

## **I FEEL, THEREFORE, I LEARN: THE ROLE OF EMOTION IN SELF-DIRECTED LEARNING**

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### **Abstract**

It is rare to find the emotional component of self-directed learning discussed explicitly in the literature. This lack is particularly glaring given the interest sparked by recent brain research concerning the importance of emotion in all types of learning as well as by the dramatic increase in self-directed learning in the emotionally charged context of health care. The purpose of this paper is to address this void and to present an interactive model of self-directed learning that positions emotion in this type of experience. Support for the model is presented by integrating information from diverse bodies of literature that contribute to understanding the link between learning and emotion. The resulting model provides a more comprehensive and practical tool for understanding self-directed learning. The essential premise of the model is that context, content, learning, and process each carry an inherent emotional load that is mediated by the characteristics of the individual learner.

My research has focused on the self-directed learning of men and women facing medical crises (Rager, 2003; Rager 2004; Rager, 2006; Rager, 2007). As the participants described their experiences, it became apparent that their emotions had played a significant role in their learning. Sometimes emotion served as a motivator for learning and sometimes their fear prevented them from being able to process information. In all cases, however, emotion was a factor in their self-education. Those studies of the experiences of women who had been diagnosed with breast cancer and men who had been diagnosed with prostate cancer have served as the impetus for delving more deeply into the role of emotion in self-directed learning.

With few exceptions (Danis, 1992; Rager, 2003; Rager, 2004; Rager, 2006; Rager, 2007), the role of emotion in self-directed learning is not dealt with explicitly in the literature. This is particularly glaring given the interest sparked by recent brain research concerning the importance of emotion in all types of learning, as well as by the dramatic increase in self-directed learning in the emotionally charged context of health care.

The purpose of this paper is to address this void and to present an interactive model of self-directed learning that positions emotion in this type of experience. Support for the model integrates information from diverse bodies of literature that contribute to understanding the link between learning and emotion. Literature from educational psychology, health care, neuroscience, philosophy, education, human resources, and self-directed learning is cited, based on their contribution to this discussion. The theoretical basis for the model is presented as well as

its implications for practice. In explaining the model, examples from the self-directed learning experiences of cancer patients are used.

### **Self-Directed Learning**

Self-directed learning has been described as a survival skill in response to the rapid pace of change in modern society (Caffarella, 1993). Synonymous with independent learning or self-education, estimates of participation by adults range from 70 % (Tough, 1973) to over 95% (Livingstone, 1999). Self-directed learning is commonly defined as “a process in which individuals take the initiative with or without the help of others in diagnosing their learning needs, formulating goals, identifying human and material resources, selecting appropriate learning strategies and evaluating learning outcomes” (Knowles, 1975, p. 18). Along with andragogy and transformational learning, self-directed learning has been identified as instrumental in defining the field of adult education (Merriam & Caffarella, 1999).

Interest in this form of learning has been particularly keen since the works of Houle (1961/1993), Tough (1973), and Knowles (1975) focused attention upon it. Researchers have explored the goals of self-directed learning, developed process models, correlated it with many different variables, and developed instruments to measure it (Candy, 1991; Long, 1996; Merriam & Caffarella, 1999). However, in spite of an extensive literature base, the emotional aspects of self-directed learning have rarely been discussed. Certainly when learner characteristics are acknowledged as a factor in self-directed learning (Brockett & Hiemstra, 1991; Candy, 1991; Garrison, 1997), one may assume that the learner’s emotions are among the aspects that are included.

Danis (1992) is one of the few to list emotion specifically as a factor in self-directed learning. She presents a “broad, unifying framework that could encompass and guide the various data-based self-directed learning efforts” (p. 48). She identifies the five main components of this framework as strategies, phases, learning content, learner, and context. Emotions are cited as one of the factors in the learner category as an aspect of individual identity that plays a role in self-directed learning. However, this subcomponent of the proposed framework is merely listed, as opposed to being discussed or elaborated upon.

