

## **The Need for the Acquisition of Knowledge in Weak Situational Experiences in Diverse Environments of Modern Management**

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**Abstract:** *Past research has indicated that mental models codify our experiences and guide our future behavior. In fact, some scholars have defined learning as the process of formulating and updating mental models. Although the vast majority of learning is achieved through explicit learning mechanisms (e.g. training sessions), the opportunity exists for learning in all moments of work experiences. The purpose of this paper is to present a theoretical frame work to explain what factors create the greatest opportunity to learn from weak situational experiences and therefore increase the overall richness of one's mental models and, in turn, job knowledge.*

**Keywords:** Learning, Job Knowledge, Mental Models, Theory, Weak Situations

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### **1. INTRODUCTION**

Managers of today face a more challenging business environment than ever before. Rapid advancements in technology allow overwhelming amounts of information to be accessed with ease. Globalization has enlarged the pool of competitors and suppliers to the point where opportunities or threats can exist anywhere and at anytime. This dynamic environment has caused even the simplest decision of a few years ago to be a complex calculation today. "To be effective, managers should develop the ability to generate several interpretations and understandings of organizational events so that the 'variety' in their understanding is equivalent to the variety in the situation (Bartunek, Gordon & Weathersby, 1983, p. 273)."

In the light of this current business environment, the ability to learn from one's experience is vital to both individual and organizational success. Although the majority of learning is achieved through explicit learning mechanisms (e.g., coaching, performance reviews, or training sessions), the opportunity for learning exists in all moments of work experience. These experiences that exist without an explicit learning objective can be considered more ambiguous and therefore can be classified as weak organizational situations (House, Shane & Herold, 1996). The likelihood of acquiring knowledge in these situations will depend on the interaction of individual dispositional characteristics and situational factors.

With the vast number of variables one needs to consider in making a decision in this dynamic environment, the concept of mental models is an appropriate measure of job knowledge. Mental models are cognitive maps that reflect the causal relationships we see in a given situation. The greater number of causal relationships in a mental map, the greater the expertise one has of a given situation (Evans, 1988).

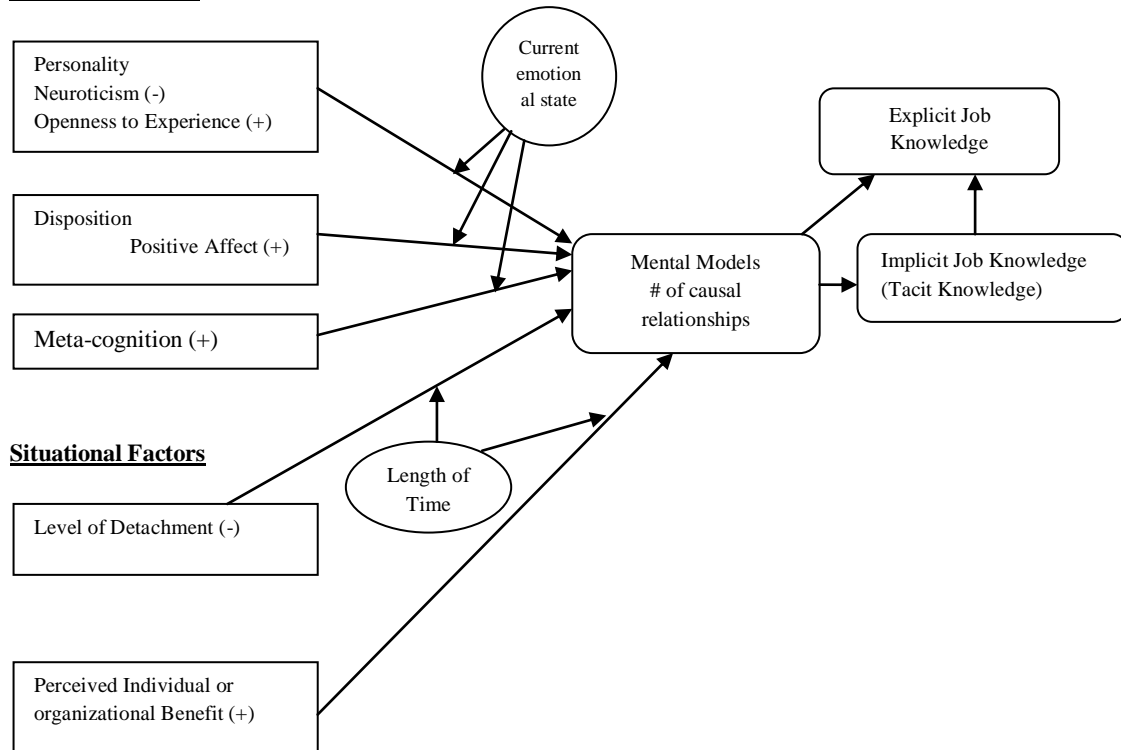
Learning from experience is knowledge acquired from the interaction of an individual and an aspect of the environment. The focus of this article is to examine learning from experiences in weak situations in the absence of an explicit learning objective. It is in these situations that basic and natural individual tendencies will influence individual behavior and the resulting ability to learn from the situation. Notably, of course, examining individual dispositional characteristics

