CHAPTER 3

VARIABLES

3.1 EMOTIONAL INTELLIGENCE

3.1.1 Overview

In the recent past there has been a growing interest in the area of Emotional Intelligence, promoted by Daniel Goleman’s (1996) book on this topic. The term Emotional Intelligence is defined in very common terms as an ability, capacity, or skill to perceive, assess, and manage the emotions of one's self, of others, and of groups. The evolution of Emotional Intelligence goes as follows: it has its roots in the concept of "social intelligence," first identified by Thorndike (1920). Psychologists have discovered three types of intelligences and have grouped them mainly into three clusters: abstract intelligence (the ability to understand and manipulate with verbal and mathematic symbols), concrete intelligence (the ability to understand and manipulate with objects), and social intelligence (the ability to understand and relate to people). This includes inter and intrapersonal intelligences. Social intelligence is defined as “the ability to understand and manage men and women, boys and girls -- to act wisely in human relations”. These two intelligences comprise social intelligence and are defined as Interpersonal intelligence is the ability to understand other people: what motivates them, how they work individually and cooperatively. Many successful sales people, politicians, teachers, clinicians, and religious leaders are generally the individuals with high degrees of interpersonal intelligence. Intra personal
intelligence is a correlative ability, turned inward. It is a capacity which forms an accurate model for oneself and makes that model usable so that it can operate effectively in the life. Inter and Intrapersonal intelligence involves abilities that may be categorized into five dimensions:

1. **Self-awareness:** This means observing yourself and recognizing all the feelings as and when it happens.

2. **Managing emotions:** This refers to handling feelings and sentiments; realizing what is behind those feeling and finding ways to handle fears and anxieties, anger, and sadness.

3. **Motivating oneself:** This means moving the flow of emotions in line with the goals; emotional self-control; delaying gratification and controlling impulses.

4. **Empathy:** This refers to seeing things with other point of views; sensitivity to others' feelings and concerns and taking their perspectives.

5. **Handling relationships:** This means managing emotions with others; social competence and social skills.

Expression of emotion includes the ability to convey personal emotions both verbally and nonverbally, as well as to perceive and understand the expressed emotions of others. Regulation of emotion incorporates the ability to be adept at using emotion to influence moods in one as well as others. The final ability, utilizing emotional intelligence, suggests a need for the emotionally intelligent person to be able to use emotions to effectively decide on a solution to a problem (Rozette et al 2006).
The discussion in this section first describes the nature and definition of Emotional Intelligence, followed by its importance and discussed in terms of its old and new theories.

3.1.2 Emotional Intelligence - Nature and Definition

The most distant roots of Emotional intelligence can be traced back to Darwin’s early work on the importance of emotional expression for survival and adaptation. In the 1900s, even though traditional definitions of intelligence emphasized cognitive aspects such as memory and problem-solving, several influential researchers in the intelligence field of study had begun to recognize the importance of the non-cognitive aspects. In 1920, Thorndike, used the term social intelligence to describe the skill of understanding and managing other people.

Similarly, in 1940 David Wechsler described the influence of non-intellective factors on intelligent behaviour, and further argued that our models of intelligence would not be complete until we can adequately describe these factors. In 1983, Howard Gardner's ‘Frames of Mind: The Theory of Multiple Intelligences’ introduced the idea of Multiple Intelligences which included both Interpersonal intelligence (the capacity to understand the intentions, motivations and desires of other people) and Intrapersonal intelligence (the capacity to understand oneself, to appreciate one's feelings, fears and motivations). In Gardner's (1983) view, traditional types of intelligence, such as IQ, fail to fully explain cognitive ability. Thus, there was a common belief that traditional definitions of intelligence are lacking in ability to fully explain performance outcomes.

conducted by Dulewicz and Higgs (2000) it is evident that Emotional Intelligence is an important topic for occupational psychology. Indeed, EI is also a very hot topic in human resource management, judging by the extensive media coverage given to the subject over the last few years, and the great interest shown in the topic by people from all walks of life. It is argued that it has tremendous potential value not only for managers and HR professionals but also for teachers, educationalists and counselors (Higgs and Dulewicz 1999).

In the high performance context, the new definition involves not only “technical-analytical intelligence or educational background and expertise”, but 'the capacity of managing oneself and interpersonal relationships” as well. In other words, as a new tendency, emotional abilities of working people are gaining more importance.

Technical, conceptual and analytical intelligence, that is, the Intelligence Quotient (IQ), has little to do with this measure of personal achievement.

According to Mayer and Salovey (1997), emotional intelligence reflects not a single trait or ability but, rather, a composite of distinct emotional reasoning abilities: perceiving, understanding, and regulating emotions. Perceiving emotions consists of recognizing and interpreting the meaning of various emotional states, as well as their relations to other sensory experiences. Understanding emotions involves comprehension of how basic emotions are blended to form complex emotions, how emotions are affected by events surrounding experiences, and whether various emotional reactions are likely in given social settings. Regulating emotions encompasses the control of emotions in oneself and in others. An individual’s emotional intelligence is an indication of how he or she perceives, understands, and regulates emotions. In sum, emotional intelligence is a form of intelligence
that involves “the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them and to use this information to guide one’s thinking and actions” (Salovey and Mayer 1990).

The idea that high emotional intelligence may lead to personal and professional success has generated a great deal of excitement among the general public, managers, academics, and business consultants alike. According to popular opinion and work-place testimonials, emotional intelligence affects individual performance.

For the purpose of this study, the researcher has defined Emotional Intelligence as per Emotional and Social Competency Inventory – University Edition developed by HAY Group

I  **Self-Awareness**

a)  **Emotional self-awareness**

This is the ability to understand your own emotions and their effects. It is being able to recognize how you react to cues in the environment and how your emotions affect your performance. It’s about knowing your inner resources, abilities and limits. It is based on the desire to receive feedbacks and new perspectives about you, and to be motivated by continuous learning and self-development. Self-Awareness is the heart of the ESCI-U model. It enables us to sustain our emotionally and socially intelligent behaviour, despite setbacks, over time.

II  **Self-Management**

a)  **Achievement orientation**

This is a concern for working towards a standard of excellence. This standard may be a personal need to improve your performance, to outperform others, or even to surpass the greatest accomplishment ever
achieved. It’s about seeking out opportunities and taking action on them. You will consistently strive to do better, to experience new challenges and opportunities, and will be comfortable being held accountable for your actions and ideas.

b) Adaptability

This is the ability to be flexible and work effectively within in a variety of changing situations and with different individuals and groups. People with this competency are willing to change their own ideas or perceptions on the basis of new information or evidence. They are able to alter standard procedures when necessary and juggle multiple demands as required.

c) Emotional self-control

This is the ability to keep your impulsive feelings and emotions under control. It is being able to restrain negative actions when provoked, when faced with opposition or hostility from others, or when working under pressure.

d) Positive outlook

This competency is about seeing the world as a glass ‘half full’ rather than half empty. This is the ability to see good in others and in the current situation. Threats are viewed merely as opportunities that can be acted upon and take advantage of to achieve optimal outcomes.

III Social Awareness

a) Empathy

The competence is about understanding other people. It is the ability to hear and understand accurately the unspoken or partly expressed
thoughts, feelings and concerns of others. People with empathy are able to constantly pick up emotional cues. They can appreciate not only what people are saying, but also why they are saying.

b) **Organizational awareness**

This is the ability to understand the ‘power’ relationships in one’s own group or organisation. This includes the ability to identify the real decision-makers and who can influence them. It is also about recognising the values and cultures of organizations and how these affect the way people act and behave.

