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Looking Closely at Emotional Expression in an Online Course:

A Case Study of Distributed Emotion

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Looking Closely at Emotional Expression in an Online Course:
A Case Study of Distributed Emotion

by

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DEDICATION

To Mom & Dad –

who gave me heart and a brain and encouraged me to "be a lion"

I love you.

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Looking Closely at Emotional Expression in an Online Course:

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This study of the expression of emotion in the context of a semester-long online graduate-level course was based in the interpretivist paradigm and used distributed emotion—the proposed construct that the study was designed to explore—as its theoretical perspective. The course itself was part of a wholly online Master's degree in educational technology in which the students were organized into cohorts that served as intact communities of practice during the thirteen month program.

Over 2500 course-related electronic mail and newsgroup postings and interviews with 8 of the 19 class members following completion of the course were analyzed using a data-driven and inductive coding scheme. The data were then reorganized to focus first on the individuals and then the group. Close examination of these data yielded the finding

that emotional expressions in the course were, in fact, distributed among class members, over communication structures, and across time.

Based on these findings, it is apparent that the distribution of emotional expression likely occurs in online course contexts as class members respond to one another's emotional expressions, play various roles within the group, and use a variety of communication technologies, offloading and loading their emotions onto the available structures in their learning environment. It is also believed that the distribution of emotional expression likely does not occur when class members respond according to group norms or expectations, when an individual decides to be emotionally uninvolved, or when an individual chooses not to interact fully within an environmental structure.

It is possible, therefore, to use these findings to propose that, because emotional expressions are distributed, the emotions behind those expressions are also distributed. The resulting theory of distributed emotion, paralleling that of distributed cognition considers emotions from a broad perspective incorporating individuals, groups, contexts, and time. Specifically, distributed emotion posits that emotion is (a) distributed among people, (b) distributed over structures—both material and environmental, and (c) distributed across time. Future research focusing on various contexts and on instances similar to those in which

distributed emotion was not seen in the current study should prove

especially valuable in better understanding distributed emotion.

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CHAPTER ONE: INTRODUCTION

"We know that personal feelings do not arise in a social vacuum.

They are refined in the cauldron of our collective experiences and

emotional messages to be at once uniquely our own

and shared by all" (Planalp, 1999, p. 159).

To date, emotion research has had a clear focus upon the

individual (e.g. Averill, 1980; Johnson-Laird & Oatley, 2000).

Researchers have largely looked at emotion as though it has been

captured by a snapshot and frozen as a single moment in time,

unconnected to other emotional moments. I think that focusing on an

individual and, at times, the context—yet considering both to be frozen in

time, misses something essential. To me, the spaces in-between the

photos are equally important and worthy of examination. This research is

an attempt to examine the continuity or discontinuity that exists among

our collective emotional snapshots, and, in these spaces, to consider the

people and the contexts which affect our emotional expressions.

A framework of distributed emotion, which subsumes other

theories of emotion and rests on the same principles as distributed

cognition (e.g. Hutchins, 2000; Salomon, 1993; Varela, Thompson, &

Rosch, 1991), accounts for a fuller picture of emotion among people and

over time:

- Emotion is *distributed across members of social groups*. This means emotions can be both individually held and socially shared.

- Emotion is *coordinated between external—material or environmental—and internal structures*. This means emotions will be influenced by social context and vice versa. People can also offload their emotions into physical structures, or can "load" emotions that have been previously offloaded. For example, an adult can offload emotions into a journal or can load past emotions by reading childhood writings.

- Emotion is *distributed through time*. This means emotional reactions may be time-dependent, specific times can serve as emotional stimuli, and emotions will be affected by the times in which they are experienced.

With this framework of distributed emotion in hand, I intend to examine a particular online context to determine when evidence of distributed emotion is more evident and when it is less evident. Yet, before presenting the results of this exploration, the construct of distributed emotion must be explored and explained. Specifically, it is valuable to look at existing emotion theory—to understand current beliefs and to see where distributed emotion fits among these beliefs—and practical examples—because they illustrate the theoretical ideas.

Expression Distributed Across Members of Social Groups

Individually Held Emotions

Emotions, as they are construed currently, are perceived to be felt by

individuals. One way that we learn about emotions is to experience these

feelings for ourselves. In that way we

learn what makes us happy or angry

(Evans, 2001). Yet, we cannot

generalize that an event will evoke the

same emotions in everyone

experiencing it (see Figure 1). A farmer,

for example, may feel relief and joy at

the sight of rain; a baseball player,

disappointment. Therefore, we can

assume that each individual will have his or her own emotional response

to a stimulus.

When people are lost in the mountains, a rescue team is typically called in to help. The rescuers work with both the victim and victim's family, each of which plays a particular emotional role. The victim must remain in control of her emotions to best survive her physical ordeal; the family must deal with strong emotions to best survive their emotional ordeal; the rescue workers must keep their emotional distance as they conduct the rescue while managing the others' emotions (Lois, 2001).

Figure 1. An example of individually held emotions distributed among members of a group.

Individuals will often play a particular emotional role in a group.

For example, among a group of social workers studied in the context of a

hospital, one person took on the role of the cynic within the group's

meetings (see Figure 2). In her observation of these social workers,

Meyerson found that the other members of the group may have felt

annoyed toward Len's cynicism but that they appreciated the role that he

During social work staff meetings, one individual in particular, Len, would inevitably inject a cynical remark precisely when the discussion became most tense. In this way, he seemed to diffuse the tensions and frustrations that erupted from unresolved problems, . . . from irreconcilable differences, . . . and most frequently, from situations in which social workers lacked the clarity to take action. . . . By acknowledging and releasing the tension with a cynical or taboo remark, the group cynic enabled the conversation to proceed without coming to a close, that is, allowing unsolvable, irreconcilable, and untenable issues to remain unresolved. In essence, the cynic allowed ambiguities to be acknowledged without forcing anyone else in the group to admit or to resolve them. (Meyerson, 1990, p. 302]

Figure 2. An example of an individual playing an emotional role within a group.

played in the group, enabling the group to release some of their more suppressed emotions.

One way in which individually held emotion has recently garnered a lot of attention is emotional intelligence. The term, which has gained popularity through the best-selling book by Daniel Goleman (1995), was coined in 1990 by Salovey & Meyer. The emotionally intelligent person can discriminate among the emotions that she is feeling and can incorporate this information into her thinking and her actions (Goleman, 1995). Because humans are social, the communication of emotion, such as an individual being able to name and explain her own emotions—and the awareness that emotional expression and the experience causing it may not always be in concert—become central to emotional intelligence (Druskat & Wolff, 2001; Lucas, 2001; Planalp, 1999). Additionally, a person who is considered emotionally intelligent shows an awareness of the many influences on emotional displays, including the fact that others' emotions affect hers (Druskat & Wolff, 2001; Planalp, 1999). While emotional intelligence takes into

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account the emotions of others, it is an individual characteristic—one that is reported individually and can be measured absent of any real context or social situation.

Socially Shared Emotions

The notion that emotions are individually held is not new. In fact, it seems to be the most widely-accepted view of emotion. Yet, many people acknowledge that these individually held emotions interact within social systems. I propose that this interaction must be considered when looking at emotion. Furthermore, I think emotion is often shared or transferred among people and, for this reason, should be considered socially distributed. Emotions are part of a dynamic social process. They do more than simply affect an individual; they mediate interactions between individuals (Parkinson, 1996, p. 676). Sharing emotions by talking about them holds many benefits for people. Encoding emotions into language to share them with others helps the individual to pull together his feelings, releasing them, and allows him some distance from the emotions, clarifying his understanding of them.

The night that My Fair Lady opened on Broadway, emotions were high. Rex Harrison was scared to go on stage. Robert Coote, a supporting actor in the show, was "getting his fear *from* Rex." Harrison began his performance a little shaky, but "the combination of Moss [Hart]'s calm steady-at-the-helm captain [as producer of the show] and being suddenly confronted onstage with a terrific pro in Julie Andrews calmed Rex down. Julie sang 'Wouldn't It Be Loverly' with a sense of professional security confident enough to lend Rex the strength to get through it--in spite of his terror. . . Rex was on stage with two old pros and their security *had* to register on him" (Bach, 2001).

Figure 3. An example of socially shared emotion.

As a result, he will feel a sense of control over the experience that caused the emotions (Planalp, 1999).

In the case of small groups, this sharing helps the group to "crystallize" and develop feelings of belonging among members (Planalp, 1999, p. 139). Hogan (2000) found that "a challenge shared by several people is less daunting so long as at least some of the group members have confidence, ideas, and strategies for tackling the challenge" (p. 427).

"One prison guard with whom we conferred, a diminutive Filipino, told the following story: The day before he had been interviewing a very large, young, black man, who was in jail for peddling drugs to minors. The guard felt calm, but found himself looking at the prisoner who towered above him, his muscles rippling. Again and again he thought, 'Most people would be afraid in this situation. Am I afraid? No. Well, *someone* is afraid here. What's going on?' Pausing to think about it, he had realized that, though the prisoner was trying to look 'cool,' fear seemed to be 'sparking off of his skin.' What could have happened to such a big man to make him so afraid? The tiny guard talked calmly to the prisoner for six hours! During this time he found that the prisoner had had a 'gruesome' childhood and been abused both as a child and in other institutions. Co-workers mentioned that this guard just seemed to have a knack for dealing with prisoners: Everything stayed 'cool' when he was around. He seems, then, somehow to avoid catching the emotions of prisoners, yet uses some kinds of emotional information in analyzing what is going on with them" (Hatfield, 1994, p. 141-142).

Figure 4. An example of emotional contagion.

The fact that one group member's confidence can "rub off" onto others is a sign that the emotion is socially shared and points to the fact that emotions are distributed among people (see Figure 3).

Sometimes this sharing of emotions occurs when people's feelings converge as a result of emotional expression (see Figure 4). This sharing is relatively automatic, unintentional, uncontrollable and, for the most

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part, that which leaves all participants unaware of its presence (Hatfield, Cacioppo, & Rapson, 1994). For example, two people who are dining together can often be observed using similar gestures or speaking in similar tones. This automatic sharing can take the form of, for example, mimicry of facial expressions, posture, or movement and is often referred to as emotional contagion (Hatfield et al., 1994; Kelly & Barsade, 2001; Locke, 1998). Such a transfer of emotion may be caused by a highly attentive, empathetic response; conditioned emotional response to stimuli; or mimicry and feedback (Hatfield et al., 1994).

Socially sharing emotions can cause some problems, such as the confusion that can result when we pick up on someone else's emotion and search for the origin within ourselves (Barsade, 2001), or the risk of not sharing the appropriate amount of emotion in an appropriate way (Planalp, 1999). Although these potential problems exist, I suggest that they can be addressed through awareness of these phenomena. We must change the way that we think about emotion as simply individually held and recognize the social quality that adds to its distributed nature as we connect with others daily.

Coordinated among Internal and External Structures

Emotion is also affected by social context. This is evidenced by the fact that different cultures have rules for acceptable displays of emotion that differ by context. Specifically, the emotional expression that is

acceptable in a bar watching a football game is vastly different from what is acceptable at a funeral. Another way that emotion is coordinated among internal and external structures is that emotions can be offloaded in various ways. By "offloading," I mean that a person can relieve himself of particular emotions by channeling

Singer-songwriter Rob Thomas of the band Matchbox Twenty remarked, "It's funny. You go out and you get all these interviews and a lot of these questions are the same. And the one that I get all the time is, 'Well, you know Rob, everything is doing really well. Your band's doing great and your songs are doing wonderful and you're married now and you seem really happy and I talk to you and you seem like a happy guy. Why is your album just so damn depressing all the time?' And I don't know. You're writing and as a writer it's supposed to represent the best and the worst of you at the same time and I think that if you do it in the right way, if you use it in the right way, then you can take all your depressing stuff you want and get it out of you and put it down and have a place for it and you can be a happy guy most of the time. You can just go on with the rest of your life. If you're happy—I'm not going to write if I'm happy—if I'm happy I'm just going to go out and be happy. I'm only writing if I'm sitting down 'cause I just got depressed about something" (VH1, 2001).

Figure 5. An example of offloading emotion.

them into a material or environmental structure in some way (see Figure 5). This is true when talking about memory:

> Emotion can be a characteristic of the material that is
>
> remembered. . . . In the case of emotional material, emotion is
>
> ascribed to the information that is held in memory; for example, it
>
> may be that a word has favorable connotations or that a life
>
> experience was painful. (Parrott & Spackman, 2000, p. 477)

Emotions can be offloaded onto many different things, sometimes as part of the creative process. In all cases, the emotions that get offloaded can be those from an individual or those shared by a group. Also, emotions

that have been offloaded by a person can often be "loaded" by that

person or others

(see Figure 6).

One external

structure which

can inspire emotion

Public shrines dot our landscape from areas near the World Trade Center in New York City to nearby the Murrah Federal Building site in Oklahoma City to the smaller memorials seen on roadsides. If a person is feeling emotional about a loss that occurred at a particular location, he can contribute to the shrine and alleviate some of those feelings. If a person is feeling disconnected from the tragedy, then she can visit a public shrine and soak in the emotions left by others (Haney, 1997).

Figure 6. An example of offloading and loading emotion.

is the physical environment. Emotions can be loaded from an

environment with emotionally charged elements such as sound, smell,

taste (Evans, 2001), temperature, noise level, light, and physical layout

(Kelly & Barsade, 2001). Parkinson (1996) found that "the physical

organization of our institutional and cultural world places concrete

boundaries on what we can or cannot do emotionally" (p. 667). For

example, workers whose office environment is comprised of cubicles will

have different emotional experiences than those who have private offices.

Similarly, people watching a movie together in a dark theater may find

that crying is acceptable, but a similar emotional reaction while watching

the same movie together in a well-lit living room may be unacceptable.

Distributed Through Time

Time is another important quality of distributed emotion. Emotions

are responsive to events that unfold over time (Planalp, 1999) as in the

changing emotions during the September 11th terrorist attacks. As the

attacks and their aftermath unfolded over time, emotions shifted from

disbelief and sadness, to patriotic pride and rage. As people reminisce about events after they have occurred, their emotions change. Additionally, the times in which we are living will affect the emotions that we feel. In medieval times, feelings of courtly love were prevalent while today they have been replaced by feelings of romantic love (Evans, 2001).

A Japanese-American reflected, "I think [all Japanese-Americans] feel a little discomfort around the anniversary of Pearl Harbor—as children, many of us have had to face the taunts and even the occasional fist fights on that date. . . . But what people don't realize is that for Japanese-Americans, December 7 holds the exact same meaning as for any other American" (Wu, 2001).

Figure 7. An example of emotion distributed through time.

Also, a group's emotional history will accrue based on emotional experiences over time and will become a quality of future emotional expression and behavior (see Figure 7) (Kelly & Barsade, 2001).

The idea that emotions have a distributed nature is complex. Emotions are distributed among people, and thus, can be individually held, socially held, or both. Internal and external structures also play a part in the distribution of emotions. These structures can enhance or restrict emotional experiences and expressions. Finally, emotions are distributed with reference to time. "Time" in this sense can refer to a particular era or moment in time. Emotions are affected by time in this way and, as a result, are distributed through and across time.

Viewing emotions through the lens of distributed emotion encompasses elements of many traditional theories of emotion, but bends them slightly and adds other elements. These added elements—

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context and time—have been somewhat overlooked in the emotion literature, as emotion research has been largely confined to contrived experiences and laboratory settings. More recently, as socially constructed perspectives have been added to this mix (e.g. Averill, 1980; Johnson-Laird & Oatley, 2000; Parkinson, 1996), individual emotions have come to be understood as rooted in the dictates of the social systems surrounding us. Yet although social effects are acknowledged, emotions, according to this perspective, are still individual constructs (e.g. Averill, 1980; Johnson-Laird & Oatley, 2000). Distributed emotion increases the scope of these more traditional theories by including the influences of environment and time upon our emotions and by expanding the notion of individuals' socially constructed emotions to include socially shared emotions.

CHAPTER TWO: ARRIVING AT THE CONSTRUCT OF

DISTRIBUTED EMOTION

Emotion Theory

Most current emotion theory looks at discrete emotions in

individuals. Most studies of emotion rely upon the non-social

manipulation of a single, passive person presented with emotional

material, such as an individual in a laboratory setting being shown

emotionally arousing material as his facial expressions are observed

(Parkinson, 1996). While this is valuable to some degree, "[i]n many

cases, emotion arises not from within an individual's authorial

consciousness but emerges in the dialogue of an ongoing interaction as a

function of what might be called distributed or socially shared cognition"

(Parkinson, 1996, p. 675). Certain emotions cannot be experienced

devoid of a real or perceived social context. For example, emotions such

as love, fear, pride, anger, jealousy, and guilt are inherently interactive

(P. A. Anderson & Guerrero, 1998). As a result, emotion must also be

examined from a social perspective.

Amid social, individual, and contextual influences, people are

constantly experiencing and expressing emotions. It is important to

remember that social approaches to emotion are not necessarily

antagonistic toward individual approaches, but that both are parts of

complex behavior (Thompson & Fine, 1999). Although existing theories of

emotion tend to identify their unit of analysis as the individual, most do acknowledge social influences. One example is Denzin's (1984, p. 49) definition of emotion as "temporally embodied, situated self-feelings that arise from emotional and cognitive social acts that people direct to self or have directed toward them by others." Several theorists believe that emotions are social constructions—that they are more than individual biological or cognitive responses and are part of social interactions (e.g. Averill, 1980; Johnson-Laird & Oatley, 2000). Further, they believe that those around us impact how we feel and how we express our feelings:

> Emotion rules and norms can arise spontaneously from the expressive styles of all the people involved; they can be influenced by the nature of the task; they can be adopted from a larger culture or subculture, they can be actively controlled by people in power, or all of these. (Planalp, 1999, p. 97)

The Role of Social Context

Social Constructivism

One current theoretical tradition of emotion is that of social constructivism. This tradition posits that emotions are created in a social context and that they serve a social function. The predominant theory of social constructivism is emotional appraisal. Appraisal theory posits that something has to be meaningful to a person to cause an emotion (Averill, 1980). Although cognitive processes play a major role in appraisal theory,

appraisals are also mediated by social interactions and cultural factors (Parkinson, 1996). Within this view of emotion, it is important to consider what makes something matter to an individual or group. Events achieve significance in the course of social interactions and the development of relationships making social variables, such as context and relationships with others, vital (Parkinson, 1996). An event may also be appraised as more significant than other events as it helps people further their goals, which are partially culturally determined. Culturally determined goals may include wealth, social standing, or independence. Furthermore, culture promotes implicit and explicit expectations, which impact appraisals. This cultural impact on personal appraisals can affect interpersonal relations and, as a result, how emotions are played out interpersonally. For example, an individual may choose to prove their assertiveness through anger at another. In some cultures this emotional display would be admirable, but in others it would be unacceptable.

Socialization is the way that people learn specific cultural dictates on emotion. Emotional behavior can be modified by social practices. Specifically, it is controllable by determining what emotions will be expressed and what behaviors are acceptable as expressions, by influencing which situations lead to particular emotions, and by regulating the existence and experience of complex emotions (Johnson-Laird & Oatley, 2000; Parkinson, 1996; Planalp, 1999; Yang, 2000). In

many cultures, teaching is the primary method of socializing people's emotions (Johnson-Laird & Oatley, 2000, p. 468). Because culture influences the cognitive evaluations that can lead to particular emotions, once individuals have been socialized, their emotional reactions will be difficult for them to control (Johnson-Laird & Oatley, 2000). Conversely, people may tend to judge others according to their own level of expressiveness as dictated by their own culture (Planalp, 1999). Thus, the theory of emotional appraisal and the larger theory of social-constructivism both acknowledge that social context, such as culture, plays an important role in emotion.

Group Level Emotion

Other elements of social context can impact emotions. One such element is the nature of relationships among people, specifically the level of competition or cooperation. Reese (1996) found that when in a cooperative situation people tended to report more anger when their partners' actions got in the way of meeting their goals. Similarly, they found that people who were in a competitive situation, reported that they felt more joy when they performed better than their competitors but more anger when they performed worse (Reese, 1996). Based on this information, it is important to note that organizational emotional norms, such as competition or cooperation, will influence the feeling and display

rules of members of that organization (Kelly & Barsade, 2001; Parkinson, 1996).

Similarly, "an emotion may seem to be caused by the content of a message when in fact it is a response to relational meanings" (Planalp, 1999, p. 17). So, not only are the relationships among people influencing the emotion, but the character and history of the relationship will also influence emotion. Specifically, group level emotions will be formed that may not be felt if the participants were not all a part of the group (Pescosolido, 2001; Smith & Crandell, 1984). This can happen when the members of a work team become hostile. The hostile feelings only exist because these people are working together under a particular set of circumstances.

Social Effects of an Individual's Emotions

Beyond social context helping to shape personal emotions, an individual's emotions themselves have social impact on others. The emotional reactions of others are often hard to ignore and seem to demand interpersonal response. In fact, everyone's emotions carry social meanings derived from their evaluations of the object of that emotion. As such, these evaluations are open to acceptance or rejection by other people (Parkinson, 1996).

Emotional Contagion

One way that an individual's emotions can impact us is through emotional contagion. As mentioned before, emotional contagion accounts for automatic, involuntary emotional responses that influence how and what we feel. Although most of the research on emotional contagion has been conducted with pairs (Kelly & Barsade, 2001), I think that such social influences can be extrapolated to instances involving more people. One effect that comes from emotional contagion is the classical conditioning that can occur following vicarious affect—sharing emotions by vicariously experiencing another person's feelings. This can also be called empathy transference (Kelly & Barsade, 2001). Another effect of emotional contagion is entrainment, or synchrony, that causes one person's behavior to change in order to coordinate with someone else's (Kelly & Barsade, 2001). Affective impression management is yet another effect of emotional contagion. This occurs when a person presents a particular surface-level emotional display in order to achieve a goal—to fit in with others, to gain rewards from going along with the crowd, or to enhance others' emotions (Kelly & Barsade, 2001). This affective impression management helps people operate within a social system.

Emotion Work

The research into emotion work also demonstrates the social effects that one person's emotions can have on others. For example,

airline flight attendants are trained to remain calm and pleasant under any circumstance because their demeanor will affect the emotions of the passengers (Hochschild, 1983). Similarly, Hargreaves (2001) found that teachers' emotions affect those of the people that they encounter while working, such as the parents of the children in their classes. Yet social effects appear to be more voluntary than the automatic responses of emotional contagion. Specifically, we work with others to make meaning out of our emotions and our expressions of them. This meaning making can be as simple as someone learning what makes them happy by watching others have experiences that make them happy (Evans, 2001).

Emotions as Social Acts

Emotions also serve a social function by creating structure and culture (Heise & O'Brien, 1993; Keltner & Haidt, 1999). At the same time that we are determining our emotions while watching others, we are also determining our emotions because we know that others are watching us. Because of such interactions with others, we constantly define, evaluate, and distill our emotions (Mangham, 1998). In this way emotion holds a performance aspect through emotional expression. Perhaps this expression serves an interpersonal function, like a performance, rather than serving strictly as a spontaneous reflection of internal emotion. In fact, our faces seem to be intended to express emotional reactions to others around us (Parkinson, 1996). For example, Kraut and Johnston

(1979) conducted a study of bowlers. They observed the facial displays of each bowler when he first saw the number of pins he knocked down and then again when he turned to walk back to those who were bowling with him. They found that the most observable facial displays were those directed at the watchers rather than those in response to the emotional event. Often emotional expressions are intended as communicative acts directed at others instead of simply reflecting our internal states. At times people even get emotional to let their "audience" know how they should behave (Parkinson, 1996). While people do experience emotions without an audience physically present, perhaps in the expression of emotions they have an implicit audience in mind. For example, online interactions occur with an invisible, but very real audience at the end of an Internet connection, which is often firmly pictured in the user's mind. Often that real audience takes the form of class members in an online learning environment.

Distance education courses sit at the crossroads of two areas of research in which cognition and emotion have been largely treated as distinct and unconnected concepts. On one side sits pedagogy, while on the other is communication—specifically computer-mediated communications (CMC).

Pedagogy and Emotion

Education has long been a field marked by a clear separation of cognition from emotion. Much of this stems from behaviorist learning theories that assert that learning can be broken down into discrete tasks (Gagne, 1970). Emotion was discounted in behaviorist theory (Brown & Farber, 1951). More recently, many educators have adopted a more constructivist learning theory that accounts for individuals constructing their own meanings in the course of their learning (e.g. Vygotsky, 1962). The constructivists bring the affective domain to learning situations, but have not yet given it the emphasis that it is due in terms of it assisting learning. As a result, "schools continue to operate on the theory that 'cognitive' & 'academic' are synonymous and both are apart from [emotions]" (Beane, 1990, p. 42).

Today schools continue to focus on measurable, rational qualities, as evidenced by most grade reporting practices and the pervasiveness of standardized testing (Coles, 1999). This emphasis on the cognitive to the exclusion of emotion is seen too often in schools that choose to cut out arts programs—which enable direct expression of students' emotions— when budgets get tight, as the learning benefits of these expressive subjects are difficult to quantify (Sylwester, 1994):

> While goal statements [of schools today] may include concern for
> such concepts as self-esteem, social relations, and cultural

awareness, the fact remains that curricular plans are nearly

always based on the learning of skills and content within various

disciplines of knowledge. (Beane, 1990, p. 138)

According to Chester Finn (1991), a longtime advocate for standards-based education, emotional growth will come through academic progress. Finn believes that teachers should provide vigorous academic instruction and that the confidence and self-esteem of students will automatically follow their academic success in the classroom.

The split between cognition and emotion is prevalent in education (O'Loughlin, 1997). The fact that schools have chosen to recognize a false supremacy of cognition over emotion has strongly impacted both the instruction and classroom management that occur on a daily basis. In a survey of contemporary schools, John Goodlad's (1984) impression was that classrooms did not show strong emotions either positively or negatively and that expression of strong emotions—like enthusiasm and joy—were kept under control. Considerable time is spent controlling students who display too much or too little emotion because our understanding of emotion is limited (Sylwester, 1994). As a result, schools tend to cater to those students who display the proper affective behaviors needed for success. Students who do not fit into this affective mold will be disciplined or labeled emotionally disturbed (Wager, 1998). Wager goes on to caution that this inattention to the emotional influence

on learning leads not only to learning problems in students, but also to larger problems facing society. He proposes that the first steps to be taken in correcting this problem in schools are to recognize the complexity of the emotion/cognition connection so that educators and instructional designers can build learning environments which are supportive of knowledge and which teach students about success and recognition (Wager, 1998).

Learning occurs in social contexts, which are influenced greatly by the emotions of the participants (Vince, 2001). These emotions can positively influence learning in many ways (Fishback, 1998), because students' attention is drawn to what affects them emotionally (Weiss, 2000). For example, students who are more emotionally mature in a learning context will respond more readily to feedback (L. J. Anderson & Jones, 2000). As a result, the integration of emotion into traditional, cognitively-focused classrooms can improve student learning.

Much of this integration began to spread among schools in forms such as pedagogical practices guided by results of brain-based research (Caine & Caine, 1991) and emotional intelligence (Goleman, 1995). These particular programs have become popular in part because they operate on the underlying assumptions that emotion can be tested, categorized, and measured. These assumptions appeal to education—from higher education (Harris & Sansom, 2002) to K-12 staff development

(Schmoker, 2002) and even to the White House (*A blueprint for new beginnings: A responsible budget for America's priorities*, 2001)—as schools continue to rely heavily on quantifiable measures to dictate practice. In both of these educational movements, students are aware how they and others experience and express emotions. Both call for activities that emphasize social interaction and engage the whole body as providing emotional support for students as they learn. Such activities might look like games, cooperative learning, or field trips. Yet, while educators know that such activities enhance learning, they tend to use them as rewards, taking them away when budgets are tight, academics are faltering, or students misbehave (Sylwester, 1994). Typically this withdrawal of reward-type activities is the result of students expressing too much emotion in the classroom and thus being deemed "unruly."

I propose that the connections among social interaction, emotions, and learning are strong and thus, expressing emotion in the classroom should not be treated as a reward, but rather as a vital part of any learning experience. Similarly, cognition and emotion must be considered together.

Computer Mediated Communication

Communication, on the other hand, is acknowledged to be both informational and emotional (Planalp, 1999), but it is the informational side that receives the most emphasis both face-to-face and online.

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Specifically, group research tends to focus on tasks rather than dynamics (Thompson & Fine, 1999). As a result, little research has been conducted on the emotional side of communication. Yet nearly 30% of overall message content in CMC settings is socio-emotional, including what is exchanged via professionally oriented networks in which users do not know one another (Rice & Love, 1987). This is a large percentage of message content that has received little attention in research.

Early research that did look at the emotional content of computer-mediated communication (CMC) was conducted before the Internet and use of e-mail went mainstream. As a result, most CMC users had not yet established communicative norms and conventions to convey emotion that fit the online medium (e.g. Kiesler, Zubrow, Moses, & Geller, 1985; Siegel, Dubrovsky, Kiesler, & McGuire, 1986). Those norms become very important when considering how users communicate their emotional states to one another online (Baym, 1995; Rice & Love, 1987). Because these norms had not yet been established in the early research, those results focused more on which elements of face-to-face communication, such as non-verbal cues, were lost in CMC, rather than on any new elements of CMC communication that users had developed, such as the use of emoticons or smileys (Walther & Burgoon, 1992). Despite this lack of norms, computer-mediated communication has been found to enhance the informational and emotional connections of its users (Sproull &

Kiesler, 1991). In order to best understand online emotional

communication, it is important to look at just how people communicate.

How We Communicate: A Metaphor

Traditionally, the metaphor used to describe communication is

loading and unloading boxcars (Planalp, 1999). A sender fills a boxcar

with her message and sends it along the track to a receiver. That receiver

offloads the message and, perhaps, fills the same boxcar with a new load

and sends it back to the sender. This metaphor is lacking in a number of

areas. It does not account for messages that are directed at many people,

contextual issues that can change interpretations of messages, and

messages' emotional content. If two people were trying to communicate

their emotions according to this metaphor, a sad boxcar and an angry

boxcar would meet on the tracks and one would have to cede to the

other. An alternative metaphor, which seems to capture all the influences

and nuances of actual communication, is weaving (Planalp, 1999). As

weavers, senders select their threads carefully—sometimes in concert

with others, sometimes independently. At times one thread may reflect a

reaction to threads being used by others and, as a result, will change the

pattern of the tapestry. While weaving, an angry thread and a sad thread

may create separate patterns, one thread may lead the other to create a

pattern together, or they may become tangled together and work as one

thread. Nevertheless, weaving involves multiple threads from multiple

weavers and, unlike the messages on the boxcars, which are emptied of their content, the tapestry may remain in whole or in part over time.

When viewed from a purely technological stance, computer-mediated communication (CMC) appears to support the boxcar metaphor as one individual sends a message via computer to another, who receives and also replies via computer. Yet, I propose that CMC is like weaving. Multiple people can communicate online at one time and the resulting conversation contains several threads of discussion in which individuals act and react with one other. This weaving metaphor is important to keep in mind when looking at computer-mediated communication. This implies that the focus of any CMC research study should look beyond simply the messages being loaded onto boxcars and the manifest detailing each boxcar's route. Instead, researchers should seek to capture the essence of the tapestry created by CMC users. Attention should also be paid to the weavers who are creating the tapestries, as well as the contexts in which the tapestries are woven.