alone is insufficient to examine any phenomenon within an organization, so we also take into consideration situational factors.

First we will review extant knowledge regarding learning from experiences. Second, we propose a theoretical framework explaining knowledge acquisition in weak situational experiences, outlining the role of mental models and resulting job knowledge, individual factors, and situational factors. Finally, we suggest methods of measuring the construct of mental models and implications of such methods. Fig. 1 outlines the complete proposed model.

## 2. THEORETICAL OVERVIEW

### Individual Factors



**Figure 1:** Proposed model

### 2.1 Experience and Learning

“Learning is the process whereby knowledge is created through the transformation of experience (Kolb, 1984, p. 38).” Four approaches to learning have been studied: personality, information processing, social interaction, and instructional preferences (McCarthy, 2010). This effort addresses the informational processing approach to learning: we examine experiential learning here, learning that is active and accomplished through doing. When John Dewey wrote his seminal book, *Experience and Education*, he stated that we need “to discriminate between experiences that are worthwhile educationally and those that are not (1938, p.33).” Dewey’s statement reflects the importance of a quality experience in order for one to acquire knowledge. Since the time of the publication of Dewey’s book, extensive research has examined learning from experience and has focused on how information derived from experience is processed (Ellis & Davidi, 2005; Ghose, 2010; Halebian & Finkelstein, 1999; Jordi, 2011; Olsson, Bjoorn & Jonson, 2008; Pastorino, 2012; Terlaak & Gong, 2008;). The focus of research has been on what Dewey indicated as “quality” experience. These quality experiences can be thought of as strong situations with explicit learning opportunities where the potential to learn is clear, as in intentional learning situations. In this article, we view explicit learning opportunities as situations where an individual recognizes the learning value of an experience as it occurs.

Learning from experience has been classified into two forms. The first is experiential learning wherein one learns from an experience one is directly involved in. The second is vicarious

learning wherein we learn from an experience we are indirectly involved in. Vicarious learning traditionally utilizes a role model whose experience is substituted for our own. Both forms of learning from experience play a key role during the knowledge acquisition stage of the learning process (Huber, 1991). In organizations, knowledge acquisitions occur from a combination of these two forms. Extensive research has examined the value of experience on an individual level (Ellis & Davidi 2005; Gioia & Manz 1985; McCarthy, 2010; Russo 2006), on the group level (Carley, 1997), and on an organizational level (Argote & Miron-Spektor, 2012; Haleblan & Finkelstein, 1999; Haleblan, Kim & Rajagopalan, 2006; Huber, 1991).