IV **Relationship Management**

a) **Conflict management**

This is the ability to handle difficult individuals, groups of people or tense situation with diplomacy and tact. This involves coming face-to-face with the conflict rather than trying to avoid it. This competency entails focusing on the issues rather than the people and working to de-escalate the bad feelings.

b) **Coach and mentor**

This competency is the ability to foster the long term learning or development of others. Its focus is on the behaviours involved in developing others, rather than on the formal role of teaching or training. Those who do this well spend time helping people find their own way to excellence through specific feedback on current performance.
c) **Influence**

This is the ability to have a positive impact on others. It involves persuading or convincing others in order to get them to support your ideas and suggestions. This is about grabbing someone’s attention and getting others to listen.

d) **Inspirational leadership**

This is the ability to take on the role of leader in a group or team. It implies a desire to lead others. Leadership need not come from a position of formal authority – this competency is about the behaviours of leadership, not about being in a formal leadership role. People with this competency work to bring people together to get the job done. They are able to build a strong sense of belonging within the group, leading others to feel that they are part of something bigger than themselves.

e) **Teamwork**

This competency is about working co-operatively with others, being part of a team and working together – as opposed to working separately or competitively. Teamwork is about enjoying shared responsibility and rewards for accomplishments. It involves participating actively and building the capability of the team.

3.1.3 **Importance of Emotional Intelligence**

For centuries, emphasis has been placed on academic learning, qualifications and how intelligent a person was, i.e., their IQ. But research is now confirming what many people have suspected all along: it is EQ, not IQ, that determines how well an individual will perform. According to Lonsdale (2005) the advances in neuroscience and brain imaging techniques have
enabled scientists to confirm what we all suspected – that when we are confronted by situations that are life threatening or that we “perceive” are so, reason and logic fly out the window and what emerges is a primitive, ready-to-fight Neanderthal in modern day attire. The section of the brain responsible for this instant bypass is the amygdala, hence the new term “the amygdala hijack”. The young people of the world are the most important resource in the economy. Emotional intelligence has been described as a component of one’s self that is amenable to change and development. Thus, by evaluating one’s level of emotional intelligence, an individual can identify areas in which improvement may be necessary.

Extensive research (Ornstein 1997, Epstein 1998, Nelson et al 2004) has indicated that the focus of current education is on rational and cognitive processes and that little emphasis has been placed on the important contributions of the emotional mind. Many current problems facing educators such as underachievement, lack of motivation, violence, alcohol and drug addiction are indications of the need to include an emphasis on the education of the ‘right mind’, the emotional or experiential mind. According to Mayer and Salovey (1997) “People high in emotional intelligence are expected to progress more quickly through the abilities designated and to master more of them.” The following examples are an insight into the importance of Emotional Intelligence: The Hay Group states one study of 44 Fortune 500 companies found that salespeople with high EQ produced twice the revenue of those with average or below average scores. In another study, technical programmers demonstrating the top 10 percent of emotional intelligence competency were developing software three times faster than those with lower competency. Additional research unearthed the following success stories. A Fortune 500 company in financial services proved that their high EQ salespeople produced 18 percent more than the lower EQ salespeople. One recent study conducted by a Dallas corporation measured that the
productivity difference between their low scoring emotional intelligence employees and their high scoring emotional intelligence employees was 20 times.

Two noted studies show the importance of emotional intelligence.

a) In one study, dubbed the "marshmallow test," a group of four-year-olds were offered a marshmallow and told that if they delayed eating it, they would receive a second one as a reward. The progress of the children was monitored for many years afterward. Researchers found that the children who delayed gratification and earned a second marshmallow were more successful in life. As high school seniors, they scored an average of 210 points higher on their SATs and had better overall grades. They also were more skilled at handling frustration and had more determination to overcome obstacles in pursuit of a goal.

b) A second study conducted by neuropsychologist Martin Seligman at the University of Pennsylvania in 1984 found an optimistic outlook is a better predictor of academic success than IQ, SAT scores or grades. Optimists handle frustration better and tend to be resilient in the face of opposition. They meet the challenges of work with a persevering attitude. Luckily, the study indicated that optimism can be learned, even by people who are by nature pessimistic.

According to Litpak (2005) EI seems to be an excellent framework to use in working with college students to help them be more successful in finding a job and in being successful on the job.
Importance of Emotional Intelligence stems from the fact that it deals with the cognitive aspects of life. The general trends of management like leadership, group performance, social exchange and managing change is supported by emotional intelligence today to raise the level of social and emotional competence in an individual.

3.1.4 Development and Theories in Emotional Intelligence

To garner an understanding of EI, it is important to look at the development of this theory and to review the components of the model.

3.1.4.1 A brief history of emotional intelligence

- 1930s – Edward Thorndike describes the concept of "social intelligence" as the ability to get along with other people.

- 1940s – David Wechsler suggests that affective components of intelligence may be essential to success in life.

- 1950s – Humanistic psychologists such as Abraham Maslow describe how people can build emotional strength.

- 1975 - Howard Gardner publishes *The Shattered Mind*, which introduces the concept of multiple intelligences.

- 1985 - Wayne Payne introduces the term emotional intelligence in his doctoral dissertation entitled "A study of emotion: developing emotional intelligence; self-integration; relating to fear, pain and desire (theory, structure of reality, problem-solving, contraction/expansion, tuning in/coming out/letting go)."

- 1987 – In an article published in *Mensa Magazine*, Keith Beasley uses the term “emotional quotient.” It has been
suggested that this is the first published use of the term, although Reuven Bar-On claims to have used the term in an unpublished version of his graduate thesis.


The definitions are so varied, and the field is growing so rapidly, that researchers are constantly amending even their own definitions of the construct. Up to the present day, there are three main models of EI:

- Ability-based EI models

- Mixed models of EI

- Trait EI model

**The ability-based model**

Peter Salovey and John D. Mayer's conception of EI strives to define EI within the confines of the standard criteria for a new intelligence. Following their continuing research, their initial definition of EI was revised to: "The ability to perceive emotion, integrate emotion to facilitate thought, understand emotions, and to regulate emotions to promote personal growth." (Salovey et al 2005)

The ability based model views emotions as useful sources of information that help one to make sense of and navigate the social
environment. The model proposes that individuals vary in their ability to process information of an emotional nature and in their ability to relate emotional processing to a wider cognition. This ability is seen to manifest itself in certain adaptive behaviors. The model proposes that Emotional Intelligence includes 4 types of abilities:

1. **Perceiving emotions** — the ability to detect and decipher emotions in faces, pictures, voices, and cultural artifacts— including the ability to identify one’s own emotions. Perceiving emotions represents a basic aspect of emotional intelligence, as it makes all other processing of emotional information possible.

2. **Using emotions** — the ability to harness emotions to facilitate various cognitive activities, such as thinking and problem solving. The emotionally intelligent person can capitalize fully upon his or her changing moods in order to best fit the task at hand.

3. **Understanding emotions** — the ability to comprehend emotion language and to appreciate complicated relationships among emotions. For example, understanding emotions encompasses the ability to be sensitive to slight variations between emotions, and the ability to recognize and describe how emotions evolve over time.

4. **Managing emotions** — the ability to regulate emotions in both ourselves and in others. Therefore, the emotionally intelligent person can harness emotions, even negative ones, and manage them to achieve intended goals.
Emotional Intelligence

**Figure 3.1** The Four-Branch Model of Emotional Intelligence (Mayer and Salovey 1997)

Source: Emotional Intelligence - New Ability or Eclectic Traits? John D. Mayer University of New Hampshire, Peter Salovey and David R. Caruso Yale University September 2008 • American Psychologist p.507

Note. Each branch describes a set of skills that make up overall emotional intelligence. Each branch has its own developmental trajectory, proceeding from relatively easy skills to more sophisticated ones. For example, Perceiving Emotions typically begins with the ability to perceive basic emotions in faces and voice tones and may progress to the accurate perception of emotional blends and to the detection of emotional micro expressions in the face.

Measurement of the ability-based model

Different models of EI have led to the development of various instruments for the assessment of the construct. While some of these measures may overlap, most researchers agree that they tap slightly different constructs. The current measure of Mayer and Salovey’s model of Emotional Intelligence, the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) is based on a series of emotion-based problem-solving items. Consistent with the model's claim of EI as a type of intelligence, the test is modelled on ability-based IQ tests. By testing a person’s abilities on each of...
the four branches of emotional intelligence, it generates scores for each of the branches as well as a total score.

