ATHABASCA UNIVERSITY

AFFECT AS A PRESENCE IN THE COMMUNITY OF INQUIRY MODEL

BY

PRISCA CAMPBELL

A thesis submitted to the

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The undersigned certify that they have read and recommend to the Athabasca University Governing Council for acceptance a thesis AFFECT AS A PRESENCE IN THE COMMUNITY OF INQUIRY MODEL submitted by PRISCA CAMPBELL in partial fulfilment of the requirements for the degree of MASTER OF DISTANCE EDUCATION.

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ABSTRACT

This interpretive approach to a mixed-method study examines the likelihood that an awareness of the role of emotion as presented by Damasio and LeDoux enhances individual student participation in computer-mediated conferencing. Consideration is given to emotion as an element of social presence as defined in the community of inquiry conceptual model, proposed by Garrison, Anderson and Archer. Respondents participated in an online workshop, during which they were asked how the role of emotion in cognition might be applicable to distance education. Surveys and interviews were conducted to determine the level of their knowledge of emotion and cognition at the outset. Transcripts of conference postings were examined for evidence that learning had or had not transferred. Exit interviews and surveys determined if the workshops had enhanced or not enhanced the experience of the participants in the computer-mediated conference. Three of twelve participants acknowledged that participation in the workshop did engender a positive change in their normal conference participation behaviour. Three of the remaining nine stated unequivocally that the workshop had no influence. The others were unable to contribute useful data due to technical difficulties or limited participation. Although data were insufficient to support the research question there was evidence that emotion should be a fourth presence – called emotional presence - defined as the extent to which participants in a community of inquiry are aware of and attend to overt feelings and covert emotions with the intention of facilitating learning. The community of inquiry model and the distinction between emotion and feeling need further study. The latter concepts require study in an online context.

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CHAPTER I

INTRODUCTION

> *"By the time that half the introductions are done, I'm too intimidated to post my own intro."*
> Volunteer 14f

Deconstructing the emotions experienced when faced with a blank screen and the obligation to write a graduate thesis is akin to analyzing an expensive perfume: The 'top note', the first impression, more often than not, is tension, a *background emotion*, a term defined by Damasio (1999, p. 52) as an emotion observed by onlookers without a word being spoken. The visual cue could be a tight jaw, a nervous tick, a wringing of hands – or a combination of such things.

Presume that the 'middle note' in this scenario is pride – a *social or secondary emotion* (Damasio, 1999, p. 51). It is just as likely that the social emotions of embarrassment, jealousy or guilt (p. 51) could be evident.

The long-lasting 'bottom note', a *universal emotion* (Damasio, 1999, p. 50), in this situation is fear: An emotion so universal that LeDoux (1996, p. 106) focused on it while researching the "neural basis" of emotion.

Emotions are redolent throughout the pursuit of a graduate degree. The blend of scents varies according to the circumstances. Occasionally a graduate student exudes happiness, another of the six universal emotions (Damasio, 1999, p. 50), or becomes aware through personal communications that online colleagues have perceived background emotions (p. 52) such as enthusiasm or discouragement. While writing the thesis the full range of social emotions could be experienced (p. 51): guilt that not enough time was invested; embarrassment should the author

inadvertently fail to cite the work of another; and jealousy – unrelated to the task at hand perhaps, but capable of impacting the process nonetheless.

For centuries the dispassionate thinker who applies logic and reason to pursue truth has been the ideal towards which learners are encouraged to strive. Emotion is perceived, at worst, as a hindrance to learning, and, at best, a learning outcome in the affective domain. Dirkx (1997), in *Nurturing Soul in Adult Learning,* made a case for the integration of feeling into adult education. That impassioned argument was the impetus for this examination of the role of affect in online learning.

Fear and Cognition

Fear, observed LeDoux (2002) "is the emotion about which we know the most" (p. 212). Seventy-eight years prior to LeDoux's observation, Jones (1924) reported a seminal study of the reversal of fear. A toddler, Peter, fearful of a white rat, involuntarily extended his fear "to a rabbit, a fur coat, a feather, cotton wool, etc." Fear had negatively impacted Peter's interpretation of the world – his cognition.

Subsequent studies have shown that anxiety, a form of fear, also inhibits cognition. Titles such as *Confessions of a Former Mathphobe (Carter, 2000)*, *Running the Numbers – Fear of Mathematics* (Stites, 1993) or *Girls Lose their Fear of Math at CSUH Mega Camp (Velasquez, 2003)* keenly illustrate that fear has a negative impact on math cognition – a perception that has been validated by researchers. When the search words *mathematics* and *anxiety* were entered at www.questia.com (2006) 1,036 journal articles were retrieved. When *performance* and *anxiety* were entered 6,322 journal articles were retrieved. The combination of

test and *anxiety* resulted in 7,167 journal articles retrieved. Using the spelling *on-line* plus *anxiety* resulted in 6,238 articles.

It is not merely the online learner, who experiences the impact of fear or anxiety. Those who facilitate online are affected also:

> You are ready to teach. The first night of the new semester, you get into your sweat pants of pajamas and settle down (perhaps with a glass of wine) to get to know your students intimately. You log on to e-mail and are greeted by a hot blast of messages full of students' emotions--anxiety about their ability to handle the assignments or the software (usually from women) or anger at the course load or your policies (usually from men). This emotional outpouring is a new challenge to your teaching, and you sense *danger* [italics added] ahead. (Halio, 2004, para. 2)

More than three-quarters of a century after Jones' observations of Peter our understanding of fear has broadened dramatically. For example, it is now believed beyond a reasonable doubt that the region of the brain that processes danger is the amygdala (LeDoux, 2002, p. 213). Researchers accept that emotions amplify memories (p. 222), and that emotional arousal influences "cognitive processing" (p. 225). Conversely, "cognition can be used to arouse an emotion" (Bower and Forgas, 2000).

In December 2002, researchers announced the discovery of the gene that "encodes a protein that inhibits the action of the fear-learning circuitry of the brain" (Howard Hughes Medical Institute, 2003). Rossi (2002) reported that as a result of the Human Genome Project "hundreds of the body's own natural messenger molecules" have been identified that "modulate memory, *learning* [italics added], emotions, and behavior…" (p. 31). The release of stress hormones, for example, causes the encoding of "certain patterns of memory, *learning* [italics added], and behaviour" (p. 32), – he calls them symptoms – that disappear when the "outer

stressor is removed." He observed that when stress is reintroduced, "the brain and body respond by releasing the hormones that re-evoke the state-dependent symptoms."

Regardless of theoretical predilection – behaviourist or cognitivist – consideration is routinely given to the impact of fear on cognition. Is it not reasonable, then, to consider that emotions, other than fear, also impact cognition in some manner?

Need for the Study

The concept of affect as a learning outcome has been used by instructional designers (Dirkx & Prenger, 1997; Small, 1997; Smith & Ragan, 1999; Taylor, Marieneau, & Fiddler, 2000) since Bloom et al. (Krathwohl, 2002) identified affect as a learning domain in the 1960s. Palloff and Pratt (2001, 2003) recognized that emotion played a role in online communication. They advised the use of emoticons – participant generated symbols intended to represent emotions – as a tool to compensate for the absence of tone of voice and body language during text-based Internet-mediated learning. However, the affective domain and emoticons address only indirectly the pervasive presence of emotion in online learning.

Goleman (1995, p. 27) was one of the first to describe the connection between emotion and cognition as a "battle" with the brain at the epicentre. One consequence of this battle was paradoxical noted by LeDoux (1996, p. 243) who stated: "Sometimes stress helps in formation of explicit memories but it can also devastate explicit memory." The war analogy is particularly fitting when the assertion of Merriam and Heuer (1996) is considered. They noted that feelings of threat and

fear are an intrinsic part of learning. Dirkx (1998) continued the call for the integration of emotion into learning, observing that critical theory failed to "adequately account for the emotional and spiritual dimensions" (p. 137) of learning.

The observations of Dirkx, Merriam and Heuer were in relation to face-to-face delivery. A few researchers conducted studies and advanced theory that related specifically to online learning. Conrad (2002) vividly recounted the tumult of feelings (including anxiety) that accompanied the online experience. Garrison, Anderson & Archer (2000) proposed a theoretical construct for online learning (Figure 1) that entailed three "essential elements" (p. 88): cognitive presence, social presence and teaching presence. The trio posited that emotional expression is an inherent aspect of social presence. In their Community of Inquiry (CoI) model, emotion evolved from an outcome to an essential quality of online learning. Although the model is intuitively satisfying, the position that emotion is merely a domain-specific component provided the impetus for this study's research question.

Figure 1 Elements of an Educational Experience – Model designed by Garrison, Archer, Anderson (2000)

The possibility that emotion is the warp and rational thinking is the weft in the whole cloth known as cognition is woven into the literature of a different discipline – neuroscience. In the late 1990s when the discipline of education was considering the role of emotion in cognition, two neuroscientists (Damasio, 1994, 1995; LeDoux, 1996) independently studied emotion from a biological perspective.

Damasio (1994) suggested that emotion and cognition were innately intertwined. His curiosity about the role that the brain plays in emotion was sparked by the classic case of Phineas P. Gage, who, due to an industrial accident, had an iron bar pass through his cheek, pierce the base of his skull and the front of his brain, exiting through the top of his head. Remarkably, to the surprise of all, Mr. Gage lived for nearly two decades, although his “disposition, his likes and dislikes, his dreams and aspirations” (p. 6) had changed. The well-documented, post-injury life of Mr. Gage provided scientists with the first inkling that “there were systems in the human brain that were dedicated more to reasoning than anything else, and in particular to the personal and social dimensions of reasoning” (p. 10).

Damasio began to focus his attention on people who had experienced damage to the pre-frontal area of the brain. More than twenty years ago, he encountered a patient (Damasio, 1994, who displayed much the same shift in personality as Phineas Gage did. His observations of this patient, referred to as Elliot, led him to further narrow the focus of his studies: “I became intrigued with the possibility that reduced emotion and feeling play a role in Elliot’s decision-making failures (p. 45). Damasio made his life work the study of emotion and the human

brain, using as his subjects people whose brains were damaged through accident, surgery or birth.

LeDoux (1996) boldly suggested that “cognitive science is really a science of only a part of the mind, the part having to do with thinking, reasoning, and intellect. It leaves emotion out. And minds without emotions are not really minds at all” (p. 25). He chose to study rats, because fear conditioning “can be applied up and down phyla” (p. 148).

Schutz and Lanehart (2002) pointed out that although other researchers had begun to build on the work of Damasio and his team, “inquiry has been slow to advance our understanding of emotions in education.” Those diverse points of view inspired the following goals for this study:

1) To contribute to the advancement of the understanding of the role of emotion in online learning, and
2) To further discussion about the applicability of the CoI model to online learning.

Statement of the Problem

A richer understanding of the role of emotion in cognition, as identified by Damasio (1994, 1995, 1999, 2003) and LeDoux (1996, 2002), resulted in a lived transformation by the researcher. This transformation involved the following outcomes: 1) online communication style improved, 2) emotions less frequently blocked learning, and 3) online learning deepened. That self-observation was the inspiration for the research question.

Research Question

In a community of inquiry (Garrison, Anderson & Archer, 2000), will exposure to the role of emotion in learning as defined by Damasio (1994, 1995, 1999, 2003) and LeDoux (1996, 2002) provide learners with a tool to enhance participation in computer-mediated conferences?

Definition of Terms

Enhancement. Enhancement is an identifiable transformation, based on the assumption that learning occurs when there is a measurable change in behaviour. Enhanced participation is therefore either an observable change in behaviour or attitude, from which the researcher can reasonably draw the conclusion that participation in the conference was enriched for the respondent. How does one identify enrichment? Support for enrichment can be derived from 1) responses to survey questions; 2) a comparison of statements made in exit and entrance interviews; or 3) observed changes in CMC participation during the course.

Emotions. For the purposes of this study human emotions are divided into two categories as defined by Damasio (1994): primary emotions which are “innate” (p. 133); and secondary emotions, which are adult emotions that develop over time. Emotions are a “collection of changes in body state that are induced in myriad organs by nerve cell terminals, under the control of a dedicated brain system, which is responding to the content of thoughts relative to a particular entity or event” (Damasio, p. 139). Damasio (1995) and LeDoux (1996) are in agreement that human beings can experience emotions without being conscious of the fact – an assumption that is fundamental to this study.

Feeling. Furthermore, for this study the distinction made by Damasio that the word emotion and the word feeling are not interchangeable (p.143) is accepted. He suggested that feeling is “the process of continuous monitoring…of what your body is doing while thoughts about specific contents roll by” (p. 145). Human beings must be conscious to experience feelings.

Affect. Affect and emotion, although similar, are not synonymous. Affect implies influence or action in relationship to feelings and emotions. As stated previously, emotions are states that arise spontaneously, of which we are unaware. Feelings are the expression of emotion of which we are or become conscious.

Limitations and Delimitations

Participants in this study were drawn from one graduate level distance education (DE) media and technology course offered by a tertiary-level, open-learning institution. The learners, the majority of whom were mature, had varying degrees of course-related subject matter expertise. The online course, conducted in English, required that learners participate in text-based CMC. That combination of requirements may have been a challenge for students’ whose first language was not English. Therefore it is possible that course participation was exclusive rather than inclusive.

Tiangulation was a goal of this study. In the end the number of participants was too small to allow generalization to an adult population of learners.