### **Health Care and Self-Directed Learning**

The failure to adequately address emotion and the role it plays in self-directed learning is all the more serious when one considers the increasingly important link between self-directed learning and personal health. More and more patients are assuming the responsibility for conducting their own information searches and not relying purely on the advice of health professionals. According to Gray, Fitch, Phillips, Labrecque, & Klotz (1999), “This seems to be the result of converging influences, including a growing distrust of medical authority, historical failures by the healthcare system to provide adequate information, and the ascension of a consumerist philosophy” (p. 134).

Technology is also a major factor in the link between self-directed learning and personal health. It has provided viable treatment options in regard to many illnesses and has necessitated

patient involvement in making critical treatment choices. For example, as Curtis and Juhnke (2003) report, “Although treatment protocol for some cancer diagnoses is clear, prostate cancer patients must choose among several viable options” (p. 162). These include watchful waiting, surgery, radiation therapy, hormonal therapy, and chemotherapy as well as alternative therapies (National Cancer Institute, 2000). In many cases therefore, patients are expected to choose among these options. Self-directed learning by necessity plays a critical role in assisting patients to make informed decisions in circumstances such as these.

Additionally, technology has provided the Internet and the World Wide Web. Blumenthal (2002) cites a February 2002 survey by Harris Interactive indicating that 137 million Americans use the Internet and the web, with 110 million reporting using it at least three times a month to look for health care information. Ziebland et al. (2004) assert that, “The Internet is changing the way that people learn about health and illness. Health sites and discussion lists are among the most popular resources on the web” (p. 565).

Certainly when one combines self-directed learning and a medical crisis, the role of emotion is dramatically highlighted. For this reason, examples from qualitative research studies exploring the self-directed learning experiences of breast cancer (Rager, 2003; Rager, 2004) and prostate cancer patients (Rager, 2006; Rager, 2007) will be used in this discussion. However, these examples, it may be argued, can serve to inform about the role of emotion in situations where its manifestation may be more subtle. This is supported by the position of Schultz and DeCuir (2002) who state:

Thus, during self-directed goal transactions, people make judgments such as “Is what is happening important to my goals?”, “Is this going the way I hoped?,” or “Can I handle the situation?” How individuals answer those questions, within a particular social-historical context, will influence the emotions they experience, the intensity of those emotions, and the emotional regulation they use during self-direction. (p. 127)

Thus, it may be argued that the increasingly important link between health care and self-directed learning signals the need to explore in detail the role that emotion plays in this type of learning and that this information may be helpful in supporting self-education in this important context.

### **Defining Emotion**

Challenges inherent in exploring emotion begin in attempting to define this complex concept. Galasinski (2004) maintains that, “One of the significant traits of what it means to be human is to be able to feel emotions” (p. 1). At the same time he acknowledges that in spite of having been widely researched, “emotions are still somewhat elusive as regards their final definition” (p. 3). According to the dictionary, emotion is “1. a strong feeling as joy, sorrow, hate or love. 2. strong agitation or excitement” (Steinmetz, 1993, p. 213). Damasio (2003) suggests a “...simple definition of emotion as a specifically caused transient change of the organism state...” (p. 153). He explains that, “The collection of neural patterns which constitute the substrate of a feeling arise in two classes of biological changes: changes related to body state and changes related to cognitive state” (p. 153). Emotion, therefore, is experienced physically and mentally.

## **Emotion and Education**

In spite of difficulty in defining emotion, scholars and practitioners in diverse educational fields are beginning to directly acknowledge its importance in the learning process. In the field of human resources, attention is being drawn to the impact of emotion on the process of training employees (Short & Yorks, 2002; Yang, 2004). In education, scholars are calling attention to the role of emotion in the context of the teaching-learning transaction (Caine & Caine, 2006; Dirkx, 2001; Greenhalgh, 1994; Rompelman, 2002; Schutz & Pekrun, 2007). Certainly progress has been made since the dualism of Plato who “looked upon the emotions or passions as a wild, not easily controlled and potentially dangerous aspect of human psychology” (Lyons, 1999, p. 22).