Considering Context in Communication

The way that people respond to situations requiring communication will vary according to the setting (Siegel et al., 1986). For example, those who are adept at oral communication may falter at written or online communication. For this reason it is vital that any communication setting be understood as a complex environment

consisting of people, tools, and temporal effects that may not be duplicated in other settings. Thus, the traditional view of the dyad as the sole unit of analysis for the communication process is not viable in a detailed study of a CMC setting and, as such, the unit of analysis must be expanded to encompass all elements of such a complex system.

<center>*How We Communicate Online*</center>

When putting together an understanding of CMC as a complex communication setting, the first factor to consider is what the communication looks like via computer.

Hybrid of Spoken and Written

Researchers are beginning to notice that CMC has characteristics of both spoken and written communication (Kochen 1978, as cited in Rice & Love, 1987; Voiskounsky, 1998). For that reason they have dubbed CMC a "hybrid" form of communication. CMC, for example, has characteristics of oral communication in the use of first names, treating colleagues unceremoniously, and the use of slang and jokes. Computer-mediated communication also involves the language intensity, verbal immediacy, argument framing, syntax structure, and editing ability of written communication. In fact, certain of these features are even enhanced through use of the computer with functions like cutting and pasting and tools like spellcheckers. As in written communication, the sender controls the composition of the message and the message defines

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the reasons for its being sent (Voiskounsky, 1998). All in all, this hybrid

nature is represented by the reflective and informal natures of CMC, both

of which help users to convey socio-emotional content to one another. To

get a true sense of the nature of CMC as a form of communication,

several characteristics must be examined in detail: grammar, verbal

immediacy, speech acts, non-/extra-verbal cues, and the reflective

nature of the communication.

    Grammar. Since people do not typically regulate their grammar

consciously to reflect their emotional states, a close look at grammar can

help in interpreting emotion.

> While we may be only vaguely aware of the structure of our
>
> sentences, these sentences nevertheless represent the structure of
>
> our reflective awareness (or that aspect of our reflective awareness
>
> that we are willing to discuss with others). Grammatical structure
>
> therefore provides an indication of how our conscious experience is
>
> structured. (Collier, 1985, p. 154)

By considering carefully the grammatical structure of computer-mediated

communication, we may find deeper insight into the emotional state of

the writer. CMC users typically use more formal expressions in their

online writing than they do in spoken communication. This may be due

to the fact that the act of typing causes people to consider their

communications to be more formal than what is spoken or handwritten

(Kiesler et al., 1985). Although the communication may be more formal, such formal grammar can also convey the socio-emotional state of the user.

Collier (1985) points to several grammatical characteristics that indicate unpleasant emotion. For example, people who are in a more negative emotional state will tend to compose longer and more grammatically complex sentences as they vent these emotions. They may also use more adverbial modification and phrases, which offer examples and details of their negative emotional state. People also tend to qualify statements more when those statements are counter to their actual attitudes or are made in retrospect.

Verbal immediacy. Another aspect of grammar that gives insight into an individual's emotional state is verbal immediacy. Verbal immediacy is the degree to which speakers feel close to their listeners, and it generally appears as a match between the attitudes toward a situation and those expressed during a description of the same situation. Verbal nonimmediacy can occur as the distance between the speaker and listener increase (Collier, 1985). Grammatical clues indicating nonimmediacy fall into the following categories:

- spacial separation—the use of demonstratives for objects and adverbial phrases not required by the situation, e.g. saying "those people" when referring to a group in the same room

- temporal separation—the distancing of a person from what is being described through tense shifts from present to perfect to past to past perfect, e.g. from "I am working on that," to "I have been working on that," to "I was working on that," to "I had been working on that"

- over- and under-inclusion—the use of more general agents than the situation calls for which imply consensus and makes the agent difficult to identify, e.g. "Everyone was annoyed with your actions."

- selective emphasis—putting the most important item first to show greater importance, e.g. "Barbara and Larry"

- agent-action-object relationships—the use of passive voice to manipulate responsibility for actions, e.g. "He asked me to help him" instead of "I helped him"

- modifiers—used to convey either doubt and uncertainty or strong certainty, e.g. "It might mean" or "It is obvious that"

- automatic phrases—used to imply doubt that a message is getting through to the listener, e.g. use of "you know" or "you understand" suggesting that the speaker and listener are not on the same wavelength

Although the listener—or the reader in a CMC setting—may not be fully aware of these categories, distancing effects may be realized as these

nonimmediacy cues increase, indicating the negative emotional states of the writer (Collier, 1985).

Speech acts. In addition to verbal immediacy or nonimmediacy indicating a person's emotional state, speech acts may state or imply underlying emotions (Searle, 1979). A speech act takes into consideration that every utterance is an action made with some goal in mind. A speech act can appear as one of the following:

- assertives—telling people how things are in a way that can be assessed as true or false, e.g. saying "I worked harder on this project than I did on the last one."

- directives—making requests and commands, e.g. asking of a collaborative group "Now that we have discussed our topic, can we decide who will be responsible for which parts of the project?"

- commissives—making promises and obligations that commit the speaker to do something, e.g. assuring a team "I'll complete the final edit on our paper."

- expressives—expressing feelings and attitudes directly, e.g. "I'm sorry for being late."

- declarations—making statements that in themselves bring about changes in the world, e.g. telling an employee who works for you, "You're fired." (Searle, 1979).

While expressives allow a speaker to directly convey an emotion, in the case of directives and commissives, the speaker may be implying a sense of dissatisfaction over the current state of affairs (Collier, 1985). For example, an individual requesting that his collaborative team move on to the assigning of roles for a project shows that he is no longer comfortable not having made that decision.

Non-/extra-verbal cues. Another clue into the socio-emotional content of communication is the use of non-verbal cues. Kiesler et al. (1985) found that computer users are prone to more excited and uninhibited communications due to a lack of nonverbal cues available such as body language or eye contact. Not only did their research show that these cues were lost—they also saw users over-attributing information from the remaining cues. This can lead to communications that are less accurate.

Other researchers have found, on the other hand, that while CMC systems disable the use of nonverbal cues, they offer tools to build new forms of expression (Baym, 1995; Voiskounsky, 1998). Therefore, some researchers have looked at different, extraverbal cues in order to get at the richness of CMC (e.g. Menges, 1996; Rivera, Cooke, Rowe, & Bauhs, 1994; Walther, 1992). Extraverbal cues are markers deliberately inserted into the text of CMC messages to convey socio-emotional content. Users have been inventive in their use of extraverbal cues as they create new

ways to express socio-emotional intent online and have been eager to share these new expressions via online dictionaries and guidebooks as references for other users (Baym, 1995). As mentioned previously, at the time that Kiesler et al. (1985) did their research, users of computer-mediated communication had just begun to adopt extraverbal cues as a way of conveying some of the information lost because of a lack of nonverbal cues.

One of the most common extraverbal cues is the use of "emoticons" or emotional icons. Emoticons are created by compilations of punctuation marks, which, when looked at sideways, form various facial expressions from a basic smile to a face with a confused, wavy brow. These symbols can directly convey socio-emotional content within CMC. They have been found to make such communication more appealing while not detracting from decision-making or affecting users abilities to conform to those with whom they are communicating (Rivera et al., 1994). Emoticons can draw attention to a particular emotional tenor that is often not communicated clearly face-to-face, as in the case of someone telling a joke that the listener "doesn't get." On the other hand, emoticons can have a flattening effect on the emotional content of a message, taking the sting out of a pointed remark (Poole, 2000). For example, someone may modify the tone of his CMC by following a demand with a smiling emoticon.

Another extraverbal cue is found in text-based, multi-user, real-time, computer-based environments, such as MOO's or MUD's. In these environments users are able to emote through specific text commands. In other words, users in a MOO can speak directly to others or can type in an action to convey their socio-emotional state, such as typing 'jumps up and down' to show excitement. Another extraverbal cue, which arises out of this new hybrid communication, is the use of what is sometimes referred to as 'paralanguage,' such as intentional misspellings, absence of corrections, pointed use of capitalization, lexical replacements for vocal utterances, and spatial arrays or ASCII art (Walther, 1992). In her work with an online discussion list devoted to soap operas, Baym (1995) found that, in addition to this paralanguage, discussants also used acronyms to convey messages specific to their content. For example the acronym "IOAS" replaced the often-used phrase "it's only a soap" (Baym, 1995).

Reflective nature. As opposed to face-to-face communication, computer-mediated communication can be more thought out, organized, and richer than face-to-face conversation (McConnell, 1993; Rice & Love, 1987; Steinfield, 1986). A user has several opportunities for reflection within the course of CMC: before composing his message, before sending his message, after reading another's message, and after reading a reply to his message. A user can reflect on conversations when he is away from

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the computer and will typically continue reflecting on prior conversations when he returns to the computer. As a part of such reflection, a user of CMC can "re-visit [and restart] 'old' conversations" with more ease than in a face-to-face conversation (McConnell, 1993).

Audience Effects

Users of CMC take on the roles of both sender and receiver at different times during the communication. Therefore, when examining the users of CMC, it is valuable to consider them as both participants and audience members.

Mono-, dia-, and polylogical communication. CMC is considered a hybrid with regard to the number of people involved in each communication act, each of whom helps to shape the socio-emotional content of the communication. Monological speech occurs when one speaker communicates to a silent audience. CMC serves as monological speech through the authoritative attitude that some users take, the simple requests that pepper the content, and the fact that some audience questions remain unanswered. Dialogical speech occurs when two speakers engage in communication back and forth. CMC takes on the characteristics of dialogical speech through the quick response factor and the questioning and answering that may occur regularly in private e-mail exchanges or public discussions (Voiskounsky, 1998).

While CMC shares traits with monologues and dialogues, it is the traits of polylogical communication that appear to be the most characteristic of this hybrid. Polylogical communication occurs when multiple speakers communicate with one another. One form of polylogical communication, as studied in a computer bulletin board that allowed users to communicate one to many, showed more socio-emotional content than one-to-one forms of CMC (Walther, 1992). As with any polylogical communication, CMC does not assume turn taking; users produce on their own, and at the same time as each other; users take the initiative in both sending and receiving messages; users are aware that communication is taking place even if they choose to ignore it; statements are publicly debated; and users often feel the need to repeat colleagues' views in order to register their agreement or to bring a topic back to the attention of others (Voiskounsky, 1998). CMC even includes many tools and functions enabling these polylogical traits, such as user alerts to indicate when a new message is received and the ability to reply to a message, automatically including a quotation from the original.

Temporal nature. As users communicate through CMC they do so during periods of time that are linear or cyclical. Linear time focuses on the length of a behavior, action, experience, or relationship. It is also marked by a pattern of nonrecurrent, changing activities (Hesse, Werner,

& Altman, 1988). In an online course, an example of linear time would be the communications of users introducing themselves to one another. Cyclical time, on the other hand, focuses on the duration of recurrent events and the length of the intervals between recurrences. It is also marked by an emphasis on a pattern (Hesse et al., 1988). In an online course, an example of cyclical time would be the communications of a collaborative group as they begin each of the six projects planned for the course.

Individual users of computer-mediated communication will find the scale, or duration of communication events, expanded as they experience more time to edit, compose, send, and retrieve messages. That being so, users can also over- or underestimate others' rates of response to their postings. Individual users find that they can transmit a great deal of information in a short period of time. This can be both empowering, as they are able to contribute more to class discussion, and debilitating, as they feel the effects of information overload (Hesse et al., 1988).

One particular temporal feature of CMC—the time displayed on the message sent—has specifically been shown to provide socio-emotional information regarding users. This time stamping of messages, or chronemics, can provide valuable information. For example, if a person responds immediately to a message, this quick response may indicate a heightened emotional state (Walther, 1992; Walther & Tidwell, 1995).

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Self- and other-awareness. Since computer-mediated communication involves users as both participants and audience members, it is important to note the effects of their awareness in both roles. As a participant, a user may choose to use e-mail to avoid the unwanted social interactions that would be mandatory in a face-to-face setting with audience members. Consequently, users will actively take steps to avoid any negative outcomes of their communication with audience members (Markus, 1994). Conversely, Kiesler et al. (1985) found that computer users are more likely to directly speak their minds without regard to the feelings of audience members. In a CMC setting, this uninhibited conversation is called flaming—the sending of "messages that precipitate, often personally derogatory, ad hominem attacks directed toward someone due to a position taken in a message distributed (posted) to the group" (Mabry, 1998, p. 14). Siegel, et al. (1986, p. 160) conceded that

> [t]he relative absence of social context information and social feedback in computer-mediated communication might lead to uninhibited behavior because these gaps are not yet replaced by shared norms for conveying or interpreting the social meaning of what is communicated. Although computer professionals have used computer communication for two decades, and they comprise a subculture whose norms influence computer users and computer

communication, no strong etiquette as yet applies to how

electronic communication should be used.

This explains why some people today consider flaming as part of a

sporting or playful relationship (Baym, 1995). How communications like

these are interpreted depends on the contexts of those communications,

the relationships between senders and receivers, each individual's past

experiences and characteristics, and established behavioral norms.

Behavioral Norms

The nature of the audience involved in CMC and the awarenesses

that users have of themselves and others oftentimes lead to the creation

of behavioral norms. Many of these norms grow out of the larger

community of CMC users, while smaller groups of CMC users may

develop other, more content-specific norms. Mastery of these norms,

along with other verbal abilities, often become a way that CMC

participants measure social power online (Mizrach, 2000).

Many online behavioral norms have been codified into

informational postings to new users, dictionaries and handbooks

available online—even courses devoted to "netiquette," or appropriate

and polite online behavior (Baym, 1995). Hiltz and Turoff (1985)

recommend that CMC systems be designed to encourage the emergence

of groups that can exert control over others' behavior as behavioral

watchdogs of a sort. Considering the context of an online classroom,

most likely the teacher would suggest and enforce behavioral norms. For new CMC users, teachers will typically either provide direct instruction or offer links to basic norms of a computer-mediated environment.

Small groups of users can determine behavioral norms—albeit flexible ones—based specifically on the temporal nature of computer-mediated communication. As individuals do in face-to-face and telephone settings, CMC groups can determine the appropriate length of utterances. The sequence of topics and use of transitions are also established by the group (Hesse et al., 1988). For example, the group in Baym's (1995) study of soap opera fans using computer-mediated communication determined that one inappropriate behavior was to post a response more than four or five days after an original posting was made.

Baym's soap opera users also created group-specific vocabulary. For instance, when a character named Natalie was involved in a storyline in which she died in a car accident, users changed their references to the character from "Nat" to "Splat" (Baym, 1995). Furthermore, these group members established norms regarding the information given in the subject line of their e-mail messages to the group. Abbreviations—decided on by the group—served to represent the name of each soap opera. For example, *All My Children* became AMC. Group members expected to see an abbreviation in every subject line and if a new

member did not comply, she typically received several messages explaining this specific behavioral norm (Baym, 1995). Like the users of the soap opera forum, students in an online classroom can work together to establish the structure of CMC norms that are used within their collaborative teams (Wilson, 2000).

<div align="center">Emotional Content of CMC</div>

Because emotion serves both individual and social purposes, and because emotion is a part of communication, the way in which that emotion is conveyed will impact the social context of CMC. So, after looking at how users communicate online and to whom they are communicating, we should turn attention to what emotional content is being communicated.

<div align="center">*Language and Emotion*</div>

The relationship between language and emotions is different than the instinctive relationship between nonverbal cues and emotions. In the case of computer-mediated communication, users can show as much socio-emotional content in the language they use as in their face-to-face communication (Lea & Spears, 1995, as cited in Chenault, 1997; Walther, 1992).

Direct Communication of Emotion

Having to put emotions into words may help the writer better understand her own emotions (Planalp, 1999) and can help her express

those emotions more clearly to others (Rice & Love, 1987). An individual's use of language to express her emotions represents an effort to describe her feelings to herself and to others. While this makes the direct communication of emotion sound easy, there is room for misperceptions when the individual cannot clearly identify her feelings or two people call very different feelings by the same emotional label. To avoid these misperceptions it is important to remember that the words used to identify emotions are merely labels and are not the emotions themselves (Collier, 1985).

Indirect Communication of Emotion

In writing about verbal communication of emotion, Collier (1985) describes three ways of getting at what an individual means by the labels chosen for her emotions. First, the repetition of themes within interactions can be a sign of a preoccupation with a topic. If readers overlook an emotional communication the first time it is posted, the message will likely recur in a different and potentially more understandable way. In most computer-mediated communication environments, messages are archived by the system and can also be saved by users. By using past messages as references, users are more likely to note recurring emotional content and can respond appropriately.

Also, a cursory reading of the content of communications will often not reveal what the writer is feeling. As a result, readers may need to

read between the lines to interpret the real emotional meaning (Collier, 1985). The reader can do this by drawing connections among events that seem dissimilar. To do this, readers should first consider the meanings of individual words and phrases used in the communication and then look specifically for elements like metaphor, insinuation, and irony which may imply more than what is actually being communicated. Readers should recognize that people qualify statements with which they do not completely agree and, although the writer has chosen to communicate her message using a qualifier, she is least likely to see any hidden meanings in her own message (Collier, 1985).

Finally, readers could look for Freudian slips, which will give insight into the subconscious emotions of the individual. A Freudian slip occurs when a person substitutes a word or makes an error that gives an observer insight into his true feelings. Freudian slips are less likely to occur in CMC due to the reflective nature of postings and the multiple possibilities for editing (Collier, 1985).

User Control over Emotional Communication

While users can directly and indirectly communicate their emotions, it is questionable how much control they truly have over their emotions and how others react to them. Emotional content of computer-mediated messages can appear in many forms. For instance, a user's emotional involvement and the framing devices they employ in their

communications are systematically related (Mabry, 1998). As the emotionality of messages becomes stronger, conciliation and apology increase and as the emotion in messages decreases, confrontation and challenge increase (Mabry, 1998). In other words, the increase in overall emotion in CMC will lead to more emotions that are valuable in maintaining positive group relations, while the lack of emotion will lead to dissolution of positive group relations.

That said, in a site-based study of CMC usage in a distributed company, Markus (1994, p. 123) found that sometimes a user's emotional state was in conflict with how she hoped to be "heard" by others. In this case, users claimed they could effectively mask their emotions through their careful use of CMC. At other times, users deliberately tried to keep the emotional content of their communication low. One respondent shared in a questionnaire that "[w]ith e-mail I find myself answering w/o [sic] all the kindness necessary to keep people happy with their job. Sometimes I will answer more pointedly" (Markus, 1994, p. 139). Both findings show that employees are aware of their emotional states when they communicate online but that they put at least an equal emphasis on how those emotions will come across to others reading their messages—much like how their tone of voice might be interpreted in a face-to-face setting. One way that individuals often consider how emotion comes across in CMC is in e-mail use which, in

one study, involved employees' feelings of dislike or intimidation. Employees who felt one or both of those emotions chose to communicate via computer more often than any other means of communication. Similarly, an employee of this large company who was angry or fearful that her recipient would object to the content of a message was more likely to choose to communicate via computer (Markus, 1994).

Because of this awareness of the potential emotional content of CMC, users in this business setting felt comfortable using e-mail for work-related communication but decided that e-mail was not appropriate when handling personnel matters. Issues of personnel were either deemed confidential or were deliberately handled face-to-face because the emotions evoked by such communication required "delicate handling" (Markus, 1994, p. 133). All of this attention to emotion is important to note, though "even the most conscious and deliberate form of emotional expression has expressive features that may escape the [communicator's] attention" (Collier, 1985, p. 167). In other words, a user can make intentional choices regarding the emotional content of her messages, but can still unconsciously convey her emotions. While individuals have some degree of control over their conscious emotional communications, other factors influence the amount of emotion that comes across in computer-mediated communication.

Online Learning and Emotion

Course Content and Emotion

When specifically looking at CMC in a classroom setting, the course content will affect the communication occurring. Graduate students who participated in CMC as part of both a statistics course and a social science course felt that the online environment seemed more appropriate for the more discussion-based social science course (Vaverek & Saunders, 1993). One of the reasons given was that discussion-based courses require a less rigid knowledge base for participation. Participants in this study believed that in courses such as statistics, which require more calculations and detailed knowledge, CMC is less appropriate. These students felt that a course looking for one "right answer" did not lend itself to CMC discussions in the same way as a course looking for multiple "right answers." The increased amount of discussion used in such a course allows students more opportunities for socio-emotional expression as they agree and debate on many points. Interestingly, in this study the non-discussion-based courses had greater socio-emotional content than the discussion-based courses, but that content was negative (Vaverek & Saunders, 1993). Perhaps this was due to the lack of ease that some students have in their search for that one "right answer."

Although there are ways of deliberately communicating emotions and clues to interpreting the true emotions of others, there is no

objective method for understanding emotional communication, even online. The primary challenge is that emotion is merely one piece of the complex system of communication. This system involves varied ways of communicating emotion, such as extraverbally, and varied goals for that communication, such as maintaining the social balance among individuals.

<center>Emotion and Cognition</center>

As mentioned previously, when researchers began to study the emotional content of CMC, they were working in a time when fields such as cognitive science, social psychology, and communication proceeded as if cognition and emotion were two concepts that were not interrelated (e.g. Gardner, 1985). As a result, researchers often selected topics for study, determined what data would be collected, and used coding schemes that only allowed for one code per utterance—task-related or socioemotional content (e.g. Bales, 1950) in ways that reflected a lack of relatedness between cognition and emotion.

Subsequent research into the emotional side of CMC have tended to follow the early assumptions that cognition and emotion are separate (e.g. Vician & Brown, 2000) or to focus on the computer rather than the interactions that are taking place—an idea that carries with it the same assumption that cognition should be considered primary (e.g. Bordia, 1997; Connell, Mendelsohn, Robins, & Canny, 2001; Rivera et al., 1994)

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I think the social components of emotion make it a rich and compelling topic for research. Since the cognitive side of classrooms and communication, face-to-face and online, has been the focus of more research to date, cognition will serve as a starting point for discussion of a theoretical framework applicable to both cognition and emotion.

Historically, researchers have acted as if cognition were completely separate from emotion. This separation was the result of choices made by researchers as they began working in the newly forming field of cognitive psychology. These early cognitive scientists were faced with the question of how to handle quantitatively "messy" emotions in their experimental designs. Some chose to manipulate emotions and examine those effects, while most chose to keep emotions constant in order to ignore them as they focused on cognition (Pett, 2000). Out of this research tendency grew the idea that humans were problem solvers like computers. Thus affect was seen as "a regrettable flaw in an otherwise perfect cognitive machine" (Scherer, as quoted in McLeod, 1991, p. 95). In fact, a more or less explicit decision was made early in the history of cognitive science to ignore the impact of emotion, as well as culture, context, and history because the inclusion of these factors made understanding cognition more complex (Gardner, 1985).

Many researchers now believe that the idea of cognition without emotion is incomplete; without emotion, cognition lacks the richness of

life (LeDoux, 1996; Vygotsky, 1962). According to LeDoux (1996), cognition can only represent part of the mind's functioning as "thinking, reasoning, and intellect" are tempered by "desires, fear, sorrow, pains, and pleasures" (p. 8). As a result of beliefs like this, many theories have emerged in recent literature to explain the relationship between cognition and emotion. These theories take several different approaches:

- evolutionary—cognition and emotion can be understood in terms of adaptation (Cosmides & Tooby, 2000; Sloman, 1998)

- biological—emotion and cognition are functions of the same biological system (Damasio, 1994)

- physiological—emotions stem from uncontrollable bodily responses (LeDoux, 1996; Pett, 2000)

- linear—cognition occurs first, affecting emotion (Lazarus, 1982; Ratner, 2000) or emotion occurs first, affecting cognition (Dutton & Aron, 1974; Izard, 1984)

- coexisting—emotion and cognition are two different aspects of the same thing and must be seen as interrelated (Coles, 1999; Dewey, 1895; Fleckenstein, 1992; Ratner, 2000; Vygotsky, 1962).

Not only are there a variety of explanations about the relationship between cognition and emotion—there are numerous factors that impact the relationship such as, context (Kaufman, 1996) and culture.

Traditionally emotions have been viewed as physiological responses or individual, cognitive interpretations and responses to stimuli. Current theories of emotion are characterized by one of four different perspectives. The Darwinian perspective centers on evolutionary theory and asserts that emotions cannot be understood without considering their evolutionary history and how they will contribute to the survival of both individuals and the species (e.g. Frijda, 1988; Izard, 1990). For example, if we see a bear, the fear we experience and the evasive action we take are caused by an innate need for survival. The Jamesian perspective holds that in order to experience an emotion, the individual first perceives a bodily change caused by an automatic response to an outside stimulus (e.g. James, 1994; Schachter & Singer, 1962). According to the Jamesians, when we see the bear, we experience involuntary bodily reactions including increased heart rate and increased adrenaline production. These physiological changes cause us to feel fear. The cognitive perspective acknowledges the Jamesian point of view but asserts that a cognitive appraisal of the perception initiates the bodily changes (e.g. Arnold, 1969; Lazarus, 1982). For the cognitivists, we immediately and imperceptibly appraise the bear as frightening and, as a result, we experience physiological changes. Finally, the socio-constructivist perspective declares that emotions are products of culture (e.g. Averill, 1980; Johnson-Laird & Oatley, 2000; Parkinson, 1996).

Socio-constructivists suggest that we appraise our encounter with the bear through a cultural lens that tells us that bears should be feared.

Since none of the traditional theories of emotion seem to account for the many factors influencing that relationship between cognition and emotion (Cornelius, 1996; Sturdy, 2003), I propose that no single theory can be used to explain the whole relationship. Rather, I choose to place emphasis on the fact that cognition and emotion are closely related and, as a result of this relationship, theories about one may be applicable to the other.

Distributed Cognition

As mentioned before, when looking at communication traditionally, the emotional side has long been neglected and this neglect has been felt strongly in education. I think the social components of emotion make it a rich and compelling topic for research. Since the cognitive element in classrooms, face-to-face and online, has been the focus of more research to date, it will serve as a starting point for discussion of theoretical frameworks.

Cognitive science is the field of study dedicated to understanding "the mind." Specifically, cognitive scientists look at such questions as: How do we remember things? What processes are used in decision-making? In what ways do we make inferences and engage in other types of reasoning? How do we learn? Cognitive scientists also focus their

research on the "propagation and transformation of representational states" (Hutchins, 2000, p. 1). In other words, how does the mind shape the same idea in many different ways? For example, a symphony by Mozart can be represented by the sounds of an orchestra or by the musical notes printed on a page.

In the mid-80's, three theoretical works laid the groundwork for the broad theoretical framework now known as distributed cognition. The first of these works was Vygotsky's *Mind in Society* (1978), which theorized that every high-level cognitive function occurs twice: intrapsychologically—within an individual—and then interpsychologically—between or among people. The second was Minsky's *Society of the Mind* (1986), which used the language of social groups to describe the individual mind. The final work was Rumelhart, McLelland, & The PDP Research Group's *Parallel Distributed Processing* (1986), a theory sometimes referred to as connectionism, which looked at neural networking and theorized that all cognitive activity should be thought of in terms of massive parallel processing—multiple streams of cognition occurring at the same time while influencing each other (Hutchins, 2000).

These works all look at the concept of multiple agents performing the work that previously was believed to have been completed by the individual. In Vygotsky's case (1978), the agents were people; for Minsky

(1986), the agents were different parts of the brain; and, for Rumelhart, et al. (1986) the agents took on psychological and biological forms as computational tools. Distributed cognition considers the idea of multiple agency and, in response to the question of what organizes these various agents, proposes the solution as coordination among internal agents such as memory and external agents such as tools and artifacts (Hutchins, 2000). Because of this, distributed cognition is committed to expanding the boundaries of the unit of analysis for cognition beyond the individual as it considers a larger range of cognitive mechanisms (Hutchins, 1995; Syverson, 1999; Varela et al., 1991). "The distributed cognition perspective aspires to rebuild cognitive science from the outside in, beginning with the social and material setting of cognitive activity, so that culture, context, and history can be linked with the core concepts of cognition" (Hutchins, 2000, p.10). In other words, distributed cognition looks beyond the individual to more socially- and contextually-based forms of cognition. Returning to the Mozart example, distributed cognition adds many more representations of a symphony beyond just written musical notes to include interpretations by a conductor and orchestra members, a simplified version of the symphony in a beginning piano student's workbook, producers of various symphonic recordings, and the varied understandings of different audience members. Note that

these added representations require other people or tools found external to the individual.

Ultimately, distributed cognition can be distilled into three main properties:

(1) Cognition is distributed across members of social groups. In the example of a child learning to read, the necessary cognitive processes are found distributed among that child, his teacher, and his peers. These distributed processes work together to form the activity of teaching or learning to read. In fact, this system of child and adult can synchronize the act of reading before the child is able to read for himself (Cole & Engestrom, 1993).

(2) Cognition is coordinated between external—material or environmental—structures and internal structures. This coordination may involve the use of material structures or tools, which have previously been viewed as unimportant in cognitive processing (Pea, 1993). Cognitive scientists commonly see tools as amplifying the cognition of individuals, such as writing something down to amplify one's memory. Proponents of distributed cognition point out that the act of writing something down and then referring to it later requires different functional skills than using only memory (Hutchins, 2000).

Another factor to consider when looking at cognition that uses tools is that each tool represents the knowledge of others who invented

it, as well as the decision by communities to maintain it for use by others (Pea, 1993). A measuring tape, for example, provides a way to represent a problem, plan a solution, and check that solution. Additionally, it contains a social history of practice and, as a tool, draws on the user's memory regarding how to use it.

The coordination of structures may also involve the use of environmental structures. The work of Lave, Murtaugh, & de la Rocha (1984), which followed people in the grocery store to capture the practical math being used there, clearly explains the use of environmental structures as part of distributed cognition. While grocery shopping, one informant found a package of cheese in a bin and, after examining the label, suspected that the price was incorrect. This shopper was able to infer which package was priced correctly after examining one package of the same weight and one package of a different weight from the bin. According to Lave, et al. (1984, p. 77),

> had he not transferred the calculation to the environment, he would have had to divide weight into price, mentally, and compare the result with the price per pound printed on the label, a much more effortful and less reliable procedure.

(3) Cognition is distributed through time. Products of an earlier event can transform the nature of later events. For example, a summer graduate level course, which causes a middle school teacher to reflect on

her beliefs and practices, can change the way that she approaches her classroom in the fall. Overall, distributed cognition demands that we look at the complex social and cultural context that cannot help but affect the human cognition situated within it.

The theory of distributed cognition claims that individuals use available cultural tools and artifacts as they work together to process information, thus socially constructing knowledge. Because of the collaborative nature of this processing, cognition is said to be distributed among individuals. In other words, a single individual must draw upon others to accomplish a cognitive task. These others may be, for example, face-to-face collaborators or simply opinions expressed in books and journals (Salomon, 1993). Other features of distributed cognition are its emergent and context-dependent nature (Lave & Wenger, 1991; Salomon, 1993). Hutchins (1995) studied cognition "in the wild"—out in the field rather than in a lab—and, based on his data, breaks distributed cognition into several principles. Syverson (1999) uses this breakdown in her work examining technology and human systems as ecologies. Ultimately, distributed cognition rests on the following principles:

- Cognition is distributed across members of social groups. This means that different members can contribute to the cognitions in the group.

- Cognition is coordinated between external—material or environmental—and internal structures. This means cognition is dependent upon the context including available cultural tools and artifacts. For example, a naval navigation team will chart a ship's course through the use of maps, navigational tools, and environmental cues in its workspace.