This is a study of computer-mediated conferencing from a learner’s perspective. However teaching presence contributes significantly to effective CMC according to the CoI model. Therefore the contributions of the facilitator/instructor,

and the facilitator/instructor's interaction with the learners were included in the secondary data collection.

As the CoI construct is relatively untested, the validity of the model is subject to question. The subject of the study itself may be a limiting factor. The vulnerability that accompanies the disclosures of one's feelings may have inhibited the volunteers from revealing the truth in interviews or surveys.

The theories of Damasio and LeDoux may be gaining acceptance, but they are not yet standard points of view. If one adheres to more traditional views about the biology of emotion then the results of this study could be called into question.

Summary

The lived experience, the *feeling* that there was a relationship between emotion and cognition, has been confirmed by rigorous replicable research in a number of disciplines: neuroscience, psychology, biology, cognitive science. For many Distance Educators, influenced heavily by the principles of instructional design, emotion is addressed merely as an affective outcome, something to incorporate into instruction to motivate learners, or, as in the CoI model, to support cognitive and teaching presence. The author contends that when an interdisciplinary view is taken there is compelling evidence to support the need for exploratory research in into the relationship between emotion and cognition in online learning.

CHAPTER II

REVIEW OF THE LITERATURE

"…the wiring of the brain at this point in our evolutionary history is such that connections from the emotional systems to the cognitive systems are stronger than connections from the cognitive systems to the emotional systems."

Joseph LeDoux (1996, p. 19)

Historical Overview

The exploratory review of the literature conducted in the development stage of this study suggested that true understanding could only be constructed through a multi-disciplinary approach. Therefore a review of the literature was conducted across a number of disciplines – psychology, neuroscience, adult education, online learning, and cognitive science.

A significant break from tradition occurred during the 1980s, when a group of psychologists (Gardner, Kornhaber & Wake, 1996) began to question the validity of standardized intelligent quotient (IQ) tests. One of them, Gardner conducted studies from which he developed the theory of Multiple Intelligences (MI theory) (Brualdi, 1996; Gardner, 1996, 1998).

Gardner identified seven intelligences. Two of these intelligences — Personal (PI) and Intrapersonal (II) — involved emotions. PI is the awareness of the feelings and intentions of others. II is the awareness of one's own feelings and motivations. Two decades later Gardner's list of intelligences has changed, however, PI and II remain.

MI theory was embraced so enthusiastically by some educators that eventually Gardner (1998) cautioned: "MI theory is best thought of as a tool rather

than as an educational goal." Gardner had shifted emotion from a learning outcome to an essential quality. Denzin (1984), a contemporary of Gardner, concluded that emotion must not be "studied as a social fact that is episodic, accidental, or incidental to social experience" but as a "lived experience" (p.11).

Nearly a decade passed before neuroscience provided evidence that supported the view of emotion as an inherent part of cognition. The more persuasive studies were of individuals with neurological damage to specific brain systems. For example, Damasio (1994, 1995) studied Elliot, who although brain damaged, was capable of rational analysis. However, Damasio observed that his subject had lost his ability to draw conclusions. The portion of his patient's brain that had been damaged was that which is known to process emotion. In his conclusion Damasio summed up the scientific view that emerged in the mid 1990s: "Emotion, feeling, and biological regulation all play a role in human reason" (Damasio, 1994, p. xiii).

LeDoux (1996), who concurrently studied fear in rats, defined emotion "as the process by which the brain determines or computes the value of a stimulus" (2002, p. 206). Like Damasio, LeDoux suggested that organisms are not always conscious of the role of emotions in their decision making.

Following the trail marked by Gardner (Krathwol, 2002), Damasio (1995), and LeDoux (1996), Goleman (1995, 1998) formulated the Emotional Intelligence (EI) theory for formal education. Goleman proposed an educational taxonomy whereby EI mattered more than IQ, suggesting that "emotional literacy programs improve children's *academic* achievement scores and school performance" (1995, p. 284).

His work inspired numerous parent- and educator-led movements calling for the advancement of emotional literacy in the classroom.

A group called Antidote (2003) published *The Emotional Literacy Handbook* which captured the results of a six-year investigation into “how schools can use emotional literacy.” Recommendations addressed the needs of students and the adults who cared for them – teachers, other staff and parents. When a school applied the recommendations six outcomes were anticipated: 1) a safe environment for the communication of feelings; 2) a clear understanding of what was to be done, how participants felt and what they thought; 3) acceptance of the individual; 4) an inclusive community capable of 5) actively listening; and 6) confident and competent educators, parents and students.

Unexpectedly the education taxonomy devised by Goleman was embraced by the corporate world (1998), changing hiring and training policies and practice. Goleman and four colleagues (Cherniss, Goleman, Emmerling, Cowan, & Adler, 1998) estimated that American businesses would retain 5.6 to 16.8 billion dollars annually by improving the social and emotional competence of their workforces. These savings could be achieved by implementing 22 guidelines, in four phases. Assessed in the preparatory first phase are motivation, the needs of the organization, and the strengths and limits of personnel. To engender motivation the quintet called for feedback presented with care; presenting participants with choice; and linking learning to personal values. Training, the second phase, has nine components that lead to learning. The third phase confirms the transfer of learning to the workplace, and provides maintenance of the competencies. Evaluation is

conducted in the fourth phase, the results of which are used to adjust the subsequent iteration of the program.

Callahan (2004, p. 82), citing Damasio and Dirkx, called for educators who espouse critical theory to “manage the emotions in their classrooms actively.” He pointed out that “the very praxis of critical theory relies on emotion as its catalyst” (p. 75). However, Dirkx, (Personal communication, 2005) questioned the “management” of emotion. In reference to EI in the workplace, Fineman (2000) echoes Dirkx’ caution, “…the very technique or concept creates distinctions that immediately relegate…some people to a less worthy or less ‘competent’ personal condition” (p. 109).

Although none of the previously mentioned researchers applied their theory to distance education, their work has nevertheless informed the research of a number of DE practitioners. Of 28 scholarly works found that investigated aspects of affect and DE, 17 were journal articles, of which 15 were reports of original research. The remaining 11 papers were reports of conference proceedings, of which 10 reported original research. The papers were published between 1990 and 2005. Significantly, all but two appeared between 2000 and 2005. Apparently, distance educators did not pursue research into the role of emotion in online learning until relatively recently.

Theory and Research: Flirting with Emotion

Researchers have flirted with the subject of emotion, usually as a subset of some other concept. Kirkup and von Prummer (1990) examined the needs of female distance education students. The pair was interested in the significance of gender in

distance education, concluding that “pedagogic practices developed for the women’s studies classroom” (p. 29) had much to teach other disciplines. Although emotion underpinned their research and the report – they wrote of “the passionate knower” (p. 29) and the “felt sense of isolation” – emotion was not addressed explicitly as an essential condition of learning.

Three reports (Luca and Tarricone, 2001; Leleu-Merviel and Labour, 2003; Hao, 2003) examined EI in a distance education context. A fourth (Norris & Pan, 2003) described Project EMO “in which 18 in-service teachers became knowledgeable” of “Social and Emotional learning and its relationship to academic achievement.” Although distance education per se was not an aspect of the project, Macromedia Flash and other multimedia tools were used by students to build “from virtual reality to a real-life project.” Their conclusion about the value of technology in a learning environment provides a perspective that DE practitioners may find useful for future research.

Luca and Tarricone (2001) used journals and student contracts online as tools during their study of the relationship between teamwork and EI. They concluded that there was a “strong correspondence between students’ emotional intelligence and team harmony.” The online contract signed by all participants was an explicit commitment to the roles each would play; the amount of time each would invest; and what each was to deliver in fulfillment of the course requirements. The weekly online, yet confidential, journals completed by all students were used to demonstrate “success in completing tasks, as well as self/peer mark for all team members.” Of the twenty teams participating in the case study, two were chosen for

investigation: “one highly successful, and another, which had major collaboration problems,” which resulted in the second team splitting. The researchers reported that the successful team displayed awareness that uncontrolled emotions had negative consequences, and that, as members of a team, they had “responsibility towards the other members of the team.” Members of the unsuccessful team were not aware that their behaviour towards team members caused “a lack of team cohesion and cooperation,” and “a feeling of disempowerment.”

Leleu-Merviel and Labour (2003) published a case study that used the “the work of researchers, like Goleman” to determine the “pedagogical implications for educational courseware creation.” They concluded that e-learning could “transmit content” while satisfying “complex learning needs…particularly concerning the mastery of emotional intelligence in interpersonal communication.” They recognized that the current state of the Internet limited “the use of high quality audio-visual materials.” They suggested that poor transmission quality hindered the ability of learners to “observe non-verbal behaviour and language.” Leleu-Merviel and Labour expressed confidence that rapid technological change would eventually eradicate the limitations.

Hao (2003) explored the “…basic emotion set for online collaborative learning” from an instructional design and EI perspective, suggesting an area for further research: DE would benefit from knowing if a basic emotion set is culturally sensitive. The study participant was a female graduate student who contributed data by keeping a journal, and posting messages. Using grounded theory, Hao analyzed the qualitative data using open and axial coding. The research identified five

categories of emotion, some of which occurred “concurrently”: curiosity/fascination, confusion, motivation, frustration, and anger.

Compartmentalizing Affect and Emotion in Online Research

Prior to the invention of Magnetic Resonance Imaging (MRI), which permits non-invasive study of the physiological effects of emotion on the body, applying rigorous and replicable research methods to the study of emotion was extremely difficult. Concepts such as the affective domain, social presence, and learner motivation lent themselves to the traditional quantitative study design preferred by social scientists. The body of research that amassed as a result effectively compartmentalized the role of emotion in cognition.

Several authors contributed to a body of work in reference to social presence and student interaction online, two aspects of affect that recur frequently in the literature. The most intensely studied aspect of affect – learner motivation – occupied Miltiadou and Savenye (2003). Continuing in the traditional vein of affective domain outcomes, but from a workplace perspective, were Cleveland-Innes and Ally (2003a, 2003b), who reported the findings of their pilot study to determine the effectiveness of “e-learning methods to foster online soft skills (2003a), and their comparison of WebCT and vClass, “synchronous versus asynchronous online learning environments (2003b). Mahesh and Conlon (2003) suggested a relationship between affect and learning objects, in a paper explaining their practical approach to an “affective model” for instructional designers.

The DE studies listed below addressed emotion to some extent, but did not make reference to EI or neuroscience. Conrad (2002), Tu and McIsaac (2002) and

Oren, Miodusur and Nachmias (2002) addressed social presence. Anderson, Rourke, Garrison, and Archer (2001) investigated teacher presence online. Student interaction occupied Garrison, Anderson, and Archer (2000); Bonk, Olson, Wisher and Orvis (2002); Rourke and Anderson (2002) Foley and Schuk (1998); Brown (2001), Garrison (2000), Turk (2002) and Sherry, Crone, Rauscher and Obermeyer (2003).

The psychosocial aspect of online student support was of concern to Cain, Marrara, Pitre and Armour (2003), who studied graduate students' perspectives. Through qualitative analysis of interview data they identified three implications for practice; the second of which – the need for a "positive social environment among peers" – underscored the significance of social presence as defined by Garrison, Anderson, and Archer (2000). Scheer and Lockee (2003) also studied learner online support, choosing a wellness perspective, defined as "a balance of the body, mind, and spirit." They based their research on a six-dimensional model posited by Hettler in 1980. One of the dimensions, emotional wellness, "includes the capacity to manage one's feelings and related behaviours…."

Smith, Murphy and Mahoney (2003) attempted to identify factors that influenced student "readiness for online learning" (p. 57). Emotion in the form of comfort was confirmed as a factor and was present in the questions included in the survey of participants. Questions 5 and 6 began with "I feel" (p. 62).

Conrad (2005), reporting observations from her ongoing research into the construction and maintenance of online communities, cited the community of inquiry

model, noting that study participants experienced community “affectively” (p. 16). She observed that the learners used community “as a comfort” (p. 17).

The Omnipresence of Emotion: The Integration Begins

Nearly a decade after Damasio and LeDoux posited their theories, a few researchers in online learning, working independently, began to publish studies that were clearly influenced by this earlier research. The founding research of these neuroscientists, which is rigorous and has begun to be replicated, has given birth to a new sub-discipline- *affective neuroscience* (Davidson, 2003).

A few DE researchers have begun to incorporate affective neuroscience into their own research. The report of Glazer (2003a) did not specifically reference the work of Damasio, Gardner, Goleman, Denzin or LeDoux, although it posited a theory of distributed emotion, a concept supported by their research (Damasio, 1994, 1995, 1999, 2003; LeDoux 1996, 2002). This similarity provoked a further search that resulted in the retrieval of Glazer’s (2003b) dissertation which cites both Damasio and LeDoux. Thus providing reason to assume that their biological understanding of emotion informed her theory of distributed emotion that rests “on the same principles as distributed cognition” (2003a). She posited that emotion is distributed “across members of social groups;” and is “coordinated between external – material or environmental – structures” and that “emotion is distributed through time.”

O’Regan (2003), influenced by Damasio, Gardner, Goleman, Denzin and LeDoux, cited the work of each in his historical review of the perception of the place of emotion in learning. O’Regan “attempted to open up a field of enquiry into” … “what emotions are associated with studying online,” the “teaching-learning contexts

of these emotions," "how they related to student learning," and the "implications for teaching and learning online" (p. 82).