According to early philosophers including Plato, emotion is needed to be controlled and tamed by reason much as a slave relates to a master (Schultz & DeCuir, 2002). Dirkx (2001) maintains that the marginalizing of emotion and elevating of rationality to a preeminent position in adult education theory building and practice is a reflection of this tradition. He asserts that, “Educators within formal settings of adult learning seek to control, manage, limit, or redirect outward expressions of emotions and feelings” (p. 67). In other words, the master is still seeking to control the slave.

However, Dirkx is among those seeking change in current thinking about emotion and learning. His position is congruent with Caine and Caine (1990) who state, “What we learn is influenced and organized by emotions and mind-sets involving expectancy, personal biases, and prejudices, self-esteem, and the need for social interaction” (p. 67). They maintain that emotion and cognition cannot be separated in learning but rather that both are integral to the process. This premise is central to the model presented here.

## **Emotion and Neuroscience**

Support for the position that emotion is integral to learning is emanating from the recent explosion of brain research that has been facilitated by technological advances. Non invasive imaging techniques such as magnetic resonance imaging, positron emission tomography, and electroencephalogram allow researchers to study activity in the normal brain while engaged in specific tasks such as learning a new vocabulary word. According to Jensen (1998),

Biologically, emotions are not only very current science, but also very important science. Neuroscientists are now breaking new ground in mapping out this important learning component. The affective side of learning is the critical interplay between how we feel, act, and think. There is no separation of mind and emotions; emotions, thinking, and learning are all linked. (p. 71)

Researchers such as Damasio (1994), LeDoux (1998), Jensen (1998), Wolfe (2006), and Zull (2006) are drawing attention to the emotional component of learning. They do so in understandable terms, so that those outside the field of neuroscience can make practical use of this new information. Zull (2006) explains that “Emotion is the foundation of learning. The chemicals of emotion act by modifying the strength and contribution of each part of the learning cycle. Their impact is directly on the signaling systems in each affected neuron” (p. 7). Wolfe

(2006) adds, “The brain, a pattern-finding organ, seeks to create meaning through establishing or refining existing neural networks; this is learning. Emotion affects what is learned and what is retained” (p. 35). In other words, there must be a strong enough emotional hook for the learner to notice something and begin the learning process. Further, the emotional component impacts the quality and strength of the neural trace or imprint in the brain. This has important repercussions for the ability to recall what has been learned or experienced.

Damasio (1994) argues that 17th century French philosopher Descartes was in error when he declared, “I think, therefore, I am.” He contends that the mistake was in separating the rational and the body. His research suggests,

that the comprehensive understanding of the human mind requires an organismic perspective that not only must the mind move from a nonphysical cogitum to the realm of biological tissue, but it must also be related to a whole organism possessed of integrated body proper and brain and fully interactive with a physical and social environment. (p. 252)

The interactive nature of the model presented here reflects this understanding. Damasio (1994) likewise asserts that emotions are essential to human reason and that the absence of emotion can actually interfere with rationality and decision making.

Jensen (1998) further posits that,

Emotions are a distillation of learned wisdom: the critical survival lessons of life are emotionally hardwired into our DNA. We have been biologically shaped to be fearful, worried, surprised, suspicious, joyful, and relieved, almost on cue. We must cease the long standing habit of thinking of emotions as always irrational or having nothing to do with the ways we think. Emotions are a critical source of information for learning. (p. 78)

Clearly, ignoring emotions and the role they play in learning leaves us with an incomplete and flawed understanding of the process. Rather neuroscience suggests that emotion must be recognized and considered as integral to learning.

Wolfe (2006), on the other hand, reminds us that emotion is “a double-edged sword, with the ability to enhance learning or impede it” (p. 40). During periods of intense emotional response, neuroscience suggests that our ability to access higher order problem solving skills is diminished and less efficient. Building on this idea, teachers are advised that “successful learning may be seen as a ‘safe emergency’ – a state of high attention but without the debilitating anxiety” (Cozolino & Sprokay, 2006, p. 14). Classroom learning environments, it is suggested, should seek this balance.

Brain based learning programs such as those espoused by Caine and Caine (1994) and Jensen (2000) apply information emanating from neuroscience regarding how the brain functions and include the role of emotion in learning. However, it should be acknowledged that others sound a cautionary note suggesting that what we are learning from neuroscience is “at best a set of working hypotheses” (Merriam, Caffarella, & Baumgartner, 2007, p. 416).