Central to the four-branch model is the idea that EI requires attunement to social norms. Therefore, the MSCEIT is scored in a consensus fashion, with higher scores indicating higher overlap between an individual’s answers and those provided by a worldwide sample of respondents. The MSCEIT can also be expert-scored, so that the amount of overlap is calculated between an individual’s answers and those provided by a group of 21 emotion researchers.

Although promoted as an ability test, the MSCEIT is most unlike standard IQ tests in that its items do not have objectively correct responses. Among other problems, the consensus scoring criterion means that it is impossible to create items (questions) that only a minority of respondents can solve, because, by definition, responses are deemed emotionally 'intelligent' only if the majority of the sample has endorsed them. This and other similar problems have led cognitive ability experts to question the definition of Emotional Intelligence as a genuine intelligence.

Mixed models of Emotional Intelligence

The Emotional Competencies (Goleman) model

The Emotional Intelligence model introduced by Daniel Goleman focuses on Emotional Intelligence as a wide array of competencies and skills that drive leadership performance. Goleman's model outlines four main Emotional Intelligence constructs:

1. Self-awareness — the ability to read one's emotions and recognize their impact while using gut feelings to guide decisions.
2. Self-management — involves controlling one's emotions and impulses and adapting to changing circumstances.

3. Social awareness — the ability to sense, understand, and react to other's emotions while comprehending social networks.

4. Relationship management - the ability to inspire, influence, and develop others while managing conflict.

Goleman includes a set of emotional competencies within each construct of Emotional Intelligence. Emotional competencies are not innate talents, but rather learned capabilities that must be worked on and developed to achieve outstanding performance. Goleman posits that individuals are born with a general emotional intelligence that determines their potential for learning emotional competencies. Goleman's model of Emotional Intelligence has been criticized in the research literature as mere pop-psychology (Mayer et al 2008).

The Bar-On model of Emotional-Social Intelligence (ESI)

Bar-On defines emotional intelligence as being concerned with effectively understanding oneself and others, relating well to people, and adapting to and coping with the immediate surroundings to be more successful in dealing with environmental demands. Bar-On posits that Emotional Intelligence develops over time and that it can be improved through training, programming, and therapy. Bar-On hypothesizes that those individuals with higher than average EQs are in general more successful in meeting environmental demands and pressures. He also notes that a deficiency in Emotional Intelligence can mean a lack of success and the existence of emotional problems. Problems in coping with one's environment are thought, by Bar-On, to be especially common among those individuals lacking in the subscales of reality testing, problem solving, stress tolerance,
and impulse control. In general, Bar-On considers emotional intelligence and cognitive intelligence to contribute equally to a person's general intelligence, which then offers an indication of one's potential to succeed in life.

**The Trait Emotional Intelligence model**

Petrides (2009) proposed a conceptual distinction between the ability based model and a trait based model of Emotional Intelligence. Trait Emotional Intelligence is "a constellation of emotional self-perceptions located at the lower levels of personality". In lay terms, trait Emotional Intelligence refers to an individual's self-perceptions of their emotional abilities. The trait Emotional Intelligence model is general and subsumes the Goleman and Bar-On models discussed above. The conceptualization of Emotional Intelligence as a personality trait leads to a construct that lies outside the taxonomy of human cognitive ability. This is an important distinction in as much as it bears directly on the operationalization of the construct and the theories and hypotheses that are formulated about it.

While Emotional Intelligence has been defined and recognised from different angles, according to Freedman et al.: "Emotional Intelligence is a way of recognizing, understanding, and choosing how we think, feel, and act. It shapes our interactions with others and our understanding of ourselves. It defines how and what we learn; it allows us to set priorities; it determines the majority of our daily actions. Research suggests it is responsible for as much as 80% of the "success" in our lives."

**3.1.5 Emotional Intelligence and Performance**

Emotional Intelligence (EI) refers to the ability to perceive, control and evaluate emotions. Some researchers suggest that emotional intelligence
can be learned and strengthened, while others claim it is an inborn characteristic.

When psychologists began to write and think about intelligence, they focused on cognitive aspects, such as memory and problem-solving. However, there were researchers who recognized early on that the non-cognitive aspects were also important. For instance, David Wechsler defined intelligence as "the aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment". As early as 1940 he referred to "non-intellective" as well as "intellective" elements, by which he meant affective, personal, and social factors. Furthermore, as early as 1943 Wechsler was proposing that the non-intellective abilities are essential for predicting one’s ability to succeed in life.

Wechsler was not the only researcher who saw non-cognitive aspects of intelligence to be important for adaptation and success. Robert Thorndike, to take another example, was writing about "social intelligence" in the late thirties. Unfortunately, the work of these early pioneers was largely forgotten or overlooked until 1983 when Howard Gardner began to write about "multiple intelligence." Gardner proposed that "intrapersonal" and "interpersonal" intelligences are as important as the type of intelligence typically measured by IQ and related tests.

IQ by itself is not a very good predictor of job performance. Hunter and Hunter estimated that at best IQ accounts for about 25 percent of the variance. Sternberg has pointed out that studies vary and that 10 percent may be a more realistic estimate. In some studies, IQ accounts for as little as 4 percent of the variance.

An example of this research on the limits of IQ as a predictor is the Sommerville study, a 40 year longitudinal investigation of 450 boys who
grew up in Sommerville, Massachusetts. Two-thirds of the boys were from welfare families, and one-third had IQ’s below 90. However, IQ had little relation to how well they did at work or in the rest of their lives. What made the biggest difference were childhood abilities such as being able to handle frustration, control emotions, and get along with other people.

Granted that cognitive ability seems to play a rather limited role in accounting for why some people are more successful than others, what is the evidence that emotional factors are important? The following literature proposes to bring to light certain research work that has been done by behavioral scientists to show the impact of Emotional Intelligence on performance both in academic and corporate arenas.

Ramesar et al (2009) in their research found that Emotional Intelligence development will help cope with Stress and thus indirectly contribute to performance of the individual.

Paulo Lopes (2006) in their study to explore the relationship between Emotional Intelligence, Job Performance and affect attitudes at work, found that Emotional Intelligence was significantly related to several indicators of work performance.

Al Belamy et al (2005) found that a positive correlation between EQ and each of the students evaluation of the program factors

Boyatzis and Saatcioglu (2008) found that MBA,s can develop emotional and cognitive competencies crucial to effectiveness of a manager and leader, impacting performance of an individual.
Berenson et al (2008) found that students with a higher GPA had higher Emotional Intelligence. They also found that Emotional Intelligence was the main predictor of academic success.

Jayan (2006) in his research in the area of managerial performance established that high performers had significantly more Emotional Intelligence than the low performers.

Harvey and Dasborough (2006) found that people with high Emotional Intelligence manage negative emotions to ensure that it does not interfere with work performance. They also found that individuals with high Emotional Intelligence were able to cope better with stress thus helping to decrease work aggression and perform better.

Schuttle et al (2001) in their research found that individuals with a higher Emotional Intelligence solved more problems than the others. They were also able to find that those with higher Emotional Intelligence were in a better position to ward off negative emotions that would have detrimental effect on task performance and continue to persist on the task.

3.1.6 Emotional Intelligence - Summary

While intelligence is one of the most talked about subjects within psychology, there is no standard definition of what exactly constitutes 'intelligence.' Some researchers have suggested that intelligence is a single, general ability; while others believe that intelligence encompasses a range of aptitudes, skills and talents. While there has been considerable debate over the exact nature of intelligence, no definitive conceptualization has emerged. Today, psychologists often account for the many different theoretical viewpoints when discussing intelligence and acknowledge that this debate is ongoing.
More recently social scientists are beginning to uncover the relationship of emotional intelligence to other organizational psychologies, such as leadership, group performance, individual performance, interpersonal exchange, performance evaluations, and change management. Humans are social beings and as such our level of success when dealing with people is intimately linked with our level of emotional intelligence.

According to Goleman (1998), “Emotional 'intelligence' determines our potential for learning the practical skills that are based on its five elements [or competencies]: self-awareness, motivation, self-regulation, empathy, and adeptness in relationships,”

There has been an impressive and growing research panel that suggests that the abilities of emotional intelligence are important for success in many areas of life. Emotional intelligence is more useful for effective performance at work.