The proceedings of the 21st annual Distance Teaching and Learning Conference included two reports (Stein and Wanstreet, 2005; Campbell and Cleveland-Innes, 2005) of original research both grounded in Garrison, Anderson and Archer's (2000) community of inquiry model, only one of which (Campbell and Cleveland-Innes, 2005) cited the work of Damasio and LeDoux. Stein and Wanstreet used the CoI model to examine teaching and cognitive presence as well as "the ability of learners to perceive and establish social presence in group work." They concluded that social presence supported cognitive presence in small work groups, yet undermined the ability of the whole class to construct meaning together due to the strength of the bonds formed in the work groups. Campbell and Cleveland-Innes reported the preliminary findings of the study reported here. Further integration of the findings of affective neuroscience into DE practice is a distinct possibility as supporting research accumulates. A third paper presented (Palloff and Pratt, 2005) referred to presence, but did not specifically cite the Garrison, Anderson and Archer model or the work of Damasio and LeDoux

Community of Inquiry Model

The computer-mediated conferencing theory (Figure 1) developed by Garrison, Anderson and Archer (2000) proposed a "conceptual framework" (p. 87) that identified what they referred to as "crucial prerequisites for a successful higher educational experience" that play out within a "community of inquiry" (p. 88). The inclusion of the "expression of emotion" (p. 99) as an element of one of the three

presences, and their conclusion that emotion is important to critical thinking made this model particularly appropriate for a study of emotion in cognition.

The trio suggested that the interaction of cognitive, social and teaching presence is essential to learning. Cognitive presence (Garrison, Anderson, and Archer, 2000) is the ability to “construct meaning through sustained communication” (p. 89). Teaching presence applies to all who enable instructional design and facilitation. They defined social presence as “the ability of participants in the community of inquiry to project their personal characteristics into the community, thereby presenting themselves to other participants as ‘real people’” (p.89).

Within the model, cognitive presence and teaching presence are seen to be paramount, with social presence in a supporting capacity. However, Anderson, Rourke, Garrison and Archer (2001) assessing teaching presence in online learning, identified one need that has a biological basis in emotion, and called for further investigation – the need “to develop compensatory behaviours” (p. 14) for the lack of body language and tone of voice in text-based computer-mediated communication.

Kanuka & Garrison (2004) studied cognitive presence in online learning concluding that successful social presence is achieved through “effective teaching presence” (p. 4). Data was gathered during an interview with a focus group of experienced online practitioners. Significantly “the triggering event” that they state is essential to cognition –defined as “a state of dissonance or *feeling of unease* [italics added] resulting from an experience” (p. 6) is impossible without invoking an emotional response in the learner. They also mention (p. 10) that the respondents

identified an emotional response to facilitation that inhibits learning, for which, they believe, educators must compensate when teaching online.

The appropriateness of the CoI model for the development of this study was further strengthened by two reports of original research (Rourke, Anderson, Garrison and Archer, 2001) and (Garrison, Cleveland-Innes and Fung, 2004). The 2001 study tested a method of quantitatively measuring social presence in computer-mediated conferencing. In their conclusion, the authors called for further study to enable triangulation of "participant perception of social presence and its value (p. 16). The second study validated a measurement instrument for the community of inquiry model, designed to permit quantitative assessment of student "adjustment" (p. 71) to online learning.

Critique of the Validity of Appropriate Theory and Research Literature

The majority of the literature reviewed is from disciplines other than distance education, as no critical mass of research has as yet been conducted on the role of emotion in cognition in online environments. This dearth of research had a constructive effect, however, inspiring a multi-disciplinary approach that sought concepts and observations in the complementary fields of adult education, face-to-face pedagogy, and neuroscience. These disciplines have large bodies of rigorous, replicable research. Whether these concepts are readily transferable to the online domain requires further study.

A hunt through the Internet using Google and the search-words 'community of inquiry' retrieved 3,990,000 Web pages in 0.10 seconds. A 'Search within Results' with the names of the authors of the CoI model reduced the pages retrieved to

3,580. A scroll through the first 20 links suggested that the concept has in the five years since its introduction become widely accepted as a basis for online research at North American tertiary level institutions. Some of the institutions represented were Georgia State University, Georgia Institute of Technology, Winthrop University (McKlin, Harmon, Evans and Jones, 2002); the State University of New York (Shea, 2003), Ohio State (Stein and Wanstreet, 2005), Athabasca University (Poscente, 2002; Campbell and Cleveland-Innes, 2005; Perry and Edwards, 2005); and the University of Calgary, where Garrison is Academic Director of the Learning Commons.

Finding studies that validated the model's assumptions was a more difficult task. Boris and Hall (2004) presented "findings of a study conducted at the University of South Dakota…which considered the importance of developing a 'community of inquiry'…among online learners" using Garrison, Anderson and Archer's concept. Perhaps, the fundamentally intuitive appeal of the model has precluded rigorous academic debate about its validity?

The Contribution this Study will make to the Literature

A review of the literature demonstrates that distance educators have acknowledged that emotion has a place in cognition through the affective domain. Only recently have they considered the possibility that emotion has a richer role in cognition. This study contributes to that nascent awareness, weaving a number of separate threads from the literature of various disciplines into whole cloth to suggest that a cross-disciplinary approach has value for future distance education research.

CHAPTER III

METHOD

"transparency builds trust"
Volunteer 24m

An Interpretive Approach in a Mixed-method Research Strategy

A condition of approval by the Research Ethics Board (REB) for this study was that respondents must be volunteers, making impossible random participation, thus eliminating the implementation of an experimental design method. A quasi-experimental method, in which randomness does not occur, could not be implemented because qualitative analysis of transcripts of CMC postings was essential. Although, according to Creswell (2003), mixed-method research is still somewhat unusual in human science research, the mixed-method approach was used to "neutralize or cancel the biases of other methods" (p. 15), as well as triangulate data.

According to Merriam (2001) "education is considered to be a process and school is a lived experience" (p. 4), therefore, she continued, the interpretive approach is an appropriate choice for education studies. She concluded that interpretive studies are used to "…challenge theoretical assumptions held prior to the data gathering" (p. 38). The interpretive method was chosen, because this study of students of distance education questions prevailing assumptions about the role of emotion in cognition, and the CoI conceptual model.

The intent of the participatory learning module was to encourage participants to construct knowledge about the role of emotion in cognition. The entrance

interviews and surveys were intended to examine the entry state of the respondents: How did they understand the role of emotion in cognition at the outset of the course? The lived-experience unfolded through CMC transcripts: Was evidence found that demonstrated that they had applied their constructed knowledge to the CMC? The culminating inquiry into the respondents changed state at the end of the period of study was through exit interviews and surveys: How did participation in the online workshop enhance participation in the CMC? Responses from these three data gatherings were compared for consistencies and/or inconsistencies. In addition to being the primary data collector, the author interviewed, classified, analyzed and interpreted the data gathered, subsequently authoring this report of the findings.

Driving the research strategy was the need to create a feeling of safety that would make participants sufficiently comfortable to respond openly and honestly to questions about their personal feelings and emotions. Consequently, in the first round of data collection (entrance surveys and interviews), participants were asked to compare the feelings that they had experienced as face-to-face learners with their anticipated feelings as online learners. The presumption was that comparing the known to the unknown would reduce the feeling of vulnerability that exposing feelings and emotions can engender.

Procedures

For triangulation purposes, three sources of data – entrance and exit interviews, entrance and exit surveys, and data analysis of computer-mediated conferences – were included in the study design. The entrance survey and interview were intended to determine individual prevailing attitudes toward emotion in learning

at the outset. The entrance survey (Appendix A) was derived from an instrument designed by Garrison, Cleveland-Innes and Fung (2004). Concurrently, the volunteers were asked to participate in a one-hour online workshop, developed by the author in conjunction with the technical professionals that support the Digital Reading Room (DRR) of the host institution, where the workshop was housed.

The Online Workshop. The workshop was an introduction to the evolving understanding of the role of emotion in cognition, culminating with the research of Damasio and LeDoux. There were 7 sections: *Introduction*, *What Sex is your Brain*, *The Affective Domain*, *Multiple Intelligences*, *Emotional Intelligence*, *The Research of Antonio Damasio and Joseph LeDoux*, and *Concluding Remarks*.

The introduction was procedural, containing information about what to expect and what to do. *What Sex is your Brain* was a four-minute interactive quiz designed to determine whether the participant's computer system was configured properly. At the outset participants had the choice of skipping to the next segment, *The Affective Domain*, where participants had their choice of one of two quizzes: *Disgust* or *Spot the Fake Smile*. These were interactive online quizzes developed by the BBC for its *Science and Nature: Human Body & Mind* Web site.

The *Multiple Intelligences* segment was a straightforward, text-based introduction to the theories of Howard Gardner. In the *Emotional Intelligence* segment, participants were asked to complete their choice of two quizzes: *Emotional Intelligence in the Workplace* or *A more All-encompassing View of Emotional Intelligence*. These two quizzes were developed by private sector organizations as either a loss leader to tempt people to purchase in-depth analyses of their EI, or as a

value-added item on a Web site. The instructions for this segment informed participants that should they choose the second quiz they might be asked to purchase something, but were not obligated to do so.

Quotations from the writings of Damasio and LeDoux complemented a text-based introduction to the theories of the two neuroscientists. This segment was followed by a word of caution and the concluding activity; a request that participants reflect on how their theories might impact education, and distance education in particular.

A word of caution was included in the workshop, because the research presented was not conducted in a distance education context. A quotation from a paper by Adolphs (n. d) accompanied the caution: “little is known about the neural structures participating in recognition of emotion from other visual cues, such as body posture, from auditory cues, or from integration of cues from multiple sensory modalities”...and…“next to nothing is known about the neural basis of recognizing ‘social’ emotions.”

Throughout the workshop, participants voluntarily responded to questions that evoked qualitative answers. None of the questions were mandatory and all responses were anonymous. The responses were forwarded by the DRR Webmaster to the author by e-mail. The questions encouraged the participants to relate to their experience as online students to any understanding gained. The questions were not intended to produce data, rather to encourage deeper learning.

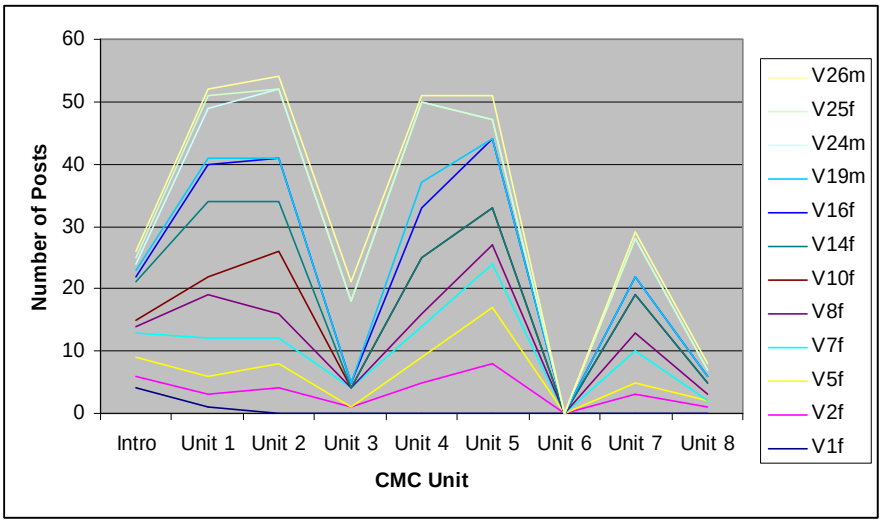
Computer-mediated Conferencing. The policy of the institution that sponsored the studied course is that computer-mediated conferences used for research are transcribed by a member of the support staff, who then deletes the contributions of those who declined participation, and changes the name of all other participants to an alphanumeric tag to protect the privacy of all. This blind transcript is forwarded to the researcher for analysis. The researcher is given a key to identify the postings of those who volunteered to participate in the study, and that of the facilitator. For analysis, postings from the learners who neither agreed nor declined to participate are secondary data. All contributors to the CMC were aware that the conferences were recorded, as it is the policy of the institution to inform students at the beginning of each term.

At the end of the term, documentary analysis of the transcript was conducted. The goal of the analysis was to confirm that emotion was present, and to determine whether the learners who participated in the workshop had an enhanced CMC experience.

Research Sample

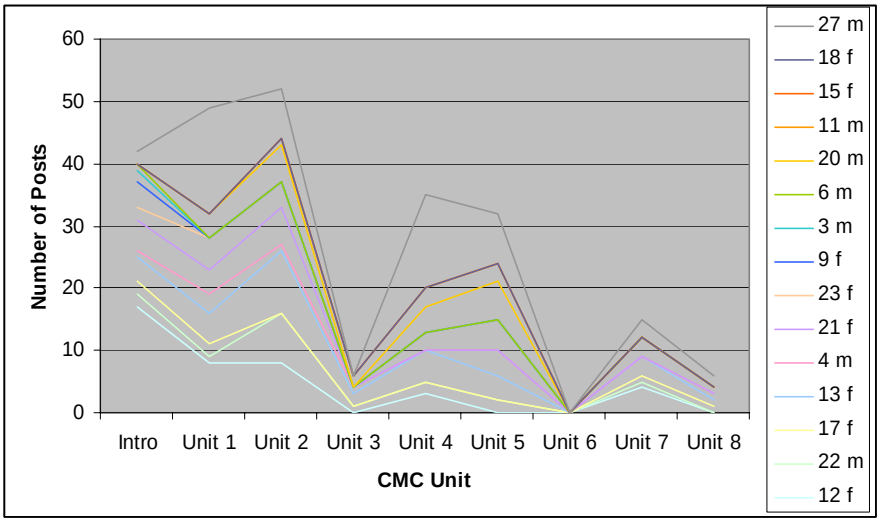
Students from a four-month online technology course at one tertiary level distance learning institution were invited to participate in the study. The course was chosen for the size of the enrolment (32 students) and because the course was not the subject of any other research project at the time. One student withdrew from the course, 4 declined to participate, 12 (Figure 2) accepted the invitation.