In summary, what is common to recent findings from research into how the brain works is support for the critical role that emotion plays in the process of learning and that this applies to all types of learning including self-directed learning, the most common form for adults.

### **Theoretical Framework**

Discussion of the role of emotion in self-directed learning is rooted in the integration of two philosophical frameworks. The first is Bandura's (1986) Social Cognitive Theory with its emphasis on the influence of environment and cognitive processes on intentional behavior. "The social portion of the terminology acknowledges the social origins of much human thought and action; the cognitive portion recognizes the influential causal contribution of thought processes to human motivation, affect, and action" (Bandura, 1986, p. xii). Bandura presents his three-way interactive model as a triangle linking learning, the individual, and the environment. Support for the alignment between self-directed learning and Social Cognitive Theory is detailed in Ponton and Rhea (2006).

Bandura's (1986) framework captures the interplay of the various components in the model, but fails to sufficiently emphasize the brain activity that is based on the information emanating from neuroscience. Therefore, a second framework has been identified that is drawn from Gagne's Information Processing Theory (as cited in Noe, 2002). This cognitivist orientation to learning is distinguished by the emphasis it places on the internal processes occurring in the human brain. These include capturing, storing, retrieving, and responding to messages, but the theory also acknowledges external events that influence learning such as those affecting the learner's attention to a particular stimulus.

It is the integration of the two frameworks that best captures the intent of the model of self-directed learning presented here. Bandura's (1986) Social Learning Theory addresses the comprehensive and complex nature of the model, while Gagne's approach to Information Processing Theory (as cited in Noe, 2002) emphasizes the internal processes occurring in the brain. The two are compatible and in combination more adequately position the model theoretically.

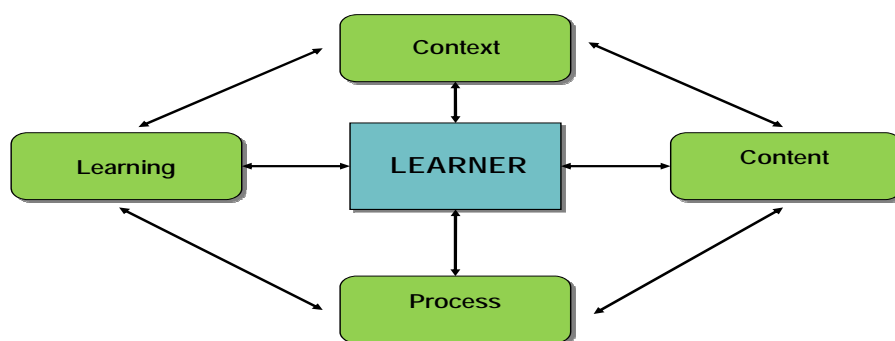
### **An Integrative Model of Self-Directed Learning**

Merriam and Caffarella (1999) have identified three categories of models of self-directed learning: (a) linear (Tough, 1973; Knowles, 1975); (b) interactive (Brockett & Heimstra, 1991; Danis, 1992; Garrison, 1997); (c) instructional (Grow, 1991). Of the three types, the interactive model appears most relevant and accurate for a model of self-directed learning as autodidaxy. Candy (1991) defined autodidaxy as "the individual, noninstitutional pursuit of learning opportunities" (p. 23).

The interactive model proposed here acknowledges the significance of the emotional component of self-directed learning within the context of the natural setting. Essential to understanding this new model is the fact that it is cyclical rather than progressing according to logically ordered steps as suggested by linear models. The components of this more comprehensive model interact throughout the process; therefore, progress is likely to be cyclical

and iterative, as opposed to linear. It is best characterized by Tremblay and Theil (1991) who wrote, “Indeed, autodidactic processes operate around intentions which take shape without any prior consideration. The objectives are constantly readjusted depending on personal tastes and wishes and circumstances. The process is characterized by its heuristic, iterative and contextual aspects...” (p. 35).