In an organizational setting, learning from experience is traditionally accomplished through strong situations with explicit mechanisms. These explicit mechanisms can be in the form of after-the-event coaching (Ellis & Davidi, 2005), corporate training sessions, individual performance evaluations, and even reviews of past organizational performance (Haleblan & Finkelstein, 1999). In today's dynamic business environment, it is not always adequate to utilize an explicit mechanism to generate knowledge from experience. The concept of self-directed learning has therefore become a popular solution. Self directed learning has been defined by Malcolm Knowles as a process in which "individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies and evaluating learning outcomes (1975, p. 18)." Another interesting perspective on learning is that reflection is part of the learning cycle: reflective observation is the learning stage at which an objective assessment is made of our understanding and conceptualization of our experiences occurs (Jordi, 2011). Thus, reflection is transformative learning of a self-directed nature.

Regardless of whether learning occurs vicariously or directly or whether it is directed by the organization or self directed, the result is an acquisition of knowledge which in turn affects behavior. Knowledge has been defined as "information combined with experience, context, interpretation, and reflection. It is a high-value form of information that can readily be applied to decision making and action (Vaghely & Julien, 2010, p. 74)." Various ways of measuring knowledge acquisition have been utilized. Often, a measurement of performance as a result of behavior has been evaluated. The logic behind this approach is simple; as one accumulates experience, the resulting performance will improve over time. Another manner through which to measure knowledge acquisition is through cognitive schemas or mental models. The concept of mental models has been used to illustrate how information is processed and translated into action (Carley 1997; Ellis & Davidi, 2005; Jones, Ross, Lynam, Perez & Leitch, 2011; Radvansky & Zacks, 2011; Weick 1995). The concept of mental models will be discussed in greater detail later on in this article.

The common theme throughout the learning from experience literature is the focus on strong situations with explicit (obvious) learning opportunities. These explicit opportunities are in line with the quality experience referred to by Dewey. It is not the objective of this article to contest the value of these experiences. In fact, we are in agreement with this focus and hold the belief that the majority of knowledge obtained from experience is derived from these "quality" experiences. However, the potential to acquire knowledge exists in all experiences even when not recognized by the individual or the organization.

## **2.2 Framework for Knowledge Acquisition in Weak Experiential Learning Situations**

Knowledge can be acquired outside of explicit learning opportunities (Argote & Miron-Spektor, 2012). Situations within an organization are traditionally considered strong situations due to organizational pressures and norms (Davis-Blake & Pfeffer, 1989). However, not all situations can be strong learning opportunities. Specifically, ambiguous situations can be viewed as weak learning opportunities (House, et al., 1996). Situations which provide no explicit learning opportunity should also create less organizational pressure and can be thought of as weak learning opportunity situations. It has been determined that dispositional characteristics are likely to have the strongest effect in relatively weak situations (Davis-Blake & Pfeffer, 1989). However, ultimately, behavior is determined by both dispositions and situations, an interactional view (House, et al., 1996; Argote & Miron-Spektor, 2012).

From this, it can be concluded that an individual's ability to acquire knowledge from weak situational experiences depends on both individual and situational factors. Knowledge acquired as a result of weak situational experiences must reflect an individual's basic dispositional tendency, in conjunction with his interactions with situational factors. The number of casual relationships in one's mental models will be utilized as a measure of knowledge acquisition. Thus, this article presents a theoretical profile of an individual and situation that creates the greatest opportunity to learn from experiences in weak situations, thereby increasing the overall richness of one's mental models and, in turn, job knowledge.

### **2.3 Mental Models: Definition and Impacts**

“Effective leaders are effective not because they have more knowledge or experience than ineffective leaders; rather, it is because they have a more valid and effective way of handling the complex issues they face (Johnson, 2008, p. 85).” An individual's mental models are internal symbolic representations of the world or aspects of the world (Johnson-Laird, 1983). In other words, people use experience to generate a cognitive map to explain reality. We take observations from our experience to create or update our mental models. When an experience differs from our expectations, we adjust or correct our mental model to reflect the new information. The more complex or rich our mental model is, the more advanced our understanding of a situation is (Evans, 1988; Jones et. al., 2011). To measure the complexity of a mental model requires counting the number of causal relationships in the person's mental model which can be applied in understanding a situation. In short, mental models act as maps representing the various casual relationships we perceive that make up the situations around us. The greater the number of causal relationships, the greater is our understanding of these situations (Evans, 1988).