Figure 2 Volunteer CMC Participation



Conference postings of the 14 students who neither declined nor agreed to participate contributed secondary data (Figure 3). As stated previously, due to the significance of the role of the facilitator in the CoI model, the postings of the facilitator were also included in the secondary conference data.

Figure 3 Participation in CMC by People who Provided Secondary Data



All but one of the 3 males and 9 females who volunteered to participate had undergraduate degrees, and some had already earned graduate degrees. All the

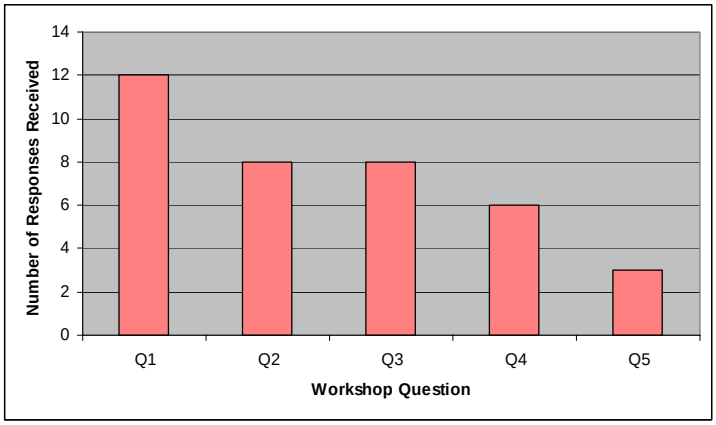
volunteers were mature students, with varying degrees of experience as online learners.

The alphanumeric method of tagging differentiated the participants by gender. Therefore it was known that the secondary data group was comprised of 7 males and 8 females. Their postings implied that the majority were mature students, most indicated they were working in distance education. The postings of one member of the secondary data group suggested that she was a recent undergraduate, who had enrolled in a graduate course shortly after graduation.

Data Collection

Participation in the online workshop was anonymous, but the author learned through the interview process that one volunteer had technical difficulties entering the workshop, so she failed to complete it. Tracking dates and times of responses to workshop questions appeared to confirm that 12 people did complete the workshop (Figure 4) in the first few weeks of the term. As it was possible for participants to repeat the workshop, repetition is one possible explanation for a participation of a dozen despite one volunteer stating categorically that she had not been able to participate.

Figure 4 Online Workshop Participation by Question



Of the 12 students, 3 participated in the study exactly as intended: completing entrance and exit surveys and interviews, plus participating in the CMC. Three volunteers participated in 3 of the 4 interview/survey collections; 4 participated in 2 of the 4 interview/survey collections. Two of 12 volunteers did not participate in any interview or survey. As participation in the computer-mediated-conference was mandatory, all 12 (Table 1) volunteers contributed postings in varying quantities.

Table 1 Participation by Volunteers in Study Activities

Volunteer	Questionnaire A	Interview A	CMC	Questionnaire B	Interview B
V1f	🗐	☎	🖱		
V2f			🖱	🗐	☎
V5f	🗐	☎	🖱		
V7f		☎	🖱		☎
V8f	🗐	☎	🖱		☎
V10f		☎	🖱	🗐	☎
V14f	🗐	☎	🖱	🗐	☎
V16f	🗐	☎	🖱	🗐	☎
V24m	🗐	☎	🖱	🗐	☎
V25f			🖱		
V26m		☎	🖱	🗐	☎
V19m			🖱		
Totals	**6**	**9**	**12**	**6**	**8**

Treatment of the Data

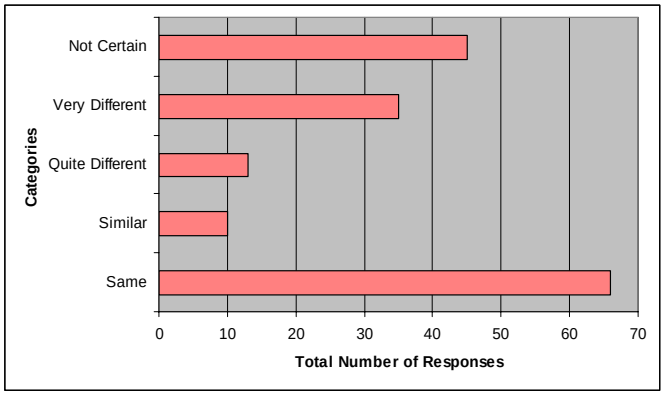
As data were collected in units over a four-month period, with the largest unit, the transcript of the CMC, delivered at the end of the data collection process, initial analysis was segmented thusly: entrance surveys and interviews; exit surveys and interviews; followed by CMC transcript analysis. After segment analysis was completed, the resulting data were examined for patterns, consensus and contradictions.

The Surveys. The entrance surveys were tallied by category for data that enabled the author to draw conclusions about the emotional expectations of the volunteers at the outset of the course with regards to CMC. To that end, a list of (Appendix A) feelings and emotions was provided to the participants. They had five different categories from which to choose in order to compare the feelings they were experiencing at the commencement of the course with those previously experienced in a face-to-face environment. Opportunities to contribute qualitative data were also provided. Finally demographic and background information were collected.

Six people provided a total of 169 responses to Section A of the entrance survey (Figure 5) with 45% of the responses indicating that the anticipated feelings experienced during the course would be ‘the same as’ or ‘similar to’ those experienced as face-to-face learners. (Probable feelings were communicated by marking the appropriate column). Anticipation, curiosity, and motivation were the three predominant feelings, as each was marked by five students. The sixth participant indicated that the experience of anticipation, curiosity, and motivation was going to be ‘very different from face to face.’ Anxiety and anticipation were also

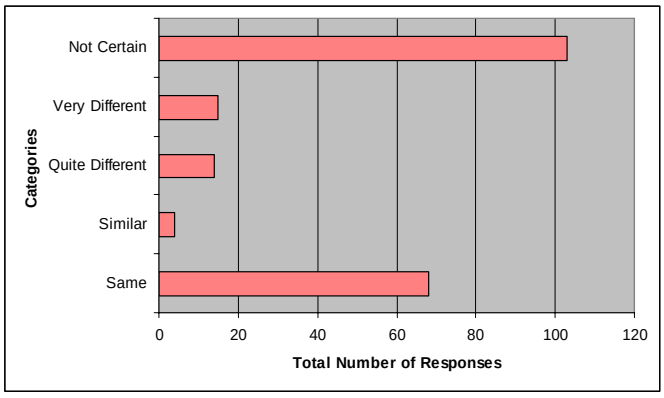
marked six times, making them the only other emotions to have been chosen by all respondents, although the experience of the feelings ranged across all five categories.

Figure 5 Comparing Anticipated Feelings to Previous Face-to-face Experience



Six people provided a total of 204 responses to Section B of the entrance survey (Figure 6) with 50% of the responses being ‘uncertain/had no experience’ in terms of how feelings toward online learning compared to those of an experienced learner. Thirty-three percent of the responses anticipated the same feelings as experienced online learners.

Figure 6 Feelings Compared to an Experienced Online Learner



The exit surveys (Appendix B) were tallied for data that would enable the author to draw conclusions about the true emotional experience during the course of

the respondents. To that end, the same list of feelings and emotions provided in the entrance survey was presented in the exit survey. The category choices also remained the same, but the exit questions varied: The participants were asked to compare the feelings actually experienced during the course to 1) feelings experienced in previous face-to-face learning (Figure 7) to those anticipated at the beginning of the class (Figure 8). Opportunities to contribute qualitative data were also provided. Finally demographic and background information were collected to corroborate data collected in the first round.

Figure 7 Feelings Experienced in Comparison to Previous Face-to-face

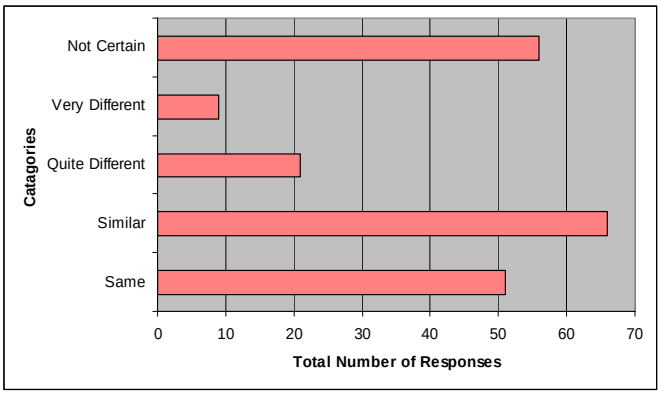
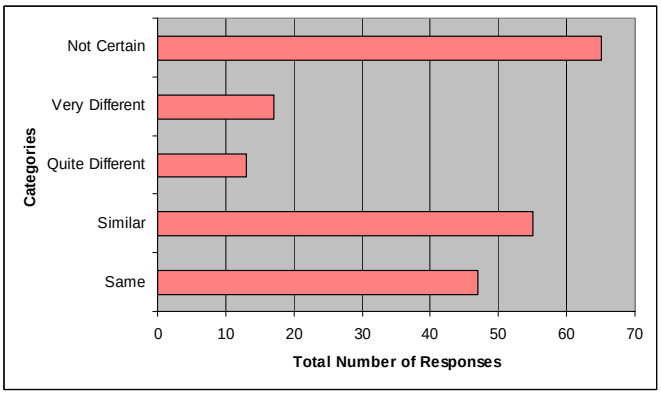


Figure 8 Comparisons of Experienced Feelings to Anticipated Feelings



Five people provided 203 responses to Section A of Questionnaire B, with 58% of the responses indicating that the respondents experienced feelings “the same’ or ‘similar to’ previous face-to-face learning. Twenty-eight percent of the responses indicated that the respondents remained ‘uncertain/had no experience’ of the feelings presented as choices.

In addition, the qualitative responses on the exit surveys were reviewed for data that suggested the manner in which participation in the online workshop had impacted participation in the computer-mediated conferencing.

The list of emotions and feelings in both surveys was purposefully presented without pattern or categorization of ideas so as not to lead or bias the participants. To reduce the error of assumption by the survey designer, the list presented was extensive -- so extensive that Volunteer 2F wrote, “I don’t understand how anger and many of the emotions given above could apply to an online distance learning course, so I felt these were very hard to answer with the options provided.” Her observation is in stark contrast to the anger vehemently expressed by Volunteer 10F – anger engendered by her online learning experience.

The Interviews. The entrance interviews (Appendix A) were comprised of open-ended questions designed to produce data from which the author could draw conclusions about the anticipated emotional experience of the volunteers in regards to CMC. The interviewees were asked to compare their face-to-face experience with their expectations of distance learning.

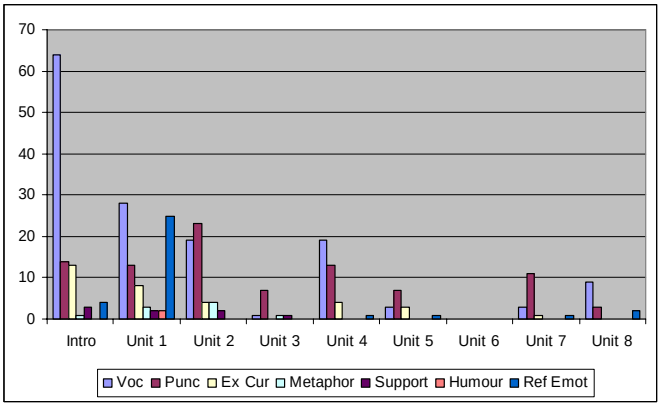
The exit interviews (Appendix B) were comprised of open-ended questions designed to produce data that supported or failed to support the data collected in the

entrance surveys, as well as produce data that would suggest the manner in which participation in the online workshop had impacted their computer-mediated conferencing. Two variations were asked of the interviewees to corroborate the answer to this survey question: How did the introductory session on the role of emotions in learning support your online learning experience?

Transcript Analysis. The 298 postings that ranged from 3 to 56 per contributor were batched by unit: Introduction, Units 1, 2, 3, 4, 5, 6, 7, and 8. No postings were made during Unit 6, because, according to the data collected, the CMC for the unit had been cancelled by the facilitator.

The posted threads for each unit were followed and examined for evidence that emotion was present, and for direct or indirect evidence that the volunteers who had participated in the online workshop had in some manner been transformed by the experience. The author used 7 criteria (Figure 9) to determine whether emotion (negative or positive) was present in postings: 1) choice of vocabulary (Voc), 2) the use of punctuation or emoticons (Punc), 3) expressed curiosity (Ex Cur); 4) the use of metaphor (Metaphor), 5) expressed support (Support), 6) humour (Humour), and 7) referenced emotion (Ref Emot), defined for these purposes as the use of vocabulary to communicate unequivocal feeling.

