Journal of european industrial training.*

IAEA. (n.d.). *The Competency Framework- A guide for IAEA managers and staff.* Retrieved from International Atomic Energy Agency: https://www.iaea.org/sites/default/files/18/03/competency-framework.pdf

Kahneman, D. (2011). *Thinking, Fast and Slow.* USA: Farrar, Straus and Giroux.

Knowles, M. (1984). *Andragogy in Action: Applying Modern Principles of Learning.* San Francisco: Jossey Bass.

Maj, S. P. (2022). A Practical New 21st Century Learning Theory for Significantly Improving STEM Learning Outcomes at all Educational Levels. *Eurasia Journal of Mathematics, Science and Technology Education, 8*(2). doi:https://doi.org/10.29333/ejmste/11510

Maslow, A. (1954). *Motivation and personality.* New York: Harper and Row.

Pedler, M., Burgogyne, J., & Boydell, T. (1997). *The Learning Company: A strategy for sustainable development* (2nd ed.). London: McGraw-Hill.

Rosenberg, M. J., & Hovland, C. I. (1960). *Attitude organization and change: An analysis of consisfency among attitude components.* New Haven: CT Yale University Press.

Ruiz-Martín, H., & Bybee , R. (2022, March 03). The cognitive principles of learning underlying the 5E Model of Instruction. *IJ STEM Ed 9*. doi:https://doi.org/10.1186/s40594-022-00337-z

Society for Human Resource Management. (2023). *Competencies: The Key to HR Success*. Retrieved from Society for Human Resource Management: https://www.shrm.org/hrcompetencies

Steve , B. O. (2015, December). Constructivism Learning Theory: A Paradigm for Teaching and Learning. *IOSR Journal of Research & Method in Education, 5*(6), 66-70.

Sweller, J. v. (2019, January 22). Cognitive Architecture and Instructional Design: 20 Years Later. *Educational Psychology Review, 31*, 261–292. doi:https://doi.org/10.1007/s10648-019-09465-5

Vroom, V. H. (1964). *Work and motivation.* San Francisco: Jossey-Bass.