The concept of mental models has been used to illustrate how information is processed and translated into action (Carley, 1997; Chermack, Song, Nimon, Choi & Korte, 2012; Ellis & Davidi, 2005; Radvansky & Zacks, 2011; Weick, 1995). Mental models and the term knowledge have been used interchangeably (Argote & Miron-Spektor, 2012; Rouse & Morris, 1986), though it is important to further distinguish the relationship between the two concepts. “Mental models refer to a general class of cognitive constructs that have been invoked to explain how knowledge and information are represented in the mind (Klimoski & Mohammed, 1994, p. 405).” Additionally, mental models are “cognitive representations of external reality (Jones, et al., 2011, p. 47).” Knowledge has been further classified as explicit, implicit and tacit. Explicit knowledge is knowledge that can be expressed to others. The other end of this spectrum is tacit knowledge, which is something that is known but cannot be expressed. Implicit knowledge is an overlapping concept: it is knowledge that can possibly be expressed but has not been expressed (Reber, 1989). Mental models can directly result in explicit knowledge or can result in implicit knowledge, which can, at a later time, be expressed and result in explicit knowledge; they can also result in knowledge that remains inexpressible in the form of tacit knowledge.

## **3. PROPOSITION DEVELOPMENT**

### **3.1 Individual Factors**

In the examination of learning from experiences in weak situations in the absence of an explicit learning objective, we find that individual tendencies are influential. In these situations, our basic and natural individual tendencies will influence our behavior and resulting ability to learn from the situation (Please see Fig. 1). Thus, several individual characteristics are worthy of review. The first characteristic of importance combines the factors of neuroticism, openness to experience and extraversion from the Five Factor Model (FFM) of personality: the FFM is a broad dimension of personality that helps explain our behavioral tendencies (Costa & McCrae, 1992). The affect disposition is the second individual characteristic of note: this personality dimension is interpreted as an indicator of the long term general mood of an individual. This characteristic is of particular importance to this effort. Meta-cognition, the final characteristic deemed important to this research proposal, is interpreted as “complexity of thought” or simply thinking about the way individuals think.

Research on individual difference covers a significant number of dispositional factors. In the specific area of personality, the Five Factor Model has generated the broadest support among

researchers (Poropat, 2009). Although the five factors of neuroticism, extraversion, conscientiousness, agreeableness and openness to experience do not exhaust all aspects of an individual personality, they offer broad personality dimensions that can be measured with high reliability and impressive validity (Digman, 1990; Poropat, 2009; Watson & Clark, 2006). Personality refers to a relatively stable pattern of behaviors and consistent internal states that explain a person's behavioral tendencies (Hogan, 1991).

### *3.1.1 Neuroticism.*

Neuroticism is one of the dimensions in the Five Factor Model. It has been viewed as a measure of emotional stability. People high in neuroticism are associated with tendencies to exhibit high levels of anxiety, depression, hostility and self-consciousness, while low neuroticism is associated with a tendency to remain calm and poised (Costa & McCrae, 1992). Traditionally, high levels of neuroticism have had a negative association with work performance. In particular, research conducted by Wallace and Newman (1997) has demonstrated that highly neurotic individuals are susceptible to "automatic orienting of attention," which means they can be distracted away from the focal stimuli or task at hand. It has been further proven that highly neurotic individuals are "more strongly influenced by factors relating to the allocation of attentional resources (Smillie, Yeo, Furnham & Jackson, 2006, p. 140)." In a weak situational experience, people low in neuroticism will be more stable and observant of their surroundings.