Figure 9 Occurrences of Criteria for the Presence of Emotion



Summary

As the goal of this exploratory and interpretive study was to determine whether a change in behaviour in the participants could be engendered that resulted in an enhanced CMC experience, a method was required that would disclose an emic perspective (Merriam, 2001). To determine if an insider's view had been captured, the researcher identified what the respondents knew about emotion and cognition at the outset of the study. The intended catalyst for change was the online workshop. The CMC transcripts were the narrative from which inferences could be drawn. The exit surveys and interviews provided data which would deny or confirm that change had taken place.

CHAPTER IV

RESULTS

"I also hoped the program would use multiple methods to deliver content as a way to show best practices."

Volunteer 7F

Research Question

In a community of inquiry as defined by Garrison, Anderson and Archer (2000) will exposure to the role of emotion in learning as understood by Damasio (1994, 1995, 1999, 2003) and LeDoux (1996, 2002) provide learners with a tool to enhance participation in computer-mediated conferences?

Interview and Survey Evidence that Supports or Fails to Support the Research Question

Six of the 12 volunteer respondents completed the entrance survey (Table 1), while 9 granted entrance interviews. Six (not the same six) of the 12 volunteer respondents completed the exit survey, while 8 (all of whom had granted an entrance interview) granted an exit interview. All 12 participated to varying degrees in the CMC.

When all the data were collated it became apparent that presenting the results by individual would be most effective. The desire for triangulation and the subsequent design of the study were analogous to narrative. Each volunteer was the protagonist in his or her own story. The beginning of the story – the exposition – setting the scene for what was to come – was the entrance data. The CMC transcript data were analogous to the chapters in which the plot unfolded – what actually

happened to the characters. The exit data delivered the denouement – the conclusion to the narrative.

Volunteer 24m. Volunteer 24M contributed the greatest number of posts (56, one more than the facilitator) to the computer-mediated conference. He participated in each of the 4 other collections, providing rich data for analysis.

His responses to the entrance survey questions indicated that at the commencement of the course he anticipated experiencing “the same feelings” as if the course had been in a face-to-face mode. He used the word *comfortable* repeatedly in the qualitative sections of the survey, underscoring his statement that he looked forward to “potentially stimulating social and learning experiences.”

When asked in the exit survey to compare the feelings he had actually experienced to those that he had anticipated experiencing at the outset of the course, he checked the column labelled *similar to your expectations*. He confirmed his initial expectations, and again used the word *comfortable* to describe the experience he had had as a member of the online community.

The entrance interview corroborated the entrance survey data. Volunteer 24m did not think that he would have to make an emotional adjustment to learning in an online environment. He anticipated that if he were to get to know the emotions of his colleagues online he would merely “scratch the surface,” because the absence of body language eliminated opportunities to react to emotional cues.

During the exit interview he stated that the session on the role of emotion in learning merely “reinforced things I already knew.” When asked to describe an instance online when he used this reinforced understanding of emotion he told of

responding to a communication factually. “I did not put her down. I didn’t attack. Knowing in advance that it was emotional helped me.” Volunteer 24m spoke of a benefit of participating in the workshop: “Just trying to anticipate before I post or as I post…using a self-effacing style – helped…got good discussions.”

The data suggest that the behaviour of Volunteer 24m was transformed as a result of participation in the workshop, supporting the research question.

Volunteer 16f. Volunteer 16f was the second most frequent (39) poster, and like Volunteer 24m participated in every data collection activity. Unlike 24m, she anticipated that 2 of the 39 feelings and emotions listed in the entrance survey would be experienced quite differently from face-to-face. She was uncertain of, or had no experience with, 18 of the 39 choices listed. She anticipated experiencing the 21 emotions or feelings that remained as if they were the same as face-to-face. She was “curious to see if the experience with group work for assignments is as ‘trying’ and unsatisfactory online as it has been in face-to-face situations.”

Putting her experience into context in the exit survey, Volunteer 16f wrote: “I do not think I feel particular emotions as an online learner.” She confirmed her entry expectation, “I find that group projects are as difficult to keep fair as I did when working in a face-to-face context.”

In the entrance interview she confirmed that she anticipated a difference between face-to-face and online learning: “I thought I would be more happy [*online*] because I could control the environment more. I wouldn’t have to sit and listen to things that are off topic.” She said that she anticipated bringing to the online class “calm, because I look at things more rational and logical.”

Although during the exit interview she said that her online learning experience was “not an emotional experience, very rational, very dry,” she observed that she benefited from the workshop, because her eyes were opened to the fact that other people do experience emotion, even if she did not. When asked how the introductory session on emotion supported her online learning experience she replied it “made me think of things I wouldn’t have thought about it. It was good.” She was sufficiently inspired by the knowledge she gained from the workshop to write a paper for the course about the role of fear in cognition. She said that in future classes: “when people get emotional…I’ll understand it more.” The data suggest that the behaviour of Volunteer 16f had transformed somewhat as a result of participation in the workshop, supporting the research question.

Volunteer 14f. Volunteer 14f posted 27 times, and contributed to every data collection activity. She entered the term anticipating that she would experience 12 out of the 39 emotions and feelings listed quite or very differently in comparison to face-to-face learning. She also anticipated experiencing 18 emotions and feelings quite or very differently from experienced online learners, although she reported that she had often been an online learner. She wrote: “I’m typically a quiet & shy student who learns from listening and processing information and only contributing when I feel that there is something unique or valuable to contribute – and consistently I find it difficult to ‘engage’ with online classmates. I find it stressful that there is such an expectation of ‘developing community’ within one term online classes.”

On her exit survey she indicated that she experienced 13 of the emotions and feelings listed in a similar fashion to face-to-face – a shift in opinion from the

beginning of the term. Loneliness was the only feeling she again marked as *quite different from face-to-face.* She observed:

> Learning online feels 'lonely.'" Her fear of failing to become part of the online community was realised. She wrote: "Unfortunately, I do not feel like a member of an online learning community. Other than for recognizing some of the names in the classes, I have never made any connection to a classmate – outside of the conference sessions.
>
> She noted: "I need to learn how to 'engage and get connected' in online."

Volunteer 14f stated in the entrance interview that she felt "paranoid about writing, and therefore posting." She anticipated lurking, describing her previous online presence as "hardly present," which engendered guilt. A theme she returned to in the exit interview.

The online learning experience had left her "guilt ridden" because she believed she had not participated enough. [7 out of 27 participants posted more often than she, and of those 3 posted only 2 to 7 posts more than she.] When asked what support the workshop provided for her online learning experience, she said that she was "cognizant that emotions played a role." It was "not just me that understands it." The workshop "put a name to it" and confirmed something she felt.

Although the data suggest that the behaviour of Volunteer 14f had not transformed as a result of participation in the workshop, her statement that the role of emotion in cognition should be incorporated in course designs does support the research question. Her desire to learn to connect online suggests that attending to affect for learners like Volunteer 14f may have value.

Volunteer 10f. Volunteer 10f posted 38 times and participated in 3 of the 4 additional data collections. During the entrance interview, the first encounter with the

author, she said that she was used to competition and liked “to have people to compare with.” She believed isolation would be her greatest emotional adjustment, although she stated: “I don’t think emotions affect my learning.”

On the exit survey she invested considerable time putting into context the emotions that she felt during the term: “I felt anger and frustration because the course wasn’t what I thought I was taking. I felt cheated because I had signed up to learn about _____ and the course wasn’t teaching me anything about _____.” She continued, “I felt isolated…”and “I hated the assignments….” She wrote passionately, using words such as *frustrated*, *angry*, and *upset*. She added punctuation for emphasis.

When asked during the exit interview what influence the online community had on the emotions she experienced, she replied: “I didn’t connect with them. I didn’t feel a connection at all.” She felt she had no influence “whatsoever” on the emotion of her colleagues. She felt she had not come to know their emotions. When asked how her emotions affected her learning online, she replied, “I don’t think I learned as much.”

The experience of Volunteer 10f failed to support the research question. She stated that the workshop did not support her learning experience, provided no benefit, and she was unable to describe an instance online where she used her knowledge of the role of emotions. However, her observation that “I don’t think I learned as much” suggests that despite the failure of the workshop to enhance her CMC experience, attending to affect for online students who perceive themselves to be in a negative learning situation may have value.

Volunteer 8f. Volunteer 8f posted 20 times and participated in 3 of the 4 additional data collection activities. In her entrance survey she anticipated experiencing most (31) of the emotions and feelings listed very differently from those she felt in a face-to-face environment. She wrote that she was annoyed at the survey's focus on emotions: "I would prefer to be doing something which I feel some connection."

In answer to the question, how do you feel about becoming part of an online learning community, this experienced online learner wrote:

> It's different than I expected. Not going out of the house is the area of online learning that is most difficult for me to come to terms with. There is both a comfort and uncertainty in this. There is comfort in being surrounded by the familiar. And there is comfort in knowing you are not being judged on physical appearances. On the other hand there is a feeling of unease. I'm used to learning with others physically present. I feel I should be 'out there' learning with every one else. The feeling I have is similar to when I was unemployed for a period of time. It's close to guilt.

During the exit interview she told the interviewer that she felt like she was "illiterate," because she did not have the technical language necessary for the course. She "really did feel the isolation." She felt that she was "standing back.

To the question, did the introductory session support her online learning experience, she replied, "I didn't do that. I couldn't get in. I did read something about it (emotion)." She said that the possibility of the workshop caused her to ponder "how you could look at emotion in a different way."

Although the workshop could not enhance the CMC experience of Volunteer 8f, her self-constructed insight into emotion – you could look at emotion in a different way – suggests that there might be value to openly discussing emotion and its role in cognition in the online classroom with learners.

Volunteer 26m. Volunteer 26m, the last of the three who participated in 3 out of 4 data collections, posted 14 times. The author discovered through the entrance survey that he was a relatively experienced online learner who believed it was the responsibility of the learner to “get on with the job.” He had “no concern about emotions.” According to him, getting to know the emotions of his online colleagues depended “on how well they expressed them.”

During his exit interview, Volunteer 26m said that the emotions experienced by the online community “validated” his, and “added some depth of my perception.” He felt that he influenced the emotions of his colleagues by adding a “contextual” element. To the question: how did your emotions affect your learning online, he responded, “Greater the resolve, the more emotional effort.” He noted that he tended to “be passionate with things” he had “had experience with.”

When asked how the workshop supported his online learning he replied that it caused him to ask, “What am I thinking about this?” The workshop enhanced his awareness of the “issue from a formative evaluation perspective.” The benefit of the workshop for Volunteer 26m was learning “what I have to facilitate, a better awareness.” He told of using his new knowledge when a memo he wrote received a negative response. He adapted his approach to make the recipients more receptive. He believed that the subsequent memo was received more positively than the first. The data suggest that the behaviour of Volunteer 26m was transformed as a result of participation in the workshop, supporting the research question.

Volunteer 7f. Volunteer 7f was 1 of 4 participants who completed 2 of the 4 data collection activities. She contributed 34 posts to the CMC. During the entrance

interview she recalled the demands of online learning, which she found “amazing.” She encountered “lots of stress” and “pressure.” She anticipated “a certain amount of fellowship and support” from the online community. Recalling her first online learning experience, Volunteer 7f related that she “hadn’t anticipated the insecurity of posting.”

In the exit interview she said that during the term she “checked out of the discussion because she was so annoyed.” The emotional adjustment she said had nothing to do with being online. Rather she had to deal with the fact that her “expectations of the course and the direction it was taking” were not met. She held back because the course “was going off tangent.” She thought she “didn’t participate as much. She “learned less.”

When asked about the workshop she admitted, “I never did it as an introductory workshop. I enjoyed it.” She “liked “the part about Emotional Intelligence – the concept.” She “hadn’t heard about it.”

The data suggest that the behaviour of Volunteer 7f was not transformed as a result of participation in the workshop, thus failing to support the research question. However, the data indicate that her emotions did impact her CMC experience, suggesting that there might be value to openly discussing with learners emotion and its role in cognition in the online classroom.

Volunteer 5f. Volunteer 5f posted 29 times, but only participated in the entrance interview and survey, so the author was unable to draw from this data any conclusions that supported or failed to support the research question.

Volunteer 2f. Volunteer 2f posted 24 times, and participated in the exit survey and interview. She wrote: “I felt more emotion doing this questionnaire than the course. I don’t understand how anger and many of the emotions given above could apply to an online distance learning course, so I felt these were very hard to answer with the options provided.” She continued in reference to her experience as a member of an online learning community:

> Never really concern myself about it – just do my work and hand in assignments. Will only do the conference postings as required, and wouldn’t be online if it was not for marks. But I am working along with a cohort and therefore do not feel isolated like some might be feeling.

When asked during the exit interview if the workshop supported her online learning experience she replied “I don’t think it really did”. She could not identify an instance when she used her knowledge during the course, nor could she identify any benefit that resulted from participating in the workshop. This data failed to support the research question.

Volunteer 1f. Volunteer 1f participated eagerly in the entrance survey and interview, posted 5 times then vanished. The data she contributed neither supported nor failed to support the research question.

Volunteers 19m and 25f. These two volunteers did not participate in the entrance and exit surveys and interviews. Respectively, they posted 9 and 3 times each. Therefore their lack of survey and interview participation neither supported nor failed to support the research question.

Fear and Cognition Redux

Was fear a lived experience in any of its manifestations during this study? Unequivocally yes, as demonstrated by these direct quotes from surveys and interviews:

“I am feeling slightly apprehensive,” Volunteer 1f. “I have a fear that I will say something ridiculous that will be “out there” for all to see for ever more.”