- Cognition is distributed through time. This means that cognitions will change over time, and will be affected by the times in which they take place. (Hutchins, 1995; Syverson, 1999)

Distributed Emotion

In light of the aforementioned theoretical framework of distributed cognition (Hutchins, 1995; Syverson, 1999) and the belief that cognition and emotion are inextricably linked (e.g. Fleckenstein, 1992; LeDoux, 1996; Ratner, 2000; Vygotsky, 1962), *distributed emotion* can be posited and explored. Furthermore, I agree with Brian Parkinson's (1996, p. 678) belief that "it is necessary to consider the communicator, addressee and the surrounding socio-cultural context in order to understand the emotion process completely, and that cognitive or physiological models are therefore only capable of providing partial accounts of the phenomena in question" (p. 678). As a result, CMC research must begin to look at the entire context of computer-mediated communication to more fully understand the nature of emotional expression. Thus, my

research will take into account the full context of an online learning environment in an attempt to find evidence of a complement to distributed cognition—namely distributed emotion.

CHAPTER THREE: METHODS

The context of a collaborative, online, graduate-level course is particularly interesting when considering distributed emotion. First, online learning environments require students and instructors to operate in very different ways than in face-to-face environments. While the students and instructor are engaged with one another for the purposes of learning, they are also working separately and together to communicate with one another via networked technology (Poole, 2000). Both of these purposes can be emotionally laden. In addition, class members working online tend to be more reflective about their work and their communication patterns (McConnell, 1993). This reflection is often seen in their online interactions and will be valuable in their recollections about their emotional experiences as part of the class.

Within the specific context of an online class, emotions may be coordinated between internal structures of the individual and the external structures of, for example, the computer environment or physical workspace. For example, an individual who is frustrated by a particular class assignment may choose to convey her frustration to her peers online. Her level of frustration may increase or decrease based upon how long she must wait for a response or the nature of the responses she receives. In this way she has coordinated her internal feelings with the external structures of her computer and her classmates.

I think that the close inspection of emotion as part of an online course will show that the three principles of distributed cognition can be applied to a new theoretical construct of distributed emotion.

Pilot Study

In Fall 2001, a pilot study was undertaken which found evidence of distributed emotion in an online course. The data in this study—interviews and online public and private postings—showed that the emotions in this particular course were distributed among people, among structures, and over time. The research methods used during the pilot study were closely examined and, as a result, a number of specific decisions were made in designing this subsequent study to best capture additional evidence of distributed emotion, should it exist in the new context.

Paradigm

Typically a research study is conducted within a single paradigm. The researcher's paradigm is her beliefs about the world and her place in it (Schwandt, 2001). Paradigms differ from one another in their ontologies—their views about the nature of reality—and their epistemologies—their views about the nature of knowledge and our relationships to it. The particular ontological and epistemological beliefs that comprise each paradigm drive all research conducted within that paradigm. Furthermore, since a paradigm represents deeply-held

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philosophical views, paradigms are considered to be incommensurate (Lincoln & Guba, 2000).

For this study, I worked in the interpretivist paradigm, which carries with it multiple assumptions:

- Individuals and groups construct reality. Therefore, there can be no objective truth (Lincoln & Guba, 2000).

- Social action is meaningful, and that meaning can be uncovered through dialogue (Lincoln & Guba, 2000; Schwandt, 2001).

- The researcher investigates social phenomena with the goal of gaining a deep understanding of the phenomena (Denzin & Lincoln, 2000).

- Context plays an important role in the investigation of any phenomenon and this context provides the potential for logical generalizations to other contexts to be made (Denzin & Lincoln, 2000).

- The researcher serves as the primary research instrument (Erlandson, Harris, Skipper, & Allen, 1993) and must identify and engage her biases in order to understand others' actions (Schwandt, 2000) (see Appendix A: Researcher as Instrument Statement).

- Because of the value of thick, rich data demonstrating interrelationships between those data and their contexts, qualitative methods are preferred (Erlandson et al., 1993).

Working in an interpretivist paradigm helped me reach my goal of understanding the nature of distributed emotion as a phenomenon in the context of an online class. Since it was vital for me to consider what people were doing and saying when searching for evidence of distributed emotion, I worked closely with them in order to interpret the meanings behind their words and acts. Because I was researching emotions, it was important to get at each participant's inner understandings from her perspective, and because I was looking for the patterns of emotions across a group, it was also important to interpret those understandings in terms of the larger group context.

Theoretical Perspective

Since the construct of distributed emotion is original, my research draws on the parallel theory of distributed cognition. Specifically I used the distributed characteristics of cognition put forth by Hutchins (1995) and Syverson (1999) and described in detail in chapter two:

- Cognition is distributed across members of social groups.
- Cognition is coordinated between external (material or environmental) structures and internal structures.
- Cognition is distributed through time.

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This theoretical perspective shaped my research design and, as a result, I gathered, generated, and analyzed data to support or refute these categories with reference to emotion. For example, in order to examine the individual nature of emotional expression to best understand the distribution of emotions across group members, I gathered data from participants regarding their personal expressions of emotion during the course. Similarly, to understand the socially shared nature of emotion, I considered an individual's emotional expressions as well as her interpretations of the emotional expressions of others.

<div align="center">Audience</div>

The results of this research should prove valuable to educators and instructional designers who work in online contexts. Hopefully, they will note that students in online contexts are emotional beings and, as such, will consider students' emotions in the planning and execution of online collaborative learning experiences. Furthermore, the students who participate in these experiences may be interested in this research, connecting it to their own emotion-laden work with their peers and instructors online.

<div align="center">Context</div>

The particular program that served as the broad context for this study is an online Master's degree program in educational technology at a medium-sized private university on the West coast. This year marks

the fifth year of the program. The program consists of an intensive thirteen months that run July thru August. The participants in the program are assigned to a cohort of up to 24 students, and this cohort experiences all facets of the program together—online classes punctuated by three face-to-face meetings. The goal of the program is to produce graduates who can use technology in ways that will positively impact learning.

The students come together initially at a week of face-to-face meetings held in July. These meetings provide students with the foundation of a strong cohort community and the technology skills necessary to be successful in working online. The cohort is expected to work together as a community of practice (COP). As such, the designers of the program expressed that students spend much of their time during these initial face-to-face meetings participating in activities that help students forge personal and professional relationships with the members of their cohort and other members of the larger program community (*[Graduate School] Online Masters*, 2002).

Immediately following the July meetings, during the summer school session, the students take their first course online. During the fall trimester, students are engaged only online. In the spring, however, they continue taking online courses and meet face-to-face at a national technology conference. For the final summer session, the students

complete their online coursework and meet at the University for final face-to-face class meetings and a public showcase of their work.

The online classes typically have both synchronous and asynchronous components. The initial face-to-face meetings begin to establish a community among members of each cohort, and courses are designed specifically to contribute to and develop the online learning community. Many of the class sessions are devoted to group activities and collaboration.

<center>Sample</center>

For this study, I used a purposive sample. The members of a purposive sample are chosen based on their relevance to the phenomenon being studied (Schwandt, 2001). Since the phenomenon of interest here is the distribution of emotion in an online course, the sample was comprised of the class members—one instructor and nineteen students—in a single online, collaborative, graduate-level course. This particular course was selected because the pedagogical approaches used—collaboration and discussion—have been found to have higher degrees of socio-emotional content than online courses that do not use these approaches (Vaverek & Saunders, 1993). Additionally, research shows that groups working together online for an extended amount of time are concerned about interpersonal relations and therefore they work on them to make an enjoyable and challenging work

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climate. As a result, the work and interactions of the group are of high quality (McConnell, 1993).

Below is a brief description of each of the participants in this study. The information listed was current as of the end of the course (July 2002).

- *Jonathan* was the instructor of the Organization of Technology in Schools course. He has been teaching as part of the program since its inception and helped to develop the online Master's degree program. As well as serving as an instructor for the program, Jonathan works as a technology consultant, based on the West coast.

- *Angela* lives in the Midwest where she works as a technology specialist at a public elementary school. She was highly experienced with the technologies used during the course.

- *Bonnie* works part-time as a teacher at a non-parochial private school in the South. She also develops curriculum for a private company.

- *Carl* teaches computer applications at an alternative high school and a community college on the West coast. During the course, Carl received a "Teacher of the Year" award.

- *Elizabeth* is an elementary level teacher at a parochial school on the West coast. She lives and works in close proximity to the University.

- *Goldi* lives on the East coast, making her the most "distant" member of Cohort Oak. She works as a technology teacher at a public middle school.

- *Gordon* teaches technology at a public elementary school on the West coast. He considered himself a "newbie" with regard to the technologies that were used in the course.

- *Helen* works for a technology corporation in support of education. She lives in the Midwest and traveled for work on occasion during the course.

- *Jessica* teaches second grade at a public school on the West coast. She gave birth to her first child during the course.

- *Julie* works part time for the library at a University different from the one she attended as a student. Like Angela, she was highly experienced with the technologies used during the course.

- *Lia* lives on the West coast and teaches at a Montessori school there.

- *Michael* works as a graduate coordinator for a different program at the same School of Education where he was a student. He often reminded class members during discussions that he had no public school experience.

- *Peter* teaches at a parochial school in the South.

- *Steven,* like Michael, is employed by the University's School of Education. He works as a technology support person.

- *Susan* lives on the West coast and works as a corporate senior technology manager.

Most of the students in Cohort Oak had returned to graduate studies after having been away from school for a number of years. Also, many of the students lived on the West coast—most of them within driving distance of the University. Finally, the majority of the class members had teaching experience, but not all in public schools.

Post Hoc Design

One of the keys to understanding distributed emotion is being able to grasp the overarching patterns of emotion occurring within a context. Because it is difficult to make out patterns over time or across people while immersed in the context and because my research relies largely on what information my participants provided, I needed to make sure that the participants were in the best position possible to reflect upon both individual and group experiences over time. As a result, this study was conducted post hoc. The post hoc nature of this research demanded that I choose the course to be studied so that my participants could clearly recall the details of emotions expressed during the course rather than during their subsequent work as part of the cohort. For this reason, I looked at a course from the end of the program cycle—one that occurred during the final summer session. As a result, this study was conducted

post hoc with all data collected and generated approximately five months after the course concluded.

While it would have been my preference to conduct this study one or two months following completion of the course being studied, a few obstacles delayed my work. The first was finding an online program that was aimed at adults and was largely collaborative in nature. Once those programs were identified, gaining the permission from program directors proved difficult. I approached the directors of four programs, who did not grant me permission to research in their context, prior to finding the program studied. Those directors who did not grant permission cited various reasons for their refusals, including: challenges facing the program at the time resulting in a restructuring effort, perceived logistical problems such as contacting participants for permission after the course had ended, and concerns about participant well-being— specifically a concern about maintaining anonymity, the perceived burden that would be placed on participants, and the perception that my research would interfere with the trust built among the class members. The final issue was gaining permission for the study from this university's Institutional Review Board. All told, these time-related challenges caused a four-month delay before data generation could begin.

Data Collection and Generation

To study the phenomenon of distributed emotion in this online context, I collected and generated data from the class participants. Because a disconnect often exists between what people say and do, the use of material culture as data for qualitative research is valuable for exploring multiple voices and interpretations of individuals' experiences (Hodder, 2000). The evidence of material culture, which I collected as part of this study, consisted of public postings made online as part of the work for the course, and private e-mail messages sent from students to instructor, from instructor to students, and from students to each other (see Appendix B: Sample Collected Data).

Because documents such as these are considered "mute evidence . . . [which] endures physically and thus can be separated across space and time from its author, producer, or user" (Hodder, 2000, p. 703), I coupled the documents with other data generated with my informants to give the documents greater depth (see Appendix C: Sample Generated Data). The use of documents along with participants' voices is especially vital in research on emotion. Meyerson (1990) warns against using only self-reported data when investigating emotion so as to avoid participants including only socially desirable emotions in their reports. Similarly, Wirshbo (1990) warns against using only observations in emotion

research as observed behavior or language may not easily indicate internal emotional states, even to a trained observer.

The first data generated with the informants were their initial written reflections about the emotions of the group. For these written reflections, collected prior to the first interview, informants were asked to describe the class members' feelings and expressions of emotion during the course—both students and instructor. The informants chose the form that these reflections took (e.g. drawings, notes, journaling), and they submitted these as e-mail messages or attachments to e-mail messages sent to me. All participants chose to reflect in journaling form.

Additional data were generated by a series of electronic interviews with all informants. Conducting the interviews electronically allowed participants more time to consider and compose more reflective responses (Harasim, 1996). CMC typically results in more carefully thought-out and better organized comments, and experienced CMC users can make up for any missing nonverbal cues in their writing, resulting in conversation that is often richer than natural conversation (Rice & Love, 1987). This was evident in the group, for example, by Julie organizing her reflections thematically and by Goldi choosing to express herself often through key phrases instead of full sentences.

Research only points to a few drawbacks of online data collection: lack of computing skills and lack of access to computers or the Internet

(Dillman, 2000; Kaye & Johnson, 1999). Since these participants had been actively participating in online courses, lack of computing and CMC skills was not an issue. Access to a computer was also not a problem. As far as access to the Internet, participants were given the option to complete the interview online or to download the questions to be completed offline and then return them as e-mail attachments.

These interviews gave me an authentic opportunity to see the phenomenon of distributed emotion through my informants' eyes (Silverman, 2000). I conducted a series of three interviews with all participants. During the initial interview I asked each informant for the same information (see Appendix E: Interview Protocols). In order to offer the respondents as much flexibility as possible during the initial interview, I provided them with both a Web form and text document containing the interview questions. As mentioned previously, respondents then chose to respond to the questions online, by using the Web form, or offline, by completing and e-mailing the text document. Additionally, respondents were instructed that they could submit their answers in subsections, allowing them to become familiar with the questions, reflect thoroughly on their responses, answer questions at their own pace, and build their responses over time as they preferred.

I conducted subsequent interviews, which were tailored to each informant, via e-mail. During the second interview I asked any follow-up

questions that arose from the responses to the initial interviews. The final interview focused on particular messages and emotional themes in order to help the informants reflect on specific collective emotional experiences during the course. The messages and themes used in these interviews reflected a variety of emotions—both positive and negative— and emerged from initial data analysis of the documents collected, initial participant reflections, and the first and second interviews. Additionally, the messages used were provided to the informants in the original form in which they appeared.

Throughout the study confidentiality was maintained through the exclusive use of pseudonyms. Participants elected to what degree to participate by giving their consent to use some or all of the following as research data:

- asynchronous public postings that participants had contributed as part of the class
- private messages to the instructor that had been saved
- private messages to other members of the class that participants had saved
- interviews about their experiences of emotion in the class
- written reflections about the emotional milieu of the class

At any time, participants were able to place conditions on the use of their data as it pertained to this study. Specifically, they could designate

specific messages, postings, or utterances that they authored to not be used in the research.

Data collection and generation began mid-December and ran through mid-February (see Table 1). Of the twenty members of the class,

Table 1
Table showing when data were collected and generated.

Data Collected / Generated	When
public postings by individual	Dec 19 - Jan 31
private messages	Jan 14
reflections	Dec 16 - Jan 28
interview #1	Dec 21 - Feb 12
interview #2	Jan 12 - Feb 3
interview #3	Feb 12 - Feb 13

I was able to make contact with eighteen (see Appendix F: Sample Class Member/Participant Tracking Database). This initial contact often came after one or two e-mails to several possible e-mail addresses, but in a few cases came after a phone call. These eighteen class members gave initial permission for me to use their public postings to the newsgroup, but only sixteen responded to the official consent form after additional e-mails and phone calls, when possible. Thus, only sixteen consented to my use of the public postings that they made to the course newsgroup (see Table 2).

Table 2
Table showing participants and the data each provided.

Participant	Consent Given for Use of:					
	Public Msgs	Pvt Msgs	Reflections	Int #1	Int #2	Int #3
Jonathan *	X					
Angela	X		X	X	X	X
Bonnie	X		X	X	X	X
Carl	X					
Elizabeth	X					
Goldi	X			X		
Gordon	X		X	X	X	X
Helen	X			X		
Jessica	X	X	X	X	X	
Julie	X		X	X	X	X
Lia	X					
Marcus	X					
Michael	X					
Peter	X					
Steven	X					
Susan	X			X		
* course instructor						

Five students responded to the open-ended reflection prompt and eight students completed the first interview and member check. Six students completed two additional interviews and subsequent member checks. One student provided some of the private e-mails that she sent as part of the class and another provided a transcript of a discussion occurring via instant messaging. Because consent could not be obtained from the other chat participants, the transcripts were not read or used as data for the study. Several students mentioned that, had they saved any private

messages or chat transcripts, that they would have made those available to me (see Table 2).

Data Analysis

Coding

Throughout all stages of data collection and generation, I engaged in interpretive thematic analysis. As suggested by Ryan (2000), interpretive analysis takes place during the both the coding process and the refinement of themes. The coding scheme itself focused on emotions, but was data-driven and inductive. Each code was labeled an emotional experience or emotional perception, such as "curiosity about what others think," "pride in individual accomplishment," or "hesitancy due to unsure understanding." Additionally, data were coded that directly commented on the emotions of the group as a whole or any subgroups.

Since the coding should help to uncover any patterns of emotions among the participants, the emotions themselves become secondary in importance. Therefore, the key to the coding scheme was consistency among the codes more than each code being the exact emotional term at which anyone reading the posting would arrive. For example, the coding scheme could have as easily relied on "naming" emotions as, for example, "emotion A" or "emotion B." In this case, any patterns among the emotions would certainly come to light, but such a coding scheme would quickly become unwieldy, thus weakening the level of consistency among

the codes. So, with the value of the coding scheme lying in the patterns that may be uncovered, the use of emotional words as codes needed only to be consistent in the researcher's mind throughout the coding process.

During the coding process, each public posting served as the unit of analysis with the possibility of multiple codes assigned per message. The same unit of analysis was used with private messages, but interview data were chunked and coded by idea. All postings—public and private—were examined by topic in chronological order to best understand the context in which each was written.

I think the best way to understand the coding that occurred is to consider some sample data. The following data come from the public newsgroup postings made by the students in the course. These postings were sent during the third week of the course, which happened to be when students were posting personal Web site redesigns to the newsgroup. These redesigns were to be based on a book that the class had read in which the author advocated particular user-centered design principles such as not having too much text on any given Web page and allowing users to navigate the site using pull-down menus from which they could choose the information they wished to see. While reading the book, the students were in agreement with many of the author's suggestions, but after redesigning their own sites accordingly, new opinions came to light.

The selected ten messages are taken from several discussion threads but are all on the same topic—students' opinions of the author's Web design advice. These messages are presented chronologically according to the thread where each appeared. All names and identifying characteristics have been changed to ensure confidentiality, and for the sake of clarity, quotations from prior messages on this topic used in these messages have been removed. Also, when needed, spelling has been corrected and formatting has been modified.

Subject: Re: Don't Make me Think - Lesson for the day
Date: Mon, 20 May 2002 18:37:37
From: Michael

Jessica, I still haven't dabbled in Flash or Shockwave. I just don't feel like those are skills I HAVE to have right now. I plan to dive in head-first once the coursework and wedding are done.

Back to Susan's original point, Liz and I talked about this yesterday too. The suggestions [the author] makes are great for e-commerce and company homepages. But ours are student pages. We're not trying to capture the attention of surfers who happen by, or attract their business ... these sites are text-heavy and geared toward the prof (and each other).

Nevertheless, my site was staler than last year's bagels and I needed to do something, so I'm glad we had the assignment!

:-)
Mike

Subject: Re: Michael's changes
Date: Wed, 22 May 2002 17:34:04
From: Helen

Michael,

The background was just the "spice" you needed to jazz it up a bit – and you are right, it is not distracting. Like the layout a lot... but as I am going through everyone's sites, I'm finding that I am not a fan of pull down menus... oh well. I guess I'd flunk [the author]'s course if he taught one :-)

Very organized, intuitive and easy to navigate.
Nice job,

Helen

Subject: Re: Michael's changes
Date: Thu, 23 May 2002 11:24:58
From: Peter

I think there is a legit argument against pull downs being "user friendly" . . . I have used them in the past on sites I have worked on . . . made it "easier" for me to fit everything into the window . . . but as a user I hate them . . . they mean I have to go looking for what I want to find . . . I prefer a text based navigation where the essential links show up in the initial window . . . if I have time I'll scroll down and look at the secondary level links . . . just a personal preference . . .

- Peter

Subject: Re: Michael's changes
Date: Thu, 23 May 2002 14:06:54
From: Bonnie

Hmmmm....good point Peter, I hadn't thought of it that way...I went with drop down menus on my site with my changes...now I am wondering...

Subject: Re: Michael's changes
Date: Thu, 23 May 2002 17:58:31
From: Michael

Thanks, Bonn! Don't know if I've ever been called "very organized" before. :-D

To those who complained about the pull-down menus, sorry, I don't like them either. I wanted to make the site easier to navigate, but frankly I think they're eyesores, so I may not keep them beyond the grading of this project.

Mike

Subject: Re: Michael's changes
Date: Thu, 23 May 2002 18:45:37
From: Lia

Nice comment Peter, I feel the same too.. dropdowns remind me of search engines... Oh, I love them on accessibility pages where you can have the fonts on the page changed to the size you want. I wanted to do that on all of my pages but did not have the time to play with it.. hmph..

Subject: Re: Lizzy's site and screenshots
Date: Wed, 22 May 2002 17:28:41
From: Helen

Liz,

I don't know what to say. I liked your site the old way (although I loved your rollover for the mailbox when I clicked on it earlier today). I'm a very visual person (as you are) and like the site the way it was. Quirky, wacky, out of the ordinary but very intuitive and very YOU. I know this doesn't help with this assignment though :-)

Helen

Subject: Re: Lizzy's site and screenshots
Date: Wed, 22 May 2002 15:45:34
From: Elizabeth

I feel the exact same way!!!!! I appreciate your honesty though. I miss my old page. : (It had a lot of love in it. But I'm glad to get the assignment over with.

on to the next.......

Liz

Subject: Re: Lizzy's site and screenshots
Date: Fri, 24 May 2002 12:57:03
From: Elizabeth

I don't think it was pointless....I just prefer my own style to represent ME. If I were designing a professional site to represent others, I would likely follow [the author]'s recommendations a lot more seriously, while also trying to reflect the personality of the individual I'm representing.

I think I lost a lot of myself in my own recreation of my site and I had become very attached to my original.

I'll get over it. :)

Lizzy

Subject: Re: Site Changes Take Two
Date: Tue, 18 Jun 2002 05:19:24
From: Elizabeth

Mike, sorry I'm just getting around to [commenting on your second round of Web changes]....

Though I think it looks good, I'm finding these drop down menus detestable. I have altered my site to include them as well and I hate the way it changes my site to something cold and boring. I liked your previous page with the centered table better. It filled the

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page with something and my eye wants there to be something there.

Liz

When I examined these data, several elements led me to choose particular emotional terms as codes. For example, I retained the emotional labels that participants gave to their own and others' feelings, such as Peter's and Elizabeth's uses of "hate." I also allowed emotionally charged phrases to lead me to label a message with a particular code, such as Lia's remark, "I wanted to do that on all of my pages but did not have the time to play with it.. hmph," which was coded as indicating her frustration with the situation. As a final example, the use of qualifiers—words or phrases that convey doubt or uncertainty—was seen as indicating emotional content. When Helen tells Elizabeth that she preferred Elizabeth's Web site before it was redesigned, she prefaces her comments with, "I don't know what to say." Her use of this phrase indicated hesitancy and this hesitancy might have resulted from feelings of being insecure or feelings of concern that she would hurt Elizabeth's feelings. Because of the context of the whole message, including Helen's understanding of Elizabeth personally, I chose to use the code of "unsure whether helping or not."

I also considered extraverbal cues as markers indicating emotion. In Elizabeth's reply to Helen, her use of repeated exclamation points led

me to code the message as "excited that others understand." Several of the students include smiling emoticons in these messages. This influenced the degree of emotion seen in some messages. For example, in Elizabeth's message that proclaims "I'll get over it" she adds a smile. I took this to mean that her strong negative feelings toward the author's advice have lessened. By contrast, a month later, when she sends her final message on the topic, Elizabeth expresses negative emotions, which I took as stronger due to the absence of a smiling icon. It is also important to note that some messages may not contain any emotion and thus may remain without a code. This occurred with several messages in the study, but none within this thread. One message like this was sent during a collaborative project when Steven posted, "sure, i will do what it takes. send me the file [sic]."

Often choosing the right code for a message became a question of degree of the emotion being expressed. Looking again at Elizabeth's last two messages she moves from preferring her design style for her page to finding the author's suggested menu strategy to be "detestable." Having messages from the same student that convey different degrees of the same emotion (dislike) helped in my coding decisions. This also shows that the coding process was an iterative one. As a result of coding Elizabeth's last message, I was better informed later to code the earlier message more appropriately.

Throughout the coding process, I maintained a codebook (see Appendix G: Sample Codes from Codebook). This codebook is an organized list of codes, including descriptions of the codes, information that distinguishes one code from another, and examples from the data. This codebook was not a static document, but rather was distilled and polished during the course of the research (Ryan & Bernard, 2000). As I decided on a code, I recorded it in the codebook. For example, the code of "concern" was described in the codebook as "you notice something and mention it as a concern, but you are able to move on from it." During coding, I was attentive to codes that were similar to one another. When considering "concern" as an emotion, I also remained aware that a message may have conveyed "frustration"—a similar emotion, but one that I had defined as "impacting an individual's behavior more directly than concern." Because of similarities such as this, it was vital that I continuously compared codes to help bound them. These comparisons were recorded in my reflexive journal so that they could be examined in detail. Periodically I reviewed and refined the codes used.

This detailed examination revealed codes of "hesitancy to offer an opinion" and "cautious about coming on too strong." Comparing the data under each of these codes helped me better define each code and make sure that the data were coded consistently. Also, at times it became necessary to expand or collapse a particular code. For example, when the

data on "enthusiasm for working together" become overwhelming, I divided it into smaller groups of "enthusiasm for learning benefits of working together" and "enthusiasm for social benefits of working together." Similarly, a code called "confused about a disconnect" that was applied to only a small amount of data were collapsed into a larger one called "confused about a topic."

Finally, it is important to keep in mind that the coding of documents took place at the same time as data generation and that these two activities informed one another. For example, interview data helped me to confirm an interpretation of a participant's emotional expressions and document coding led to questions for follow-up interviews. Because of these checks on the coding process I was able to reconsider my initial interpretations that, because she expressed very little emotion in her postings, Julie kept herself removed from her peers. After my initial interview with Julie I learned that she had emotionally "broken down" in a previous class and that she did not wish to repeat that experience. As a result, I changed the code on several messages from "distancing" to "cautious."

Coding was one way that I analyzed the data in a two-phase thematic analysis process. Until I was completely familiar with each informant as an individual, the context of this study, and the concomitant emotional experiences, I was not able to accurately

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determine patterns of distribution. My plan of analysis mirrored that of research on distributed cognition: becoming familiar with the individuals and context separately and then examining the full situation (e.g. Hutchins, 1995).

Analysis on an Individual Level

During the "individual phase," I got to know the emotional and communication patterns of each of the informants, as well as the timing and impact of emotional events during the course. One way that I became familiar with the data on this individual level in my pilot study was by coding the data using the NVivo data analysis assistant. NVivo allowed me to code the data after I had imported them into the program. I was able to examine the data chronologically or by code, both of which facilitated the initial assigning of codes and the subsequent comparisons among them that I made. Furthermore, I maintained my list of codes with NVivo and was able to track the changes in coding that occurred during the process of analysis. Although I chose to use NVivo during the analysis phase of my research, the actual analysis of the data was done by me and not in any automatic way. NVivo simply allowed me to organize data in several ways, such as chronologically or by theme, search both data and codes, and sort the data by code.

One feature of NVivo—a size restriction on imported files—came to light early in my pilot study. I had intended to import the data in one file

so that I would be able to conduct a single search on all public postings. This would have enabled me to find, for example, if one emotion only appeared during a particular period of time or in a particular informant's postings. Because of this file size restriction, I imported my data week by week, according to the workweek of the class. This turned out to be a beneficial software constraint as I was able to better familiarize myself with the emotional expressions of individuals and the context on a weekly basis.

In order to best familiarize myself with the timing and impact of events within the course, I translated the coding into weekly profiles (see Appendix H: Weekly Profiles). Writing these profiles not only helped me to crystallize the timeline of events in the course, it also allowed me to consider what might be considered critical emotional incidents during the course—a step toward recognizing group patterns.

I also composed individual profiles (see Appendix I: Individual Profiles), based on my coding, that allowed me to take a closer look at each class member's emotional communication patterns. Writing both types of profiles during the pilot study proved so helpful in understanding the data in an individual sense, with attention paid to the participants and the context, that I repeated the process.

Analysis on a Group Level

After gaining familiarity during the "individual phase," I moved into the "group phase," in which I examined subsets of data more closely so that distributed patterns might emerge. These subsets consisted of critical emotions and incidents that have emerged from the individual and weekly profiles. In the pilot study data, anger became a critical emotion because only two class members ever expressed it and that happened in the same discussion thread. Other examples of critical emotions emerged during the pilot study, such as those that were expressed only during a particular task, by someone serving in a particular role, or those that seemed out of character for a student. Although I searched for these particular patterns in this study's data, I was unable to find similar patterns. For example, I sorted the emotions expressed by all class members on a weekly basis in an attempt to get at patterns of emotions over time (see Appendix J: Codes Appearing Most Often per Week). During this course however, those emotions most expressed by the class members remained relatively unchanged with the exception of participants exchanging enthusiasm during the first week of the course for praise in subsequent weeks. This information provided additional insight into the patterns of emotion occurring throughout the course.

One way in which I needed to view these subsets was by individual. Because I could not view and search the messages sent by one participant using NVivo—viewing and searching could only be done by week—I chose to record individual emotions and the factors causing these emotions—triggers—in an Excel spreadsheet. I set up the participants' names in rows and dates in columns. I then entered numerical codes that represented each emotion and trigger. For example, "enthusiasm for working together" became the numerical code 11-3. During the pilot study, I had expected to see patterns of emotion among people by examining the spreadsheet carefully, but instead found that it had become unwieldy with more than 100 different numerical codes over the course of approximately 85 days. One way that I might have been able to more easily discern patterns through visual inspection was by distilling the codes further to reduce the total number included in the spreadsheet. Had I done this, I would have lost valuable details such as an individual's terms for her own emotions or the various triggers that can all lead to the same emotional expression, both of which are significant when looking for evidence of distributed emotion. I was, however, able to conduct searches on the spreadsheet that proved valuable. Specifically, using the individual and weekly profiles, I was able to search for and examine occurrences of particular emotions. These searches provided evidence for the distribution of emotion among people.

For this study I again created this type of spreadsheet so that I could closely examine the emotions of the participants (see Appendix K: Sample Spreadsheet Showing Codes by Person).

Another data visualization technique used during the pilot study with hopes of discerning patterns of distributed emotion over time was the creation of weekly emotional timelines. For this I used a software program called TimeLiner in which I could enter participant names and the emotions that they had expressed each week. The data were then presented chronologically one week at a time in a timeline format. Considering the pilot study data in this way taught me that time is a relative concept in terms of an online course. Specifically, time scales expand and contract depending on the context and the emotional expressions occurring.