Although overall the relationship between levels of neuroticism and the generated causal relationships will be negative, the relationship will not be linear. In a weak situation, a person with a moderate level of neuroticism will spread their attention across many available stimuli, helping to offset the negative effect of their emotional state. As the level of neuroticism increases, an individual will be distracted or consumed by their emotional state and therefore will be less aware of the surroundings and current experience. Thus, as the level of neuroticism increases, the strength of the negative relationship with casual relationships will also increase, creating a negative curvilinear effect on mental models. This will limit the individual's ability to learn from weak situational experiences, as a reflection of the lower number of causal relationships in their mental maps. This results in the following proposition:

*Proposition 1: Neuroticism, as defined as emotional stability, will have a negative curvilinear effect, in the form of a negative s curve, on the number of causal relationships in one's mental map.*

### *3.1.2 Openness to experience.*

Openness to experience is the personality dimension of the five factor model that has received the most debate among researchers. This dimension has been classified as culture (Norman, 1963) or as intellect (Borgatta, 1964; Goldberg, 1981) and openness (Costa & McCrae, 1992). For our purpose, openness to experience incorporates aspects from all the above classifications (Digman, 1990).

The openness to experience dimension is a measure of an individual's "receptiveness to new ideas, approaches, and experiences (Costa & McCrae, 1992: 41-42)." Intuition enters into the discussion here: it has been defined as analysis based on habit or the use of insight, the sight and understanding of the inner nature of things (Vaghely & Julien, 2010, p. 74). A meta-analysis done by Barrick, Mount and Judge (2001) examining the relationship between the FFM and job performance showed that openness to experience correlated strongly with performance in job training. Overall, the openness to experience dimension demonstrates a natural tendency to be intellectually curious. Those individuals marked by their openness to experience, then, are more likely to be aware of an experience, even in the absence of an explicit learning objective. This results in the following proposition:

*Proposition 2: Openness to experience, as defined in the Five Factor Model, will have a positive effect on the number of causal relationships in one's mental map.*

### *3.1.3 Extraversion.*

An individual with a high level of extraversion tends to have the characteristics of being sociable, assertive and outgoing (Digman, 1990). In the literature, the dimensions of extraversion and

openness to experience are closely associated. As was the case with openness to experience, extraversion has been associated with strong performance in training exercises (Barrick et al., 2001). However, after closer examination, it has been determined that both dimensions are in fact independent of each other (Garcia, Aluja, Garcia, & Cuevas, 2005). Individuals with a high level of extraversion are more likely to engage their surroundings. This tendency to interact with the environment will increase their opportunity to acquire knowledge in weak situations. This results in the following proposition:

*Proposition 3: Extraversion, as defined in the Five Factor Model, will have a positive effect on the number of causal relationships in one's mental map.*

The remaining dimensions of the Five Factor Model are agreeableness and conscientiousness. Agreeableness is also referred to as likeability: it is associated with altruism and treating others fairly or kindly. It does not imply that one is more likely to engage in a situation, but rather it reflects how they will act once engaged. Conscientiousness is a dimension associated with characteristics such as being persistent and achievement oriented. In a meta-analysis, conscientiousness was determined to be positively related to job performance (Barrick et al., 2001). However, this result is due to the strong situational environment associated with most organizational settings. In a weak situational experience, the effect of both these dimensions should be limited and therefore no hypotheses will be stated at this time.

#### *3.1.4 Positive Effect.*

Positive effect is the individual's dispositional tendency to experience positive emotions across situations and time (Perrewe & Spector, 2002). Positive feelings have been shown to enable individuals to categorize items, people, and situations more flexibly and creatively, and in particular, to see potential relatedness among unusual and untypical members of categories that can be sensibly related (Erez & Isen, 2002). Someone with a trait of positive effect disposition will have a long term tendency to be in an optimistic and positive mood. This tendency will allow someone to be naturally more aware of their surroundings and draw relationships between the actors in those surroundings.