To conclude with, as the pace of change is increasing and the world of work makes ever greater demands on a person's cognitive, emotional, and physical resources, this particular set of abilities called Emotional Intelligence will become increasingly important.

3.2 LOCUS OF CONTROL

3.2.1 Overview

When important things happen people tend to explain what caused the outcome. The way we explain misfortune can be analyzed along two dimensions known as locus and generality. Locus of control refers to the tendency to take personal responsibility for the outcome (internal) or to attribute the outcome to external events (external). It may also be called personalization. Generality refers to considering the outcome as an isolated
one-time event or as a permanent and pervasive condition. Causes lasting for only a limited time are called “unstable” and those lasting for a long time are referred to as “stable” or “permanent”.

Locus of control evolved from Julian Rotter's (1954) social learning theory of personality. It is related to learned behavior and the reinforcement of such behavior (Rotter 1966). The construct refers to the extent of the belief of a person in terms of whether or not the individual believes that actions taken can affect outcomes. If someone feels that (s) he is in control of what happens, then (s) he has an internal locus of control. Persons with a high degree of internal control are more confident and assertive, are active searchers for information that will help them to achieve their own objectives, and are attracted to situations that offer opportunities of achievement (Bush 1988). In contrast, if someone feels that fate, luck, or chance affects what happens to him or her then (s) he has an external locus of control. Externally controlled persons see that reinforcement does not come from their own behaviors but from events that are beyond their capacity. Martin et al (2003) found a positive relationship between locus of control and goal orientation among university students. Persons with an internal locus of control felt that they were given more opportunities to engage in positive work outcomes. Someone with an internal locus of control would see challenges as opportunities for learning and professional growth. In contrast, someone with an external locus of control would ignore these challenges due to their sense that learning will not have an impact on him/her (Norvilitis et al 2003).

The discussion in this section first describes the nature and definition of Locus of Control, herein referred to as LOC, followed by its importance and discussed in terms of its old and new theories.
3.2.2 Locus of Control - Nature and Definition

Locus of control refers to an individual's generalized expectations concerning where control over subsequent events resides. In other words, who or what is responsible for what happens. It is analogous to, but distinct from, attributions. According to Weiner (1974) the "attribution theory assumes that people try to determine why people do what they do, i.e., attribute causes to behaviour." There is a three stage process which underlies an attribution. Step one: the person must perceive or possibly observe the behaviour. Step two is to try and figure out if the behaviour was intentional, and step three is to determine if the person was forced to perform that behaviour. The latter occur after the fact, that is, they are explanations for events that have already happened. Expectancy, which concerns future events, is a critical aspect of locus of control. Locus of control is grounded in expectancy-value theory, which describes human behaviour as determined by the perceived likelihood of an event or outcome occurring contingent upon the behaviour in question, and the value placed on that event or outcome. More specifically, expectancy-value theory states that if (a) someone values a particular outcome and (b) that person believes that taking a particular action will produce that outcome, then (c) they are more likely to take that particular action.

Locus of control, according to Rotter's approach, can be divided into two separate sources of control: internal and external. People with an internal locus of control believe that they control their own destiny. They also believe that their own experiences are controlled by their own skill or efforts. An example would be "The more I study, the better grades I get" (Gershaw, 1989). On the other hand, people who tend to have an external locus of control tend to attribute their experiences to fate, chance, or luck. (1) Examples: External locus of control: If a student attributes either their successes or failures to having a bad day, unfair grading procedures on their
teacher's part, or even God's will, they can be said to have a more external locus of control. These students might say, "It doesn't matter how hard I study. The teacher just doesn't like me, so I know I won't get a good grade." These students generally don't learn from previous experience. Since they attribute both their successes and failures to luck or chance, they tend to lack persistence and not have very high levels of expectation.

A locus of control orientation is a belief about whether the outcomes of our actions are contingent on what we do (internal control orientation) or on events outside our personal control (external control orientation) (Zimbardo 1985).

Thus, locus of control is conceptualized as referring to a uni-dimensional continuum, ranging from external to internal:

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<th>External Locus of Control</th>
<th>Internal Locus of Control</th>
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<td>Individual believes that</td>
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<td>his/her behavior is guided</td>
<td>his/her behavior is guided</td>
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<td>by fate, luck, or other</td>
<td>by his/her personal</td>
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<td>external circumstances</td>
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McCombs (1991), in his research, suggests that what underlies the internal locus of control is the concept of "self as agent." This means that our thoughts control our actions and that when we realize this executive function of thinking we can positively affect our beliefs, motivation, and academic performance. "The self as agent can consciously or unconsciously direct, select, and regulate the use of all knowledge structures and intellectual processes in support of personal goals, intentions, and choices" McCombs asserts that "the degree to which one chooses to be self-determining is a
function of one's realization of the source of agency and personal control". In other words, we can say to ourselves, "I choose to direct my thoughts and energies toward accomplishment. I choose not to be daunted by my anxieties or feelings of inadequacy".

Thus, people who develop an internal locus of control believe that they are responsible for their own success. Those with an external locus of control believe that external forces, like luck, determine their outcomes.

The scholar for the purpose of this research has, after considerable literature review, defined Locus of Control as: A locus of control orientation is a belief about whether the outcomes of our actions are contingent on what we do (internal control orientation) or on events outside our personal control (external control orientation)" (Zimbardo 1985).

3.2.3 Importance of Locus of Control

Locus of control has generated much research in a variety of areas in psychology. The construct is applicable to fields such as educational psychology, health psychology or clinical psychology. Understanding of the concept was developed by Julian Rotter (1954) and has since become an important aspect of personality studies.

Research studies have supported an association between locus of control and school adjustment. For example, in a study of students in grades five through eight, Nunn and Nunn (1993) found significant negative relationships between locus of control and scores on the Iowa Tests of Basic Skills. With these students, externality was associated with increasing tendencies for lower levels of achievement, and was evident in both males and females. Tesiny et al (1980) found externality to be negatively associated with performance in areas of reading, mathematics, and teacher ratings of
study habits. Blaha and Chomin (1982) obtained similar findings between locus of control and students reading attitudes and aptitudes. These authors found internality to be a positive factor in predicting academic performance, particularly with regard to attitudes about the reading experience. In other words, students who believed that success in reading was due to their own efforts also felt that extrinsic reinforcers and positive outcomes were more often associated with reading than students who did not. The authors interpreted this to mean that more positive associations between the students' effort and the outcomes associated with reading lead to more positive attitudes.

Locus of control has also been shown to be associated with other psychological characteristics and perceptions. Nunn (1998) found significant relationships between an internal locus of control and perceptions of adjustment within the home, school, and peer relations. In this study, higher internality was associated with more positive evaluations in all three environmental contexts. The author notes that since internal locus of control is positively related to achievement, behaviours which are consistent with internality lead to greater task persistence and achievement at school, which is associated with greater perceived adjustment.

Gaa (1979) examined the effect of goal-setting conferences upon both locus of control and academic achievement. Students who participated in a five week intervention in which they and teachers were involved in systematically working toward self-chosen goals scored significantly higher on achievement measures and were more internal in perceptions of their ability to control reinforcements in the classroom.

Research has shown that having an internal locus of control is related to higher academic achievement (Findley and Cooper 1983). In one study (Kernis 1984) subjects were led to make either internal or external
attributions for their success at a given task. Those who made an internal attribution performed better on the same task than on a different task when tested again, whereas those who made an external attribution performed better on a different task than on the same task. This suggests that internals are more likely to continue working at a task that they have succeeded at, while externals are likely to stop working on the successful task and move on to a different task. Similarly, locus of control differences dictated response to positive verbal feedback in a study of elementary students (Lonky and Reihman 1980). After participating in a self-chosen activity (i.e., an intrinsically motivated task), students received positive verbal feedback. Later, they were given the opportunity to participate in the same task again. Students with an internal locus of control spent more time at the task the second time around, whereas those with an external locus of control spent less time at the task. This suggests that if praise is given to externals for an intrinsically motivated task that their motivation actually declines when the praise is stopped.