“If you were asking if I felt anxiety and apprehension when taking my FIRST online course – yes,” Volunteer 2f.

“…a little apprehension because of a new community,” Volunteer V5f.

“On the other hand there is a feeling of unease,” Volunteer 8f.

“Felt a lot of anxiety,” Volunteer 10f.

“Apprehension due to shyness…,” Volunteer 14f.

It may be noteworthy that only the female participants mentioned feeling some form of fear. The strongest negative emotion expressed by the men was frustration.

Did the fear that the women confessed experiencing impact their learning in some manner? The answer is speculative.

Volunteer 2f mentioned fear in the context of being new to online learning. Fear was something she recalled. During her participation in the study she was an experienced online learner and therefore fearless.

In the entrance interview Volunteer 5f chose carefully the synonym for fear that best expressed her personal feelings. She said scary was too strong a word to describe the emotional adjustment that she anticipated feeling. Anxious and anxiety

were suitable words. Her anxiety at the commencement of class was two fold. She was fearful that she would not succeed at the master's level, and she was fearful of online learning. Volunteer 5f did not participate in the exit survey or interview, therefore drawing a conclusion about how fear impacted her learning is impossible.

Volunteer 8f's feeling of unease was expressed in the entrance survey where she described her feelings about becoming part of an online learning community:

> It's different than I expected. Not going out of the house is the area of online learning that is most difficult for me to come to terms with. There is both comfort and uncertainty in this. There is comfort in being surrounded by the familiar. And there is comfort in knowing you are not being judged on physical appearances. On the other hand, there is a feeling of unease. I'm used to learning with others physically present. I feel I should be "out there" learning with everyone else. The feeling I have is similar to when I was unemployed for a period of time. It's close to guilt.

During the exit interview, Volunteer 8f did not mention fear. Rather, she spoke of feeling isolation. When she related how her emotions influenced those of her colleagues online, she replied "very little." She "felt like they weren't really listening" Her own emotions kept her "standing back." The anxiety she felt at the beginning had been replaced by emotions provoked by the experience.

Like the previous volunteer, 10f the anxiety she felt at the commencement of the course was replaced by experience-specific emotions. She finished the course "angry" and "frustrated."

Shyness inspired the apprehension Volunteer 14f felt at the outset. " Her fear of failing to become part of the online community was realised. She wrote:

> Unfortunately, I do not feel like a member of an online learning community. Other than for recognizing some of the names in the classes, I have never made any connection to a classmate – outside of the conference sessions."

She noted: “I need to learn how to ‘engage and get connected’ in online. The exit data suggest that her shyness not her apprehension impacted learning.

For Volunteer 1f the anxiety felt at the commencement of the course related to doubt in her ability to perform at the level required. She vanished within a few weeks of course commencement. There was no subsequent data to either support or fail to support that the anxiety she felt caused her to absent herself from the CMC.

CMC Evidence that Supports or Fails to Support the Research Question

Coding the CMC Data. As stated previously, the author used 7 criteria (Figure 9) to determine whether emotion (negative or positive) was present in postings: 1) choice of vocabulary (Voc), 2) the use of punctuation or emoticons (Punc), 3) expressed curiosity (Ex Cur); 4) the use of metaphor (Metaphor), 5) expressed support (Support), 6) humour (Humour), and 7) referenced emotion (Ref Emot).

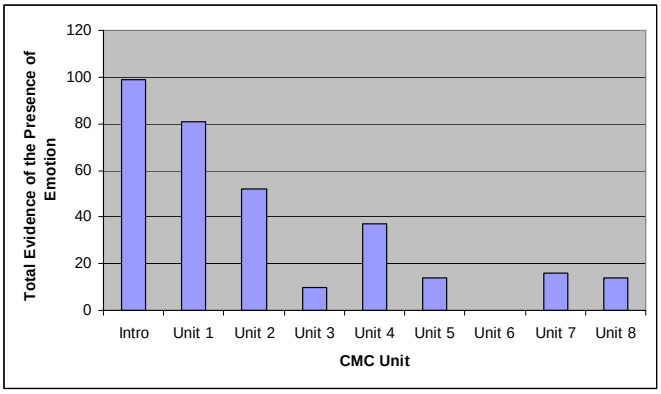
What is the difference between vocabulary and referenced emotion? An example of a posting coded as vocabulary comes from the Introductory Unit during which 27m, the conference facilitator, instructed, “Tell us…what you *hope* [italics added] to get out of this course....” The facilitator could have readily used a synonym such as anticipate or expect in place of hope, which was used as a figure of speech in the affective domain, not an expression of heartfelt emotion.

In contrast, referenced emotion – defined for these purposes as the use of vocabulary to communicate unequivocal feeling – is exemplified by a post in Unit 1, also contributed by 27m. Responding to a communication by a learner who had posted in direct contravention of his instructions 27m wrote: “I must say that when I started reading your posting I was *disappointed* [italics added] because you had

decided to go to the dictionary but I was *pleasantly surprised* [italics added] to see what you ended up with." Clearly expressing feelings as part of, or in response to a posting is referencing emotion.

Introductory Unit. There was a significant social aspect to this unit – participants were directed to introduce themselves, and describe their families, interests and course-related experience. Therefore the strong presence of emotion (99 coded instances) (Figure 10) in the Introductory Unit (more than in any other unit) was in keeping with the CoI model.

Figure 10 Evidence of the Presence of Emotion per Unit



Vocabulary (Figure 9) was the prominent indicator of the presence of emotion, followed by punctuation. The general feeling expressed was one of anticipation, with phrases used such as "I look forward to…"; "I would love to…", "I am hoping to…" used repeatedly.

As the participants revealed themselves to each other, curiosity was aroused. "What will you be doing…"; "When you have a few moments, let me know about…" and "What does _____ stand for" are examples of expressed curiosity.

Ironically the self-professed "quiet and shy" Volunteer 14f invested a considerable amount of time and emotion in her first posting, the longest of this unit.

Vocabulary, expressed curiosity and punctuation were evident in her contribution. In two sentences of her opening paragraph she projected vulnerability, segueing from "…I'm in awe of the diverse and talented group of learners." to "By the time that half of the introductions are done, I'm too intimidated to post my own intro." In the third and fourth paragraphs of her introduction she wrote about her "interest" in distance education.

Her post elicited a positive response from Volunteer 7f, which showed evidence of vocabulary, punctuation and referenced emotion. Volunteer 14f replied to 7f, who had acknowledged that the original post was inspirational, "I'm glad you enjoyed the philosophical orientation. I usually feel *squeamish* [italics added] writing such ideas…."

The data suggest that emotion was present in this unit, but neither fails to support nor supports the research question.

Unit 1. The discussion in Unit 1 was opened by the facilitator with a call for personal definitions of the course subject. He asked a number of open-ended questions: "What does it mean to you?" – "What do you think of when you hear the term? What does it include and what doesn't it include?" He did not explicitly call for emotional responses.

The posting of Volunteer 2f, who had been unable to identify an instance when she used the knowledge she gained during the online workshop, was coded for metaphor, punctuation, referenced emotion and vocabulary. She drew attention to "the headaches of learning" and "struggles." She wrote of the "commitment to the cause" and her fear/resentment of "loss of control." She concluded her post with "I

would *hate* to lose the feel/control of books and not have that technology at my disposal when I want it*!*" [Italics added].

The first response elicited by 2f's post was in emotional agreement. Volunteer 5f, who participated only in the entrance survey and interview, sympathised with 2f's "frustration" recounting a moment from her life when she felt something similar. Then 5f moved from similarity to antithesis, describing a positive emotion engendered by the object of their shared frustration.

Volunteer 14f was second to respond, agreeing "somewhat" with the headache metaphor then presenting a reasoned, unemotional argument. The third response, contributed by 12f, confirmed frustration with the subject, including an example from her own life. She also expressed curiosity about something to which 2f had alluded.

4m responded to Volunteer 5f's reply to the original post, using expressed emotion and punctuation to describe how he felt about the subject. 13f returned to 2f's original discussion expressing curiosity about the same matter that drew a question from 12f. The entire thread concluded with remarks by 20m who wrote: "_____ can be really frustrating!" He then described benefits and the things for which he was "grateful".

The data suggest that emotion was present in this unit, but neither fails to support nor supports the research question.

Unit 2*.* In Unit 1 there were 81 instances of the presence of emotion, in comparison to the 99 identified in the Introduction Unit. Unit 2, the next nearest in frequency to Unit 1 fell short by 29 instances.

The facilitator started the Unit discussion by listing 5 barriers to “initiating or expanding distance education”, one of which addressed resistance, which is in the affective domain. Some of the subject lines of the threads posted in response to the question drew attention to the emotional aspect of that barrier. Volunteer 2f used the subject line “Motivation + passion = change”. Volunteer 14f responded adjusting the subject line slightly to “Motivation + passion = change / are they wrong?” The facilitator re-entered the discussion with the subject “Money and passion”, which drew responses from 13f and Volunteer 14f.

The response of 20m who had posted to the “Motivation + passion = change” thread, elicited a response from Volunteer 14f with the subject line “enlisting cooperation by understanding”. 20m responded.

Volunteer 7f’s contribution to “Motivation + passion = change” thread caught Volunteer 14f’s attention. She responded with the subject line “Feedback, Cooperation, Change.”

Volunteer 5f began a thread with the subject line “Additional barrier to change – Attitude (Fear)” that drew a response from the facilitator. Volunteer 5f replied with “Suggestions for overcoming fears”, which in turn drew a response from 13f. The facilitator returned to suggest that “Fears may be well-founded” engendering a response in turn from Volunteer 5f and subsequently 4m.

20m provided the first response to the opening remarks of the facilitator. He cited Emotional Intelligence, the first time a reference to the content of the workshop appears. 20m, however, was not a volunteer therefore he did not participate in the workshop. At the end of the Unit, 20m recommended a book, *The Five Dysfunctions*

of a Team, in one of his final postings. He used punctuation to underscore the value he placed on the content of the book, and once again cited Goleman's Emotional Intelligence theory.

As stated previously, Volunteer 5f participated only in the entrance survey and interview, making it impossible to conclude that she experienced a transformation in her behaviour as a result of participating in the workshop. However, this statement from the survey, "The personality of people comes through loud and clear in their bulletin board postings" suggests that she was aware of an emotional aspect to CMC. Suggestions she posted during the CMC for overcoming fears cited a number of traditional sources. There was no evidence that she had incorporated the workshop concepts into her thinking.

Unit 3. A discussion begun in Unit 2 about online training and video animation was moved to Unit 3 at the direction of the facilitator. This comparison of software and technique elicited a negligible amount (Figure 9) of enthusiasm from some participants, evidenced primarily by punctuation.

Unit 4. In Unit 4, out of 37 indications of the presence of emotion, 35 were either vocabulary or punctuation. The discussion question which the facilitator asked to open the Unit called for participants to express their opinion about the value of the unit as it was currently presented. To further the discussion, 27m presented within the post an alternate method of presenting the content.

Volunteer 24m could not contain his enthusiasm for the question. "I really like this question! I have been stewing, heming (sic) and hawing now for over an hour before deciding to reply. And I am surprised at my answer…."

Although 27m had not explicitly asked for the learners' feelings about the unit, Volunteer 2f chose to respond in that manner. "I am ready to comment on my feelings on …." She continued writing about liking, building rapport and enjoyment of the "learning experience."

Volunteer 10f also responded emotionally, expressing desire through vocabulary (I wish, I want) and enthusiasm through punctuation (!!).

Unit 5. The facilitator directed learners to post accounts of experience in their workplaces with the course subject matter. Frequently the emotion expressed recalled those of the retold experience, rather than feelings engendered by the Unit. However, there was evidence of unit specific emotion indicated by punctuation and choice of vocabulary.

Unit 6. Unit 6 CMC was cancelled by the facilitator.

Unit 7. The facilitator 27m commenced the discussion with a call for insights from practical experience or the readings. According to the posting, the unit topic had been suggested by a course participant (one who declined to participate in the study).

Volunteer 16f, who described her online learning experience as "very rational, very dry," posted: "I was (sic) been following this conference *with great interest* [italics added]. I have read both sources – they were great! *I wish* [italics added] I had this information when I completed _____. I find the information on indirect costs *particularly interesting* [italics added]. I have always *wondered* [italics added]…." She continued: "I am also *looking forward* to the development of this discussion, and apologize for having so little to say…."

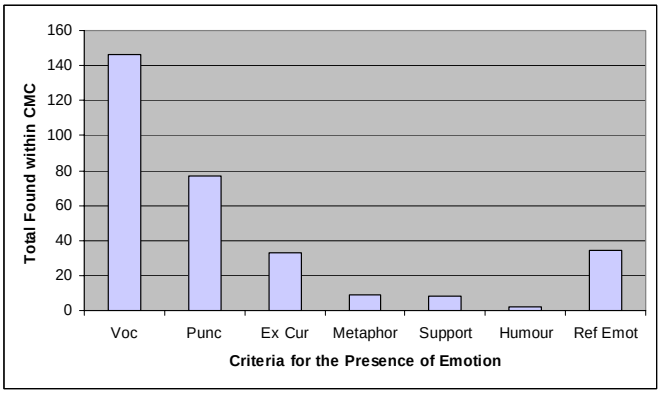
In two relatively short paragraphs, Volunteer 16f employed vocabulary, expressed curiosity, used punctuation, and referenced emotion. Further investigation is needed, but the author inferred that this posting supports the research question.