However, in a study done by Staw & Barsade (1993) comparing what they term the debate between "Sadder but Wiser versus Happier and Smarter," the positive relationship was confirmed but not as a linear relationship. Their results showed decreasing effects of positive effect on decision making as the level of positive effect increased. At high levels of positive effect, an individual positive mood will consume their attention. This results in the following proposition:

*Proposition 4: The relationship between positive affect disposition and the number of causal relationships in one's mental map will resemble an inverted U shape.*

#### *3.1.5 Metacognition.*

Metacognition refers to the ability to reflect upon, understand, and control one's learning (Schraw & Dennison, 1994). It is determined that metacognition has two separate parts: metacognition knowledge and metacognition control. Metacognition knowledge is an understanding of what an individual knows and their own cognitive operations. Metacognition control refers to how one manages these cognitive operations. Research has shown that metacognition is separate from intellectual ability (Swanson, 1990). Additionally, people deemed high in metacognition awareness have been shown to perform better than those low in awareness in regards to learning (Garner & Alexander, 1989) and problem solving (Swanson, 1990). Metacognition represents a natural ability to organize and understand how one thinks, feels and also recognize the environment around them. This results in the following proposition:

*Proposition 5: High levels of metacognition awareness will have a positive effect on the number of causal relationships in one's mental map.*

The above individual traits represent natural long-term tendencies of a person's overall disposition. However, these are only tendencies: at times an individual can deviate from these norms. An individual's current emotional state represents such a deviation. For example, someone with a positive trait affect disposition has the tendency to be in a positive mood, but an event can

put him in a temporary negative emotional state. On the other hand, an individual who is low on neuroticism (emotionally stable) can be in an extremely positive mood due to an event. In either case, an extreme emotional state will consume the attention of an individual away from their surroundings. This results in the following proposition:

*Proposition 6: Current emotional state will have a moderating effect on the number of causal relationships in one's mental model. Any extreme current emotional state (positive or negative) will moderate the individual factors.*

### **3.2 Situational Factors**

Learning from experience is knowledge acquired from the interaction of an individual and some aspects of the environment (Dewey, 1938). Examining individual dispositional characteristics alone is not sufficient to examine any phenomenon within an organization: we must also examine situational factors. The situational factors reviewed here are based on the two situational factors Dewey discussed in his book titled *Experience and Education* (1938).

The first factor was described by Dewey as continuity. This factor encompasses two elements: relations to past experience and the realization that experience has some consequences for the future. In regard to relationship to past experience, a new experience with a direct relation to a prior experience is likely to contain an explicit learning objective. The logic behind this assumption is that, as one encounters a series of connected events, other capabilities are utilized to analyze the experience. This situation is beyond the scope of this paper. The concept of an experience having future consequences is, however, relevant to this analysis. If an individual perceives that any potential of future benefit to themselves or the organization is at stake in an experience, the individual's attention will be attracted. That is to say, as the level of perceived benefit increases, so will one's awareness of the experience, which will, in turn, have a positive effect on the number of causal relationships in one's mental models. This results in the following proposition:

*Proposition 7: The level of perceived individual or organizational benefit will have a positive effect on the number of causal relationships in one's mental model.*

The second situational factor discussed by Dewey (1938) is called interaction. This is defined as the link between an individual and the environment during an experience. From this concept of interaction, the concept of detachment can be developed. Detachment is the level of involvement one has in a particular experience. As mentioned earlier, learning from experience can be broken down to two forms, vicarious learning and direct experiential learning. Vicarious learning occurs when one learns indirectly through another individual's experience. This would be an example of high detachment because, in such a learning environment, one is not an active actor in the experience. Experiential learning directly from one's own experience is an example of low detachment: the individual is an active participant in the experience, thereby, feeling much closer to the experience. The more actively involved in an experience one is, the greater the opportunity to acquire knowledge from that experience. This results in the following proposition:

*Proposition 8: The higher level of detachment will have a negative effect on the number of causal relationships in one's mental model.*