From the above literature it can be concluded that LOC is important for performance, stress, motivation and also affects various other behavioral aspects in an individual’s life thus determining the rate of success and failure.

### 3.2.4 Development and Theories in Locus of Control

Locus of control is the framework of Rotter's (1954) social learning theory of personality. The main idea in Julian Rotter's social learning theory is that personality represents an interaction of the individual with his or her environment. Rotter sees personality, and therefore behaviour, as always changeable. Change the way the person thinks, or change the environment the person is responding to, and behaviour will change. Accordingly Rotter suggested a Predictive Formula: Behaviour Potential (BP), Expectancy (E)
and Reinforcement Value (RV) can be combined into a predictive formula for behaviour:

\[ BP = f(E \& RV) \]

This formula can be read as follows: behavior potential is a function of expectancy and reinforcement value. Or, in other words, the likelihood of a person's exhibiting a particular behavior is a function of the probability that that behavior will lead to a given outcome and the desirability of that outcome. If expectancy and reinforcement value are both high, then behavior potential will be high. If either expectancy or reinforcement value is low, then behavior potential will be lower.

Another important theory underlying locus of control according to Julian Rotter (1954) in his observations of people in therapy was that:

- Different people, given identical conditions for learning, learn different things
- Some people respond predictably to reinforcement, others less so, and some respond unpredictably
- Some people see a direct and strong connection between their behaviour and the rewards and punishments received

The core of his approach is called Expectancy Value Theory: the basic assumption is that your behavior is determined not just by the presence or size of reinforcements, but by the beliefs about what the results of your behavior are likely to be i.e., how likely you are to get the reinforcement.

Heider (1958) proposed a psychological theory of attribution. Attribution is a concept in social psychology referring to how individuals
explain causes of events, other's behaviour, and their own behaviour. Fritz
Heider argued that, as an active perceiver of the events, the average person
continuously or spontaneously makes causal inferences on why the events
occur. Eventually, these inferences become beliefs or expectations that allow
the person to predict and understand the events that they observe and
experience. As such, attribution theory is concerned with how individuals
interpret events and how these interpretations relate to their subsequent
behaviour.

The two main types of attributions are internal and external
attributions. When an internal attribution is made, the cause of the given
behavior is assigned to the individual's personality, attitudes, character or
disposition. When an external attribution is made, the cause of the given
behavior is assigned to the situation in which the behavior was seen (that the
individual producing the behavior did so because of the surrounding
environment or the social situation). These two types of attribution lead to
very different perceptions of the individual engaging in a behavior (Personal
is Internal and Situational is external).

Weiner and colleagues (Jones et al 1972, Weiner 1974, 1986)
developed a theoretical framework that has become a major research
paradigm of social psychology. Attribution theory assumes that people try to
determine why people do what they do, i.e., attribute causes to behavior.
A person seeking to understand why another person did something may
attribute one or more causes to that behavior. A three-stage process underlies
an attribution: (1) the person must perceive or observe the behavior, (2) then
the person must believe that the behavior was intentionally performed, and (3)
then the person must determine if they believe the other person was forced to
perform the behavior (in which case the cause is attributed to the situation) or
not (in which case the cause is attributed to the other person).
Weiner focused his attribution theory on achievement (Weiner 1974). He identified ability, effort, task difficulty, and luck as the most important factors affecting attributions for achievement. Attributions are classified along three causal dimensions: locus of control, stability, and controllability. The locus of control dimension has two poles: internal versus external locus of control. The stability dimension captures whether causes change over time or not. Controllability contrasts causes one can control, such as skill/efficacy, from causes one cannot control, such as aptitude, mood, others' actions, and luck.

Attribution theory has been used to explain the difference in motivation between high and low achievers. According to attribution theory, high achievers will approach rather than avoid tasks related to succeeding because they believe success is due to high ability and effort which they are confident of. Failure is thought to be caused by bad luck or a poor exam, i.e. not their fault. Thus, failure doesn't affect their self-esteem but success builds pride and confidence. On the other hand, low achievers avoid success-related chores because they tend to (a) doubt their ability and/or (b) assume success is related to luck or to "who you know" or to other factors beyond their control. Thus, even when successful, it isn't as rewarding to the low achiever because he/she doesn't feel responsible, i.e., it doesn't increase his/her pride and confidence.

Principles

1. Attribution is a three stage process: (1) behavior is observed, (2) behavior is determined to be deliberate, and (3) behavior is attributed to internal or external causes.

2. Achievement can be attributed to (1) effort, (2) ability, (3) level of task difficulty, or (4) luck.
3. Causal dimensions of behavior are (1) locus of control, (2) stability, and (3) controllability.

Thus the theories imply that every human being has a "place" - the locus where he/she feels the control of his/her life rests; this place or locus of control can either be internal or external; and it is this position that creatively determines how much "in control" an individual feels about his/her life.

3.2.5 LOC and Performance

As the environment around you changes, you can either attribute success and failure to things you have control over, or to forces outside your influence. Which orientation you choose has a bearing on your long-term success.

This orientation is known as your "locus of control". Its study dates back to the 1960s, with Julian Rotter's investigation into how people's behaviours and attitudes affected the outcomes of their lives.

Locus of control describes the degree to which individuals perceive that outcomes result from their own behaviours, or from forces that are external to themselves. This produces a continuum with external control at one end and internal control at the other. According to this there are two types of people: One, people who feel in control of their lives are invigorated and challenged by their busy schedules and two, people who don't feel in control, often report being "overwhelmed" by the stresses of life.

Prior research has suggested that matching individual characteristics with task expectations and requirements leads to improved performance. Several investigators have recently suggested that nonacademic factors may be particularly important in the performance of individuals. The
locus of control (LOC) is an important variable that explains individual differences. Individuals with an internal locus of control (ILOC) believe that the outcomes of events to be or outcomes, internally controllable. In other words, they believe their own personal efforts, behaviors, or skills will influence and determine outcomes and they take responsibility for their actions. Research has supported a positive relationship between internal locus of control and motivation and achievement in school.

3.2.6 Locus of Control - Summary

People tend to attribute their successes or failures to either internal or external causes. Persons with an internal locus of control see themselves as responsible for the outcomes of their own actions. Someone with an external locus of control, on the other hand, sees environmental causes and situational factors as being more important than internal ones. These individuals would be more likely to attribute success to luck rather than effort, or to attribute failure to some unfair circumstance than to his/her own shortcomings. Since its introduction, the locus of control construct has undergone considerable elaboration and several context-specific instruments have been developed. Health researchers in particular have embraced locus of control as a concept for explaining behavior. Generally, the development of locus of control stems from family, culture, and past experiences leading to rewards.

Thus in conclusion it can be noted that empirical research findings have implied the following differences between internals and externals:

1. Internals are more likely to work for achievements, to tolerate delays in rewards and to plan for long-term goals, whereas externals are more likely to lower their goals. After failing a task, internals re-evaluate future performances and lower their
expectations of success, whereas externals may raise their expectations.

2. According to Bialer's (1961), considerable data suggest that internal locus of control is associated with increased ability to delay gratification.

3. Internals are better able to resist coercion. This relates to higher outer-directedness of externals, another factor which Rotter (1966) believed distinguished the two orientations.

4. Internals are better at tolerating ambiguous situations. There is also a lot of evidence in clinical research that internality correlates negatively with anxiety, and that internals may be less prone to depression than externals.

5. Externals are less willing to take risks, to work on self-improvement and to better themselves through remedial work than internals.

6. Internals derive greater benefits from social supports.

7. Internals make better mental health recovery in the long-term adjustment to physical disability.

8. Internals are more likely to prefer games based on skill, while externals prefer games based on chance or luck.

### 3.3 COGNITIVE COMPETENCIES

#### 3.3.1 Overview

In the beginning great emphasis was placed on standardization of work processes and a strong division of labor. The advent and influence of the human relations approach began to instill interest in the employee as a
learning individual, but this was arguably more motivated by the desire to promote employees’ self-development and commitment to the firm than by the desire to directly influence their performance and productivity.