On her exit survey, Volunteer 2f wrote: “I don’t understand how anger and many of the emotions given above could apply to an online distance learning course.” Yet, in this penultimate Unit she posted: “If only the rules were consistant (sic) for everyone then *we/I wouldn’t get so emotional* [italics added] about the topic---…. The author infers, therefore, that the workshop failed to transform Volunteer 2f’s perception of the role of emotion in cognition. Her words and actions appear to contradict each other, supporting the need for improving an online learner’s knowledge of the role of cognition in learning.

Volunteer 7f, who had not completed the workshop as an introductory session, admitted in her exit interview that she had held back and “checked out of the discussion….” Therefore, the author concluded that the survey and interview data did not support the research question. However, in reply to a posting, Volunteer 7f chose as her subject line, “the emotional side of costing.” Her post cited a helpful chapter in a textbook that discussed the “human side of costing.” Her posting garnered a response from 23f, who acknowledged her level of interest in Volunteer 7f’s response by the use of punctuation. Volunteer 7f replied in kind. Would Volunteer 7f have chosen the vocabulary or found the reference significant if she had failed to participate in the workshop? Confirmation requires further investigation, yet if found to be true, this entry would support the research question.

Volunteer 24m used punctuation to underscore his level of interest in a separate posting. In this Unit (Figure 11) punctuation was the primary indicator of the presence of emotion.

Figure 11 Number of Times Criteria for the Presence of Emotion was Found



Unit 8. Facilitator 27m began the final Unit with a call for summation. He asked a number of open ended questions. Two of the questions were in the affective domain: 1) “What, if anything, would you like to see added or taken out of the course?” And 2) “Is there anything I could have done to better support you in your learning?”

Volunteer 5f, whose participation in only the entrance survey and interview made it impossible to draw conclusions based on that data, posted: “…I *enjoyed* [italics added] the discussions and was again *surprised* [italics added] to see the online community that develops. I am *amazed* [italics added] to see how personalities shine through even though there is no visual contact.” In a subsequent paragraph she wrote: “I *didn’t like* [italics added] how some people used acronyms in the course without clarifying them. I didn’t always know what they were talking about so it *removed/distanced* [italics added] me from the discussion. (I know I couldve (sic) asked for clarification, but when I don’t know something I already *feel inferior*

[italics added], and don't *always have the nerve* [italics added] to put my ignorance in writing.)"

The implication of Volunteer 5f's posting is that emotion hampered her learning. She said in an interview that she did not gain anything from participating in the workshop. Therefore, the author concludes that this entry fails to support the research question. The entry does suggest however that an understanding of the role of emotion in cognition might be of value. Perhaps the workshop was an inadequate tool?

The self-professed rational Volunteer 16f posted: "Although I enjoyed all the information provided by individuals that are presently working in the field, at times I did not feel included in the discussion/s." She concluded her posting with the emotional, "Best wishes to all!" It is possible that this posting is an example of transformed behaviour. With further investigation it may be possible to assert that this post supports the research question.

Secondary transcript data. As mentioned previously, the only direct reference to EI during the CMC was contributed as secondary data, by a participant who had not volunteered. Inferred from the posting was that the contributor had adopted EI principles prior to participating in the course, and had a strong desire to share them with his colleagues. None of the volunteers chose to remark on or make reference to the knowledge they had acquired during the workshop in respect to the EI posting by the person who had not volunteered.

Summary of Findings

Three respondents, 24m, 16f and 26m, acknowledged a transformation had occurred as a result of participating in the workshop. Their statements provided the strongest evidence in support of the research question. Volunteer 24m attributed the change in his behaviour, when posting and responding, to a new awareness of how others react to, and are affected by, emotion. Volunteer 16f began the course assuming that her logical and rational approach to posting was the norm. As she observed the behaviour of her colleagues through the lens of her new insight into emotion and its place in cognition, she came to understand that emotion influenced others. The impact of her new awareness impelled her to write a paper about the role of fear to cognition. Volunteer 26m transformed his approach to posting so that participants would be more receptive to postings, which he directly attributed to participation in the workshop.

Although Volunteer 14f stated that the workshop 'named' something she felt, when asked what benefit there was to understanding the role of emotion in cognition, she replied, "Course developers need to factor that into classes. She saw the benefit occurring in the future, not something that occurred during the course. Qualitative data collected appeared to indicate that she was as hampered by her emotions at the end of the course as she was at the beginning.

Two respondents (10f and 2f) stated unequivocally that the workshop did not support her learning experience. Volunteer 7f was not transformed, although she was intrigued by the concept of Emotional Intelligence.

Five respondents (8f, 5f, 19m, 25f and 1f) did not participate in the study in a manner that allowed conclusions to be drawn that either supported or failed to support the research question.

CHAPTER V

Discussion and Conclusions

> *"We help people with their fears through education (awareness) and communication."*
>
> Volunteer 5F

Since Peter was first observed transferring his fear of a rat to objects with a similarity to the rat, people have been helped with their fears through education and communication. This study suggests that fear is not the only emotion that affects cognition.

Merriam (2001, p.208) wrote: "In qualitative research, a single case or small non random sample is selected…to understand the particular in depth, not to find out what is generally true of the many." This small non-random sample of respondents contributed data, which are an accumulation of individual lived experiences, across a spectrum ranging from unaware to revelatory. Their willingness to share private thoughts and feelings, and to construct knowledge collaboratively with the researcher, may be the underlying strength of this study.

The expectation that learners would be empowered by the concepts of Damasio and LeDoux was realized for 3 out of 12 respondents. Of the unaffected volunteers, some displayed a seeming contradiction between the persona they projected online and their perception of themselves as online learners. The emotions generated by this conflict appeared to interfere with their learning. Although the data failed to conclusively support the research question, there were sufficient data to

indicate a need for continued study into the role of emotion in the online learning environment, particularly in relation to the community of inquiry model.

In the CoI model, social presence (Garrison, Anderson and Archer, 2000) is defined as “the ability of participants in the community of inquiry to project their personal characteristics into the community, thereby presenting themselves to other participants as ‘real people.’” In the model the “primary importance” of social presence “is its function as a support for cognitive presence.” The authors of the model observed that “when there are affective goals for the educational process…then social presence is a direct contributor to the success of the educational experience.”

The majority of participants in the CMC met the criterion for social presence. They presented themselves as real people. They were warm, friendly folk who displayed curiosity about the subject matter, contributed to the discussion, conveyed their enthusiasm, and in some cases, distress. Personalities shone through.

The presence of emotion during the CMC neither supports nor fails to support the research question. Additional support for the research question could come from references made during the CMC by volunteers that addressed concepts, such as Goleman’s Emotional Intelligence, Gardner’s Multiple Intelligences, or the theories of Damasio and LeDoux.

The author does not challenge the importance of social presence as a support and contributor to educational success. However, if one accepts the contention of neuroscientists (LeDoux, 1995) that emotion computes the value of a stimulus and that human beings are seldom aware of the role that emotion played in

that computation (Damasio, 1994; LeDoux 1995) then it becomes necessary to consider emotion in the CoI model not merely as a component of social presence, but also as a component of teaching and cognitive presence.

Cognitive presence (Garrison, Anderson and Archer, 2000) is defined as “the extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication.” Some of the data collected suggests that the emotional state of a learner can hinder construction of meaning. Volunteer 10f observed that she did not learn as much, because of the emotions she experienced. Volunteer 8f felt that she stood back. These comments do not illustrate an inability to present a persona. They illustrate disrupted cognitive presence.

Teaching presence (Garrison, Anderson and Archer, 2000) has two major functions. The first is “the design of the educational experience.” The second is facilitation, defined as “a responsibility that may be shared among the teacher and some or all of the other participants or students.” Volunteer 26m declared that a benefit of the workshop was becoming aware of what he had to facilitate – emotion.

How the course was presented in the syllabus was apparently misinterpreted by Volunteer 10f, which led to deep frustration and a strong distaste for the assignments. Did the mismatch result from an ineffectual explanatory text (an aspect of design) or were covert emotions computing the value of other stimuli that evolved from the design, such as the image of the professor? Was it possible that Volunteer 10f chose the course because her emotions computed the value of his face to be

friendly? These questions are impossible to answer with data from this study, but may provide direction for further research.

The data suggest that distance educators should consider a revision of the CoI model to include a fourth presence, which the author calls *emotional presence*, defined as the extent to which participants in a community of inquiry are aware of and attend to overt feelings and covert emotions with the intention of facilitating learning.

Alternative Explanations for the Findings

Two male and two female volunteers provided supporting data, suggesting that gender was not a factor. Yet it is possible that gender differences are an alternate explanation for the findings.

Impact of the Study in Terms of what was Learned

In practical terms the author learned that if she were to replicate the study on a larger scale compensation for volunteers is necessary in order to ensure triangulation. A condition of compensation should be that volunteers would receive payment when they had completed all study components.

In general terms, the author learned that the manner in which the volunteers experienced emotion was complex. There is evidence that learners embroiled in feelings may be unable to sufficiently distance themselves from them to moderate their effect. The challenge for online facilitation is that members of the community of inquiry may either be unaware that they need support or unwilling to ask for it.

Unanticipated Findings

Based on the literature the author anticipated learning that participants experienced varying degrees of anxiety toward the technology. Although that was true for some volunteers, For Volunteer 1f the anxiety felt at the commencement of the course related to doubt in her ability to perform at the level required. She informed the author that although she was enrolled in a graduate level course she did not have an undergraduate degree. Volunteer 1f felt a “real disconnection” because she was unable to “talk to people about it.” Volunteer 1f, who only completed the entrance survey and interview, and posted only 5 times to the CMC, disappeared early in the course.

According to the Web site of the host institution:

> Applicants to the _____ program must hold a baccalaureate degree from a recognized post-secondary education institution. If the potential applicant does not have a degree, but believes his or her education and experience is equivalent to an undergraduate degree, then it is the responsibility of the applicant to put forward this position in writing as part of the application process.

The author infers from this that Volunteer 1f had made a satisfactory case for admission and had been granted permission to enrol in the course.

Two scenarios are possible to explain Volunteer 1f’s absence. 1) The education and experience of Volunteer 1f were not the equivalent to an undergraduate degree, which she discovered early in the term, causing her to absent herself from the CMC and not participate in the final data collection activities. 2) The anxiety felt by Volunteer 1f caused her to absent herself from the CMC. No conclusion can truly be drawn.

The experience of Volunteer 1f fails to support the research question, yet compels the author to wonder if the facilitator or a counsellor had attended to her emotion, would Volunteer 1f have been more visible?

Strengths, Weaknesses, and Limitations of the Study

Opportunities to present preliminary findings at two Distance Education conferences provided an insight into a weakness in the research question. The phrase “enhance participation” is imprecise, open to interpretation, and begs the question how is participation enhanced.

Participants in this study were drawn from one graduate level distance education (DE) course offered by a tertiary level open-learning institution. The learners had varying degrees of course-related subject matter expertise. Although the majority of students were program students, because the course was an elective, non-program students were permitted to register. This appears to have caused one member of the study group to quit the study.

Twenty-seven members of the population neither accepted nor declined the invitation to participate. Therefore in accordance with the guidelines of the Research Ethics Board of the host institution, their contributions to the computer-mediated-conferencing (CMC) were studied as secondary data. However, the small number (12) of volunteers precluded generalization to an adult population of learners.

The online course, conducted in English, required that learners participate in text-based CMC. That combination of requirements may have been a challenge for students’ whose first language was not English. Therefore it is possible that course participation was exclusive rather than inclusive.

The online workshop about the role of emotion in cognition was hosted by the Digital Reading Room of the institution, rather than in the course conference area. To participate in the workshop required leaving the virtual classroom and logging into the library. This condition decreased accessibility, limiting participation.

The workshop, designed by the author, may have been ineffectual. However, the ineffectuality of this workshop does not necessarily invalidate the premise that a different workshop covering the role of emotion in cognition might be of value to adult learners.

The uncompensated, volunteer status of the participants impacted the study. The multi-part design involved a number of activities spread over a term. More pressing concerns, such as course assignments, family, and personal interests limited study participation. Inconsistent participation hindered triangulation.

As the CoI construct is relatively untested, the validity of the model is subject to question. The same can be said of this author, who was responsible for the interpretation of the study data. Her relative inexperience as a researcher may have limited the value of the findings. The subject may have had a limiting factor. The vulnerability that accompanies the disclosures of one's feelings may have inhibited the volunteers from revealing the truth in interviews and surveys.

The theories of Damasio and LeDoux may be gaining acceptance, but they are not yet standard points of view. If one adheres to more traditional views about the biology of emotion then the findings and conclusions are invalid.

One of the strengths of the study lies in the qualitative data collected. Volunteers gave thoughtful, fulsome responses that provided rich, enlightening data.

Another strength lies in the multi-disciplinary approach that brought together understanding. This strength, however, has an inherent weakness. Much of the research has not yet been replicated in an online environment, particularly the neuroscience studies that were conducted in a primarily face-to-face environment.

Implications for Professional Practice

Current practice calls for online facilitators to attend to the affective domain in the first week of a course to build a sense of community. One group development theory often referred to as ‘form, storm, norm and perform (Smith, 2005)’ acknowledges an emotional component that fades, eventually disappearing when the group reaches the perform stage. An implication of this study is that emotion should be attended to throughout the life of a group. Effort should be made to respond to covert emotion that may hinder cognition and facilitation. Learners should be made aware of the role of emotion in cognition, and encouraged to attend to and be responsible for the emotional aspect of their learning.