The proposed model (see Figure1) is represented by the following configuration with each component potentially contributing an emotional layer to the self-directed learning experience that is mediated through the individual learner.



*Figure 1. An Interactive Model of Self-Directed Learning.*

The context component of the model represents the environment within which the self-directed learning experience takes place. Spear and Mocker (1984) have effectively argued for the influence of the “organizing circumstance.” They found that “self-directed learners, rather than preplanning their learning projects, tend to select from limited alternatives which occur fortuitously with their environment, and which structures their learning projects” (p. 4). In addition to the “organizing circumstance,” the context is a reflection of the social, economic, political, cultural, and ethnic dimensions that influence self-directed learning. These aspects carry emotional weight that may impact the learner to a greater or lesser degree. For example, in the instance of a cancer diagnosis the economic circumstance of the patient can determine the availability, quality, and extent of medical treatment that may be accessed. One participant in the breast cancer study elected to be treated at the highly esteemed Mayo Clinic. Medical insurance and a positive personal financial situation made this option possible. This choice involved extensive travel and additional expense, but this participant felt confident that she was receiving the best possible treatment. In this instance, the economic dimension added a significant positive emotional layer to the experience.

The content component of the model represents the subject matter or topic of the self-directed learning experience. Subcategories of this dimension include the complexity, urgency, criticality, novelty, availability, and general emotional character of the topic to be investigated through self-directed learning. In the cancer studies, many of the participants suggested that the subject of cancer inherently elicits a fearful response in people. Many spoke of accessing the 5 year survival rates for their types of cancer. For some of these breast and prostate cancer patients

the news was not good in that regard. For example, one participant who was diagnosed with inflammatory breast cancer learned that the prognosis for this type of cancer is poor and that it is very likely to spread quickly to other parts of the body. In this case, the content component engendered a strong emotional response that impacted the learning.

The learning component addresses the information processing that takes place within the brain of the learner. It acknowledges the role of emotion in the learning process emanating from neuroscience. As suggested by information from brain research, emotion is essential to learning. Indeed, it is referred to as the “foundation of learning” (Zull, 2006, p. 7) and as a factor that mediates what is learned and what is remembered (Wolfe, 2006). Experts agree that in order for learning to take place, our attention must first be engaged. Our emotional responses trigger that attention. Additionally, the encoding and retrieval processes that are involved in learning are tied to emotion. The emotional component assists in strengthening the neural connections involved in storing and retrieving information. This aspect is a reflection of Gagne’s Information Processing Theory (as cited in Noe, 2002) that informs the theoretical framework for the model.

In the case of the breast and prostate cancer patients, they could easily recall the date, time, and circumstances of when they learned about their cancers. The emotional component of their experiences galvanized those memories. However, overly intense emotions were also reported to have impeded or stopped learning in some instances. This was the case with one breast cancer participant who reported not hearing anything her doctor said after being told that her lump was cancerous. Emotional overload made information processing impossible at that time.

The process component of the model represents the self-directed learning process itself. It includes the triggering event, diagnosing learning needs, formulating goals, identification and selection of resources, learning strategies, evaluation, decision making, and action. This component includes many of the steps proposed in earlier linear process models of self-directed learning (Knowles, 1975; Tough, 1973). However, in this new model, neither the self-directed learning process as represented in this component nor the model as a whole is seen as linear. The self-directed learner often uses a process that is quite messy. As stated earlier, it is cyclical in that it involves many instances of looping back to earlier steps or stages in the process resulting in ongoing modifications and adjustments.

Emotion, it is proposed, is also a factor in the process component of the model in that the learner’s past and current experiences with self-directed learning carry an emotional weight that also can exert influence. For example, one of the prostate cancer patients felt very confident and comfortable with his ability to research and make decisions based on what was learned regarding prostate cancer treatment choices. As an academic and associate vice president at a university, he was able to benefit from his expertise and experience with the research process. The result was a positive influence on the emotional component of the experience. He was able to find information quickly, assimilate what it was telling him, and evaluate its credibility and value in his particular situation. This confidence greatly influenced his positive and peaceful attitude during treatment and recovery.