In the 1980s, attention was paid to product quality and differentiated customer demand, and consequently, separate training departments in firms became a commonplace. While the importance of competencies began to surface, there was still relatively little attention given to the concept of competencies until the start of the 1990s. This concept gained strength with the appearance of an influential publication on core competencies by Prahalad and Hamel (1990). The concept of key qualifications, developed in the 1970s in Germany by Mertens (1974), was introduced. The key qualifications concept focuses on the knowledge, skills, and attitudes needed for flexible performance within a particular occupational domain. Toward the end of the 1990s, this concept made way for the concept of competencies, regarded as learnable and teachable attributes that indicate aptitude to perform various human activities such as work, learning, and coping with change.

Higher education increasingly came to be seen as the provider of intellectual capital for the knowledge economy, whereby the main emphasis was placed on competencies related to teamwork, problem solving, creativity, and analytical abilities. These competencies were seen as characteristics of competent and broadly employable graduates.

Competencies acquired in education are necessary not only for ensuring quick returns but also for employability in the long term. It is important to gain insight into the role of various kinds of competencies in the short and long terms and to the extent to which courses in higher education offer the right mix of these competencies, given the goals and needs of employers and employees in the labor market.
Organizational environments are more dynamic and uncertain due to increased globalization, shorter product cycle time, intense competition, and high levels of interdependence across the value chain of organizations. With growing demands of the dynamic environment, management education has the responsibility to provide the industry with graduates equipped with the relevant competencies.

The many components of competent performance include knowledge, cognitive and practical skills, attitudes, emotions, values, and motivations.

The discussion in this chapter first describes the nature and definition of cognitive competencies, herein referred to as CC, followed by its importance and discussed in terms of its theories.

3.3.2 Cognitive Competencies - Nature and Definition

A competency is more than just knowledge and skills. It involves the ability to meet complex demands, by drawing on and mobilizing psychosocial resources (including skills and attitudes) in a particular context. A competency is defined as a capability or ability. It is a set of related but different sets of behavior organized around an underlying construct, which we call the “intent”. The behaviors are alternate manifestations of the intent, as appropriate in various situations or times. It is a set of skills, related knowledge and attributes that allow an individual to perform a task or an activity efficiently and effectively within a specific function or job.

Management competency profiling has attracted half a century of research and evaluation. The basic assumption is that mastery of prescribed competencies will enhance job performance.
Many studies (Boyatzis 1982, Dulewicz and Herbert 1999; Robertson et al 1999) have attempted to isolate which competencies determine and support the positive relationship between managerial competence and performance.

According to Grzeda (2005) competence is viewed as an independent variable comprising a range of underlying traits and skills, enabling management task performance and influencing management behavior. Hellriegel et al (2008) defined management competencies as “sets of knowledge, skills, behaviors, and attitudes that a person needs to be effective in a wide range of positions and various types of organization”

The definition of competence given by Boyatzis in 1982 is as follows: “an underlying characteristic of the person that leads to or causes effective or superior performance” (Boyatzis 2008). He believed that these generic competencies accounted for one third of the variance in management performance, another third by job and organizational specific management competencies, and the remaining third by situational factors.

Moore, Cheng and Dainty (2002) defined the term competence as what people need to be able to do to perform a job well. It refers to the range of skills, which are satisfactorily performed by the employee (Rowe 1995). The emphasis is on doing, on the question ‘What can an employee do?’ (Rowe 1995).

Hoffmann (1999) explains that the term competence has been used to refer to the meaning expressed as standards. Standards are the level to which an employee should perform his job. These standards should be achieved in order to perform sufficient.
In literature different categorizations of competencies are mentioned. Van Assen (2000) makes a distinction between three levels of competencies in an organization. These three levels of competencies are the following:

- **Strategic distinctive (core) competencies**: the strategic ability to sustain the coordinated deployment of strategic assets in a way that helps the organization to achieve its strategic goals;

- **Organizational competencies**: the specific way group and individual capabilities are linked and related to functional technological capabilities;

- **Individual competencies**: attributes of individual capabilities.

These competencies can be seen as an oval, which has overlap in different competencies. Individual competencies can also been found in organizational competencies and both can be found within strategic distinctive (core) competencies. Individual and organizational competencies are needed to reach the strategic goals of an organization.

A classification of competencies is the holistic competency model of Delamare Le Deist and Winterton (2005). The holistic typology is useful in understanding the combination of knowledge, skills and social competencies that are necessary for particular occupations (Delamare Le Deist and Winterton 2005).

Four different dimensions of competency are defined within the model: cognitive-, social-, and functional and meta-competencies. According to the typology, knowledge and understanding is captured by cognitive competency, skills are captured by functional competency and behavioral and
attitudinal competencies are captured by social competency (Delamare Le Deist and Winterton 2005). Meta-competency is concerned with facilitating the acquisition of the other substantive competencies (Delamare Le Deist and Winterton 2005).

To understand what cognitive competencies are, it is useful to describe the concept of cognition. In psychology it is mentioned as a term referring to the mental processes involved in gaining knowledge and comprehension, including thinking, knowing, remembering, judging and problem solving. These are higher-level functions of the brain and encompass language, imagination, perception and planning (Psychology 2006). The use of cognition is reflected within the term cognitive competency.

Delamare Le Deist and Winterton (2005) describe the concept as knowledge and understanding. Understanding can be described as not only the possession of knowledge as also the appropriately use of knowledge. Therefore, cognitive competencies refer to mental processes, the knowledge relevant for profession and the ability to use this knowledge in appropriate situations. In this research it is referred to as the knowledge that an engineer needs to perform his job.

Another classification of competencies is as follows: There are three clusters of competencies differentiating outstanding from average performers in many countries of the world (Boyatzis 1982). They are:

1. Cognitive competencies, such as systems thinking and pattern recognition;

2. Emotional intelligence competencies, including self-awareness and Self-management competencies, such as emotional self-awareness and emotional self-control; and
(3) Social intelligence competencies, including social awareness and relationship management competencies, such as empathy and teamwork.

An integrated concept of emotional, social, and cognitive intelligence competencies offers more than a convenient framework for describing human dispositions. It offers a theoretical structure for the organization of personality and linking it to a theory of action and job performance. According to Boyatzis (1982) if a competency is an “underlying characteristic of the person that leads to or causes effective or superior performance”, then

- an emotional, intelligence competency is an ability to recognize, understand, and use emotional information about oneself that leads to or causes effective or superior performance;

- a social intelligence competency is the ability to recognize, understand and use emotional information about others that leads to or causes effective or superior performance; and

- a cognitive intelligence competency is an ability to think or analyze information and situations that leads to or causes effective or superior performance.

For the purpose of this study, the researcher has defined Emotional Intelligence as per Emotional and Social Competency Inventory – University Edition developed by HAY Group.
Cognitive Competencies

a) System thinking

This is the ability to identify the many and various factors that impact upon a complex situation or event. It is recognising both the causes and effects of actions and outcomes.

Systems Thinking is about explaining these interactions in terms others can understand, which may involve the use of diagrams, flow charts, detailed but simple discourse etc.

b) Pattern recognition

This competency is about recognising patterns or trends in random information, events or situations. It is the ability to describe these patterns or trends to others, and use metaphors or analogies to bring them to life and make them easily understood and recognizable. It is also the ability to see the commonality or similarities among various and often very different situations.

Thus assessment of cognitive competencies can help improve communication and enhance overall performance.

3.3.3 Importance of Cognitive Competencies

The concept of competency has become important in the previous century, which is caused by the demand that employees are asked to work with large amounts of information (Skyrme 1997). The emergence of the knowledge-based new economy and the impact of new technologies; the consequent pressures for lifelong learning and maintaining employability; changes in the workplace, including the emergence of the high performance workplace and innovation, has led to the to the need for a broader framework
of competencies that are responsive to all these requirements. Organizations are now on the lookout for ‘Ready to employ’ rather than ‘Ready to Train’ employees. One primary objective of graduate management education is to prepare people to be outstanding managers and leaders. To be an effective manager or leader, a person needs the ability to use knowledge and to make things happen. These can be called competencies, which Boyatzis (1982) defined as “the underlying characteristics of a person that lead to or cause effective and outstanding performance”. Research has shown that there are a set of competencies that have been shown to cause or predict outstanding manager or leader performance. The challenge today is to integrate the development of these competencies into the curriculum as an essential element.