While looking at all of the data hour by hour was unnecessary, examining emotionally critical incidents in this way was quite valuable. For example, during the coding process of the pilot study I had determined that the two weeks of planning the major project was emotionally significant and that an up close look at those two weeks, day by day, was valuable. On the other hand, two weeks of reading and discussing texts did not need to be looked at in such chronological detail. For this study, instead of creating a timeline of each week, hour by hour, I looked at the critical incidents and determined the scale of time that

was most appropriate for a close examination in order to find the patterns of distributed emotion over time. For example, in one discussion thread, Jonathan commented, "Stop being so weasely!!!" In my initial reading of the data, it appeared that this comment was directed to Lia— the person who had made the last comment prior to Jonathan's outburst. After a second reading of the data, it appeared that Jonathan could have been directing his comment toward Michael, who had been engaged in discussion with Lia before Jonathan's comment. In order to better understand who might have been talking to whom, I charted this discussion thread on an hour-by-hour timeline (see Appendix L: Sample Timeline of Critical Conversations).

Finally, to better understand the connections among the students in the class, I created a spreadsheet on which I could indicate who—via the course newsgroup—offered constructive feedback to whom regarding class projects (see Appendix M: Public Feedback among Students). While I had hopes that different subgroups of students would come to light after examining the patterns of feedback, none emerged. Some students were consistent in their feedback while others were not.

<center>Ensuring Quality of Findings</center>

Considering distributed emotion to be a viable construct is useless if this study had not been designed in a way that ensured the quality of my findings. As an interpretivist researcher, I seek to make logical

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generalizations based on the findings of my study and lessons learned from related literature. It is my responsibility to ensure that the conclusions that I draw are the result of a well-constructed and well-executed study.

One way to judge the quality of interpretivist research is through trustworthiness. Trustworthiness specifically indicates whether or not the research findings will be credible to others. It can be broken down into four qualities, each of which parallels a traditional goal of research: credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). Credibility means that the data presented here is considered to be true by the informants in the study (Lincoln & Guba, 1985). By ensuring the transferability of my research, I have provided information to assist readers in applying my work to their own contexts (Lincoln & Guba, 1985). Finally, I established trustworthiness through dependability—ensuring that my research process was logical, traceable, and documented—and confirmability—ensuring that my interpretations are grounded in the data rather than "merely figments of the inquirer's imagination" (Schwandt, 2001, p. 259).

I have demonstrated credibility using two tactics. I participated in prolonged engagement—engaging with participants and data over time— which allowed me to: build trust between my informants and myself, learn about the culture I am studying, and note any distortions that may

have become part of my data. I also engaged in persistent observations—attentive and detailed observations of the newsgroup data—which allowed me to open up to the multiple influences of my informants and the complex context in which this study's focus resides (Lincoln & Guba, 1985).

I have also demonstrated credibility through my interactions with two groups of people—my informants and my peers. I engaged my informants in member checks regularly to ensure that my understandings of their experiences were accurate.

> Member checking provides for credibility by allowing members of stakeholding groups to test categories, interpretations, and conclusions. . . . It is in this step that the members of the setting being studied have a chance to indicate whether the reconstructions of the inquirer are recognizable. (Erlandson et al., 1993, p. 142)

I verified the understandings that were generated with my informants at three different stages of my research: with clarifying questions in the second and third interviews, summaries following all interviews, and checks of all ideas used in the final report of findings (see Appendix N: Sample Member Checking).

Additionally, I engaged with some of my peers in a peer debriefing group (Lincoln & Guba, 1985). A peer debriefing group serves as a forum

for testing the themes that emerge from research data (Spall, 1998). It lent credibility to my work by showing me new ways of looking at my data. Another role of the group was to ask questions to help me "understand how [my] personal perspectives and values affect the findings. Such a questioning approach serves to minimize bias within the inquiry" (Spall, 1998, p. 280). My peer debriefing group for this study consisted of two colleagues who are familiar with both the nature of online communication and the interpretive methods that I used in my research. We met face-to-face for approximately two hours per week and communicated through e-mail messages as needed throughout the course of the study (see Appendix O: Peer Debriefing).

To ensure transferability I have provided the readers of this study with thick, detailed descriptions of the context and my findings so that they may see similarities to their contexts and thus transfer my findings to their own situations as appropriate (Lincoln & Guba, 1985). Finally, the creation of an audit trail—"used by the inquirer as a means of managing record keeping and encouraging reflexivity about procedures" (Schwandt, 2001, p. 9)—can attest to the potential dependability of the research process and the potential confirmability of the study's findings (Lincoln & Guba, 1985). My audit trail consists of the data collected and generated; member checking summaries of the data; my reflexive journal, wherein I have written my questions and decisions regarding my

research (see Appendix P: Sample Reflexive Journal Entries); and my codebook, which includes a record of my analytical reasoning.

Another set of criteria for judging qualitative research addresses authenticity: fairness, ontological authenticity, educative authenticity, tactical authenticity, and catalytic authenticity. Fulfilling the criterion of fairness means that the informants' voices are represented in the findings in a balanced way. Ontological authenticity shows that, as a result of their participation in the study, the informants' understandings become more complex. Educative authenticity refers to the greater understanding and appreciation of others' points of view that informants may gain as a result of their participation in the research. Tactical authenticity and catalytic authenticity both involve taking action. Tactical authenticity refers to the extent to which informants consider taking action as a result of their participation in the study, while catalytic authenticity refers to the extent to which they actually take action (Schwandt, 2001).

As the researcher, I can construct a study that strives for full authenticity, but only fairness is within my control. For the other types of authenticity, I can only hope that my work has led or in the future will lead my informants to these experiences, as I may not see any evidence of them (Schwandt, 2001).

It is my hope that my work has resulted in a trustworthy and authentic research study, wherein I found support for the theoretical construct of distributed emotion and, perhaps more importantly, an understanding of how it manifests in the context of an online course. These understandings have led me to be able to make logical generalizations that can be applied across online collaborative learning experiences and, perhaps, across all collaborative learning situations. Had my research not offered evidence supporting distributed emotion, I would have been satisfied with having taken a closer look at emotion in this context and hoped that this closer look will help others to plan, facilitate, or participate in online courses effectively.

As individuals we are connected to one another; it would be difficult to make it through a day without feeling the effects of this connectedness. Through distributed emotion, I am trying to better understand the nature of these connections. As my understanding increases during subsequent studies, I plan to share my findings with others with hope that they will see the impact their emotions have on others and others' upon them. As a result, students may learn more effectively, work teams may reach a higher level of success, and families and friends may better draw on one another for support.

CHAPTER FOUR: FINDINGS

The students in this online Master's degree program in educational technology both learned about and participated in a community of practice through their cohort. The students of Cohort Oak took all of their classes together during the program and the Organization of Technology in Education course, which came in the last trimester of the program, proved to be a context rich with evidence of distributed emotion.

Communication Technologies

Members of Cohort Oak used multiple communication technologies during their work in the program and this particular course—from the more familiar such as telephone and e-mail to the less familiar— newsgroups (NG), electronic mailing lists (listserv), Tapped In (TI), and instant messaging (IM). Each of these technologies had particular characteristics and capabilities that governed how students could use the tools while completing their course work.

Newsgroups (NG) were the primary means of communication during the graduate courses. Students would subscribe to a separate newsgroup for each course, so that in one trimester they could be responsible for reading messages in at least three different newsgroups. In addition to the students, the instructor was also a participant in the newsgroup for his course. Newsgroup messages were available on each

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student's computer via a newsgroup reader of their choice. The messages were actually saved on the university's server, but could be downloaded to the student's computer for use offline, if the student chose to do so. Newsgroup messages were organized by topic into threaded discussions, rather than by date and time.

Another of the communication technologies that was put to use by the graduate program was the cohort electronic mailing list, which the students referred to as the "listserv." Cohort Oak had their own listserv through which students could communicate with one another. The students determined that only one faculty member would be allowed to participate in the listserv with them—their cohort advisor, who was not the course instructor. Like the newsgroups, students elected to join the listserv and when they joined they were offered different levels of participation: regular read and write ability vs. weekly read-only ability. After a student wrote a message, she would e-mail it to the listserv's address. The listserv then automatically delivered copies of the message to each subscribing student member as e-mail. Thus, the students did not need any technology other than e-mail to access the messages. Because they appeared as e-mail, the messages were delivered in date and time order, though students had the ability to create a subject line and could allow the messages to be read as threaded discussions.

Tapped In (TI) is a multi-user virtual environment used by many of the program faculty for synchronous class meetings. Tapped In allowed students a little more latitude in their communications than the text used in the newsgroups and listserv. Specifically, students could "chat" with one another and could also express emotions through the use of "emote" commands. For example, if Carl was excited, he could use an emote command to tell the others in the group that "Carl jumps up and down." This added another dimension to the conversations that took place in Tapped In. To use this technology, students would log into a particular Web site at an appointed time in order to have a realtime, text-based discussion. TI also allows users to record their conversations for later reference. Additionally, participants in TI can upload resources to be shared and can open Web pages to show each other information during realtime sessions. Synchronous chatting online through Tapped In was more similar to talking for the students than use of many of the other technologies available to them. Yet, Bonnie explained, "it took us longer to feel 'open' in [TI] sessions, to 'trust' the instructor so to speak." This perspective shows a preference on the part of the students, which will be discussed more later, in having time to reflect before posting their thoughts and emotions online.Another communication technology that allowed synchronous chatting and that was used by the students was instant messaging (IM). For some students this required using

specialized software, AOL Instant Messenger (AIM). The use of IM was not mandated by the graduate program. To use AIM, students had to be signed up as an AOL user with a unique screen name. To chat with others, a student needed to know others' screen names—their "buddies." AIM allows students to see which of their "buddies" are online at any given time. Anyone who was running the program was considered to be online and could be contacted to chat with others. The students tended to use IM in two ways: for planned chats and incidental conversations. Sometimes they would arrange to be online at a particular time to talk with each other. For example, some students admitted that when they were engaged in Tapped In class sessions they would also be holding side conversations via IM. Students could also sign on whenever they liked and would, when seeing a "buddy," stop what they were doing to chat. These incidental conversations proved valuable when students were working alone and experienced difficulty. They could look to see who was online from their class and could then ask for assistance.

<div align="center">Cohort Oak</div>

In this Master's program, students found a whole new way of learning as compared to their former school experiences. Revelations like this were often communicated in the online "classroom" setting:

When I joined the [online master's] program, I was in a position again where I was the student, and I honestly (in the very

<div align="center">100</div>

beginning) felt that old resistance to actually apply myself...that old

attitude of "let's just get it done" came creeping back. Fortunately,

right from the beginning, I found myself surrounded by professors

and peers who had goals of learning together to open up more

doors for gaining insight and information.

These students particularly appreciated the online nature of their learning. Stephanie recalled, "I had daily (multiple times per day sometimes) meaningful and intellectual conversation with others in my cohort and my professors. I found this to be MUCH more valuable than any in class setting I've ever been in."

The fact that Cohort Oak had been together for ten months prior to the Organization of Technology in Education course meant that, as one student put it, "[W]e had already bonded and formed impressions of one another." The students had already uncovered many characteristics of the cohort and of the individuals who comprised it by the time they entered the final trimester of the program. Gordon found that the "cohort seemed to be very open to any and all suggestions and ideas." Bonnie realized that students in Cohort Oak did not "[sit] on their hands—they respond[ed]." "All in all," according to Goldi, "because of the camaraderie of the group, we helped each other through [the course]."

Preference for Text

Because their program was online, students had to rely strongly upon text to communicate. Gordon felt that reading only others' text was lacking:

Without actually hearing a person's voice left me at a disadvantage and I had to rely on how the written words were arranged. Most of it was based on the personality of the writer and knowing who they were.

Because Gordon felt disadvantaged in reading "voiceless" text, he relied on the initial face-to-face sessions, when he was able to meet the person who would soon be behind the text. He said,

If I had not the opportunity to meet and get to know the other cohort members, things may have been different. It's very easy to take things the wrong way unless you know who is writing the messages. The tone of the voice was based solely on the personality of the individual.

Other students, however, expressed a preference for using text to communicate with others. Michael, for example, explained,

I get too many thoughts going at once when I get stimulated in conversation, and end up not saying things right. In written communication [. . .] I get to think about my response and get it

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settled before it's out there. I'm just too scattered, and I need the

time to consolidate.

Peter also appreciated having "time to formulate [his] responses." The

time factor available in asynchronous online communications was

valuable to Angela, too. She described it by saying:

> I am not good with words on the spur of the moment and
>
> expressing myself properly—getting all the words out of my head—
>
> is sometimes difficult when it is done verbally and not in a written
>
> communication. Some people have the perfect rejoinders when it
>
> comes to verbal discussions/arguments. I tend to think of them
>
> later on when the words aren't all tangled up in my head.

Elizabeth also preferred communicating via text, but she did so because

she believed expressing herself in this way was more representative of

herself. She explained:

> I am much more comfortable with my own words and thoughts
>
> when communicated via writing than spoken word. There's
>
> something about the sound of my own voice that alters the
>
> thoughts I'm having. My written "voice" is much truer to my spirit
>
> and I can express myself freely and far clearer. Hard to explain.
>
> But you will definitely know me better if you read my words than [if
>
> you] listen to my speech.

For several students, communicating online was more comfortable than communicating face-to-face in the moment. Yet, others needed the initial face-to-face meetings in order for the online communication to be comfortable.

The preference that some students showed for text over voice translated into a preference for one form of online communication over others. Michael explained his preferences when he told the group, "[My preference for using text is] [p]recisely why I prefer NG to TI, personally. I like to take time to be expressive, and say what I truly feel, and TI doesn't allow for it. Also why I prefer online to F2F conversation." Preferences like these and the use of various communication technologies under different circumstances were characteristic of the members of Cohort Oak.

Online Course: The Organization of Technology in Education

The Organization of Technology in Education course had a focus on technology, differentiating it from the theory-driven courses that the students had taken previously in the program. Jessica described the course content as consisting of "'fun' assignments." Angela also enjoyed the change in focus of this course. She recalled, "I really enjoyed [Jonathan's] class because it 'spoke' to the side of me that loves fiddling with computer software and making it bend to my will, so to speak."

As mentioned before, the members of Cohort Oak had been communicating with one another and working together for two trimesters prior to registering for the Organization of Technology in Education course, taught by Jonathan. Because of these prior relationships, Jessica expressed that "Feelings and emotions from this class in particular are hard to separate from the cohort as a whole. [Jonathan's] class took place during our last trimester so many emotions were already in play prior to class starting." Thus, the students found it difficult to separate their feelings about the course from their feelings about other stressors emerging at the end of the program as a whole. In other words, as expected, the students were not always able to attribute certain emotions solely to Jonathan's course. Angela noted that the students "did not focus [their] full attention on [the course]." This split attention was due in part to two features of the program, rather than the course itself. First, the students were nearing the end of their Master's program altogether. Second, as a conclusion to the program, immediately after the final trimester courses ended, students were expected to meet for a final face-to-face session during which they would turn in their completed Master's research projects and present their findings as part of a public exhibition known as Showcase. Therefore, the mood of the cohort at this time varied from "a state of relief that the end was in sight" to "tense, since we were all wrapping up our research projects and preparing for [Showcase]."

Jessica confessed that the students were generally "stressed" preparing for Showcase, while Michelle observed, "Most class members were exclaiming about feeling overwhelmed in general—'drowning.'" Yet, as Jessica reminds us, Cohort Oak's stressful feelings likely had "little to do with this course in particular."

Because the students found it difficult to separate elements of context and time when recalling their emotions during the course, when looking at their emotional expressions through the lens of distributed emotion, focus had to be maintained on all the elements of the course: people, context, and time. The patterns of distribution that emerged came from close examinations of: (a) the support provided for students by the cohort structure, (b) the subgroups that grew out of the cohort, (c) the instructor's expectations for the course, (d) the student and instructor responses to one another's emotional expressions, and (e) conflict which occurred among the students during the course.

Cohort Support

Interactions among cohort members had a dramatic effect upon members' emotions. Angela believed,

> One of the purposes of this cohort was to provide mutual support
> in getting through this program. If you are not honest in
> expressing your emotions, you are short-changing yourself of one
> of the great benefits of being a member of this group.

Most members of Cohort Oak described the cohort as their primary support while working toward their Master's degree. Helen described the experience by saying, "We all reacted to each other's joy, fear, frustration and stress. [We felt a] strong connectedness with each other." Jessica saw the cohort as serving a similar purpose and pointed to the fact that "having already been with the cohort for 10 months before this class started, we had already bonded." She described the group as "very cohesive" and appreciated that "[m]ost of us had the same feelings and reactions, and we shared them readily." Goldi believed that they were all successful in the program due to the "camaraderie of the group" and that cohort members "helped each other through it." Months after graduation, Angela commented, "Cohort Oak was and is one heck of a supportive group!"

The student members found Cohort Oak to be very valuable. They demonstrated this value by the amount of intra-cohort communications. According to Julie,

> Our cohort had a reputation for what [a professor from a prior course] considered "excessive" posting. There were jokes about us being "overachievers," or else just being too "chatty," but what wasn't understood is that we were a very active online COMMUNITY, and that the "extra" posts were the equivalent of [face-to-face] chat and social interaction. As an online community,

we used every avenue we could to communicate, including

newsgroups where we "saw" each other daily.

Julie realized that the connections among members of the cohort were

strengthened through very active communication. She also observed that

these postings were often supportive in nature and that the support grew

over time saying, "We did become more supportive of one another as time

went on. I noticed a lot more virtual back-patting."

<p align="center">*Professors as Outsiders*</p>

Unlike the course newsgroups, which were established and run by

the faculty members in the program, only one instructor had the

opportunity to participate in the Cohort Oak listserv. Jessica explained

that

the listserv was subscribed to by all cohort members as well as [an

advising professor]. As a group, we decided that other professors

not be allowed. The listserv was used for a lot of communication

among the cohort—due dates, TI notices, 'outside' discussion.

Some postings were about [Master's program] related things, while

others were not.

Goldi shed light on the group's decision not to allow faculty to participate

in the listserv by saying: "We were a tight [cohort], very loyal to each

other. The professors [except for the cohort advisor] were usually the

outsiders."

Jonathan as Outsider

Jonathan, as an instructor, was outside the cohort, and he did things that firmly established his position as the instructor of the course. For example, he issued two warnings during the course. The first warning came during the first week of the course: "I'm ALWAYS online so don't even THINK about slacking-off!" Student reactions to this posting varied and Gordon, who typically did not communicate his emotions, saw it as alienating Jonathan from the students:

> I was a little taken aback with this comment thinking who was slacking off? We've gone this far in the program, why would he need to tell us this? [. . .] [O]ur prior learning history as a cohort never indicated that any of us were slacking off. I felt if anyone was slacking off then that should be addressed on an individual basis and not publicly aired with the cohort.

The students' alienation that Gordon sensed continued to be felt in response to Jonathan's second warning, "I have a creepy feeling that you will all checkout the second [that Showcase] begin[s]." Michael took him to task for his assumption by asking, "What kind of question is that? In 6 weeks, we have more posts in this NG than in any other class we've taken all year!" According to students, Jonathan was "making [assumptions] based on not knowing us." Angela realized that "There was no basis or history for his [warnings] other than what he might have

experienced with other cohorts." Although interpretations of these warnings varied among the students, for some these comments solidified an instructor vs. student atmosphere in the course.

Jonathan also asserted himself as the course instructor by constantly describing his busy professional life in the newsgroup. Julie recalled "a sense of him being incredibly busy." This sense came from postings like one from Australia at the beginning of the course: "I've been traveling cross-country, doing full-day workshops followed by an after-dinner speech. Tomorrow morning I'm delivering a huge keynote and have yet to finish my paper, let alone slides." Jonathan also posted "what [he wrote] to accompany [his] girls & tech. conference" and "an article in-press [that he was] sharing [. . .] before it [was] fully edited." These references reminded students that Jonathan was not like them and pushed them to communicate among themselves—keeping him out of their discussions. Julie remarked, "I wouldn't have shared [anything emotional] with him. I believe he was too busy to deal with that in any case." She realized that any emotional communications directed at Jonathan would not likely be well met. Similarly, Angela "felt that he was not necessarily focused on the student but more on what he was doing himself." In this way Jonathan managed to maintain a position of power in the class, remaining clearly apart from the students.

The students in Cohort Oak shared their feelings with one another through particular communication technologies in which Jonathan was not a participant. Many of these conversations took place using instant messaging. Angela remembered "a couple of IM sessions [when we shared how we were feeling]." Julie also recalled this form of communication when she said, "Several times in [. . .] AIM other classmates and I would talk about our irritation with one individual or another, or a particular project's frustrations, etc." For Bonnie, communicating with cohort members via IM became a habit with "typical instant message gripe sessions, which served to relieve stress." Students also engaged in spur of the moment conversations with colleagues. Helen participated in one such conversation, reporting to others, "I spent some more time (pulling my hair out) this afternoon—Michael helped out a lot (he was on AIM)." Another mode of communication that, like IM, the students in the cohort "owned" was e-mail. Jessica often used e-mail to convey her emotions in the context of working collaboratively. Julie used e-mail with different classmates to "[keep] each other up on how each was doing that week— professionally, emotionally." She also mentioned, "I did send out some supportive private e-mails."

As students communicated using a variety of tools, they coordinated their use of these tools in ways that made the

communications flow naturally. For example, Angela explained that some students "expressed anger over the [database] assignment—in [listserv] postings, by e-mail, and by phone." Helen was one of those students using these forms of communication to discuss the database assignment—conversations that included both emotional reactions to the assignment and plans for completing it. For example, in the newsgroup she told everyone, "I was in AIM with Peter—talking about the Filemaker project—we wanted to continue our discussion later. We will be on TI at 7:00PST tonight for whoever wants to join in the fun!" Helen's comment demonstrates the coordination that often took place as students communicated with one another. Helen knew that the conversation that she and Peter engaged one-on-one in IM would be beneficial for other students to read, but that continuing the discussion with more people and using the capabilities of IM would not be the best choice for the discussion that would take place about the database topic. As a result, she shifted the conversation from IM to Tapped In, allowing other students to participate more comfortably.

Julie pointed out another example of coordination of communication channel and emotion expressed. She recalled, "There were some snappish exchanges in the newsgroup, which didn't carry over to the cohort list." Some emotional discussions did occur in the course newsgroup, but since those were open to all class members the

conversations did not become redundant—happening repeatedly in different communication modes. As would be expected though, such en masse emotional discussions often resonated in other modes of communication. For example, Julie remembered after one such discussion in the newsgroup that she "listened to Michael vent a bit on IM later and was supportive for him." While reactions to the newsgroup-based emotional discussions were communicated in a variety of ways, the emotional discussions that happened in the newsgroup were not reiterated in other "places."

Offloading and Loading Emotions

While coordinating their use of different communication technologies, the students were able to offload and load their emotions into their conversations. In this course the emotions offloaded most often were feelings of stress, frustration, and anxiety. One particular way that students were able to offload their emotions through their communications was by asking for specific assistance. These requests were met with help from other members of the cohort—help that relieved the stress that had led to the request for help. Angela remembered, "There were quite a few e-mails in the cohort listserv expressing concern on the technical issues." She knew that if she "got stuck on something" she could "send out an e-mail on the cohort listserv and usually get an answer or get pointed in the right direction."

One specific topic that led students to offload feelings of being overwhelmed was a growing concern about the amount of postings made to the newsgroup. A few commented in the newsgroup that there seemed to be too many messages to handle. Elizabeth told everyone, "I don't know about everyone else, but I don't really care for the over breeding going on in NG! Every time I look away and then look back, the messages have increased exponentially. STOP IT!!!!!!! :)" Peter offloaded his feelings by keeping a running tally throughout the last weeks of the course: "1929 postings in this NG as of 3:13 PM EST on June 19, 2002." Michael addressed the issue in the newsgroup with his posting:

> Ya think maybe we're taking this to some extremes? We've averaged about 150 posts a day this week. That's insane. I'm as guilty as anyone, but I wonder if we could scale back just a bit so we can have some semblance of a life outside NGs??

Others mentioned the abundance of postings in their reflections on the class. Bonnie said, "I often found it actually overwhelming to try and keep up with the many conversations and add thoughtful responses." Goldi mentioned that the students also offloaded this frustration into the listserv. She recalls, "We were constantly reminding each other not to over do it. Sometimes we said things like, 'Quit the overkill in Jonathan's newsgroup.' There was tension over that. I think we ALL felt it."

There was one pitfall to students offloading stress in conversations with their cohort members: others would subsequently load the stress that had just been offloaded. At times the offloading of stress for some students meant trouble for others. Angela admitted that this happened to her during the database project. She said, "I eventually got a little frustrated with the lack of pre-planning (getting the [university] end in place, for example). But I think that frustration was more a reflection of what the majority of the cohort was feeling." Angela knew that she was feeling frustrated even though she had completed her project and was generally where she needed to be in her work. Julie was aware that her stress could have added to the stress of others, as happened in Angela's case. She revealed,

> I felt that explaining stressful circumstances to the group would
> add to their burdens at a time when they were already doing as
> much as they could handle. Holding my tongue about my own
> issues in the larger community was a way of support as well.

While expressing stress may be helpful to the person doing the offloading, Angela and Julie became aware of the negative ramifications that offloading emotions could have for others.

Offloading stress was not the only way these students found to relieve their emotions. They found that offloading stress went hand-in-hand with the loading of support from Cohort Oak. Gordon said,

"Sharing my frustrations with fellow cohort members helped me air my concerns and get a little support." Julie agreed, "It made us feel better to support the others," and expressed this exchange colorfully by saying, "Probably you can think of it as mutual stress grooming—if we were a chimp band, that is." Elizabeth loaded feelings of enthusiasm as support from the newsgroup. She told the group, "I actually love NG. [. . .] I find these conversations really charge me and challenge me to think."

In addition to loading general support throughout the class, Angela pointed to one incident in the newsgroup that served as "a bit of a diversion in a very stressful period." This incident involved some harsh words exchanged between two members of the cohort (which will be discussed later at length). Angela loaded feelings of relief from her own stress as she read others' stressful postings, knowing that at least her stress level was lower at that moment than her peers'.

Use of humor. Another way that students loaded feelings of support was through the use of humor. As many students shared humorous postings with their peers, others could load stress relief in the form of a chuckle. At times students used humor deliberately to help others through a frustrating experience. For example, when working on his radio project, Carl managed to do something on his computer, but when it came time to do it again he did not remember exactly how he done it in

the first place. Since Michael was not able to offer specific technical support, he used humor to support Carl by posting this anecdote:

Reminds me of an episode of Cheers [sic] where Woody [the bartender] was mixing every conceivable alcohol trying to come up with a new drink. He finally came up with one that was great after about 12 hours, and Norm said, "what's in that?" Woody looked around at the dozens of half-empty bottles and started crying.

Not only did Carl pick up on Michael's humor—other students also expressed their appreciation for his posting.

Bonnie explained, "[H]umor was strongly present within our group so that really prevented me from getting overly stressed." At one point, the students talked about the assumption that newsgroup text is devoid of emotion. They discussed the strong reactions they have to the humor present in the group's postings. Goldi said, "I don't feel like you guys are sterile [. . .] I laugh out loud with milk coming out of my nose at your text." Helen often experienced a similar reaction to reading newsgroup postings. She explained,

[The same thing] has happened to me a lot, that I'm laughing loudly while reading something one of you have posted. My husband and kids think I'm crazy. My [four year old] daughter once came up to see what I was laughing at—expecting to see something—anything but text!

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Based on their reactions, it is easy to see how one person's humor caused at least a moment of stress relief for others in the cohort. For most of the students in the class, humor provided a way to support one another and often that support emerged when others loaded a laugh from the course newsgroup.

Loading past emotions. In addition to loading emotions as they were experienced during the course, the students also referred to events in the cohort's past as a way to load past emotions. In some cases these past emotions were loaded when students revisited a past discussion topic. For example, when discussion shifted to whether or not one can construct knowledge alone, Lia posted, "Hey, Peter, remember this one? Ooh, I better stop right now!" Michael then responded, "We're right back to 'can you learn alone?' Groan … ;-)" In this example, Lia's reference to the past discussion evoked a groan from Michael. She then replied, "Stifle yourself and don't go there! We don't want Peter to backslide and lose his epiphany! LOL [laugh out loud]." In this exchange Lia mentions the previous conversation, Michael alludes to the emotions felt when the conversation originally took place, and then Lia shifts those past emotions to humor—meant to evoke positive feelings from Peter and, perhaps by extension, others in the cohort. Jessica similarly loads emotions from earlier in the program, albeit briefly. While working on an assignment she exclaims, "AAGH!!! Having flashbacks of having to build

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that fax machine at [our initial face-to-face]!!! :-P" She easily recalled the frustration of the prior assignment but expressed those feelings with the same humorous spin that Lia did.

At other times students deliberately referenced past group emotions as a way of offering support to others. Lia again referenced the past with her newsgroup posting that said, "I still remember those 2 favorite words we used at the beginning of the program to support each other when faced with people like this in our work place…'baby steps.'" Angela explained, "[B]aby steps [. . .] became something of a cohort battle cry." By invoking this phrase from the initial face-to-face meeting of the cohort, Lia alluded to the feelings of the group at that time. Similarly Angela referenced a lesson learned in a prior course by posting, "P.S. I think that at times we have all forgotten Rule #6 [. . .] from The Art of Possibility [sic] [. . .] 'Don't take yourself so seriously.'" In contrast, Helen's references to group history focused more on individuals than the group as a whole. In one discussion she mentioned that she was "[u]sing Peter's analogy (again) from 1st tri. :-)" This reference to Peter could evoke pride stemming from his creation of an analogy that Helen found to be valuable. She also referenced a past shared experience with a classmate before disagreeing with his point of view: "I hate to disagree with you, Lego Buddy, but a laptop is as important to a teacher as a pen and pencil—it is a necessary tool." The reference to their experience

together on the Lego project established a sense of connectedness which helped divert any defensive feelings from the classmate with whom she disagreed.

Roles in the Cohort

In distributed cognition, playing roles alters the cognitive capacities of all members of a group (Hutchins, 1995). I see a parallel in distributed emotion, as these roles also alter the emotional capacities of group members. As the students in Cohort Oak coordinated their communication, they were also coordinating cognitive and emotional tasks within the group. This occurred as different students played different roles within the group—each of which affected the students emotionally. For example, because one student took on a particular role, others did not have to focus their efforts in the same direction—causing them not to redouble their efforts both cognitively and emotionally.

Cognitive Task-Based Roles

Several cognitive task-based roles emerged in the cohort. In doing the cognitive labor associated with each of these roles, the group member impacted others emotionally. For example, Helen often played the role of group coordinator or leader. This was seen in her coordination of efforts as she planned the open project discussion in Tapped In for any cohort members who were in need. Helen also showed her leadership role when she posted,

This assignment is hard to get the "group feel" on—isn't it? How about this idea... I can start the database [then pass it around for others to make changes and refine it with all of us looking at it at each stage]. What do you think? This way, everyone is learning a bit about Filemaker Pro and it is truly a group project.

In suggesting this, Helen served as group leader as she helped others to organize collaborative efforts for projects. Because Helen did the leadership work in the group, other students were free to focus on other elements of their work, and thus preventing any worrying about who was in charge of doing what relative to this assignment.