The effect of time on organizational phenomena has been widely examined. Examples of direct requests to incorporate time can be seen specifically in goal setting theory (Fried & Slowik, 2004) or in theory building in general (George & Jones, 2000). In addition, work on the "distortion" of time can be seen in research examining the experience of "timelessness" in work (Mainemelis, 2001) and also in the concept of "flow" developed by Donner and Csikszentmihalyi (1992). An individual's ability to evaluate experience is constrained by the dimensions of time. Time traditionally is viewed in the form of absolute or linear time, also referred to as clock time. A logical conclusion would be the longer an experience takes to unfold, the greater the opportunity to acquire knowledge. On the other hand, an experience that is low in detachment and high in perceived benefit can offer little opportunity for knowledge acquisition if the experience is brief or instantaneous.

"However, people's perception of time is not limited only to the objective characteristics of clock time (Fried & Slowik, 2004, p. 405)." There is also a subjective view of time. Examples of the

subjective view of time can be seen throughout everyday life. The sensation that time slows down during the moment of impact in a car crash or the simple expression that “time flies while having fun” highlight the subjective view of time. In the work regarding the concept of “flow,” it has been determined that under certain circumstances “people lose the sense of time and hours seem to pass in minutes (Donner & Csikszentmihalyi, 1992, p. 17).” This results in the following proposition:

*Proposition 9: Length of time (form of objective or subjective) will have a moderating effect on the situational factors. The longer (perceived or actual) an experience takes to unfold, the more positive effect on the number of causal relationships in one’s mental models.*

#### **4. CONCLUSION**

The importance of strong situation experience will always remain paramount in learning literature. However, the potential to learn from weak situations as outlined in this paper do have implications in today’s business environment. Increasing our understanding of how an individual naturally acquires knowledge from his experience can lead to a greater comprehension of employees’ decision making processes. In addition, the role of weak situations in our understanding of our environment can lead to increased effectiveness of organizations’ socialization process. Work utilizing mental models has already been established in the area of socialization (Wanous, Reichers & Malik (1984), strategic decision making (Gary, Wood, & Pillinger, 2012), causal reasoning (Ali, Chater, & Oaksford, 2011), and team effectiveness (Mathieu, Rapp, Maynard, & Mangos, 2009).

Others areas where this work can be applied are in the self directed learning literature and in the adjustment of flawed mental models. In addressing the former, in the current hyper competitive state of business, employees must be proactive in their acquisition of knowledge. Researchers have used the phrase “just in time learning” to describe the future state of corporate education (Bolton, 1999; Romiszowski, 1997). Acquisition of knowledge in a weak situational experience can act as a catalyst for more proactive forms of learning such as self directed learning.

The examination of how an individual adjusts or corrects flawed mental models is another area of possible contribution for this research. As stated before, mental models are a cognitive representation of our perceived environment. These models are constructed and corrected by our experiences. If our models differ from what actually occurs, we adjust our models to reflect reality. Moments of weak situational experience can offer indicators of potential flawed mental models. Therefore, individuals who are prone to knowledge acquisition in weak situational experience may be subjecting their mental models to more constant examination. In addition, the hypotheses outlined in this article pertain to the acquisition of knowledge but the quality of the knowledge acquired is not addressed, thus providing another area of future research.

“Compared to what we ought to be, we are only half awake.”- William James (1924, p. 237)

The level of competition that individuals and organizations face today constantly places greater demands on our abilities. As we strive to adapt and evolve to meet these challenges, we recognize the vast extent of our abilities. One needs only to examine the advancements in business over the past 25 years to see evidence of this statement. However, we must continue to rise to these demands by maximizing all available opportunities. The William James quote stated above can be modified from “ought to be,” to “need to be,” to reflect the current state of business. Recognizing the role of weak situational experience in knowledge acquisition is a step towards what we need to be. In an environment that is constantly changing, we must respond by constantly learning and adapting. Conceding moments as unimportant is no longer an option if organizational success is desired. It is true some experiences are more important than others at times, but all experiences are important at all times.



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