It is now widely accepted that in modern knowledge societies the economic prosperity of individuals, communities, and countries is associated with the cognitive competencies acquired. In order to make well-informed decisions, politicians and educational authorities need high-quality data about the effectiveness of formal and non-formal educational environments. A manager’s performance depends not only on their experience (seniority) as traditional and bureaucratic organizations seem to stress, but also on the competencies they bring into their job.

According to Finn (1993), a manager’s performance (output competencies) is influenced by their attributes that include task-related knowledge and experience (input competencies), and personality characteristics (process competencies). This means that objective factors such as experience and technical abilities, which were the key determinants of performance in mass production economy of the past, are not sufficient for effective performance today.
Organizational environments are more dynamic and uncertain due to increased globalization, and intense competition. To successfully manage paradoxes organizational leaders must learn to deal with contradictions and embrace incompatible forces, rather than choose between them. Management education has the responsibility to provide industry with graduates equipped with relevant management competencies to counter such situations. Any function in the Organization requires a set of essential competencies to be performed effectively.

Some of the areas where competencies play a vital role in the effective and efficient functioning of the organization are:

- Competencies are useful to staff and managers in assessing self-development needs and setting performance standards and career plans.

- Staff development programmes are directly connected with the need to update or upgrade specific competencies. New learning experiences will be introduced to support them.

- Building teams or task forces as well as succession plans can benefit from a more effective and objective process.

The importance of understanding cognitive competencies lies in the fact that competency based management approach is the linking of competencies with the strategic objectives, plans and capabilities of the Organization. Objective factors such as experience and technical abilities, which were the key determinants of performance in mass production economy of the past, are not sufficient for effective performance today. Technical competencies are necessary for adequate performance of managerial functions, but most of them are not associated with superior performance (Boyatzis 1982, Spencer and Spencer 1993). Thus, competencies will
increasingly be used as a basis for identifying individual and organizational needs and planning for development. Cognitive competencies are useful in many learning situations and in finding the solution of different problems.

3.3.4 Development and Theories in Cognitive Competencies

Competencies are a set of abilities and personality characteristics required for superior performance. Hogg (1989) defined competency as “competencies are the characteristics of a manager that lead to the demonstration of skills and abilities, which result in effective performance within an occupational area. Competency also embodies the capacity to transfer skills and abilities from one area to another”.

History of Competency

The beginning of the twentieth century work brought complex skills to the job. The technological advancement and changing economic scenario required specific competencies to cope with it.

In the era of scientific management where Taylor shifted emphasis from workers competencies to time and motion study. Complexity was minimized and efficiency was maximized. During the mid-century World War II ushered in a different culture, wherein only people in command were allowed to give orders and these had to be followed without questioning. Post war competition was limited and people stuck to the culture of following orders. Thus there was no need for any updating of skill or competence.

The turnaround came during the early 1960’s when Mc Clelland wrote about the importance of IQ and personality tests in predicting performance. Following this was the beginning of the field of competency measurement. In an article published in American Psychologist in 1973,
McClelland quoted that traditional achievement and intelligence score may not be able to predict job success and what is required is to profile the competencies required to perform a given job effectively and measure them using a variety of tests.

In 1992, The Mayer Committee defined key competencies as: competencies essential for effective participation in the emerging patterns of work and work organization. They focus on the capacity to apply knowledge and skills in an integrated way in work situations. Key competencies are generic in that they apply to work generally rather than being specific to work in particular occupations or industries. This characteristic means that the key competencies are not only essential for participation in work, but are also essential for effective participation in further education and in adult life more generally.

The DeSeCo Project, (Definition and Selection of Competencies), supported by the OECD (Rychen and Salganik 2001), identified three very broad competencies, each of which can be broken down to provide a more extensive list of generic skills. These three competencies are:

- acting autonomously and reflectively
- using tools interactively
- joining and functioning in socially heterogeneous groups.

The DeSeCo Project also identified four conceptual elements of key competencies:

- *Key competencies are multi-functional*—they meet a range of different and important demands of daily and professional life.
They are needed to achieve different goals and to solve multiple problems in a variety of contexts.

- **Key competencies are relevant across many social fields** and are therefore relevant for effective participation in school and the labor market. They also play an important role in the political process, social networks and interpersonal relationships (including family life), and in developing a sense of well-being.

- **Key competencies refer to a high order of mental complexity**—they encourage a mental autonomy which involves an active and reflective approach to life.

- **Key competencies are multi-dimensional**—they are composed of ‘know-how’, analytical, cultural and communication skills and common sense.

The development of cognitive competencies is a matter of continued importance to the education sector. In educational settings the focus is on helping students to become ‘work ready’ in terms of their generic skills development.

### 3.3.5 Cognitive Competencies - Summary

Hamel and Prahalad (1994) defined core competence as ‘the collective learning in the organization, especially how to co-ordinate diverse production skills and integrate multiple streams of technologies’ (Prahalad and Hamel 1990: 82). Competencies usually include only those behaviors that demonstrate effective or superior performance. They do not include specific knowledge, but rather “learned” or practical experience or the behavioral *application of knowledge* that produces a successful result. Competencies
refer to the *application of skills* that produces a successful result. There is a growing acceptance among academics, education policy-makers, and employer groups that the development of cognitive competencies is part of the role of higher education.

Employers are seeking graduates with a sound Systems Thinking and Pattern Recognition. In the 21st Century the most significant challenge for students will be to manage their relationships with work and with learning. This requires skills such as negotiating, action planning and networking, added to qualities of self-awareness and confidence. These are the skills required to be "self-reliant" in career and personal development; skills to manage processes rather than functional skills. The world is changing so fast that knowledge and skills soon become obsolete. In addition, more frequent career transitions accelerate this, making it necessary to learn new skills and adapt to new situations. Hence the need for "effective learning skills". The objective of effective organizations is to achieve superior performance. Organizations are seeking to identify and hire people who have the potential to produce extra-ordinary results – and they want people who are at the top end of the employability scale.

Boyatzis et al (2002) in their paper titled ‘Learning Cognitive and Emotional Intelligence Competencies through Graduate Management Education’ state that there are a set of competencies that have been shown to cause or predict outstanding manager or leader performance. Regardless of author or study, they tend to include abilities from three clusters:

1. Cognitive or intellectual ability, such as systems thinking;

2. Self-management or intrapersonal abilities, such as adaptability; and
(3) Relationship management or interpersonal abilities, such as networking.

The latter two clusters make up what we call emotional intelligence competencies (Goleman 1998).

Cognitive competencies are very important in the current day as it will help in quick, rationalized decision making; identify and predict trends in the environment; enhance performance and look into cause and effect relationships.

3.4 PERFORMANCE

3.4.1 Overview

Defining student performance in the 21st Century, includes not only academic achievement, but also brings under its umbrella a wide array of skills required to be successful at the work place. One primary objective of graduate management education is to prepare people to be outstanding managers and leaders. This means helping people develop the functional, declarative, procedural, and meta-cognitive knowledge needed. Traditionally the performance of a student was judged on basis of their test scores. The grades received by candidates in their respective tests and examination were taken as a base to evaluate their performance. Organizations also placed a lot of importance on these scores. While selecting a candidate into a particular course certain minimum benchmarks are set with regard to their marks. But this criterion does not necessarily assure an organization that on selecting a candidate with high academic scores, performance at the job is guaranteed. While academic grades do give us an idea of the general intellect level, it does not give us any information about the candidate’s aptitude or skills for the job. Companies while hiring prospective candidates based on these academic
grades fail to evaluate whether the student has the required skills to perform effectively on the job.

Determinants of students' performance have been the subject of ongoing debate among academics and Organizations. The discussion in this section first describes the nature of Performance and definition of performance as construed by the scholar, followed by its importance.