Jessica also played a role in which she did cognitive work that benefited the other group members emotionally—that of group organizer. Jessica's role as group organizer involved keeping "one place for information from all classes." She began her organization because "[i]t was too time-consuming to have to visit each individual professor's calendar to see due dates, reading assignments, TI schedules, etc. Better to have it all in one place with links to the syllabus." In fact, Jessica was the first student who posted in the course newsgroup saying: "Syllabus and assignment info has been added to our cohort summer schedule. [URL] :-)" She explained, "[M]y mind is constantly multitasking. I could tell the cohort due dates and project assignments off the top of my head without much reference to the syllabus or calendar. Since I would rattle

due dates off in TI, people would ask me to remind them or post a calendar." Interestingly, Jessica's role in the group emerged because she needed to organize things that "made [her] life easier." She explained, "I tend to be a scheduler and knew I had to do these things for myself. If others could benefit from the work I had to do for myself, all the better." Others in the group were able to benefit both cognitively and emotionally from her organization. Many students expressed their appreciation and awe to Jessica for "keeping us organized." Gordon in particular remarked to the group, "I'm really in awe of those of you who are able to keep everything organized! There are times when I feel there is an abundance of information to get through and not enough time to do it all." Since the students were able to rely on Jessica to keep track of and communicate important items such as due dates, they did not feel additional stress from having to keep schedules individually.

Elizabeth played a role within the group that, like Jessica's, removed a burden from the other students—the role of the confronter. Because Elizabeth was comfortable directly addressing things that bothered her in the newsgroup, students who were also bothered but wary of confrontation could get their needs met through Elizabeth's postings. Angela described Elizabeth's style of confrontation when she said, "She really 'shot from the hip' in her repl[ies]." Julie also recalled that she knew "from a conversation with [Elizabeth] about an incident

with a professor in an earlier class that she was not afraid to take someone on," although that confrontation did not occur in a class newsgroup. Elizabeth herself demonstrated her style when she chided Steven for the way he posted links to his online work. She said, "Steven, the day you put the http:// before your ng links, I will have a big party and scream with joy! SAVE US THAT ONE STEP, MAN!!!!!!!" In this as in other messages, Elizabeth was comfortable directly addressing something that bothered her.

Perspective-Based Roles

In addition to those roles that kept students from duplicating efforts on particular tasks or took the burden of certain tasks away, a different kind of role emerged in the group. These roles centered more on certain students' perspectives toward the subject matter of the course. As the students' perspectives were expressed online, others could rely on those individuals to represent a particular point of view. For example, Susan often took on a critical perspective in discussions about technology in schools. She asked her classmates, "What about children and families who do not have computers? They still exist." In this way she was bringing up a point of view that had not been considered by the cohort. She continued to help others to see this alternative viewpoint when she posted,

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I understand you are a teacher, and your focus revolves around your role in education, but I think the bigger issue is these types of policies do further divide economic classes. It is a big problem which needs a lot of continual discussion. As far as I'm concerned it should be mentioned over and over until people understand the real problem.

For others in the cohort, looking at topics through a critical lens either never occurred to them or did not come easily. Susan was able to do so, and her posting this perspective lessened what could easily become a stressful burden on others of each considering multiple viewpoints themselves.

Similarly, Peter shared his viewpoint with the cohort that attention to language is important in discussion and that attention to appearance is important in design work. In this way, Peter played the role of group aestheticist. He referred to one part of his role when he prefaced his remarks with, "By now you all know I am really stuck on the use of language." In one discussion about learning, Peter drew the group's attention to the way they kept referring to technology as showing "what WAS learned" as opposed to considering that technology "should really be used TO learn." In this respect, his role served the group in the same way that Susan's maintaining a critical perspective did. Peter's

complementary role had him focusing his feedback on the look and feel of other students' Web designs. For instance, he told one student,

> I love the new look . . . is there any way that you can incorporate the [project] heading into the table with the picture? . . . that way you have balance on the page—keep the picture centered but center the [project] heading over the picture.

Since Peter's focus in offering design feedback to others was appearance-related, other students who did not have an artistic eye could relax knowing that someone in the group could help them in this area. Thus, even a group member's personal perspective on the course topics could help others in the class emotionally.

Emotion-Based Roles

Finally, students in Cohort Oak played roles that are best described by the "trademark" emotions expressed. In other words, certain students constantly and consistently expressed the same emotion or emotions in their communications with other class members. As a result, the others in the class could draw on these emotions or could feel released from having to communicate the same emotions to others— knowing that they were "covered." Jessica and Peter both served in this capacity with regard to empathy. Jessica's empathy was communicated mostly outside of the newsgroup. She explained, "I am extremely empathetic to others. [I try] to be as helpful as possible and tend to worry

if others are not comfortable with their assignments/skills/etc." Peter, on the other hand, expressed his empathy through his words and actions *in* the newsgroup. Regarding the redesign of his Web site, Peter told his classmates, "I know a number of the cohort are on dial ups and it makes it easier on those individuals when my site has fewer graphics to load." Not only did Peter redesign his Web site to make it easier to navigate as specified in the assignment, but he also attended to the connectivity limitations of his peers. In other instances Peter seemed to know what other students were going through and helped them accordingly. For example, he offered,

> Hey Roxanne . . . check out Angela's original post when she launched her radio show . . . it has her step by step processes and when I was stuck I went back there to refresh my knowledge about the .rm and .ram files and their relationships . . . might help, Rox.

Gordon's emotional roles in the group, like Jessica and Peter's, were based on helping others in the cohort to feel supported. Gordon offered support by confessing to others that he was a newcomer to the technology used in the class. He said, "I'm just a beginner myself, so don't feel like you're alone in all this!" This confession could put others at ease by letting them know they were not the only beginners in the group. While others were clearly beginners, Gordon was the only one to share the details of the technical difficulties that he had during the class—

something that he voiced often. For example, when students were working on the database project, he posted,

> I'm nowhere near where some of you are with the software, and I really don't understand how to improve the form, other than little things like the font size, etc. [. . .] Thanks for understanding what level I'm at with this program.

In addition to Gordon's making other beginners feel at home in the cohort, he also played the role of "keeper of the cohort." In this role he made sure that the cohort as a whole did what it was designed to do—support its members. For example, Gordon repeatedly posted messages proclaiming the positive attributes of the cohort. He let the group know, "This is a great support group!" He also pointed out the helpfulness of the group: "Thank you all who made valid suggestions! You could see what I couldn't, very interdependent, wouldn't you say?" Finally, in his role as "keeper of the cohort" Gordon helped the group members see the value in the work in which they were engaged together by asking, "Can you envision using this in your workplace? I certainly can!" Gordon's cohort-centered communications helped the group to remain strong throughout the course without all members having to focus on keeping the cohort healthy.

Lia's roles were similar to Gordon's in that they focused on the positive emotions of her and others. She filled several emotional roles

within the cohort. First, she consistently communicated enthusiasm throughout the course. For example, she posted, "me too.. me too.. wanna learn" to show her enthusiasm for new Web design elements that others were willing to teach, and she posted, "will try it today.. still playing..ladidah. Thank you!" when someone posted a suggestion about her Web site. Lia's enthusiasm also extended to class discussion when she expressed, "Ooh, we're going to play with ideas...fun."

In addition to her enthusiasm, Lia filled the important emotional role of nurturer. She nurtured classmates through tough technical issues—going to great lengths to make sure that they were successful. For example, when Susan expressed her frustrations with an assignment, Lia offered, "[W]ant me to drive over tomorrow morning? Let me know." Her nurturing also extended to those in the cohort who were offering encouragement to others. After Gordon encouraged Susan during a stressful time, Lia followed up by posting, "Thanks Gordon... The sacrifices and priorities we make will be for 3 more weeks. we can freak out or look at it like ..yeah!! we're almost there!!! LOL!" Interestingly, Lia nurtured Jonathan as much as her fellow students. Jonathan kept the students updated on his traveling to and from Australia. Before he left Lia commented, "Hope you have a safe and a restful (seat arrangement) trip. <grin>" and prior to his return flight she wrote, "[H]ope you brought your own pillow!! Have a calm flight back!!"

Perhaps Lia's most important emotional role in the group was that of mediator. Bonnie mentioned, "I think Lia really helped ease the tension in the group a lot." In the role as mediator, Lia usually looked at all sides of an issue being discussed. She often posted comments like, "Heehee! Depends on what side of the glass you're looking at. ;-)." During one discussion about class readings, Jonathan questioned something Michael said. Lia stepped in as mediator between the two, posting, "I don't see any contradiction on Michael's statement..just balance…like everything in life." Lia's role as mediator was constant even when she was under duress. While she was exploring several points of view during class discussions, Jonathan constantly pushed her to call a single point of view her own. Angela described one of these exchanges

> [Lia] is such a nice person and her responses were typical Lia responses—conciliatory, trying to see both viewpoints. I know that when I saw Jonathan's "attack," I did a mental gasp. Again, he didn't know her very well and probably didn't realize that this was a part of her personality. I thought she handled it very well and very diplomatically.

According to Angela, "Helen and I felt badly for her, although Lia handled [Jonathan's pushing] graciously, as always." Even in the face of conflict, Lia's role as mediator led her to see all sides of a situation and express them in class.

Another role that appeared in Cohort Oak was the "conflict-avoider," and it was filled by Bonnie. This particular role was more passive than the others, but was equally a part of the distribution of emotions among the students in the class. Bonnie admitted that she "honestly stayed out of any sort of conflict type scenarios…just didn't have time for it." She also mentioned, "[O]nce you respond, you're involved and have to stay involved." Bonnie practiced this type of avoidance from the very beginning of the course when Jonathan warned students that they should not "slack off." She remembers,

> I know Jonathan was just being funny with the first message… I really ignored the whole issue [. . .] and the # [sic] of our postings…our group was who we were and it wasn't worth hashing it out and trying to dissect and/or break it down/apart.

As mentioned previously, the cohort's messages demonstrated that they loaded and offloaded their emotions, but because of Bonnie's "conflict-avoider" role, she remained outside of any emotions stemming from conflict. She mentioned, "[F]or me the 'emotional status' of the group was stable, even though I know it was not for others." While Bonnie avoided the conflicts because of the time it would take for her to be involved, she benefited by not loading many of the emotions that were offloaded into cohort communications by her peers.

A Combination Role

One role, that of technology mentor, provided both cognitive and emotional support to group members. For this course, Angela moved into the role of mentor to other members of the cohort. She explained her shift into this position when she said,

> Looking back on the class, because I was so comfortable with the "geekiness" of the assignments, I found that I was in more of a mentoring position to many in my cohort. It was a different kind of footing than what I experienced with them in other classes.

This role was actually a familiar one for Angela, as she serves as mentor in her job as a school district technology specialist: "I subsequently found myself working with my [peers] in much the same role in which I work with teachers in my district, which was a very comfortable feeling for me." She remarked, "It was my 'thing' and it was a contribution that I could make, knowing that I was in my milieu and the others didn't seem to be." Angela knew that by taking on this role she was supporting her peers, much like Jonathan had asked the students to do, and her peers appreciated it, one of whom remarked to her, "As always, continuing to learn from you."

Angela's support often helped to clarify those parts of the course that remained unclear to students. For example, she was the first person to post her finished radio show, expressing that she was "going to be

brave here" by doing so. At this point in the class, the students did not know exactly what Jonathan expected from their work, so it made sense that Angela viewed turning in her work first to be a courageous act. She did so partly to provide a model for her classmates.

Prior to posting her finished product, Angela "had been in contact with other cohort members via e-mail (both individually and via the listserv) and had come to realize that many were still worried about how to do this assignment." She knew that other members of the cohort needed support and that Jonathan expected them to support one other. She also knew that she had the ability to help them. Yet, with Jonathan's expectations for class discussion being so unclear, she "really thought it over for quite a while before [she] posted [help], since [she] didn't know what Jonathan would think." Posting directions for doing what she had done "felt pretty close to cheating," but because Angela saw fellow students in need of help, she decided that mentoring them was necessary and "appended how [she] had done [the radio project]." As a result of Angela's postings, "there seemed to be a sense of relief" among many cohort members about completing the project.

Angela again stepped into the role of mentor to the group when they were faced with the database assignment. She reflected,

> After sensing the dismay that so many seemed to express over the
> assignment, via the cohort's listserv, I volunteered to send out a

PDF of a handout I had used within my district to teach teachers

how to use FileMaker Pro on a basic level. Several took me up on

it.

In this case, her technical assistance benefited at least one other member

of the cohort as Angela recalled, "I do specifically remember Peter

thanking me and asking one or two additional questions, saying it had

gotten him going with the program."

Students Serve as Models for One Another

Many of the members of Cohort Oak modeled for one another. By

seeing what each other was doing, the students were able to gain

valuable information about what they themselves were attempting. This

lowered the stress level, as students were able to gain insight on ways to

progress when they found themselves in similar instances. For example,

Bonnie described how she took advantage of the modeling by her

classmates during the radio project when she posted,

I am freaking out here. I have never streamed any audio and I

haven't the first clue about how to go about doing this. I honestly

am way behind. [. . .] Your posts are helping though, I'm taking

notes :) Thanks.

She appreciated that she was able to follow the lead of others in the

cohort through their postings to the newsgroup. Later she expressed

more appreciation for the modeling done by her peers:

So often we start things thinking, "Hey, this will be so fun and easy

and things will just fall into place," but then we find out deep into

the process that we have that overwhelming sense of anxiety that

we bit off more than we could chew...it is actually very helpful to

hear the "real story" now, before I start, so I can go in with a

realistic vision and knowing that I am going to have to contribute

some major time for this.

Peter also appreciated that members of the cohort took on the role of

modeling how projects should look. When others provided him with their

databases to serve as models for the one he was trying to create, he

wrote, "[M]y biggest hurdle with this was visualizing what it was going to

look like once it was up and accessible on the Web. [After playing with

yours] I literally see the project more clearly now . . . thank you, I need to

SEE." Helen noticed this trend of students taking advantage of the

models provided by other students and remarked about another

student's Web site, "other examples from other cohort mates helped you

make yours better."

Bonnie summed up the cohort's coordination of various

communication technologies and the emotions she was able to load from

others when she remembered:

In discussing upcoming assignments and due dates, I would jump

in with an occasional "ugh" or "give me strength" kind of response

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to which others would add something (usually humorous) and that

was it. But we restricted these types of comments either to phone

conversations or instant message conversations, out of the view of

the group at large and professors.

Her comment shows how she used the coordination of structures and

people to receive emotional support. This coordination was very fluid for

the students in Cohort Oak and there is no evidence that having to

coordinate these elements added to the stress level of any students—they

were seamless parts of the cohort and the course.

Summary

The cohort was a group of students who remained together

through the program—taking classes and working together. As a result of

the cohort's staying constant while having different instructors for each

class, the instructors were viewed as the outsiders. Thus, the students

turned to modes of communication to which the instructors did not have

access when needing a safe place to communicate their emotions. Within

the cohort, and when using different modes of communication, students

offloaded and loaded emotions. Because the cohort had been together

over time, students were able to refer to events in the cohort's past as a

way to load past emotions and encourage others to do the same.

Additionally, different students played different roles within the group—

all of which affected the students emotionally. In this way, emotions were distributed among the members of the cohort.

Subgroups

A number of subgroups existed within Cohort Oak during the Organization of Technology in Education course. Each subgroup contained two or more members of the cohort.

Some of the subgroups were de facto among the class members. For example, those who were classroom teachers formed one such group. Another subgroup was made up of students who were excited about the technology focus of the course. Angela explained,

> I frankly found the "geeky" nature of it a relief from all the theory and heavy reading that we had had up to that point and still had in our other classes. I really enjoyed his class because it "spoke" to the side of me that loves fiddling with computer software and making it bend to my will, so to speak. However, in retrospect I believe I was in the minority in this feeling—big time!

Julie was also a member of this "geeky" subgroup. She observed,

> For some of us, we had been waiting to get to this part of the program, where we would be actually using more of the fun technologies. For others who had been having trouble with using the technologies so far, it seemed to be piquing their frustration.

Although the students in these de facto subgroups had much in common, they did not seem to be as connected as the members of other types of subgroups that existed during the course.

The subgroups that were the most intra-connected were those that formed because of student choices. One type of student-chosen subgroup in this class was based on personal connections. Bonnie explained this type of subgroup saying, "[L]ike when you speak to your closest friends, you say things that you wouldn't necessarily say to the general public." That was, according to her, the way "smaller sub groups started to form." According to Bonnie, these subgroups were not competitive with the rest of the cohort. She explained,

> A lot of the best ideas came from those side conversations [among members of a subgroup]. Then, one person would say, "Hey, that's an interesting way to look at it, let's bring that topic up," and then we'd get the whole class involved and boy, could some of those entailing conversations be engaging and thought-provoking.

Personally-Connected Subgroups

Another type of subgroup in Cohort Oak—the personally-connected subgroup—crossed the de facto divisions mentioned above. The personal connections on which these subgroups were based could also be considered a meeting of the minds among students (see Appendix Q:

Personally-Connected Subgroups). Angela and Helen formed one such subgroup. Angela explained,

> I also got to know Helen more personally through phone calls and IM. We have the same temperament and work ethic, it turns out. Helen and I have found we can pick up the phone or drop an e-mail weeks or months later and we're right back on the same wavelength. I think she's probably the sister I never had.

The closeness between Angela and Helen came through in the course newsgroup. When Angela disagreed with one of Helen's postings, she exclaimed, "This is one of the few disagreements we have had!" and when Helen agreed with Angela she added, "LOL... Posted about the same time, Angela. 'Great minds....'!"

The "Color Commentators"

Julie was a member of a subgroup—an extremely cohesive one that called themselves the "Color Commentators" [pseudonym]. The "Color Commentators" formed when, as Julie tells it, "We [Elizabeth, Michael, Peter, Ben, and myself] found that we were all a bit more tech-savvy than most of our classmates and also a good deal more sarcastic and less conventional." These personal characteristics served as the glue that held the subgroup together. Julie described this group as "a small subset of my classmates with whom I was close—we didn't hold back a lot from one another." Like Angela and Helen, this subgroup's closeness was

apparent to all class members from its members' newsgroup postings. For example, at the beginning of the course, Elizabeth was waiting for one of the books for the course to arrive in the mail. She told the cohort, "I STILL haven't gotten the book we are supposed to be using [. . .], but Michael is supposed to come over today and bring his copy for me." During a later discussion, Michael illustrated one similarity of opinion on which the subgroup was based. He posted, "Elizabeth and I DID NOT plan to post that same sentiment at the same moment! I promise!!" Michael also made multiple references to Elizabeth's school in discussions about classroom technology, showing that he had become very familiar with her workplace.

Face-to-Face Origins

Interestingly, all of the subgroups that formed based on personal connections had some origins in face-to-face meetings. The "Color Commentators" formed in part when "three [students] were physically in the same location during the first TI session for 'moral support.'" Angela formed a subgroup with Marlene after they bonded face-to-face. She explained, "When we met [for the winter face-to-face session], Marlene and I discovered we both enjoyed forms of cross stitch and loved books (she's a librarian), so we "bummed" around." Angela pointed out that her relationship with Marlene grew after their initial face-to-face bonding: "We began [talking] via phone and e-mail not too long after [meeting face-

to-face] continuing even after the program has ended. We also chatted via IM several times." Other subgroups formed when members worked together to share technical know-how during the face-to-face meetings that occurred in prior trimesters of the program.

Angela suggested that the actual proximity among cohort members impacted these closer subgroup relationships. She recalled, "I was more acquainted with Julie and Lia than as just students, too, but the distance factor stood in the way of forming anything very close." For Angela, not being able to interact face-to-face at all in a relationship was a limiting factor as to the closeness of the bonds she formed. She also observed:

> [T]hose who lived in and around [the same city] seemed to develop more close social ties than the [those from other parts of the state] and the rest of us outside [the state]. The [group in the same city], while they worked well and played well with the rest of us, did do some things together socially. However, if anyone was in town, they were welcomed wholeheartedly into the group—it wasn't exclusive. I remember Goldi mentioning what a terrific time she had when she went [to visit] and stayed with [another cohort member].

Perhaps this need for at least some face-to-face interaction was unique to Angela, but the evidence of how the closest groups formed seems to

indicate that additional face-to-face interaction was important to the subgroups.

Unconnected Students

These personally-based subgroups remained constant throughout the course and were primarily comprised of those students who had a high level of presence in the newsgroup. Commenting on the others, Bonnie mentioned, "[T]here were a couple of group members who really made an effort to stay away and stay 'removed.'" Angela also noticed this behavior. She observed,

> There were a handful [of cohort members] who tended to isolate themselves, in my perception. Most notably, Susan never fully participated in the cadre's listserv, for example, and this was somewhat reflective of her overall relationship to the cadre as a whole.

Angela described a different member of the cohort as "withdrawn" and another as "not into sharing much about himself." These students who interacted less often with their peers did not belong to any subgroups that were personally-based.

Although some students seemed on the fringe of the cohort as a whole, others who were highly active in the course chose to avoid membership in any one subgroup. Lia was one member of the cohort who shunned membership in any subgroup based on personal

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connections—choosing instead to shift her connections among many students or to have only tangential relationships to subgroups. Julie remarked,

> Lia played a role as a sort of foil or peripheral nonmember of [our] subgroup, yet closely involved in some ways—strange, now that I think about it. I think the subgroup itself offended her by its apparent exclusivity. She's like that anyway, a demon about "inclusion" vs. "exclusion" in the classroom and everywhere else.

Lia seemed to object to the very idea of becoming a member of a subgroup based on personal connections, preferring instead to connect with all members of the cohort.

Assignment-Based Subgroups

Still another type of subgroup based on student choice formed among the members of Cohort Oak while they were taking the Organization of Technology in Education course. These were subgroups based on assignments in the course (see Appendix R: Assignment-Based Subgroups). These subgroups often looked like collaborative work teams and the students elected whether or not to join a particular group. One assignment-based subgroup consisted of Jessica, Lia, and Gordon and centered on the streaming radio assignment. Jessica was instrumental in forming this group since she had proposed the original idea of using a script for the project. She issued an invitation to others who might want

to work collaboratively. Jessica mentioned, "A few of us were discussing alternatives to interviews [for the radio project]. Scripts came up and some people were interested in recreating a play or movie." Thus a group began to form among those students who wanted to work together on a project involving a script. Lia signed on, saying, "Jessica's invite on a play sounds so juicy!!!" The subgroup that was beginning to congeal hit a snag as students wondered about the logistics—how would each of them learn the technical side of streaming audio while working collaboratively? As a result of their concern that working together would not fulfill the expectations of the assignment, the students returned to their plans to work independently and "interest kind of fizzled out." Lia's interest, however, had not "fizzled" and she reintroduced Jessica's idea by saying:

> I'd rather learn the techie part with the memory and image of you
> guys talking and we all laughing at the end of the project. Just my
> thoughts…So Jessica, can you abandon interviewing [your
> husband] for this one and I will save the kids' projects for a rainy
> day and let's really have some laughs with this one?

In response to Lia's suggestion, she, Gordon, and Jessica "decided to band together to create something different." Thus an assignment-based subgroup was formed. Lia later described their communications as "Lots of e-mail…sharing ideas…sending files…lots of back and forth." Jessica summed up the experience when she told the cohort, "The project was

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great fun and the collaboration made the content that much more interesting. On our own, we could not have come up with something so creative. Thanks Lia and Gordon!"

Not all of the assignment-based subgroups looked like Jessica, Lia, and Gordon's group. In one instance a subgroup formed among several women who independently conducted family history interviews for their radio projects: Angela, Goldi, Julie, Bonnie, and Helen. Angela was the first student to post her radio project, and her work seemed to inspire others to do interviews with family members. Goldi's inspiration turned to action, and she let Angela know it: "Guess what!!! After listening to your clip I recalled that my mother and grandmother were [coming to visit] for a couple days! I interviewed [my grandmother] about Dec. 7th." Similarly, Julie commented, "I'm also with Angela on wanting to preserve that part of the family story." When Helen posted her interview for her cohort members to see, she mentioned, "Like Angela, I interviewed my Mom and Dad a few days ago." The existence of this subgroup was not lost on the other members of the cohort. Peter mentioned that he wished he "could have interviewed [his] grandmother (both are gone) and been a part of the WW II connection." Many of the students in this group worked together to iron out the technical details of their independent projects. They also considered how they might pull their independent projects together. Angela wondered for example, "[T]here has to be some way to

eventually hook these together!" She envisioned "a whole body of first person stories." These examples demonstrate that no matter how subgroups formed around assignments in this course, the students called on these groups for support.

Distributed Emotion in Subgroups

In general, the members of subgroups that formed due to student choice—whether by personal connections or by assignments—distributed their emotions in the same ways that the larger cohort did. Specifically, students within the subgroups played the same roles that they did in the cohort at large. For example, when working with his radio project subgroup, Gordon maintained his role of supporter. He told his group, "I enjoyed working collaboratively with you and Lia. You two are great! Thanks for the support and feedback." Similarly, Angela maintained her role as technology mentor, a fact that Bonnie acknowledged by saying, "This [radio project] caused me some frustration. Thanks Angela for the help!" Angela served in the role of mentor in her database project group as well. She explained,

> I do know that I partnered up with three others who had little or
> no familiarity with the program. I figured that as long as they did
> the overall design and were willing to run some trial data in it to
> make sure things worked, I would do the technical work on our
> database and make it Web-ready. I saw it as a way to relieve some

of the stress others were feeling, since I really wasn't feeling any

about this assignment.

Finally, Helen carried her leadership role from the whole cohort to her

database project group. She often posted comments like, "[C]ould you

please be the 'point person' to getting our database up on the Web? That

would be a great contribution to the group!"

Not only did the roles of the cohort spill into the subgroups, but

the offloading and loading of emotions that took place in the cohort also

occurred in the subgroups. Angela spoke about one of the subgroups of

which she was a member when she said, "If I had IM up and running,

sometimes Marlene and I would chat and share. I know she was ready to

throw in the towel even toward the end and we would talk about that."

This statement shows that Marlene was able to, at the very least, load

support from Angela, a fellow member of her subgroup. Julie and other

members of the "Color Commentators" offloaded their frustrations into

subgroup communications. She explained, "With this particular group,

we established early on that we could vent as much as we liked without

any judgment from the other four." At one point, Julie offloaded feelings

that conflicted with those of another "Color Commentator." She

explained, "The conflict I enjoyed was between myself and another of my

close friends in the subgroup and we still laugh about it." Apparently, the

people involved with the conflict were able to offload their feelings and get

past the conflict. Julie also mentioned that after Jonathan criticized one of Michael's postings, she "listened to Michael vent a bit on IM later, and was supportive for him." In this way she helped him to load support. The "Color Commentators" also used humor as a means of support, in the same way that the entire cohort did. At one point Julie somewhat guiltily admitted to the cohort that she often skimmed their Web pages instead of reading all of the text closely. Peter chose to use humor to help Julie feel better about her admission. He replied, "Oh we are all so mortally wounded . . . we thought you devoured each and ever word slowly savoring all of its meaning in the grand scheme of our prose . . . oh well . . . ;)" This playful, sarcastic exchange served as support from one member of the "Color Commentators" to another.

The presence of at least one subgroup affected the emotions of the cohort at large. The "Color Commentators" group seemed to be more inflexible in its membership, and as a result, the members tended to put each other's wants and needs above those of others in the class. This feeling of exclusivity showed through to the cohort at one point when collaborative groups were forming around the database project. Michael, one member of the "Color Commentators," had asked Lia and Carl if he could join their group for the project. Shortly after that, Elizabeth, another member of the "Color Commentators" subgroup posted, "Hey Michael, can we work together as well do you think?" In her posting,

Elizabeth neglected to ask Lia and Carl if it would be okay to join the database project group, restricting her request only to the other member of her subgroup. Interestingly, Michael's reply mirrored the exclusiveness apparent in Elizabeth's question when he replied to her, "I think I'm working with Lia and Carl. I have no problem adding another if it's OK with Jonathan"—again leaving Lia and Carl out of the loop.

Summary

During this course, within the cohort, a number of subgroups formed. Some of the subgroups were de facto among the members of the course, and others formed based on student choices. Those based on personal connections remained constant throughout the course, but not every student belonged to a personal subgroup. Those based on assignments formed throughout the course, but were temporary in their durations. These subgroups most often looked like collaborative work teams. In one instance, however, a subgroup formed among students who were independently working on similar projects.

In general, the subgroups that formed due to student choice distributed their emotions in the same ways that the larger cohort did. Specifically, students within the subgroups continued to play the same roles as they did in the cohort. Like in the larger cohort, the members of these subgroups offloaded and loaded emotions using multiple forms of communication. Another feature of the subgroups was that they differed

in the fluidity of their memberships. One subgroup, the "Color

Commentators," was more rigid in its membership and, as a result, some

members of this group tended to put each other's wants and needs above

those of others in the class.

Instructor Expectations

Explicit Expectations

During the first week of the course, Jonathan told the students, "I

read everything in the NG even if I don't reply [. . .] I try to reply to

everyone occasionally so they feel loved." He quickly followed this

message with, "I do expect you to support each other though." These

postings clearly conveyed that his expectation was for the cohort to be

supportive of its members and that he would only offer his support

sporadically.

Implicit Expectations

Expectations for Discussion

Although Jonathan made this particular expectation known, many

of his other expectations were implicit—ones that the students might

only determine by "reading between the lines" of his communications.

One particularly strong and implied expectation was that students

should hold and express their own strong opinions during class

discussion. Jonathan implied this by expressing his own strong opinions

on a number of discussion topics. In one discussion, for example, he

asked students for their opinions on the value of thin client computing in schools. After only a few students commented, he posted, "Thin clients are (IMHO) [in my humble opinion] a high-tech fantasy designed to ignore progress in processor power and storage in favor of centrally-maintaining control over user action." By giving his personal opinion while serving in the role of instructor and discussion leader, Jonathan steered the course of many discussions toward particular viewpoints. In other discussions he very strongly communicated his opinions, for example: "HOW ABOUT TWENTY YEARS WORTH OF TEACHERS REFUSING TO USE COMPUTERS???" and "You know what's wrong with the iBook mobile lab? It's still a damned lab!!" In each case the only student responses that followed Jonathan's postings favored his point of view.

In addition to communicating the implicit expectation that students should express their own strong opinions, Jonathan also pushed the students when they expressed viewpoints that he deemed weak. According to Jessica, he "liked to challenge us and make us think about our positions." Angela "noticed rather early on, in his response to another [student's] reply, Jonathan was not one to hold much back and was very certain of his viewpoint." She said,

> He tended to take someone on or zero in on someone's weak
>
> response, especially when that person was not firm in stating an
>
> opinion or was being conciliatory in her response. I say "her,"

because I recall [. . .] women this happened to—Goldi, Lia
(especially).

For example, when Goldi shared that she was planning to purchase several of the same model digital cameras for the students and teachers to use in her school but did not explain why she thought the same model was necessary, Jonathan replied, "BAD IDEA!" Jonathan seemed to especially like challenging Lia. After Lia had commented on a software program, Jonathan replied, "You need to rethink EVERYTHING!" He also chided her for her part in a conversation with one of her elementary students who asked if a Lego fax machine could "really work." Jonathan asked Lia, "What does REALLY work mean? You should have explored those boundaries more." He challenged Lia's thoughts on learning when he cautioned her to "[b]e careful about 'all' generalizations and the idea that learning is best achieved when a teacher does something like GROUPS kids into cohorts." Finally, during a discussion between Lia and Michael about the value of balance as a perspective, Jonathan told them to "Stop being so weasely!!!" Looking back, Angela reasoned, "Jonathan was just trying to push Lia into being more assertive about stating her opinions." Angela had uncovered one of his implicit expectations for Lia and the other class members.