Implications for a Scholarly Understanding

Distance educators should consider looking beyond the borders of their discipline for research upon which to build, although applicability should not be presumed. Distance education studies should be designed to test the efficacy of ideas borrowed from other disciplines.

Implications for Theory Building

Re-examining cognitive theories in light of recent developments in neuroscience should be encouraged.

Recommendations for Further Research

Further research is needed to determine if these findings can be replicated and are generalizable to the population of adult learners. Two of the concepts on which this study was based – the CoI model, and the distinction between emotion and feeling, – need further study. The latter concepts require study in an online context.

Recommendations for Change in Practice

Fear is recognized to hinder cognition. The author recommends that learning about how the full range of emotions impact learning from a biological perspective should become standard practice for distance education practitioners. Subject to verification by further research, the author recommends that facilitators, educators and learners, consistently attend to emotion in the online environment.

Recommended Modifications in the Community of Inquiry Model

The author recommends that due to the omnipresence of emotion and its impact on all three domains in the CoI model that a fourth domain (Figure 12) labelled emotional presence be added to the model.

Figure 12 Proposed Changes to the Elements of an Educational Experience - Proposed revision to a model designed by Garrison, Archer, Anderson (2000)

Summary

Although there was an existing critical mass of research into the relationship between fear and cognition, this study was inconceivable fifteen years ago. Damasio and LeDoux were conducting their research into the biology of emotion in relative anonymity. Publication of their theories was almost five years in the future, as was the establishment of the Centre for Distance Education at Athabasca University. Distance education was primarily print-based. A decade would pass before Garrison, conferencing.

Fifteen years later, emotion is still not a primary area of research in online education, and it is uncommon for researchers to weave together observations from across disciplines. That is despite the reality that the “emerging subdiscipline” (Davidson, 2002), affective neuroscience, continues to redefine our understanding of the biology of emotion.

For DE practitioners there is still a lack of theoretical constructs on which to build sound practice. It is the hope of the author that this exploratory study will act as a catalyst for further research into the validity of integrating affective neuroscience theory and DE theory.

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APPENDIX A

QUESTIONNAIRE A

This instrument is designed to assess your emotional reaction to online learning. The following questions will assist the researcher in assessing your perceptions of the emotions that you experience at the commencement of an online course. Your responses will be held in strictest confidence and your identity will not be revealed to anyone other than the researchers in the project. Please complete all pages of this questionnaire. This will take approximately 20 minutes.

Section A: Please indicate the emotions you feel now by placing an 'X" in the appropriate response box.

Compared to previous face-to-face learning experiences, what feelings are you experiencing prior to the commencement of the course?

Feeling	The same as face to face	Similar to face to face	Quite different from face to face	Very different from face to face	Uncertain/no experience
Anger					
Disgust					
Fear					
Happiness					
Sadness					
Anticipation					
Curiosity					
Motivation					
Anxiety					
Apprehension					
Irritation					
Unsettledness					
Comfort					
Confidence					
Co-operative					
Desire					
Pleasure					
Safety					
Satisfaction					
Contempt					
Jealousy					
Resignation					
Shyness					
Sulkiness					
Envy					
Grief					
Guilt					
Loneliness					
Obstinacy					
Shame					
Sorrow					

Amusement					
The blues					
Boredom					
Distance					
Distaste					
Gratitude					
Joy					
Longing					

Use this field to put into context any of the emotions that you are feeling:

Section B: Please answer the following section by placing an 'X' in the appropriate response box.

Indicate how your feelings toward online learning compare to those of an experienced online learner.

Feeling	The same as experienced learners	Similar to experienced learners	Quite different from experienced learners	Very different from experienced learners	Uncertain/no experience
Anger					
Disgust					
Fear					
Happiness					
Sadness					
Anticipation					
Curiosity					
Motivation					
Anxiety					
Apprehension					
Irritation					
Unsettledness					
Comfort					
Confidence					
Co-operative					
Desire					
Pleasure					
Safety					
Satisfaction					
Contempt					
Jealousy					
Resignation					
Shyness					
Sulkiness					
Envy					
Grief					
Guilt					
Loneliness					
Obstinacy					
Shame					
Sorrow					
Amusement					
The blues					
Boredom					
Distance					
Distaste					
Gratitude					
Joy					
Longing					

Section C: Please answer the following questions in the spaces provided.

1. How do you feel about a becoming part of an online learning community?

2. What feelings do you have toward the online learning environment?

3. What feelings do you have toward the technology you will be using as an online learner?

4. What feelings do you have about working with your fellow online learners?

5. How do you feel about the anticipated lack of face-to-face communication with your instructor?

Section D: Demographic and Background Information

1	Age:	18 – 19 years of age	☐
		20 – 29 years of age	☐
		30 – 39 years of age	☐
		40 – 49 years of age	☐
		50+ years of age	☐
2	Gender	Male	☐
		Female	☐
3	Highest Education Level	High School Diploma	☐
		College Diploma	☐
		Undergraduate Degree	☐
		Graduate/Professional Degree	☐

4	Marital Status	Never married Common-law marriage Married Separated/divorced Widow/Widower	☐ ☐ ☐ ☐ ☐
5	Country of residence		
6	How many graduate courses have you completed to date?		
7	Have you taken courses online before? *If your answer is no, skip to question 11.*	Yes ☐ No ☐	
8	If yes, how many online courses have you completed?		
9	If yes, check all that apply:	e-mail only Online conferences Examinations Face-to-face meetings	☐ ☐ ☐ ☐
10	How well do you understand the role of emotion in cognition?	Novice Intermediate Expert	☐ ☐ ☐

INTERVIEW SCHEDULE A

1. Please describe the details of your first experience as a learner in an online environment:

When?

Through what institution?

Course

Instructor

Number of students

Format of the course

2. What do you believe will be your greatest emotional adjustment to learning in on an online environment?

3. What do you believe will be the most significant differences between the emotions that you experienced as a face-to-face student and those of an online learner?

4. What influence do you believe the online community will have on the emotions that you will experience while learning?

5. What influence will you have on the emotions experienced by the other online learners?

6. How well do you think you will come to know the emotions of the other online learners?

7. How will your emotions affect your learning online?

8. How did your emotions affect face-to-face learning?

APPENDIX B

QUESTIONNAIRE B

This instrument is designed to assess your emotional reaction to online learning. The following questions will assist the researcher in assessing the emotions that you experienced during your online course. Your responses will be held in strictest confidence and your identity will not be revealed to anyone other than the researchers in the project. Please complete all pages of this questionnaire. This will take approximately 20 minutes.

Section A: Please indicate the emotions you felt by placing an 'X" in the appropriate response box.

Compared to previous face-to-face learning experiences, what feelings did you experience during the course?

Feeling	The same as face to face	Similar to face to face	Quite different from face to face	Very different from face to face	Uncertain/no experience
Anger					
Disgust					
Fear					
Happiness					
Sadness					
Anticipation					
Curiosity					
Motivation					
Anxiety					
Apprehension					
Irritation					
Unsettledness					
Comfort					
Confidence					
Co-operative					
Desire					
Pleasure					
Safety					
Satisfaction Contempt					
Jealousy					
Resignation					
Shyness					
Sulkiness					
Envy					
Grief					
Guilt					
Loneliness					
Obstinacy					
Shame					

Sorrow					
Amusement					
The blues					
Boredom					
Distance					
Distaste					
Gratitude					
Joy					
Longing					

Use this field to put into context any of the emotions that you felt as an online learner:

Section B: Please answer the following section by placing an 'X' in the appropriate response box.

Compare the feelings you experienced as an online learner to those that you anticipated feeling at the commencement of the course.

Feeling	As expected	Similar to your expectations	Quite different from your expectations	Very different from your expectations	Uncertain/no experience
Anger					
Disgust					
Fear					
Happiness					
Sadness					
Anticipation					
Curiosity					
Motivation					
Anxiety					
Apprehension					
Irritation					
Unsettledness					
Comfort					
Confidence					
Co-operative					
Desire					
Pleasure					
Safety					
Satisfaction					
Contempt					
Jealousy					
Resignation					
Shyness					
Sulkiness					
Envy					
Grief					
Guilt					
Loneliness					
Obstinacy					
Shame					
Sorrow					
Amusement					
The blues					
Boredom					
Distance					
Distaste					
Gratitude					
Joy					
Longing					

Section C: Please answer the following questions in the spaces provided.

1. How do you feel about your experience as a member of an online learning community?

2. What feelings do you have now toward the online learning environment?

3. What feelings do you have now toward the technology you used as an online learner?

4. What feelings do you have now about working with your fellow online learners?

5. How do you feel now about the lack of face-to-face communication with your instructor?

Section D: Demographic and Background Information

1	Age:	18 – 19 years of age	☐
		20 – 29 years of age	☐
		30 – 39 years of age	☐
		40 – 49 years of age	☐
		50+ years of age	☐
2	Gender	Male	☐
		Female	☐
3	Highest Education Level	High School Diploma	☐
		College Diploma	☐
		Undergraduate Degree	☐
		Graduate/Professional Degree	☐

4	Marital Status	Never married Common-law marriage Married Separated/divorced Widow/Widower	☐ ☐ ☐ ☐ ☐
5	Country of residence		
6	How many graduate courses have you completed to date?		
7	Have you taken courses online before? *If your answer is yes, complete 9 and 10.*	Yes ☐ No ☐	
8	If yes, how many online courses have you completed?		
9	If yes, check all that apply:	e-mail only Online conferences Examinations Face-to-face meetings	☐ ☐ ☐ ☐

INTERVIEW SCHEDULE B

1. Please describe the details of this experience as a learner in an online environment:

When?

Through what institution?

Course

Instructor

Number of students

Format of the course

2 What was your greatest emotional adjustment to learning in on an online environment?

3 What were the most significant differences between the emotions that you experienced as a face-to-face student and those of an online learner?

4 What influence did the online community have on the emotions that you experienced while learning?

5 What influence do you think you had on the emotions of the other online learners?

6 How well did you come to know the emotions of other online learners?

7 How did your emotions affect your learning online?

8 How did the introductory session on the role of emotions in learning support your online learning experience?

9 How did the introductory session on the role of emotions in learning hinder your online learning experience?

10 For you, what was the most benefit(s) of understanding the role of emotion in cognition?

11 For you what was the negative aspect(s) of understanding the role of emotion in cognition?

12 Describe an instance online when you used your knowledge of the role of emotions in learning.

APPENDIX C

ATHABASCA UNIVERSITY INVITATION TO PARTICIPATE

Invitation to Participate in an Athabasca University Research Project

January 5, 2005

Dear Student:

I am Prisca Mary Campbell, a student in the Master of Distance Education degree program at Athabasca University. Under the supervision of Dr. Martha Cleveland-Innes and with the support of thesis committee members, Dr. Paul Jerry and Dr. Susan Moisey, I am about to begin research for my thesis*: Affect as a Presence in the Community of Inquiry Model*. The study is influenced by the work of neuroscientist Antonio Damasio and psychologist Joseph LeDoux and builds on the online community-of-inquiry model developed by R. Garrison, T. Anderson and W. Archer.

The purpose of the study is to examine whether emotion is the fourth form of presence in an online learning community. In particular the study is intended to answer the question, “In a community of enquiry as defined by Garrison, Anderson and Archer will exposure to the role of emotion in learning as understood by Damasio and LeDoux provide learners with a tool to enhance participation in computer-mediated conferences?

With the consent of Professor _____ and the Athabasca University Research Ethics Board, I invite you (and other learners registered in ____ for the winter term) to become a participant in the study. Participation, in whole or in part, is voluntary. You are under no obligation to participate in any way. You have the right to withdraw from the study without prejudice at any time.

Should you choose to fully participate your role would entail:

- Completing a survey at the commencement of _____ and at the conclusion of the course, each of which should take no more than 20 minutes of your time to complete
- Participating in an online workshop about the role of affect in cognition that will be made available January 10 to 16, 2005 in the Digital Reading Room (A maximum of 1 hour will be needed to complete the workshop).
- Contributing to the computer-mediated conferencing as a requirement of _____. Your posts will be collected for analysis

Please note:

- Selected study participants will be interviewed by telephone at the commencement of the course and at its conclusion. The interviews will last no more than 30 minutes.

Should you agree to participate your anonymity will be protected and your contributions will be kept confidential. Permission to conduct the study has been gained from the Athabasca University Research Ethics Board (AUREB) whose guidelines will inform the process. I will adhere to Tri-Council Policy regarding ethical conduct in research that involves humans. Provincial and Federal legislation regarding freedom of information and research conducted on human subjects will not be contravened. In accordance with the AUREB guidelines, a copy of the study will be made available to you should you request it.

I anticipate that this study will be emotionally benign; however there is a remote possibility that participation could act as a catalyst that might result in emotional distress. To counter this remote possibility, you, as a participant, will have access to support counselling through the Student Services Department of Athabasca University.

Your participation in this study will be greatly appreciated. To accept or decline participation please reply to glendah@athabascau.ca, your willingness to participate by cutting and pasting one of the two statements that follow into the message of the letter:

1. I consent to participate fully in the research project, including completing surveys, interviews and the workshop. I understand that I may refuse to answer any question or withdraw entirely at any time without penalty
2. I do not wish participate.

Prisca Mary Campbell
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Should you wish to discuss the project with someone other than the researcher, please e-mail or call:
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1 800 788 9041
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