It is important to note that in considering the model as a whole, there is interaction and overlap between and among the various components of the model as indicated by the bidirectional arrows. Given the complexity of self-directed learning situations and self-directed learners themselves, this overlap is appropriate. This characteristic of the model is reflective of Social Cognitive Theory (Bandura, 1986) that has informed the theoretical framework of the model.

The entire process is dependent on the self-directed learner, the central component in the model. This is the individual who feels the emotion regardless of the source and the person who is being impacted by those feelings. The characteristics, abilities, attributes, motivation, and personality of the learner are included in this component. Some people are by nature more emotional than others. By the same token, some people express their emotions more openly and intensely. It is when content, context, process, and learning are mediated through the individuality of the learner that the unique character of a self-directed learning episode is experienced.

It is suggested that the cumulative intensity and impact of emotion in a particular learning experience will range along a continuum from low to high. Although examples from the experiences of cancer patients have been used to illustrate the role that emotion plays in each component of the model, it is asserted that some degree of emotional load is present in each component for every self-directed learning experience.

### **Implications for Practice**

Most would agree that becoming an effective independent learner is a necessity given the amount and pace of change with which we are asked to cope. Caffarella (1993) has written that “The ability to be self-directed in one’s learning, that is, to be primarily responsible and in control of what, where, and how one learns, is critical to survival and prosperity in a world of continuous personal, community and societal changes” (p. 32). This discussion has highlighted the role of emotion in self-directed learning and has identified multiple sources of that emotion. Expanding our understanding of the factors influencing this critical form of learning is a first step to identifying strategies that have implications for practice. The model presented here can serve as a tool to guide both the development of self-directed learning skills in formal settings and support services for independent learners.

Merriam and Caffarella (1999) assert that “part of the job of educators of adults is to help learners, whether they are learning on their own or in formal learning programs, to be able to plan, carry out, and evaluate their own learning” (p. 290). Therefore, the topic of emotion and its role in self-directed learning should be included in instances where adults are being taught or encouraged to be self-directed. Individuals should be encouraged to use techniques such as journaling and discussion to capture and explore the emotional components of their learning experiences. Adult educators should encourage their students to go beyond identifying what they are feeling to examining the sources of those feelings and the impact they are having on their learning. These strategies lay the groundwork for using this information to make appropriate decisions. If changes are indicated, action plans should be developed and implemented. These suggestions may be seen as related to the concept of emotional intelligence (Goleman, 1995),

which includes the ability to identify and productively manage one's emotions. Indeed, many of the strategies suggested for developing and improving emotional intelligence (Lynn, 2002) can be modified for use in dealing with the emotional aspects of self-directed learning.

In addition, in the context of personal health, the role of emotion in self-education must be acknowledged and provision should be made for processing the emotions that will likely arise under these circumstances. The medical profession is faced with the challenge of reaching out to these independent learners with information on reliable resources as well as with emotional support services. Failure to provide appropriate assistance for individuals such as the breast and prostate cancer patients that have served as examples in this discussion has ethical implications.

### Conclusion

Schutz and Lanchart (2002) assert,

In the 2000s, researchers interested in teaching, learning, and motivational transactions within the classroom context can no longer ignore emotional issues. Emotions are intimately involved in virtually every aspect of the teaching and learning process and, therefore, an understanding of the nature of emotions within the school context is essential. (p. 67)

I would expand that position to include all types of learning and all contexts, not just as applied to classroom learning. Perhaps we are at the point when it is appropriate to rephrase Descartes and state, "I feel, therefore, I learn." Hopefully, this article will stimulate further investigation and discussion regarding the role that emotion plays in learning in general, and in self-directed learning in particular. The contribution of neuroscience to our understanding in this area is invaluable. The descriptions of the breast cancer and prostate cancer patients in regard to the emotional components of their self-directed learning experiences may begin to point the way. However, more research is needed involving other learners in other contexts.

The essential premise of the model of self-directed learning proposed in this paper is that context, content, learning, and process each carry an inherent emotional load that are mediated by the characteristics of the individual learner. Failure to recognize the complexity of the role of emotion in self-directed learning leaves us with an incomplete understanding of this critical form of adult learning.

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