Expectations for Assignments

Not only did Jonathan implicitly communicate his expectations for class discussion, he did the same for class assignments. This occurred initially as students responded to the first of several "high-tech management scenarios." Jonathan directed:

> Please discuss the scenario in the NG. Here is the first one...A kind soul has donated $10,000 to your school (or local school if you don't teach) for the purpose of "technology." How should you spend the money? Justify your answer!

As the students began posting their responses to the newsgroup, Jonathan questioned them in ways that implied he had been looking for a particular form of response to the scenario. For example, he asked one student, "Cool, but can you do all of that with $10,000?" and to another he replied, "What sort of training can you get for $10,000?" Still another student heard, "HOW MUCH??" As time passed it became apparent that Jonathan had been looking for an actual budget with some details in response to the scenario. In fact, when Michael eventually posted his thoughts, Jonathan told the group, "At least he had SOME prices!" Clearly, he was looking for prices in the students' responses to the scenario, although he never communicated that expectation directly.

Though he did not say it directly, Jonathan did not necessarily expect students to make sense of what was being taught in class. For

one project students redesigned their Web portfolios based on a particular author's user-centered design ideas. After a few students began criticizing the author's primary suggestions, Jonathan replied, "If the site works better one way than another, just count the assignment among the zillions of other academic, yet pointless, exercises in your lifelong education." In saying this he let students know that they could ignore the design advice in the book altogether rather than suggesting they consider why the author advocates these principles or think of situations in which these design principles might be most valuable. This implied that students did not need to look beyond their initial reactions to a topic in order to learn from it. Jonathan offered similar advice to two students who were familiar with higher-end database software when he insisted that they use Filemaker Pro for a database project. He told them to "[t]hink of it as a meaningless school assignment if that helps :-)" Again he implies that students need not think about what they can learn from a particular assignment, but rather they should simply go through the motions to complete it.

Unclear Communication

At the heart of Jonathan's implicit expectations and a factor which affected students emotionally was that students did not clearly understand what he was communicating. Julie described Jonathan when she said, "He also seemed a tad disorganized, and did not communicate

clearly enough his wishes." According to the students, Jonathan's lack of clear communication began with his syllabus—the document he used initially to let them know what would be happening during the course. In addition, Jonathan's lack of clarity was evidenced in his responses to students in class discussion and again in the assignments that he made via the course newsgroup.

Lack of Clarity in Syllabus

Many of the students found Jonathan's syllabus for the course to be unclear or incomplete. For example, Jessica remarked that "books and assignments were not totally laid out in advance" and "no clear guidelines [for assignments] were given" on the syllabus. Jonathan worked during the course to coordinate between his syllabus and the newsgroup in making assignments and planning activities for the students. During the first week of class, Jonathan posted in the newsgroup, "We will use TI several times during the course." Since Jonathan did not give any details about these synchronous discussions, Susan asked directly for more clarity by saying: "Do you have planned dates? I need some boundaries so I can adjust my schedule." Jonathan did not appear to be clear in his plans for the students and, during the first week of class, replied to Susan, "Give me some time. I'll give you plenty of notice…" Interestingly, halfway into the course, Jonathan still had not planned the "long-awaited TI sessions." He posted to the group,

"I'll meet with [your other professors] at [the tech conference] this coming week and figure out when I can sneak in some TI sessions without causing your heads to explode."

On the other hand, some of the elements of the course featured on the syllabus dropped out of the course curriculum. This was the result of Jonathan's confusion about the actual length of the course. He communicated to the students that he was worried they would "all checkout the second [that Showcase] begin[s]" and that he was "concerned about the brevity of this term." In his mind, the course was not supposed to end until three weeks after Showcase. Michael let him know that Showcase was "the final week of the term," at which point Jonathan replied, "Ooops! I just want you for longer :-) This term IS short. I FORGOT." In any case, Jonathan realized he had planned for a longer trimester and began deleting items from the syllabus—most noticeably learning and working with QuickTime. He informed students of these changes, and when Julie heard this she remarked that she had "bought the book/CD and everything." She had been expecting to learn to use QuickTime since it was listed on Jonathan's syllabus for the course.

Lack of Clarity in Projects

As mentioned before, Jonathan used both his syllabus and postings to the newsgroup to assign projects to the students. Even

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though he used multiple forms of communication, elements of the assignments remained unclear to the students. The first assignment that the students worked on was reading a book about streaming audio and then using the information from the book to create their own two-minute radio show. Goldi had obviously read the assignment on the syllabus, as she was the first to mention it in the newsgroup:

> I am a little confused about the streaming radio station. I am about half way through this short little book, but I still don't get what we need to do. This is what I think we need to do. What do you guys think?

Interestingly, Goldi followed Jonathan's explicit expectation for relying on her peers for support by asking the entire class for their responses. Before Jonathan replied, several students posted ideas and began brainstorming about what they could use as content for their radio shows. Jessica offered the suggestion that they could use a script and collaborate to create a play. Jonathan finally entered the discussion by exclaiming, "I LOVE this idea!!" This remark renewed confusion among the students and one commented, "I am confused... do we have to use a script? I think I want to do an interview like in the book." To clear things up, Jonathan had to add, "NO, you don't have to use a script!!!" As the students began to focus more on the content than the technology, Jonathan again had to clarify, "it's a geeky project more than a form of

artistic expression." As a result of this further clarification, Helen

suggested on the class listserv that the students work alone rather than

collaboratively, as they had been planning to do:

> [S]ome of you have e-mailed me letting me know about the "geeky"
>
> part of the whole thing and thinking it would be best to fly
>
> solo...Jonathan's NG response was the same, so I am assuming
>
> that the project is meant for us to learn the "geeky" part. This
>
> would be tough in a group situation (across the country), so,
>
> probably we should save our creative juices for another project.

Even after all of Jonathan's clarifying remarks, at least one student was

still unclear about the project. Susan directed the following questions to

Jonathan:

> I don't get this project—what is it we are trying to accomplish? I
>
> need more instruction. I have not worked with streamed
>
> audio/video before. Can I use QuickTime for this project? Would
>
> you please provide more instruction for this assignment?

> The lack of clarity felt by the students during the radio project

reappeared during the database project—a project that Goldi called

"frustrating" because "it wasn't very clear." The database project had not

been directly assigned on the syllabus—only the particular software to be

used was mentioned as something that would be covered during the

course. Jonathan instead assigned a project to create a Web-accessible

database that would be useful in some way to the graduate program: "Explore the software and create a simple database, design a new layout or two (the format in which the data will be displayed to the user) and make sure you can search and sort your simple database." Jonathan also told students to "grab a buddy" and "be done by June 28th." A few days after the assignment was made, Michael told Jonathan that many students found the assignment "daunting to look at." After a week passed, Jonathan restated the assignment in an effort to clarify the task for the students:

> My goal is for you to invent/design an application, build it in Filemaker Pro and then publish it on the Web. THEREFORE, you will NOT need to collect data to put into the database. Users can enter the data themselves. In other words, finish the design and the way in which you wish new data to be displayed and entered. Then put the database up and ask folks to fill it!!!! Data entry is not the goal of the project!

Then only a few minutes after posting this message he tried to clarify his clarification by explaining that "[n]ot scrounging around for data makes this assignment take a couple of hours rather than it being a giant project that everyone gets mad about!" Yet, even when students were beginning to turn in their assignments, some were still confused about whether or not they needed actual data in their database. This was

evidenced in Susan's reply to others' comments on her project, "I did not enter any data. I did not think we had to." Looking back, Angela commented on this lack of clarity when she said, "it was the one assignment that I truly felt was ill-conceived."

Lack of Clarity in Discussion

Like the clarifications he posted to his assignments, Jonathan regularly posted amendments to his initial statements in class discussions because a similar lack of clarity was found there. These amendments were necessary because students had responded to the initial messages with confusion or simply with an interpretation different than that which Jonathan intended. For example, at one point Jonathan commented that he thought teachers spent their summers "house painting or landscaping." Susan was unsure what he meant and asked, "Are you trying to be funny?" to which Jonathan explained, "Well, it was an attempt at humor rooted in truth." Another time, Jonathan commented on the method that a few students had used in producing their radio projects, saying:

> Well, since ONE of the goals of the project (and this class) is for you to be resourceful, I guess it's good that some of you are using video software to make radio. Perhaps someday, audio software will be used.

Angela replied, "Sometimes you have to use what you have—and that can also involve a great deal of creativity." Since Angela seemed to be justifying the process many students used, Jonathan realized that his comment had been taken as criticism rather than as he intended. As a result, he had to explain, "I wasn't disagreeing or criticizing." Similarly, Jonathan remarked to Marlene, "By now you should have learned that people have software preferences and feel confident enough in your ability to at least decide which environment to work in." Julie questioned his comment when she posted back:

> Really? what happened to that constructivist bit about everyone taking the time that they need to get comfortable with their new knowledge? Once you throw in a "by now you should have…" you've slapped the idea (and the student) in the face.

Once again Jonathan was not clear in his initial message and had to clarify: "Oy veh! I meant that you should be secure in your own understanding and not feel the need to jump from software package to software package."

Finally, misunderstandings often arose about Jonathan's use of all capital letters when posting to the newsgroup—the meaning of which differed for Jonathan and many of the students. For example, he posted to Goldi, "JUST DO IT!!!" and, in response, Goldi directly addressed her view—one shared by most experienced CMC users—that his use of all

capital letters indicated yelling. She told him, "Wow, you don't have to yell...*grin* I get your point." Jonathan's reply to Goldi's interpretation was simply, "I'm not yelling." This incident and Jonathan's continued use of all capital letters in his postings point to the fact that his tone in these and other such messages was unclear to the students.

Student Reactions to Lack of Clarity

The lack of clarity in the class took its toll emotionally on the students. Not having a "full" syllabus meant that, according to Jessica, "some of us started out confused and angry." She went on to say, "This class added a little bit to our stress only due to the fact that [course elements] were not totally laid out in advance." Julie agreed that the "initial difficulty in communicating with the instructor [about course assignments] either helped or intensified the stress [that students were feeling]." Susan was another student who expressed her impatience with what she saw as the "tardiness of instructor"—meaning Jonathan's last-minute planning of the course. Jessica's reaction stemmed from her individual situation: "This [lack of syllabus] particularly worried me because I was 9 months pregnant and had a baby 5 weeks before the trimester ended. I wanted to get all of my readings and assignments underway prior to delivery."

Even as the course progressed, certain emotional reactions to the lack of clarity did not wane. Goldi remembers that during the course she

felt "frustrated with the instructor because we weren't always clear with what we were supposed to do." This frustration was echoed by others who had been looking forward to learning things listed on the syllabus that were later dropped from the course due to lack of time. Additionally, throughout the course, the lack of clarity in project assignments resulted in students doing more work than was probably necessary. According to Julie, "We'd work on a project on our own, and then, since we weren't sure what [Jonathan] wanted, also work together on a different project just to make sure our bases were covered." Jonathan's lack of clarity affected the students in very individual, but always emotional, ways.

Offloading and Loading Emotions

At the beginning of the course, the students noticed what they felt were the deficiencies in the syllabus and reacted with a variety of emotions. As Jessica mentioned above, confusion and anger were two such emotions. Since the students were expected to support one another, they talked about these feelings in "the cohort listserv out of view of the instructor." Here, according to Jessica, "some venting took place about not having our assignments and not knowing what was going on [in the course]." Goldi described the listserv as a place "where [the cohort] would talk about the good, bad and ugly. Most of the things said about this class were feelings of frustration." Through the listserv, the students offloaded their feelings of confusion, anger, and frustration about

Jonathan's course. In return they were able to load feelings of support from other members of the cohort. Regarding her role in the listserv, Jessica said, "Usually [I reacted to other's emotions with] support because I was feeling the same way." Similarly, Angela described her position in the listserv when she said, "[My] usual reaction [to others' emotions] was sympathetic support."

The students continued to use the listserv throughout the course as a means for dealing with their emotions with regard to this lack of clarity. Angela explained, "[I]f I got stuck on something, I knew I could also send out an e-mail on the cadre listserv and usually get an answer or get pointed in the right direction." In addition, students used other modes of communication to work through the unclear elements of the course. After being assigned the database project, Michael explained to Jonathan, "We've been batting this one around a lot in e-mail and AIM. I think most of us are a little unsure what to say in NG. [. . .] But we'll get groups together before long—we've already discussed it a bit."

Overall the students met Jonathan's expectation that they support one another, but much of the support was needed because of his implicit expectations, fuzzy course design, and unclear communications. For some students, support meant playing a particular role in the cohort, while for others it meant being able to rely on those role-players. Support also took on the appearance of emotion-laden discussions among

students and away from Jonathan's view. In these discussions students could vent—or offload—their negative emotions and "load" positive ones.

Summary

While Jonathan was quite clear that students should support one another, he was unclear and held implicit expectations about discussion participation and project expectations that made it difficult for students to know how to participate in class. This lack of clarity brought up certain emotions in the students. The nature of Jonathan's expectations caused students to rely on each other, accentuating particular roles that students played within the cohort as a whole. These roles were one way that the emotions were distributed among members of the cohort. Furthermore, Jonathan did not communicate clearly when he assigned class projects either on the syllabus or in the class newsgroup. This lack of clear communication brought up many emotions in the students. Because the students knew that they had to deal with these emotions themselves, they loaded and offloaded their emotions through communication technologies that they "owned" rather than the course newsgroup. In all cases, students were able to load support from others.

Responses to Emotional Communication

Emotion in Class Projects

At times, students in the course communicated their emotions in the class newsgroup through the emotional content of their projects or

simply through conversation. The projects that contained the most emotional content were the streaming radio shows. Many of the students presented first person oral histories from family members that were very emotional. About her project, Angela explained,

> I didn't know what to do when Mom broke down. I paused it for a moment, I was so surprised, but then I quietly restarted recording. She was embarrassed at first, but later she said I could go ahead and use it because it was honest emotion. She was surprised herself that she would react that way after all these years--and her brother has been gone for about 5 years now, too. She darn near had me crying, too!

Similarly, Julie shared her grandmother's story as her radio project. She told her classmates, "the real story was much more … er, vivid than the one I pieced together. And sadder, too. This was not a bittersweet wartime romance." Steven recorded his own oral history that conveyed his experiences leaving Vietnam "so the later generation will know how [my family] came here."

Although students expressed powerful emotions in their radio projects, they more regularly communicated their emotions through conversations in the newsgroup. For example, Peter expressed empathy for others' feelings when he remarked, "I knew I was stepping on a few

toes (I don't imagine that yours will be the only "irritated" response)."

Michael at one point communicated his confusion to the cohort by saying

> The conversation about who is in what project has been spread
> across too many threads for me to keep track of. I can't really tell
> who is doing what, or if anyone is expecting anything specific of me
> so far. [. . .] Not trying to be a brat here. Just a little confused.

Students also expressed strong emotions in the newsgroup. Bonnie
became disdainful during a discussion about girls using technology. Her
emotions were reflected in her contribution to that discussion: "I so agree
with you about the marketing strategies of toys. Remember the Barbie
that disliked math? What's next? A Barbie doll that says, 'Gee
Technology is sooooo hard <giggle giggle>' Ugh..." Angela expressed her
annoyance when she exclaimed,

> And I would like a nickel for every sheet of paper wasted by a staff
> member who prints out every single freakin' e-mail he/she
> receives. I cringe every time I see the printer tray loaded down with
> all that waste!

And, as a final example, Susan conveyed her irritation as she worked on
class assignments when she told the group, "As usual it works fine on
my laptop until I upload it. I hate this internet stuff."

Constructive Responses to Emotion

Typically, the students responded constructively to such emotional communications. A constructive response was one that acknowledged the emotions being communicated and was often supportive in nature. One type of constructive response came as students responded to the emotional radio projects. Typically students distributed the emotions that they felt while creating their projects to those who listened to the radio shows. The distributed emotions were often similar to what the student-author felt. For example, after hearing Angela's radio show, Goldi responded, "Sniff, Sniff... I needed a hanky for that. What a wonderful story! You have captured a golden moment." Bonnie shared a similar reaction by saying, "What a beautiful moment for your Mother and you to share...and to think we all have the honor of 'listening in.'" Julie's radio show evoked similar responses. Susan mentioned, "Very touching story Julie. Thanks for sharing," and Lia replied, "Great going Julie...sad ending but it created the unexpected happy moment of renewed life too...interesting how real life drama unfolds." The bittersweet emotions that Angela and Julie felt as they interviewed their relatives and created their radio shows impacted their peers in similar ways. In contrast, Helen's radio show also involved an interview with a relative, but the content was more humorous. As a result, the other students responded back with humor. Jessica replied, "Great work. You

even got mom to sing…very cute! :-)" Bonnie was also amused by Helen's radio show. She let everyone know her reaction when she shared, "Oh, I'm laughing as your Mom is talking about wiggling hips…I love the picture too. Whoo hooo!"

These emotional reactions were not limited to the women in the class. While many of the men's responses to these projects focused on the technical process, some did respond emotionally. For instance, Gordon reacted to Steven's radio project with, "I can't imagine what it would feel like to leave your home and cast your fate on the open seas. I'm glad you made it." Gordon also picked up on the humor in Helen's project. He remarked, "A wonderful story and your mom sounds like a wonderful person. She must have had a lot of fun back then!"

At other times students responded to these emotional radio projects with a complementary emotion. This occurred most often as Lia responded to the radio projects. Her emotional response to these projects was to feel wistful as much as to reflect sadness or amusement. In response to Angela's plan for her project, for example Lia told her, "Oh Angela, this sounds like a personal journey too. I am so excited for you. I will be looking forward to your project…Wish mine were alive to do it with." This same feeling of wistfulness was reiterated after hearing Helen's mother via streaming audio. She wrote,

As I am listening to the interview Helen, I begin to realize how

important it is to hear her voice as she tells the story of her youth.

Wish I could have had the opportunity to do that with my mother

so that [my daughter] could have treasured the memory instead of

me telling the story.

Peter also responded emotionally to Julie's work. His emotions were

similar to Lia's—wistfulness. He posted, "this was wonderful to listen to [

. . .] wish I could have interviewed my grandmother."

Angela directly referred to another type of constructive response to

emotional communication—an educative response. When Susan

expressed frustration to the group about teachers not working during the

summer—an incident that will be discussed in detail in the following

section—Angela reacted in a way that she hoped would clear up the

misconception. She explained,

This is such a big misconception with the general public. I had to

think about this one for a while, because I felt I had to respond, if

for no other reason that to set at least one non-educator straight. I

spent a great deal of time trying to tactfully frame a response.

Gordon also gave an educative response when Helen worried about

making others in the class "mad" during a discussion about teacher

professional development. Gordon responded to Helen and the group

when he said, "I'm (we're) not mad at you Helen. There tends to be a lot

of generalizations about school teachers that seem to just float around."

In both cases, the students replied to others' emotional postings, but instead of taking on the emotions presented, they deflected them, responding in an educative way. Yet whichever way students chose to respond, they acknowledged the emotions present in others' postings to the class newsgroup.

Distancing Reactions

In contrast, Jonathan responded to emotional communications in ways that distanced him from the emotions presented. Jonathan had initially established some emotional distance when he told students that they were to support each other—as discussed previously. Additionally, in some instances Jonathan continued to distance himself emotionally from the students with responses to their emotional postings that sounded as if he were trying to match or surpass the other's experiences that led to their emotional state—ultimately coming across as competitive rather than supportive. For example, when Elizabeth posted her Web redesign she remarked, "I have a cold and need the two hours of sleep I can squeeze in before a big teaching day tomorrow." Jonathan's responded, "I feel your pain. My next few days are life-threatening. Get better." While his reply was supportive to a degree, his mentioning that his days were "life-threatening" seemed to put his woes in competition with Elizabeth's. Jonathan had a similar reaction to Angela's question

about what course materials she needed to take with her when she was traveling to a national technology conference. He replied, "Bring Papert with you and leave the QT book at home. [. . .] You can't imagine what I'm schlepping to [the conference]." Again, his response includes a degree of support but is remarkable in that he places his experiences in competition with the students'. Finally, Jonathan entered into a discussion about how much of their own money teachers spend for their classrooms. He joined the conversation by posting, "I pay for everything in order to have the honor of teaching at [the University]. My continuing education, net access, materials, computer, software, etc…are out of the goodness of my heart." Again Jonathan places his experiences in competition with the students' as a response to an emotional posting.

Another distancing response that Jonathan uses in reaction to emotional postings in the newsgroup is to downplay the emotions expressed. In contrast to the students who reacted emotionally to the radio projects, Jonathan tells Julie that her grandmother's story is "cool" and tells Angela, "I'm sorry you felt compelled to reduce your parents' lives to two minutes :-) You can sell the extended tracks." His reactions seem to indicate a desire to lessen the emotional impact of these projects, or to at least to leave it to other students to acknowledge such impacts.

The difference between student and instructor responses to emotional postings came through most clearly when Lia described her

life in the Philippines. During a class discussion about one school district's policy dictating how and when teachers should use technology, Lia responded, "How this specific policy was stated is quite dictatorial...I lived in a country that once had a Dictator...believe me, there are a lot of underlying factions to set policies." Jonathan asked her, "Seriously, which country did you live in?" Lia posted a lengthy response that detailed her experiences and shed insight into the perspectives she shared with the class:

> This was in the early 70's in the Philippines, Jonathan. I belonged to the era of teen-agers who the Government called—The Transitional Group. [. . .] I remember bugs placed on our phones [and] a phone call from the U.S. embassy looking for my father to have him brought to the U.S. He decided to stay in the country and hide in the mountains while things settled. It was chaotic. My mother comes from Old Family and Imelda liked to socialize with them. [. . .] My father belonged to the first opposition group with Ninoy Aquino called "Laban" (meaning fight). [. . .] [At] my father's funeral last September, his old fraternity friends came and paid their respects. He had a buddy who, during the Marcos regime, was the Minister of Defense [. . .] The second buddy was a senator who was imprisoned by the Marcos Regime (of Course, the Minister of Defense guy had something to do with it). [. . .] Like the typical

> Filipino Culture…All is forgiven but not forgotten…Wounds heal
>
> but scars remain.

Lia's posting was quite emotional and afterward she confessed that "only when asked…is it revisited." Jonathan's reply offered a quick response to Lia's emotional story and then moved on to another topic altogether:

> Yikes! Thanx [sic] for sharing. I found out today that Australia has
>
> just passed some crazy law saying that privacy rights are violated if
>
> any comment or work by a kid appears on the Web without written
>
> consent—oy. Last year they passed a ridiculous law requiring ISPs
>
> to censor obscene content and they are allegedly proposing the
>
> right for law enforcement to read unopened e-mail to look for porn.
>
> Thank your lucky stars for the ACLU!

Jonathan's response made little of the emotion that Lia had included in her posting. Also, the fact that he changed the topic within the same posting may indicate a desire to move on—away from the emotion. In contrast, Angela responded,

> Oh, Lia. I knew you had a diverse personal history, but I had no
>
> idea! I love history, but reading your first person account makes it
>
> so much more valuable than a history book or news story. It helps
>
> to fill in the gaps of what was NOT in the newspapers at the time.
>
> Thank you for sharing this with us!

Angela's response is respectful and appreciative of Lia and her sharing this emotional story. After the class ended, Angela reflected on this incident. She said,

> I was overwhelmed with the immensity of it, of knowing someone who had an intimate inside view of a rather turbulent time in history. One of my teaching fields is in history, so this really was fascinating to me academically, as well as personally, since I knew Lia. In contrast, Jonathan's comment was almost trivial.

The student response to Lia's emotional posting was constructive while the instructor distanced himself from the emotions.

Summary

At times students in the course did communicate their emotions through direct comments or through the emotional content of their projects in the class newsgroup. Responses to these emotional communications ranged from an individual constructively addressing the emotions—typically the student response—to an individual distancing himself from the emotions—typically the instructor response. The constructive responses from students were often supportive in nature. On the other hand, distancing responses varied from downplaying the emotion, trying to "beat" the other's emotional state, and reminding people to handle it themselves. These different types of emotional reactions were distributed among the class members.

Conflict in the Cohort

Many class members' constructive responses to other's emotional postings did have limits. The clearest example of this is the conflict started when Susan vented about the database project. Toward the end of the class, after Jonathan made the assignment, Susan posted:

> I would like to know why we are just now getting an assignment. I
> really need to bitch—giving an assignment at the last minute does
> not provide enough time to plan. We are all not teachers—some of
> us don't get the summer off.

Although Susan's message is really about the assignment, according to Angela most of the cohort focused in on the "crack [. . .] about how teachers 'have the summers off.'" This comment was met with responses from other students that seemed in keeping with their roles in the cohort. Angela was the first to reply to Susan, approaching the "crack" as a mentor, by offering an educative remark:

> Uhhh, Susan, that's a big misconception. Most teachers really
> don't get the summer "off." Any teacher worth his or her salt these
> days spends 90% of the summer (well, really non-school days)
> taking classes—on their own nickel—in order to be better prepared
> for the upcoming fall. This is a never-ending cycle. How much time
> will I get off this summer? I'm going to be lucky to get 2 weeks

because of conferences, [graduate school], district work, and other

classes I am either taking or teaching. Wish I HAD the summer off!

Lia responded next and focused on the emotions that Susan

communicated in her message—stress and frustration—not the comment

about teachers. Lia, in her typical role as nurturer, replied to Susan,

breathe in.. breathe out...breathe in...breathe out....get that piano,

a candle burning, some tea or wine or scotch...whatever

works...We are all here for each other Suz...we are all in this

together...believe me, I don't think any of the [Oaks] will watch us

sink.... okay? :-)

Following Lia's supportive posting, Susan explained to her (via the

newsgroup) that she was under additional stress at work. She replied,

"It's gotten to the point where I don't even leave the house on the

weekend because I spend all day Saturday and Sunday catching up on

school stuff and work stuff." Following this message, Gordon stepped in

and, like Lia, offered support to Susan. He posted, "Our boat has 19

members to help keep it afloat. [. . .] I, like you, wish I had more time to

devote to what we are learning. Remember rule #6 and the message on

your Palm. Be proactive! :)" After hearing from Gordon, Susan explained,

"I just found out I have to take a business trip the week of July 4, so I'm

really trying to get my [Master's project] done. [. . .] so I will not have a lot

of time during that week to work on [a database]." Finally, Susan tried to

clarify to the group that her frustration was at the assignment, not at teachers: "Well I guess I ruffled some feathers—just venting like everyone else does from time to time—wasn't directing it at anyone in particular."

Even after it appeared that the conflict had been resolved, Elizabeth made a comment as the "confronter" and, as a result, the conflict escalated.

> Elizabeth: I have to echo Angela here....that was a low blow. My work BEGINS as soon as the kids leave. Budget work, ordering, ripping out classrooms and putting in new equipment, rewriting curriculum, faculty training, etc. My busiest time is in the summer. Next time you have a point to make, try not to belittle the "teachers" on the way, please.
>
> Susan: It was not meant as a low blow—Don't be so sensitive
>
> Elizabeth: Try not to be so insensitive and I'll try not to be so sensitive.
>
> Susan: Get a life....
>
> Elizabeth: just as soon as i finish my jacuzzi.....
>
> Elizabeth: lets just kill this conversation....it is stale and going nowhere. Certainly not productive. I see no point in continuing.

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In this exchange Elizabeth reinitiated the conflict about teachers having time off in the summer and then continued on until she was able to have the last word twice.

Most of the cohort watched this exchange, and they felt that, as Angela put it, things "got a bit heated." Angela reflected on this conflict and the cohort by saying:

> I think our cohort had a reputation among the faculty as being one of the most solid, when it came to its COP (Community of Practice) and this [conflict] represented a crack in the wall, so to speak. But on the other hand, I think it says something of the health of our COP that we were able to mend things and move on.

Angela admitted that "it was also nice to see them drop it after a few days and I think the cohort breathed a collective sigh of relief." She felt that Lia and Gordon "were the best folks at the time to jump in and help calm everyone down." Incidentally, true to her role as "conflict avoider," Bonnie was unaware of Elizabeth's and Susan's exchange until it was presented to her in the context of an interview. She remarked that she "stopped reading the rest of the entries [in this discussion thread. What I have read as part of this interview] is the first I've seen where this went, wow!"

In addition to the cohort as a whole being affected by this conflict, Elizabeth's involvement significantly affected the "Color Commentators"

subgroup. Julie explained, "[W]e thought [Susan's comment] would piss [Elizabeth] off the minute we saw it." She described how the "Color Commentators" "ran around behind the scenes a bit trying to prevent a larger blowup that looked likely to happen." The subgroup members were involved in "a lot of IMing and phone calls to see if we could manage the explosion we expected from Elizabeth." As a result of these efforts, Julie believed that Elizabeth "reined it in well" and that the comments made could have been much worse.

Susan's Feelings Grew over Time

The emotions that led Susan to post this message had been building over time—feelings about how the teachers in the cohort handled professional issues and feelings about Filemaker Pro being a simplistic piece of database software. She grew frustrated with some of the teachers in the cohort and their attitudes toward the professional issues discussed in class. She explained, "Oftentimes the group complained about their teaching situations, which was extremely annoying. As a manager, I expect my staff to offer solutions to difficult situations." Susan's "corporate" way of approaching the issues discussed in class—identifying a problem and then proposing a solution—was very different from the teachers' and, as a result, her patience with them was low. Susan recalled a similar phenomenon by saying,

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An incident occurred where members were complaining about their salaries. It made me very frustrated, because when you choose teaching as a profession, you should base your decision on your passion for teaching not monetary gain. And, if you are not willing to work within a teaching salary ranges, then you need to change professions. Everyone has a choice.

Again, she felt frustrated with the way that some teachers in the class engaged in discussion—a frustration that began early in the trimester.

Susan's feelings about the software program that was required for the database assignment had been growing throughout the program—not in just this class. According to Angela, "She had been building in anger since the end of the first trimester." Angela explained that Susan "seemed to think [the software] was beneath her." As Susan was faced with this software yet again in this course, those same feelings reemerged and were expressed in her postings in the newsgroup. Susan made her feelings known to the cohort throughout this class and the whole program, so students were not surprised when she posted the message that started the conflict. As Julie said, "Susan was likely to burst out with this kind of thing."

Lack of Tolerance from the Cohort

It seems that some students' responses to this particular conflict were less supportive than usual. This could be in part because the roots

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of that conflict were ever-present. Students could have been loading related emotions constantly. For example, the fact that class discussion centered on school settings kept the non-educators feeling like outsiders, which may have helped to catalyze Susan's remark about teachers. Although Julie mentioned, "I can't blame her—her background (corporate) and needs (management) fit in less with the group than anyone else," she admitted that she was "exasperated" by Susan's remark. Another root of this conflict was found in Jonathan's syllabus, which lacked the details about assignments that the students craved. In fact, Jonathan's response to Susan's frustration about the sudden assignment was to take refuge in the syllabus that she and others found so problematic. He replied,

> Well, the syllabus stated that assignments would be given throughout the term. I imagine that homework is a fairly common aspect of any course. I do not have any "terminal" assignments required, just trying stuff and participating. Normally this class would require the writing of a tech-plan or a networking project. I'm trying to keep the pace moving along and give folks a chance to think about important issues AND geek a bit.

Jonathan distanced himself from the conflict. Yet it is interesting to consider that the issues at the root of this incident were inherent in the class itself.