### 3.4.2 Performance: Nature and Definition

Performance can be defined from two aspects – the academic side and the corporate arena. From the academic side, while measuring performance, the present educational system gives more importance to technical (hard) skills and less to non-technical (soft) skills. From the employability aspect performance is defined as a combination of both technical and non-technical skills. Though the subjectivity of performance evaluation has lessened in recent years, but it has not been totally eliminated. This subjectivity can be attributed to the fact that different people valued different aspects of learning (and what is learnt) more highly than the others.

While grades and scores continue to hold importance in the assessment of an individuals’ performance, a more holistic measurement of performance goes to include skills and attitudes also.

Performance is being redefined to include generic competencies. Student performance and achievement has by and large been evaluated and assessed as per scores secured in relevant tests and examinations. This has been the practice observed by all for decades. But the current scenario in both corporate and the academic environment have elicited a change in this
definition. The 21st century skills movement has caused academicians and corporate alike to re-visit this basic question – what is student performance?

Defining and measuring performance of students is challenging since student performance is product of socio-economic, psychological and environmental factors. To help define student performance, Daggett, in his study titled Improving Student Performance in Times of Declining Resources recommend using the four dimensions of the Learning Criteria to Support 21st Century Learning™, developed by the International Center based on findings in highly successful schools and rapidly improving schools.

- **Core Academic Learning** - indicators of the school’s fundamental academic strengths as measured by state tests, other assessment results, graduation requirements, and others.

- **Stretch Learning** - the degree to which all students are challenged to attempt rigorous coursework, push themselves to take specialized courses, and undertake interdisciplinary projects, for example.

- **Learner Engagement** - a critical aspect of the learning process that results from connectedness, seeing value in learning, feeling safe and cared about, and being actively and purposefully part of a school community. One way to begin measuring this dimension is by surveying students as to their sense of satisfaction, belonging, security, and accomplishment.

- **Personal Skill Development** - encompasses positive character traits, good work habits, and social, service, and leadership skills that not only enhance learning, but also extend to the world beyond school.
Another study by Brownlie et al (2003) at least five different approaches can be used in attempting to develop a definition of student achievement:

1. **Minimum standards or mastery:** This approach depends on specifying a required level of attainment, which, when obtained, is taken as evidence of satisfactory achievement by the individuals or group of students. Since it is possible to vary the expected level of attainment for individuals or groups, this approach does not necessarily lead to a ‘one-size-fits-all’ solution.

2. **Eventual Success:** Achievement can also be defined in terms of long term or adult success; however this approach is rarely taken.

3. **Satisfaction:** A common measure of achievement uses the level of satisfaction obtained.

4. **Comparative Position:** The natural human inclination to judge ourselves against others is also evidenced in approaches to defining student achievement.

5. **Growth:** Defining student achievement in terms of growth or increases in learning provides an approach related to the individual’s or group’s prior performance.

While many researchers have defined student performance and achievement in various ways, one has to keep in mind student achievement is an improvement in learning that develops both the individual and the individual’s ability to contribute to society while meeting academic and corporate requirements. Business education is a fast evolving field, with the
current focus being on delivering high quality education that produces well-
educated, skilled, students according to needs and requirements of the
dynamically growing competitive corporate arena. Today attempts are being
made to incorporate differentiation for evaluation of individuals’ abilities and
skills and incorporate the same as an addition in the measurement of
performance.

The scholar for the purpose of this research has, after considerable
literature review, defined performance as a combination of academic
performance (knowledge), skills and attitude. To further explain this
definition, performance is made up of two elements:

- Core Performance
- Contextual Performance

While core performance includes knowledge acquired, contextual
performance is explained by skills and attitude.

In the current study, performance is taken as a sum total of MAT
Score and Skill Set.

All India Management Association’s Centre for Management
Services (AIMA-CMS) is the specialized division undertaking testing and
other management services. The Management Aptitude Test (MAT) has been
in operation since 1988. Hundreds of B-Schools and several candidates have
availed the services under MAT. This is administered under systems and
procedures established as per ISO 9001 2000 Quality Certification. MAT is
one of the national level tests approved by the Ministry of HRD for MBA and
allied programs in the country. Compared to other national level tests, MAT is
accepted by several B-Schools in the country as a screening test for admission
to their Post Graduate Programs in Management. MAT systems and
procedures are time tested and trusted by hundreds of institutes and many candidates. The pattern of the test has been designed to assess the aptitude and the potential of candidates to undergo management programs and become effective and efficient managers thereafter. The test has five segments. These assess the students on: Language Comprehension, Mathematical Skills, Data Analysis and Sufficiency, Intelligence and Critical Reasoning and Indian and Global Environment. Graduates in any discipline and final year students of Graduate courses are eligible to take this test for their entry into B-Schools. MAT is conducted across all major cities in the country and in leading cities abroad. Although the MAT assesses some important characteristics, we should be using more comprehensive measures.

Skill Set is made up of three components, namely:

- **Basic Skills:** Include Communication, Managing Information, Using Numbers and Thinking and Problem Solving.

- **Team Management Skills:** Include skills required to harmoniously work with others.

- **Attitudinal Skills:** Demonstrating positive attitude and behaviors, adaptability, continuous learning and working safely.

With the above as the basis the scholar has developed a measure, capture the performance of students.

### 3.4.3 Importance of Performance

The tracking of academic performance fulfills a number of purposes. Areas of achievement and failure in a student's academic career need to be evaluated in order to foster improvement and make full use of the learning process. Results provide a framework for talking about how students
fare in school, and a constant standard to which all students are held. There is a shift from a focus on inputs (programs) to output (student performance). Hence student performance and its importance need to be redefined as it goes beyond the acquisition of basic skills.

According to Ken Messersmith (2007), student success means the ability to:

- Understand the rights and responsibilities that allow us to function as contributing members of our democracy.
- Cooperate and collaborate with others in work, social, and family settings.
- Make independent decisions based on reasoning supported by facts gathered and analyzed by students.
- Relate in a positive and constructive manner with family members and other members of the world community.
- Take responsibility for one’s own actions and act supportively and compassionately toward others.

In many important respects, achievements are the milestones on the learning journey between performance and potential. The importance of student performance and achievement lies in the fact that it is an improvement in learning that develops both the individual and the individual’s ability to contribute to society.

3.4.4 Performance Summary

Meeting the higher demands on studying doesn’t end with innate mental intelligence. It also requires the various abilities that a person may
possess. Students equipped with the proper level of emotional intelligence and those who are internals are more likely to exhibit better performance.

Performance of a management graduate thus does not mean just meeting the higher demands on the academic front but also encompasses the various abilities that a person may possess. Students equipped with the proper blend of academic scores and generic skills are more likely to be better performers in the working environment.

Ozga (1998) argues that knowledge is being commoditized and reduced to information, subject to constant change. Regimes of teaching, learning and assessment are constellating around skills and competencies rather than knowledge and understanding. This emphasis on core skills suggests a preoccupation with knowing how’, rather than simply knowing that’. Cameron (2000) sees this as a move towards curriculum development that begins by specifying outcomes, skills or competencies a student should be able to demonstrate at the end of the course’ and away from the more traditional curriculum development that starts with identifying a body of knowledge to be learned.

A management graduates’ performance finally translates into whether he or she will be employable or not. According to Hillage and Pollard’s (1998) widely-cited definition, employability is an individual’s ability to gain initial employment, maintain employment, move between roles within the same organization, obtain new employment if required and (ideally) secure suitable and sufficiently fulfilling work. Their main findings were:

- Employability is about having the capability to gain initial employment, maintain employment and obtain new employment if required.
For the individual, employability depends upon:

1. Assets in terms of knowledge, skills and attitudes,
2. The way these assets are used and deployed,
3. Presentation of assets to potential employers,
4. The context within which the individual works, e.g. labor market, personal circumstances.

A lot of research reviews support the fact that student performance depends on different socio-economic, psychological, environmental factors. The findings of research studies focused that student performance is affected by different factors such as learning abilities because new paradigm about learning assumes that all students can and should learn at higher levels but it should not be considered as constraint because there are other factors like race, gender, sex that can affect student’s performance.

Thus performance needs to be seen in a more holistic manner which would encompass not only academic skills but also those skills required to gain and sustain growth in the working environment.