Students may also have been less tolerant of Susan's emotional posting because they had already taken the opportunity to offload their frustrations about the lack of in-advance planning in the class into the listserv, which was not read by Jonathan. As mentioned previously, in the cohort listserv, the students had discussed their frustration over what was missing on the syllabus. Yet, according to Angela, "Susan never fully participated in the cohort's listserv. [. . .] She only got the digest version of the list from Day 1 and was the only one to do so." In receiving the digest version, Susan received a single weekly e-mail containing all e-mails sent to the list that week. By subscribing to the listserv in digest form, Susan lost any chance of participating in the conversations taking place via the listserv in a timely manner. As a result, Susan did not participate in the conversation that enabled the other members of the cohort to offload their frustrations about the syllabus via the listserv. Interestingly, no one mentioned these frustrations in the class newsgroup except Susan who did not take the opportunity to offload them elsewhere or load support for the same frustrations.

At this time in the course, students were also experiencing more personal stress than earlier in the trimester. This may have contributed to them not being able to respond constructively to Susan's emotional posting. The students felt stress from their workplace. Specifically, at

this time, the teachers in the class were busy wrapping up the school year. For example, Peter remarked, "Because of a chaotic existence the last two weeks of school I am just now getting down to the end of this thread . . . I wish had been more a part of this in the thick of it, but I'll make my comments here . . ." Other stress was added by the impending end of the program which required students to have completed their Master's projects and to have prepared for "Showcase" during which they would publicly present their work. Steven confessed to the rest of the cohort,

> sorry to say this but at this rate i just would like to get the assignment out of the way. whatever will be fine with me. i would like to put more effort onto the exhibition. i am sure we all feel like this around now. [sic]

In addition, stress experienced at this particular time in the course stemmed from the database project, which, as mentioned previously, the students felt was both sudden and poorly planned. As Julie remembered, "[W]e were all a bit extra-stressed over the database project." These added stressors combined to create a more stressful atmosphere, the effects of which were felt by cohort members.

Interestingly though, Gordon was one student who was able to separate his written response to Susan from his personal emotional reaction to her remark. In an online interview he reported,

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I was shocked that another cadre member would make such a bold statement. I felt the cuts were escalating and maybe a rift was about to occur. It's hard to take back anything you say in TI since it is all on record, and especially when it is directed at the teaching field or a single group. I remember feeling, "What is her problem with teachers?" I did feel really defensive concerning her comments.

But, as mentioned before, Gordon served as the "keeper of the cohort" feeling strongly about the role and responsibility of the cohort toward its members. He explained,

I felt as a cohort we needed to stay and support each other no matter what was said or done. We all felt frustrated at one time or another during our online course and she decided to air with all of us instead of individually. I felt we needed to share our support regardless of her comments and present a united front.

Unlike Lia's support of Susan because she was a person in need, Gordon offered support because he felt strongly that this was a part of being in a cohort of learners. Although the students showed less tolerance for Susan's remark, many continued to play their emotional roles consistently: Angela as mentor, Lia as supporter, Gordon as "keeper of the cohort," Elizabeth as confronter, and Bonnie as conflict avoider. Thus

emotional reactions to Susan were distributed among various members of the cohort.

Summary

For many members of the class, constructive responses to other's emotional outbursts had limits. The clearest example of this is the conflict started by Susan's venting about the database project. Because this conflict had grown over time and evidence of it was constant in the group, many students had less tolerance for Susan's emotional communication. For example, other students in the class had taken the opportunity to offload their emotions about the lack of advanced planning of the class into the class listserv—a forum in which Susan did not fully participate.

It seems like some students' responses to this particular conflict were less supportive because the root cause of that conflict was ever present, thus causing related emotions to be constantly loaded. Also the students were experiencing more personal stress at a time when they were faced with projects in multiple classes. Perhaps because of this stress they were not able to respond as constructively to the emotional communications. Yet, on the other hand, some students were able to remove themselves from their personal emotional reactions and stress and were able to provide support for Susan.

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The Distribution of Emotional Expression in the Course

The emotional expression during this course was distributed among the class members, across various structures, and across time. The class members showed a distribution of emotional expression across the members of the cohort, as they played particular roles that impacted the emotions of other members and through their reactions to one another's emotional expressions. A similar distribution occurred within subgroups and also between subgroups and the rest of the cohort. Emotional expression was also distributed across the various communication technologies used by class members. Students relied on different technologies in order to receive different kinds of support. For example, they chose to vent their frustrations with the course on the cohort listserv, away from Jonathan's eyes. Finally, the emotional expression during the course was distributed across time. This emerged when students expressed more stress and less tolerance during a particularly busy time in the trimester. The distribution across time also emerged when the origins of conflict among the students could be traced back through the cohort's history and the students loaded emotions from the same history. While the evidence points to distributed emotional expression in this course, it will be important to consider other evidence that supports or refutes the notion of distributed emotion in other learning contexts.

CHAPTER 5: DISCUSSION

Distributed Emotion as a Construct

In order to argue for distributed emotion as a construct, it is important to look at exactly when the distribution of emotion is *more* evident and when it is *less* evident (see Figure 8).

Figure 8. Diagram showing when distributed emotion is more evident and less evident in the context of this study. Solid lines represent clear example of distributed emotion while the dotted line represents examples of areas which do not clearly show distributed emotion.

When is Distributed Emotion Evident?

Responses to Others' Emotional Expressions

Distributed emotion occurs when an individual responds in kind to another's emotional expression. This will often look like emotional contagion in that people will react emotionally to the expressions of others or their emotional expressions will synchronize with others'

(Hatfield et al., 1994). According to the literature on emotional contagion, such entrainment of emotions will vary according to factors like the levels of competition or cooperation in the group and the group's history. Emotional contagion is one indicator that emotion is distributed among people

In this study, the flow of emotional expression among people was most clearly seen in Angela's comment about her "picking up" the frustrated emotions of her peers while working on the database project. Emotions also flowed specifically among members of subgroups. For example, Jessica reflected that she felt more excited and supportive of others when working collaboratively. Also, the members of the "Color Commentators" subgroup worked together to transfer their calming emotions to Elizabeth to alleviate some of her anger in response to Susan's comment about teachers having the summer free.

As in this current study, in a pilot study of distributed emotion, the participants also experienced the flow of emotions from person to person when working on assignments in collaborative groups. One student explained that "working collaboratively and communicating with peers tend[ed] to diffuse the negative emotions and enhance the positive ones." Others remarked that they would help team members to relax or others would support them emotionally. So, as these students worked together, some were able to transfer their calm or supportive emotions to

those students who were feeling stressed. Yet this transfer of emotions was not the same in every instance, in part because the need to express emotions within the pilot study group varied among the students. For example, one student admitted in her interview that she could have encouraged her peers more, but that she did not feel she needed to because "some of my classmates were real good at that." The ability to trace the flow of emotions among people—whether or not the emotions were expressed—as in these examples is an indicator that the emotion here is distributed.

Emotional Roles Played in the Group

Another way that emotions are distributed is through the emotional roles that group members play. Specifically, social roles and emotional communication influence each other (Planalp, 1999). In other words, one group member playing a certain role will impact the emotional communication, and by extension perhaps the emotions themselves, of other group members.

The emotions distributed among roles in the current study were found to reside with the person playing the role, rather than with the role itself. While some of the roles that students took on during the course were permanent ones, such as Lia serving as nurturer, others were more temporary, such as Helen serving as group leader for one collaborative project. No matter the permanence of these roles, both allowed the

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individuals to express certain emotions, which were then distributed within the group.

In contrast, looking at the pilot study's results, emotions were distributed among the roles themselves, rather than among the people playing those roles. In other words, although different people inhabited these roles at different times, a similar distribution of emotions always took place. This difference is likely due to the fact that all of the students in the pilot study were expected to take on a variety of roles throughout the course, while the students in the present study were not working under this same expectation and, as a result, they took on roles that came naturally to them. For example, in the pilot study each student served as discussion facilitator at one point during the semester. When they were in this leadership position, the students' expressions of emotion shifted to include emotions that they did not always express at other times, such as "empathy for the students' situation" and "encouragement to participate in the discussion." As a discussion participant, one student often worked to keep discussion going by asking, "What do you think?" Yet, when she shifted into the role of discussion facilitator, that expression of curiosity was replaced with ones directly encouraging discussion among students. For example, on behalf of herself and another student-facilitator, she posted, "After defining a specific focus or situation of discussion, we'd like for you to discuss how

the specified voices and critical-thinking strategies can facilitate the specified discussion." No matter whether the emotions rest with the roles or the people playing them, emotional roles typically indicate distributed emotion.

Various Communication Structures Better Serve Certain Emotions

Distributed emotion can also be seen when closely examining the contexts in which emotional expression occurs. The most influential element of both the current study's and the pilot study's contexts was that communication took place primarily online.

For those students in the pilot study, online communication caused them to be more cautious in their emotional expressiveness. In their interviews, many students cited the permanence of public postings as a reason for their emotional hesitance online, for example: "[The message is] imprinted so that it's there forever. If it's written, it's more a concrete thing." Also the students seemed to be more mindful in expressing themselves online because they did not want to cause any misunderstandings or offend others. One student reflected that she was more careful expressing herself online, saying, "I wanted to be careful not to step on any toes or let anybody misunderstand what I am saying." As a result of this carefulness, the intensity of emotions may have been more tempered than the communication happening face-to-face or via the telephone. Another student commented:

I think part of that effort of rewording and rewriting takes away

part of the anger. It's that whole process. In anger you lash out

immediately, but if you are holding yourself back and trying to

think, "how can I say this in a better way" or "how can I say this

differently," part of the anger is gone.

For these students, the use of computer-mediated communication

impacted the emotions expressed by affording them time to reflect. In

contrast, the students in the current study embraced the online

environment, appreciating the time they had to reflect before

communicating, rather than worrying about the permanence of their

communications. In either case, the fact that both groups of students

communicated primarily online affected their emotional expressiveness

in terms of the perceived permanence of their words and the reflection

time afforded them prior to communicating.

In addition to their primary use of asynchronous conferences or

lists, each group used additional means of communication through

which they expressed emotions. The students in this study used many

different technologies (e.g. e-mail lists, newsgroups, and instant

messaging) to increase their emotional communication capabilities. As

the students used these multiple means, they clearly coordinated their

emotional expressions. The data do not show that a student ever chose

to use one technology, later regretting her choice. They do, however,

indicate that the students felt that particular emotional expressions were more appropriately communicated using particular technologies. For example, students used IM when they needed a quick response to a stressful situation. Thus the students' emotions were affected by and distributed among the communication technologies used.

In the pilot study this was especially true when looking at subgroups, all of which met both online and face-to-face. Different degrees of emotional expressiveness took place in the different communication venues. One group member noted that while she and her group members were "very cautious about saying anything online [. . .] when [they] got face-to-face it all came out—that was the time [they] vented." She also admitted that she and another student would feed off of each other's negative emotions when they were face-to-face, but there was no evidence that the same thing happened publicly online. In addition to the differences between students' emotional expression occurring face-to-face and online, the instructor used the telephone as another venue for emotional expression. If she noticed that a student was extremely stressed or upset, she would initiate a phone call. She explained, "We need[ed] more bandwidth for the emotional expression and all of them [told me that] . . . it really helped to talk like that." Overall the coordination of emotional expression among various

communication structures can be considered another indicator of distributed emotion.

Features of the Environment that Affected Emotions

In addition to various structures conveying certain emotional expressions better than others, particular features of the larger environment, namely the online course, can cause emotions to be distributed.

As mentioned previously and with regard to the pilot study, requiring students to play multiple roles throughout a course impacted the distribution of their emotions. This was also seen in the current study as students emotions were affected by the instructor's lack of clarity.

Similarly, the different tasks put in place by the instructor triggered different emotions. For example, in the pilot study, when the students discussed their readings, they expressed more curiosity about others' ideas and more appreciation for classmates' relevant experiences than they did during their communications as part of other tasks. Also, as students responded to different tasks using formal or informal communication, their expressions of emotion changed. For example, when they engaged in an icebreaker activity, they expressed more humor and self-deprecating comments, but when they posted their weekly reflections about the group's patterns, they expressed more pride and

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regret. As strong as these patterns were in the pilot study, similar patterns did not emerge in the current study. This may be due to the current group being a cohort and working together for 10 months prior to the course studied. Their familiarity with one another and the newsgroup environment seemed to have led them to communicate with one another in a consistent fashion. As such, these participants did not demonstrate a similar distribution of emotional expression across different features of their course environment as did the pilot study participants. This element of distributed emotion should be examined in more course contexts to best determine the distributed nature of emotion in response to particular online learning elements.

Ability to Offload and Load Emotions onto the Environment

Features of the communication structures used by students during the course influenced their negotiations of these structures. In other words, not only did students have to decide how to express their emotions, they also had to choose the best structure through which they could communicate them. While this is occurring, the individuals are able to offload and load various emotions onto different environmental structures. Thus the ability to offload emotions is both a feature of an individual's emotional expressiveness, as well as a feature of the structures onto which the emotions are offloaded.

For example, in the current study, offloading and loading emotions proved to be very valuable to the students, and they did so expressing both negative and positive emotions. Many of these emotional conversations among peers served the same purpose as "venting" and, at times, reflection. The value of the offloading was found in the process of doing it and the process of offloading was influenced by the context of the course.

In the pilot study, the emotional intensity of the group increased with the introduction of an out-group: a group of classroom teachers who worked in a different city. The students worked on a project in which they needed to be at least partly responsive to this out-group. One student remembered, "The [project teachers] came in and . . . [e]motions were really high at that moment." Many of these emotions stemmed from the students' confusion about the assignment involving the teachers, but the presence of that other group seemed to stand out for the students as an emotional trigger for their feelings of confusion and frustration. As a result, every time that the students reported the progress of their work with the members of the out-group many loaded and reloaded their initial feelings when faced with those distantly located teachers.

Emotions Changing over Time

Distributed emotion is also seen when emotions expressed change over time. According to Denzin (as cited in, Mattley, 2002, p. 369), "To

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catch the meaning of emotion in the present, the person must draw on the past and the future as they interpret and anticipate the actions of the other in the interactional stream." Thus time becomes an important element when considering emotion among people, as well as another way to note distributed emotion.

This temporal pattern emerged during the current study. Most notably, Susan's feelings about how the teachers in the class seemed to handle their job frustrations grew over time, resulting in the most notable conflict of the course. Yet the emotional intensity does not *necessarily* change over time. After reading a book about designing Web sites, Elizabeth came out strongly against some of the author's advice. She expressed her emotions several times during the subsequent book discussion and the project that was based on the reading. At one point she said, "I'll get over it," but over one month later, when students were engaged in another redesign of their Web sites, Elizabeth again expressed her frustration and dislike for the author's advice. The tenor of her emotional expression at this later date showed her emotions had not lost any of their original intensity.

A similar pattern was seen during the pilot study. As participants reflected on their class experiences, they noticed emotional patterns over time that were reflected in the class postings. For example, one student noted, "When the pressure built up because of projects and deadlines, we

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got a little more frustrated and irritable" and "near the end [of the course] we got nostalgic and sad." Also, at certain times, the emotions being expressed were more intense. More students expressed need during major projects and, according to one class member, "emotions were higher around Thanksgiving."

Not only did the intensity of the emotions change over time, but also particular emotions appeared only at certain times. For example, in the pilot study, fear was only expressed during the planning for the students' group projects in which they would be simultaneously in the roles of teacher and learner. In reflections posted publicly during the course, two students who did not typically express other than positive emotions admitted to being afraid that things would not go well for their groups because they felt their planning was inadequate. Likewise, in the current study, the students felt more frustration as they neared the end of the trimester—a time when their Master's projects were due and the public showcase was held. Thus, distributed emotion is seen when the intensity of emotions change over time and when certain emotions are expressed at particular moments in time.

When is Distributed Emotion Less Evident?

While there is good evidence that distributed emotion exists as a construct, it is important to fully explore the boundaries of that

construct. Thus, we must consider when distributed emotion is less evident, looking first at groups and then at individuals.

Responses According to Course Expectations

At times distributed emotion appears less evident when looking at groups that operate according to assigned expectations that have emotional components. Often individuals come to know these expectations as a result of the socialization that they undergo with respect to context and means of communication (e.g. Johnson-Laird & Oatley, 2000; Parkinson, 1996; Planalp, 1999). For example, we tend to judge others based on our own culture and thus consider certain expressions of emotion to be acceptable or unacceptable. Similarly, the students in both studies had been exposed to at least basic principles of "netiquette," which socialized them into the culture of computer-mediated communication. Furthermore, the students in both studies had likely been socialized into the culture of education—a culture that prefers students not to express strong emotions at all (e.g., Goodlad, 1984; Sylwester, 1994).

In both the current study and the pilot study, students publicly offered regular feedback to one another, praised one another, and expressed predominantly positive emotions. No real patterns of distribution were found concerning these particular expressions of emotion leading me to believe that this sort of "regulated" or "expected"

emotional expression is not evident as distributed. Therefore, if everyone in a group is expressing the same emotions at the same level from the beginning, these emotions would not be clearly distributed.

Interestingly, for some students the expectations governing emotional expression were consistent when they faced what was "typical" for the group, but when they faced the "atypical," these expectations broke down. For example, in the current study the expectation of "netiquette" must have broken down for Elizabeth and Susan, allowing them to trade personal insults.

Complete Emotional Noninvolvement with Others

One way that an individual may be able to at least partially avoid distributed emotions is by never engaging fully with others in a given context. I say "partially" because this will enable the individual to avoid the social distribution of emotions, but will likely not allow them to avoid any structural or temporal distribution of their personal emotional expressions, as described previously. The person who never engages fully with others has made a decision, prior to his involvement with others in a particular context, to remain apart from the group emotionally, and this decision is held fast. I suspect that looking closely at the grammar used in an individual's communications could serve as an indicator of such noninvolvement. Specifically, a person might use specific words and

phrases to show verbal nonimmediacy, or increased distance, with regard to others (Collier, 1985).

This complete emotional noninvolvement should not be confused with someone, like Bonnie from the current study, who chooses to practice emotional avoidance from moment-to-moment. Bonnie was often emotionally involved with the others in the class, and her occasional decision to avoid conflict was the result of an emotional reaction to what she saw to be the beginnings of a conflict.

 Because one very clear expectation of the course in the pilot study was that all students would engage fully with others, this type of complete noninvolvement was never seen. In contrast, Steven from the current study came very close to not being fully engaged emotionally with his colleagues in the course. Overall, during this trimester Steven seemed to be more focused on his Master's project. For the most part Steven chose not to post to the class newsgroup. When he did, he posted assignments and, on occasion, would offer a one line response to a discussion prompt. All of these communications were void of emotional expressions, including any possible signs of verbal immediacy.

Had this been the extent of Steven's emotional engagement in the course, I would label him as one who avoided emotional interaction with others from the beginning of the course, but the emotional content of his radio project—his personal experience fleeing from Vietnam—gives me

pause. It is possible that Steven, who did not regularly communicate his emotions to others in the class, saw the radio project as a way to indirectly communicate emotionally. On the other hand, his emotional subject matter could have been a reaction to Jonathan's lavish praise for the emotional subject of Angela's radio project, which was posted publicly much earlier than others' work. Coupled with Jonathan's unclear project expectations, Steven may have interpreted the praise for an emotional rendering of a personal story as an implicit expectation for the project. So, based solely on his public communications it is difficult to determine if Steven was uninvolved emotionally in the course from the beginning or not, but the possibility raises an important issue when considering distributed emotion: can an individual avoid being a part of socially distributed emotion?

Lack of Full Interaction with Environment

While it seems difficult to never engage emotionally with others in a particular context, it is easier not to engage fully with a structure present in that context. In this way, a person may be a part of socially distributed emotion, but may not be a part of structurally distributed emotions. In this way the person would avoid the possibility of offloading emotions to or loading emotions from a particular structure. Susan's decision to participate peripherally in the course listserv, by receiving the digest version of the list, was a choice not to be involved fully with that

structure. Thus she lost the benefits of being able to offload stress and confusion and load support, as her colleagues who participated fully were able to do.

Overall, the findings of the pilot study and the current study point to emotion being distributed socially, structurally, and temporally. Socially, distributed emotion will be found as people respond to one another's emotions and play different social roles within a group. Structurally, emotions will be distributed as people choose which structures will best support their emotional communication and then offload or load their emotions into these structures. Temporally, distributed emotion appears as emotions change over time or as emotions are sparked at particular times. It is important to note that providing standards regarding the social interactions or the structures available would prevent emotions from being distributed. Similarly, should an individual choose not to interact socially or with the structures provided, he would not be as clearly a part of the distribution of emotion.

<center>Limitations to this Study Relative to

the Construct of Distributed Emotion</center>

While this study has provided evidence that the construct of distributed emotion is a viable one, the focus and design of the study

itself have some limitations which should be addressed in future studies of distributed emotion.

Emotional Expression vs. Emotional Experience

This study focused on emotional expressions, as opposed to the origins of those expressions. In the pilot study, however, the participants noticed the connections between the origins of their emotions and their expressions of those emotions. For example, although according to interviews many class members were experiencing the same emotions, the need to express those emotions to the group was distributed among them. This often happened with feelings of frustration. The students soon learned that they could count on Beth to "[voice] a frustration that most of the rest of us felt, so I think we all appreciated it." When Beth would vent, the others students would not join in. More than one student mentioned in interviews that they did not think it would be productive for them to express the same feelings. Similarly, as reported earlier, Carrie admitted in her interview that she could have been more encouraging to her peers, but she did not need to because "some of my classmates were real good at that."

I propose that, since the findings indicate that emotional expression is distributed, we can extrapolate that it is likely that emotional experience will also be distributed. According to Planalp (1999), both communicating an emotion and communicating emotionally

are necessary to create a complete message. In other words, emotional expression that does not stem from emotional experience is incomplete and improbable. Furthermore, Evans (2001, p. 150) argues that we should consider emotions in terms of behavior—that "[e]motion *is* as emotion *does.*"

Online Course Context vs. Other Contexts

Another limitation of this study that can be addressed in future studies is the context of an online course. It is important that the continued search for evidence of distributed emotion take place in a variety of contexts. For example, the online context relies on different extraverbal cues than would a face-to-face context, impacting the expression of emotions and others' interpretations of those expressions (Menges, 1996). As a result, the use of these different extraverbal cues *may* affect the distribution of emotion.

Another element of distributed emotion that bears further scrutiny is that of time. In an online context, a time lag between reading a message and responding to it can relate to the perception of the message, thus serving as a cue to its meaning (Chenault, 1997; Walther & Tidwell, 1995). In an online course, however, students are often guided by individual work schedules, access to computers and the Internet, and the calendar for the course, determining times when they can participate in course activities. Thus, in this study, looking at time that elapsed

between messages did not give a clear picture of whether or not emotions were distributed temporally. Additionally I noted, as did the students, the large volume of public postings that were made weekly. This made me wonder how carefully students could read each message, a phenomenon that could have caused them to miss and consider responding to some of the more subtle emotionally expressive cues.

Post Hoc Study Design vs. Ad Hoc Study Design

A final limitation to this study may be the post hoc study design. It is possible that, because the interviews with participants were conducted approximately five months after the completion of the course, participants' recollections of their emotions were different than their actual emotions during the course. The issue of whether or not questioning participants about their emotions in the moment would affect any naturally-occurring patterns of emotion arose in my mind. However, it could prove valuable to compare the distribution of emotions expressed ad hoc with those expressed post hoc.

Although there are acknowledged limitations to this study, I believe that the evidence it provides points to the construct of distributed emotion as viable. Furthermore, I believe that the elements of distributed emotion could easily be applied to various contexts.

The Importance of Context in Distributed Emotion

Distributed emotion appeared in slightly different ways in the current study than in the pilot study. This is due largely to contextual factors, which are important when considering distributed emotion. One such factor was the interpersonal dynamics of the group. In the current study certain individuals played roles within the course that they seemed to play in other settings. In contrast, the students in the pilot study "tried on" different roles, which may or may not have been comfortable roles for them. Thus, the ways that the course instructors chose to shape student roles (or not) was an important contextual factor influencing the distributed emotion in each course. Other examples of influential contextual factors in the current study are the structure of the cohort, the use of the cohort listserv in addition to the online course space, the instructor's expectation that students support one another, and the students' willingness to work collaboratively. Because of such contextual influences, it is vital in any study of distributed emotion that as many contextual factors as possible be considered as part of the analysis.

Plans for Future Study of Distributed Emotion

Future studies of distributed emotion should consider the construct in a variety of contexts. I propose that a logical next step would be to move from the online context of the pilot and current studies to a face-to-face context for the next study. The results of a study in a face-to-

face context would likely prove most valuable when compared with those from the online courses previously studied. The face-to-face context that most interests me currently is one that is similar to the course context from this study. Specifically, I would search for a face-to-face graduate-level education course that is largely collaborative. While it would be ideal to find a course in which the students were part of a larger cohort, as seen in this study, I realize that this may be difficult to find. It would be important however, that the students in the face-to-face course engage in class discussions, as well as group projects. I think such a shift in setting would provide interesting information regarding which elements of distributed emotion are more and less evident in a face-to-face context. For example, I am curious to know whether the distribution of emotion is easier to observe face-to-face or online. Also, I wonder if students engaged in a face-to-face course that meets regularly distributed their emotions socially and structurally in the same ways that students who have constant access to their online "classroom" do.

Implications of Distributed Emotion

Many emotion researchers in various fields, such as organizational studies, interaction studies, and educational psychology, are currently calling for research on emotion that is sensitive to the broader contexts in which emotions exist (Mattley, 2002; Meyer & Turner, 2002; Sturdy, 2003). For example, some members of the psychological and psychiatric

fields are calling for the next edition of the Diagnostic and Statistical

Manual (DSM) to move away from a focus strictly on the individual to

consider social and contextual issues (Olden, 2003). In a broader sense,

Sturdy (2003, p. 98) suggests that "those involved in emotion as a field of

study need not simply wait for such theoretical development to emerge,

but may also actively stimulate and/or contribute to it." I hope that

through exploring and explaining distributed emotion I have made at

least a small contribution to the theoretical development of emotion

research.

Additionally, I expect that this work will primarily prove to be

helpful to the different people involved in online learning. As

instructional designers become more aware of how the structures that

they build and organize impact the emotions of users, their designs may

become more powerful. The instructors who teach online may adapt the

structures, design, and facilitation of their courses differently with regard

to their own and their students' emotions. For example, Asteleitner and

Leutner (2000) provide specific recommendations that are helpful for

online instructors who wish to account for five particular emotions in

their facilitation of learning technologies (see Table 1).

Table 3

Suggestions for designing with emotion in mind from Astleitner & Leutner, 2000

Emotion	Recommendation
fear	• ensure success • accept mistakes as learning opportunities • create relaxed setting • be critical but positive
envy	• compare with own and criterion reference standards • be consistent in evaluation • inspire authenticity & openness • give out privileges equally among students
anger	• stimulate anger control • show flexible perspectives • allow for constructive anger expression • accept no violence
sympathy	• intensify relationships • make for sensitive interactions • cooperative learning • peer assistance
pleasure	• enhance well-being • open learning opportunities • humor • play-like activities

Finally, an awareness of distributed emotion may help students who choose to learn online to better work with others within the online environments as they learn. Overall, being mindful of distributed emotions may lead to more productive relationships, as individuals are better able to emotionally negotiate structures, people, and time.

Appendix A

Researcher as Instrument Statement

According to Denzin & Lincoln (2000), "The interpretive [researcher] understands that research is an interactive process shaped by his or her personal history, biography, gender, social class, race, and ethnicity, and by those of the people in the setting" (p.6). Since I will be the primary instrument for collecting and analyzing data, I believe that it is vital that I explain my experiences and beliefs with regard to the topic of distributed emotion.

I can trace my interest in emotions and emotional well-being to my early college experiences, especially my decisions to work as a telephone crisis counselor and resident adviser. This emphasis on emotions was also prevalent in my work as a teacher. Every year I would inform my students that while they might not remember the details of Mary Shelley's *Frankenstein,* they would recall how they felt when they were learning in our classroom. My work as a supervisor of student teachers took on an emotional emphasis as I worked with novice teachers to recognize and make the most of emotions in their classrooms through a solid rapport with their students. Also, as a graduate student, I find myself connecting emotionally not only with my colleagues and professors, but also with the informants from the research studies that I have been conducting.

My work in online learning began in 1997 with my role as a site coordinator during the initial year of the Virtual High School (VHS) project. The VHS, funded by a Department of Education Challenge Grant, is a cooperative in which member schools contribute teachers to develop and teach online courses and students who participate in these courses (Kozma, Zucker, & Espinoza, 1998). As site coordinator, I acted as an administrator and counselor for the students and teachers as they engaged in these online learning experiences. What struck me as most remarkable about these experiences was the fact that most of the participants from my site—students and teachers alike—felt that they were not connecting emotionally with the distant members in their online courses because they were not meeting with them in a traditional, face-to-face setting.

I am a strong proponent of connecting with others, and I believe one mechanism for doing so is through collaborative work. My graduate experiences have been largely collaborative: the cadre of students working together during a year of master's level seminars, peer debriefing groups working on different qualitative research projects, research teams working to understand various phenomena, and study groups working to reflect on our understandings in preparation for comprehensive exams. Because of the positive personal experiences that I have had while engaged in collaborative learning, I believe that others can benefit from

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similar experiences. As a result, the culmination of my master's studies was the design of a product to enable communication among teachers within a school with hope that it would nurture teacher collaboration.

My current research brings together my interest in emotion with my beliefs that online learning and collaboration are valuable. While I occasionally hear colleagues who participate in online learning complain about feeling disconnected, more often I hear students rave about the sense of community they have felt when learning online. It seems that as online learning has become more prevalent and the student population that I am hearing from has matured, feelings of disconnectedness are being dealt with through community-building or team-building course elements. What I see as areas of concern in learning in an online context are the general interpersonal problems that arise when students work collaboratively. It is my firm belief that a clearer understanding of the distributed nature of emotions and how they affect people will help to improve collaborative, online learning experiences.

Appendix B

Sample Collected Data

Newsgroup Postings

Subject: Question: Radio Station assignment
Date: Tue, 21 May 2002 21:40:10 -0400
From: [Goldi]

I am a little confused about the streaming radio station. I am about half
way through this short little book but I still don't get what we need to do.
This is what I think we need to do. What do you guys think?

1. "Pitch" a story with a sequence and a moral ending or maybe do an
"interview" with someone- both suggestions from the book (which I think
is very clever - BTW).
2. the techy part of this is the streaming video... but it is to be radio I am
assuming that there is no picture just voice.
3. no more then two minutes.

I am trying to get a jump on my work this week. I am going to be away
from any tech connection from Friday night through Sunday. I am going
to my grandmother's 80th b-day party in the Washington D.C. area. Is
there any way we can have this assignment due alittle later being that
it is a holiday weekend. I know we are on a condensed work schedule
but maybe better later in the week. :-)

[Goldi]

Subject: Re: Question: Radio Station assignment
Date: Tue, 21 May 2002 21:58:40 -0400
From: [Angela]

[Goldi],

Funny you should post about this, I was trying to think my way through
this, too. I got the impression that we do need to interview someone, so I
was giving some serious thought about taking a personal day on Friday
and driving to my parents' [. . .]. As I read through this little book, I
thought that it would be a good opportunity to get my folks to talk about
Pearl Harbor Day in the guise of helping their daughter with her
homework. LOL They have always been somewhat reluctant to talk

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about World War II. In fact, the one time Dad opened up at all about his experiences was right before major surgery where the outcome was a bit cloudy. But even then, he stuck mostly to the funny stuff he and his cohorts pulled in Alaska and the Phillipines (he was a flight navigator in the Navy)--he never talks about any of his combat experiences and I know he had some, judging from the medals I have seen.

Anyway, I know that asking people where they were and what they were doing when Pearl Harbor was bombed is like asking my generation where they were when Kennedy was shot (9th grade Algebra 1 class--see?). Today's generation will always be asked where they were when 9/11 happened. These are seminal questions that will always be in someone's memory. So I figured I would begin by asking them what they were doing in 1941, where they thought they were headed. Then I thought I would lead them into the main question—where were they when they heard the news and how did they hear it. Lastly, I thought I would try to get them to talk about what they did in the days following December 7--how did their paths change. If I can get each of them alone, it might make for some interesting oral history.

As for the streaming, I figured that if push came to shove (and I no longer have a tape recorder), I could always run my camcorder, import the film into iMovie and edit it, output it as a QuickTime movie, open it in Quicktime and remove the video track, saving it as just audio. (Needs must.) Then I would be ready to stream it via RealPlayer. At least that's what I hope to try. If I can shortcut it technically as I go along, I will.

Does this make any sense to any of you?

And [Goldi], maybe you can get your grandmother to "spill" about something, too! She's of the same generation as my folks--Mom just turned 76 and Dad will be 82 in October. But due right after a holiday weekend will be tight, especially if I'm driving nearly 10 hours total round trip...

[Angela]

Subject: Re: Question: Radio Station assignment
Date: Tue, 21 May 2002 20:15:16 -0700
From: [Lia]

>But even then, he stuck mostly to the funny stuff he and his cohorts
>pulled in Alaska and the Phillipines (he was a flight navigator in the

>Navy)--he never talks about any of his combat experiences and I know
>he had some, judging from the medals I have seen.

Ooh, I have lots of stories about WWII too.. passed down by both of my
families.. and you could still see the ruins.. and lots more.. interesting
venue [Angela].. the combat stories can be gruesome and really sensitive
from what I've heard..

> As for the streaming, I figured that if push came to shove (and I no
longer have a tape recorder),
> I could always run my camcorder, import the film into iMovie and edit
it, output it as a
> QuickTime movie, open it in Quicktime and remove the video track,
saving it as just audio.
> (Needs must.) Then I would be ready to stream it via RealPlayer. At
least that's what I hope to
> try. If I can shortcut it technically as I go along, I will.
> Does this make any sense to any of you?
>
> And [Goldi], maybe you can get your grandmother to "spill" about
something, too! She's of the
> same generation as my folks--Mom just turned 76 and Dad will be 82
in October. But due right
> after a holiday weekend will be tight, especially if I'm driving nearly 10
hours total round trip...

Wanna join.. both grandparents and parents have passed away but I still
have some artifacts from the war.. I think I have a little book made by
one american soldier that recorded and pasted things while he was in
prison.. he even had details of names and activities.. funny, I forgot I had
it. Won't do much for radio streaming.... but, wanna join.. wanna join in
anyway I can help..

May I? [Lia]

Subject: Re: Question: Radio Station assignment
Date: Tue, 21 May 2002 23:33:31 -0400
From: [Angela]

[Lia],

I don't know how we could use that for something that is strictly audio,
but if you have any ideas, I'm open to them! Or maybe there's an

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upcoming project where we could combine forces? The one story I remember Dad telling about the Phillipines was making sure they emptied their boots in the AM before putting them on in their tents. He said they didn't want to jam their tootsies into a scorpion hiding in them... I'm sure you are are right about the nature of the stories, which is why I won't press him for those details--he's always been very reticent about it. I don't even know if he kept the fabric (silk?) maps and the money he had at one time. I don't think I have seen those since I was in grade school.

[Angela]

Subject: Re: Question: Radio Station assignment
Date: Wed, 22 May 2002 07:27:51 -0700
From: [Jessica]

Sorry to jump in...but maybe do a dramatization or short radio play with the artifacts and details you gather. You could use the interview details and add in more facts, etc. from [Lia]'s artifacts. Is is possible to record AIM conversations? Then you all could act it out together. Just an idea.

[Jessica]

Subject: Re: Question: Radio Station assignment - I LOVE THIS IDEA!
Date: Wed, 22 May 2002 17:58:01 -0700
From: [Jonathan]

Interesting. Doing a play, radio drama is a possibility too. There should be scripts freely available. It might be funny (and higher audio quality) to give a group a script, have each person record THEIR parts, e-mail each other the parts and piece together the play. Keep it short and sweet. I wonder how terrible (hilarious) a play would sound acted by folks who can't see or hear each other. Perhaps one member of the team could be a narrator who comments over the play or adds sound effects/music to the production ala Ira Glass.

I LOVE this idea!!

Subject: Re: I'm game...
Date: Wed, 22 May 2002 18:46:32 -0700
From: [Lia]

Hey [Angela], [Jessica] and [Jonathan]'s idea sounds exciting.. how bout it??? [Jules] mentioned wanting in too... what dya think? I can also create a real authentic accent <teehee>, like coming from the province with the thickest accent...

Subject: Re: I'm game...
Date: Wed, 22 May 2002 21:57:12 -0400
From: [Angela]

Normally, I would jump at the idea. But I talked to Mom this evening and they are actually excited about this. Maybe it won't be funny (or maybe it will), but at this stage I think it's important to get them to talk about their history, in this sense. For me, it's a golden opportunity since they've always been so reticent about talking about WWII in the past. So I'm going to have to reluctantly take a pass just this once. But if you need some help, I'm game!

[Angela]
P.S. You have an accent?? LOL

Subject: Re: I'm game...
Date: Wed, 22 May 2002 19:07:05 -0700
From: [Jonathan]

Sounds good, [Angela].

I'm having a ball checking out script sites.

Subject: Re: I'm game...
Date: Wed, 22 May 2002 20:36:26 -0700
From: [Lia]

Oh [Angela], this sounds like a personal journey too. I am so excited for you. I will be looking forward to your project.. wish mine were alive to do it with... seize the moment!! :-) [Lia]

Subject: Re: I'm game...
Date: Thu, 23 May 2002 11:06:32 -0700
From: "[Julie]

I'm waffling. While jumping in on a prewritten play script would certainly be easier (!) and easier is good (!), I'm also with [Angela] on wanting to preserve that part of the family story.

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I'll hit up Mom on the idea tonight - if she screams and runs away, there's my answer. LOL

Subject: Re: Go
Date: Thu, 23 May 2002 19:00:39 -0700
From: [Lia]

GO [JUL] GO! GO [JUL] GO! It's worth the inquiry...

Subject: Sign up to be in a play!
Date: Thu, 23 May 2002 10:07:13 -0700
From: [Jessica]

I'm game too. How about anyone who wants to participate sign up on this thread. [Jonathan], if you find an interesting script, please post the url here, too. The rest of us can do some script searching, too. It is either this or me interviewing my husband...

I know many of you have a thespian inside just itching to get out! [Jessica]

Subject: Re: Sign up to be in a play!
Date: Thu, 23 May 2002 10:16:08 -0700
From: [Jessica]

[Jonathan] posted some script ideas in a lower thread...check them out!

[J.]

Subject: Re: me too
Date: Thu, 23 May 2002 19:04:01 -0700
From: [Lia]

I'm in.. let me know or it's my students again.

Subject: Re: Sign up to be in a play!
Date: Thu, 23 May 2002 18:08:00 -0700
From: [Michael]

> I know many of you have a thespian inside just itching to get out!
> [Jessica]

THAT WOULD BE ME! The last few times I've attended theatre events, I've nearly burst into tears because I miss it so much. I'm definitely in if we do a dramatic project!!

Subject: Re: Sign up to be in a play!
Date: Thu, 23 May 2002 18:56:00 -0700
From: [Jessica]

Funny, I've begun to avoid attending theater because I miss it so much. Have a feeling it will be a LONG while before I manage to find time to get up on stage again. <sigh>
[Jessica]

Subject: Re: Sign up to be in a play!
Date: Thu, 23 May 2002 20:16:55 -0700
From: [Gordon]

Count me in too.

Subject: Re: Sign up to be in a play!
Date: Sat, 25 May 2002 12:59:54 -0700
From: [Susan]

I would like to participate - I'm I too late

Subject: Re: OOps
Date: Wed, 22 May 2002 19:04:14 -0700
From: [Lia]

> [Lia],
> Or maybe there's an upcoming project where we could combine forces?

Oops, here I go again [Angela]. Getting excited without asking you first. You may have things planned for your project, sorry. Please let me know soon so I can start hooking up with others or creating my own... for what it's worth.. great idea!   [Lia]

Private E-mail Messages

Reply to: [Lia]
From: [Jessica]
Date: 5/26/2002

CC: [Gordon], [Susan]

I have not even attempted to record anything. I have a shareware program called Gold Wave that I used for my Hyperstudio project for [our other course]. Supposedly you can edit using that software, so I was just going to record directly into the computer and try that. Will be an experience, to say the least. I liked [Gordon's] suggestion that we could all record our parts and each person could edit the material as they see fit...that way we could all have the geek experience...and our finished products would all end up a tad different. Would be interesting to see. I'll cc this to [Gordon] and [Susan]. If they'd like to pick 2 poems to read and contribute to the project, that would be great.

[Gordon] and [Susan], would you like to participate with [Lia] and I? Please let us know ASAP, so we can coordinate. [Jessica]

To: [Lia]
From: [Jessica]
Date: 5/29/2002

all is well. got home from the dr. a while ago. 80% effaced but only dilated to 1 cm.   Have a "reservation" at the hospital for Sun. 7pm. Will try a cervix softener then will induce Monday am. Doc guarantees a baby by Monday! Hooray! [My husband] and I can't wait to meet him!

Glad you understood my gibberish directions. Let me know if there is any way I can help. [Gordon] is fine. He's going to do one poem. Says he'll have it by Thurs.

[Jessica]

Appendix C

Sample Generated Data

Sample Response to Reflection Prompt

Please think back on your experiences as part of the Organization of Technology in Education course from Summer 2002. Describe, as best you can, the feelings and expressions of emotion of class members (including the instructor) during the course. Feel free to compose your reflections in the form that is easiest for you (journaling, notes, drawings, etc.) and e-mail them to me.

From: "Gordon"
To: "'Courtney Glazer'"
Subject: RE: Reflection Prompt
Date: Sat, 21 Dec 2002 15:01:09 -0800

The emotion of all of us at the time of this class was very low. It was near the end of the course and all of us were in a state of relief that the end was in sight. Enthusiasm was still high among the cohort and it was an emotional high to see everyone again. Jonathan's presentations were appropriate and his enthusiasm never waned. We were all kind of going through the motions and waiting for all of this to end.
Gordon

Sample Response to Interview #1

Participant: Goldi

A. If you held a job during at the same time as you were working on your Master's degree, please list your place of employment and job title (this information will be kept confidential)
      Yes, I was technology teacher in a Middle School in a public school [on the East coast], full time

B. Briefly describe your experiences with online communication.
      Before [entering the graduate program], I had used e-mail and frequently used the internet. I had never been in a chatroom, had a Website nor used newsgroups.

C. Briefly describe your experience with online courses.
      None

D. Briefly describe your experience with this professor.
        I knew about [Jonathan] through his [professional work]. I loved
        his theories of education... constructivist (as all of the program is).
        I e-mailed [Jonathan] when I needed help with Microworlds Pro. He
        e-mailed me right away with the help that I needed. At that point I
        had know idea that he was going to be our prof. We met at the face
        to face meeting in [the spring]. That is when I found out that he
        was going to be our prof. I was very excited about that.

E. Did you know any of the [Cohort Oak] members prior to [the initial
face-to-face meetings]? In what capacity did you know each, e.g. socially,
professionally, etc.?
        Nobody

1. Do you consider yourself to be an emotional person? Why or why not?
        yes, I remember at [the first face-to-face meetings]... I broke down
        and cried because I didn't think I was going to be able to handle it.
        After meeting everyone, I realized that it was acceptable to tell
        people how you were feeling about what you were learning. I am
        very expressive and can be sensitive at times. (as my fiance would
        tell you)

2. During the course, what emotions do you remember noticing in
yourself, your peers, or the instructor?
        excited, happy, eager, frustrated, mad, tired, embarrassed

3. Describe any emotions that you felt often during the course.
        excited, happy, eager, frustrated, tired, somewhat embarrassed
        by what I don't know

        3a. What, if any, types of things would trigger these emotions?
                assignments, open questions in newsgroups,
                conversations by other people, pressure of [our master's
                projects] and other classes, comparing your work with
                other peoples work, Filemaker Pro... unclear
                assignments, good challenging assignments... changing
                your Website

        3b. Of the emotions you felt during the course, which were the
        strongest?
                eager to learn, frustrated at times

3c. When you felt strong emotions, did they affect your work or your relations with your peers and instructor? If so, in what ways? If not, why not?

> Sometimes, it made it difficult to stay focused on the goal. Frustrated with the instructor because we weren't always clear with what we were suppose to do.

4. Were there emotions you felt more when working individually on classwork? More when working collaboratively?

> collaborativly

5. Did you share your emotions with classmates? With the instructor? Give examples.

> Classmates - yes. We had a listserve where we would talk about the good, bad and ugly. Most of the things said about this class were feelings of frustration.

5a. If so, how did you decide what to share and with whom?

> We all were open with each other.

5b. Was there a difference between the emotions that you felt and those that you shared with your classmates and/or instructor? If so, to what do you attribute this difference? If not, why not?

> Yes there was a difference. We were a tight [cohort], very loyal to each other. The professors were usually the outsiders.

6. Did you notice the emotions of other members of the class? In what ways, if at all, did you typically react to those expressions of emotion?

> We all just tired to help each other be confident in each others work. Mostly words of encouragement and help.

6a. Do you associate any particular emotions with any particular members of the class? Feel free to skip yourself :-)

[Bonnie] - motivated

[Angela] - wise, eager, volenteerer, giving

[Becky] - eager

[Ben] - laid back

[Roxanne] - frustrated

[Julie] - helpful, giving

[Gordon] - Patient

[Lia] - excited , eager

[Jessica] - willing, happy

[Elizabeth] - Happy, knowlegdable

[Carl] - determined

[Marcus] - laid back

[Michael] - helpful

[Helen] - willing

[Jonathan] - directive

[Marlene] - overwhelmed

[Susan] - overwhelmed, mad

[Peter] - overwhelmed

[Steven] - laid back

7. Do you remember any particular incidents that you felt triggered
emotions in yourself or other members of the class?
      Positive emotions - working on Website and improving them.
      Radio show project.
      Negative - FilemakerPro

8. Do you remember any particular emotional postings during the
course? Did these postings seem to match the person who wrote them? If
so, how? If not, why not?
      Messages to each other in listserve to stop writting so many
      messages in [the class] newsgroup.

9. Did you notice any changes in yours or your colleagues' emotions throughout the class? If so, what do you think might have caused those changes?

>yes, I think we all "transformed" learned more. Therefore felt a success. We were closer to finishing our masters

Sample Response to Interview #2

Participant: Jessica

1. Can you tell me more about the listserv? Who was on it? Did you use it often? Did you use it for other things than venting?

The listserv was subscribed to by all [cohort] members as well as [our cohort advisor]. As a group, we decided that other professors not be allowed. The listserv was used for a lot of communication among the [cohort]--due dates, ti notices, "outside" discussion. Some postings were about [master's program] related things while others were not.

2. How did others react to Jonathan's challenges?

Some were offended; others liked the opportunity to debate and discuss.

3. Why do you think it is important to be able to separate your emotions from your work?

Personally, I can at times dislike an assignment or not really gel with members of a group. To be successful, one must be able to put these feelings aside to complete the project. (In both "real life" and "academic life") Being able to put emotions aside makes a person more able to function in society as a whole.

4. How did you become the group's "organizer?" (calendar, reminding others, etc.)

Partially out of personal necessity. I tend to be a scheduler and knew I had to do these things for myself. If other could benefit from the work I had to do for myself, all the better. In addition, my mind is constantly multitasking. I could tell the cadre due dates and project assignments off the top of my head without much reference to the syllabus or calendar. Since I would rattle due dates off in TI, people would ask me to remind them or post a calendar. Lastly, I needed one place for information from all classes. It was too time consuming to have to visit each individual

professor's calendar to see due dates, reading assignments, TI schedules, etc. Better to have it all in one place with links to the syllabus. It made my life easier.

5. How did you come to work with [Lia & Gordon] on the radio project?

A few of us were discussing alternatives to interviews. Scripts came up and some people were interested in recreating a play or movie. Interest kind of fizzled out so [Lia], [Gordon] and I decided to band together to created something different. Originally it was out of not knowing who in the world I would interview. I think the final decision was made via the listserv as to who really was interested in doing something besides an interview.

Sample Response to Interview #3

Participant: Angela

Warning about [Cohort Oak]
1. How do you remember feeling when reading these messages during the summer?
> I felt [Jonathan] was making an assumption based on not knowing us. I didn't take offense, but felt a bit mischievous when I posted my response. I rather had my tongue in my cheek when I posted my response since I KNEW there wouldn't be a problem for the majority of us. [Jonathan] just hadn't met us yet. I didn't see it as a big deal.

2. Explain what you remember about the events leading up to and following these messages.
> There was not much history here as this was early in the Tri. There was no basis or history for his message other than what he might have experienced with other [cohorts]. I think the rest of the Tri proved that we weren't "slackers" when it came to posts!

3. What, if any, action did you or other students take as a result of these messages?
> There really was no action beyond what was in the thread—it was pretty friendly, as I recall. I don't think anyone else was particularly offended, either. Our [cohort] had a history of being one of the "chattiest" [cohorts] ever.

4. Anything else to add?

>[Jonathan]'s constant presence in the group (he didn't slack off in posting, either!) helped to assure there was no letup in the postings. I really appreciated his high level of activity and interactivity.

Students Critique [Jonathan]'s Website

1. How do you remember feeling when reading these messages during the summer?

>I laughed. I particularly enjoyed [Julie]'s pseudo-HTML response. I felt that we were comfortable enough to take our professor to task in the spirit of "do what I say, not what I do." I felt it was a very friendly, non-threatening, collegial exchange and enjoyed the humor.

2. Explain what you remember about the events leading up to and following these messages.

>We were in the midst of making our first site overhauls in the spirit of one of the books we had read on Web site usability. It was giving us some tools to critically analyze what made a site well designed or not and we were looking at and critiquing each others' sites—and, obviously, [Jonathan]'s.

3. What, if any, action did you or other students take as a result of these messages?

>I just sat back and enjoyed the exchanges. So may of the [cohort] were really witty with their words. It was fun.

4. Anything else to add?

>N/A

[Lia] Shares Her Experiences From [her Childhood]

1. How do you remember feeling when reading these messages during the summer?

>Oh wow. I had a feeling of talking with someone ([Lia]) with a definite place in history—an inside view, if you will. I was overwhelmed with the immensity of it, of knowing someone who had an intimate inside view of a rather turbulent time in history. One of my teaching fields is in history, so this really was fascinating to me academically, as well as personally, since I knew [Lia]. In contrast, [Jonathan]'s comment was almost trivial, although if you looked at it as a stand-alone comment, it should probably have elicited more comment than I remember it receiving.

2. Explain what you remember about the events leading up to and following these messages.

> I think the initial question came from [Jonathan] because of the style of [Lia]'s responses, not just the content, for openers. She has a unique way of looking at a question and responding that probably compelled him to finally pose the question when she gave him an opening. I think from earlier posts, he was probably getting very curious about her.

3. What, if any, action did you or other students take as a result of these messages?

> I was one of the respondents and that was essentially the action I took.

4. Anything else to add?

> N/A

About the Filemaker Pro Assignment

1. How do you remember feeling when reading these messages during the summer?

> When I first saw the assignment, I was elated. I am intimately familiar with the program, so this was going to be a walk in the park for me—an easy ending to a tough year. I eventually got a little frustrated with the lack of pre-planning (getting the [university] end in place, for example). But I think that frustration was more a reflection of what the majority of the [cohort] was feeling. Eventually, my work was done. I just needed to sit on the file until I was told where to send it. I knew my work would be OK since I develop FileMaker databases for my district. No big deal. However, there was a lot of anger, frustration, and turmoil over this assignment. I remember saying to [Helen] (and perhaps to one or two others) that while I had no problem with the assignment, I felt it was an ill-advised and ill-timed assignment. From the standpoint of a teacher with over 20 years of secondary classroom experience, I didn't think it had been well planned out. It almost felt that he had decided to throw in one more assignment at the last minute. The timing was not great, either, as we were all trying to finalize our [master's projects], even though he posted it in mid-June. For me, it was not really a problem. I just felt badly for those who were supremely upset and frustrated. We were all under a lot of pressure on our [master's projects] and preparing for [Showcase].

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2. Explain what you remember about the events leading up to and following these messages.

I vaguely remember a feeling of coasting along. I felt like I had hit my stride and that I had been stretched enough that I was handling everything with more ease than earlier in the program. I knew there was another assignment out there—can't remember if we had been given a head's up early on that it would be a FileMaker assignment. June 2001 is a really lost month for me, having juggled 4 classes, the end of the school year in my district, and traveling to [the national technology conference] and then to [. . .] visit my folks, however briefly.

I do know that any anger that had been simmering within people ([Susan], to name one), really burst forth at this time. [Susan] was practically irate over having to learn anything about a database that she seemed to feel was beneath her, coming, as she often put it, "from the corporate world." I just think she was under extreme pressure at work and felt threatened in some way by the assignment. Maybe it was just the straw that broke the camel's back for her. For others, I think it was also timing. For the teachers in the [cohort], the end of the school year is an exceedingly busy time and we were already being pushed to the limit. There was the frustration for several folks in thinking they had a narrow band of time in which to obtain and learn another program, not to mention the expense. That issue was taken care of by the download of a trial copy, which I think some folks overlooked in their panic, initially. [Jonathan] did plainly state its availability...

I do know that I partnered up with 3 others who had little or no familiarity with the program. I figured that as long as they did the overall design and were willing to run some trial data in it to make sure things worked, I would do the technical work on our database and make it Web-ready. I saw it as a way to relieve some of the stress others were feeling, since I really wasn't feeling any about this assignment. Some folks in the [cohort] were philosophical about dealing with the assignment, others complained loud and long, and then the 2 or 3 of us who had worked with the program helped where we could.

3. What, if any, action did you or other students take as a result of these messages?

After sensing the dismay that so many seemed to express over the assignment, via the [cohort]'s ListServ, I volunteered to send out a

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PDF of a handout I had used within my district to teach teachers how to use FileMaker Pro on a basic level. Several took me up on it. I do specifically remember [Peter] thanking me and asking one or two additional questions, saying it had gotten him going with the program.

4. Anything else to add?

I remember that one of the premises for the assignment was that it was supposed to help future [cohorts], be a resource of some sort. I just didn't see that happening... Guess it all comes down to the validity of an assignment and is it really, really going to be used as stated. My guess is that these databases will never be used in that way. I really don't have a problem with that since this assignment wasn't a big problem for me, but please don't say it will be used that way and then not. Perhaps couching it as a hypothetical would have been better?

Conflict about Teachers in the Summer
1. How do you remember feeling when reading these messages during the summer?

[Susan]'s initial message made me see red. This is such a big misconception with the general public. I had to think about this one for a while, because I felt I had to respond, if for no other reason that to set at least one non-educator straight. I spent a great deal of time trying to tactfully frame a response, since I could tell [Susan] resented the assignment and its timing. I was glad to see [Elizabeth]'s response, too, although she really "shot from the hip" in her reply—framed it more strongly than I did. Once I said my piece, I had decided as soon as I had posted that I would not say anything else. When I began to see the "flames" between [Elizabeth] and [Susan], I was amazed, eventually entertained. I remember logging in just to see what was the next salvo in the ongoing "war of words." I was also glad to see it die down since it really was a bit disruptive to the level and flow of communication in our [cohort]. We had worked so well together all year...

2. Explain what you remember about the events leading up to and following these messages.

It was that initial FileMaker assignment that caught most off guard and then the things that were going on in [Susan]'s life that really tipped her over the edge. I think that things had been simmering with [Susan] ever since an earlier database discussion in an early TI session the previous Tri [. . .]. On that occasion, I remember a

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discussion I was involved in with [Susan] where she belittled the power of FileMaker. She felt it was a puny database program primarily for education while she was involved with these complex corporate databases, even though she had never used the program before. Whew! I know that I didn't want to get into that discussion with her again. Some people just don't want to see more than one side to an issue—I have personal familial experience with that and didn't even want to go there. Anyway, in addition, I know there was some reorganization going on in [Susan]'s workplace and that she had been working some very long hours. At one point, she was out of town for several days, working longer hours. She was also on a bit more of an abbreviated schedule since her company was sending her off somewhere that would make it darn near impossible for her to work on her [master's project]. She felt she had to have everything done by the end of June before she left on this trip. She had also been having some physical problems, migraines, I think. So she was a time bomb waiting to go off. She did. I tried to tactfully respond. And [Elizabeth] took her on. It was also nice to see them drop it after a few days and I think the cadre breathed a collective sigh of relief.

3. What, if any, action did you or other students take as a result of these messages?

I just sat back. I felt I had said my piece and didn't want to add any more fuel to the fire than I already had. Others in the [cohort] tried to be conciliatory (as shown in your copies of posts, below).

4. Anything else to add?

I certainly do not regret my reply to her! :-) And I don't think she held it against me. I was one of her "[chosen critics]" for her [master's project] and we had several communications back and forth after that. However, I think it is really telling that when we were finished, [Susan] apparently wasted little time in taking herself off the [cohort] ListServ. She basically cut herself off from the rest of us and I do not believe anyone has heard from her since we left [the final face-to-face]. If you try to check out her [university] Web site, she's pretty much removed everything—there isn't even a home page. It's like someone has moved and left no forwarding address. I cannot say that I am terribly surprised, just disappointed.

[Lia] & [Gordon] Help [Susan] De-Stress
1. How do you remember feeling when reading these messages during the summer?

> It felt like the calm after the storm. [Lia] in particular is very good at soothing ruffled feathers. [Gordon], too, has wonderful people skills and great common sense. I felt they were probably the best folks at the time to jump in and help calm everyone down.

2. Explain what you remember about the events leading up to and following these messages.

> It was pretty turbulent and I think probably the most emotional posts we had had all year. I was glad that [Gordon] and [Lia] jumped in to help get things back to normal.

3. What, if any, action did you or other students take as a result of these messages?

> I tried to stay out of it. I was concerned that if I said anything else on the subject, it might be seen as condescending, instead of conciliatory.

4. Anything else to add?

> [Jonathan] loved the exchanges. I was talking to [the program's director] on the vendor's floor at [the national technology conference] when [Jonathan] came up to us and started to excitedly talk about what was going on in the class NG. This was about day #2 or 3 in the exchanges, while it was still entertaining. I think our [cohort] had a reputation among the faculty as being one of the most solid, when it came to its COP (Community of Practice) and this represented a crack in the wall, so to speak. But on the other hand, I think it says something of the health of our COP that we were able to mend things and move on.

[Jonathan's] Response to Student Postings
1. How do you remember feeling when reading these messages during the summer?

> I felt badly for [Lia]. She is such a nice person and her responses were typical [Lia] responses—conciliatory, trying to see both viewpoints. I know that when I saw [Jonathan]'s "attack," I did a mental gasp. Again, he didn't know her very well and probably didn't realize that this was a part of her personality. I thought she handled it very well and very diplomatically. I was proud of her.

2. Explain what you remember about the events leading up to and following these messages.

> I think [Jonathan] wanted us all to go out on limbs and unequivocally state our opinions. I know that that rather pushed me to get off the fence, although my initial statements were posted with a great deal of trepidation. I knew that he was not shy about taking someone to task and I don't particularly care for confrontations or being on the defensive. I think [Lia] is similar, although I have seen her be really passionate about something she believes in. Overall, I think [Jonathan] was just trying to push [Lia] into being more assertive about stating her opinions. In the long run, it seemed to have worked itself out.

3. What, if any, action did you or other students take as a result of these messages?

> As I recall, I tried to stay out of it. I had already put my toe into the "[Susan] comment" a day or two earlier, so I was trying to maintain a low profile… :-)

Appendix D

Reflection Prompt

Please think back on your experiences as part of the Organization of Technology in Education course from Summer 2002. Describe, as best you can, the feelings and expressions of emotion of class members (including the instructor) during the course. Feel free to compose your reflections in the form that is easiest for you (journaling, notes, drawings, etc.) and e-mail them to me.

Take as much time as you like (within reason, of course). I would like to get your reflections before I send you the URL for the Web interview so my questions don't lead you to or from particular reflections.

Appendix E

Interview Protocols

Interview #1

- What is your program of study? What degree are you seeking, if any? Are you a full time or part time student?
- Briefly describe your experience with online communication.
- Briefly describe your experience with online courses.
- Briefly describe your experience with this professor.
- Who from the class did you know prior to being in class together? In what capacity—socially, from other classes, etc.?

1. Do you consider yourself to be an emotional person? Why or why not?
2. During the course, what emotions do you remember noticing?
3. Describe any emotions that you felt often during the course. What, if any, types of things would trigger these emotions? Of the emotions you felt during the course, which were the strongest?
4. When you felt strong emotions, did they affect your work? Your relations with peers and instructor? If so, in what ways? If not, why not?
5. Were there emotions you felt more when working individually on classwork? When working collaboratively?
6. Did you share your emotions with classmates? With the instructor? Give examples. How did you decide what to share and with whom?
7. Was there a difference between the emotions that you felt and those that you shared with your classmates and/or instructor? If so, to what do you attribute this difference? If not, why not?
8. Did you notice the emotions of other members of the class (students or instructor)? In what ways, if at all, did you typically react to those expressions of emotion?
9. Do you associate any particular emotions with any particular members of the class?
10. Do you remember any particular incidents that you felt triggered emotions in yourself or other members of the class?
11. Do you remember any particular emotional postings during the course? Did these postings seem to match the person who wrote them? If so, how? If not, why not?
12. Did you notice any changes in yours or your colleagues' emotions throughout the class? What do you think might have caused those changes?

Interview #2

Interview #2 consists of follow-up questions that emerged from the first interview. These questions were posed to participants along with the summary of Interview #1.

Interview #3

Please read the following series of postings from the [course] newsgroup. Following each, you will be given the opportunity to answer a few questions about the interactions illustrated in the postings.

The questions for each series will be the same: (1) How do you remember feeling when reading these messages during the summer? (2) Explain what you remember about the events leading up to and following these messages. (3) What, if any, action did you or other students take as a result of these messages? (4) Do you have anything else to add?

I apologize for the amount of scrolling—I know that many of you feel strongly about it—but it is necessary for the password protection and the form. ☺

A WARNING ABOUT CADRE BLEU

Subject: TI
Date: Mon, 13 May 2002 10:29:20 -0700
From: [Jonathan]

[. . .] I leave [the country] Tuesday evening, but will be online 24 hours or so later and I'm ALWAYS online so don't even THINK about slacking-off!
[. . .]

Subject: Re: TI
Date: Mon, 13 May 2002 18:36:12 -0400
From: [Angela]

[Jonathan],

Did you by any chance talk to [the program director] about us and our NG posting habits?

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(1) How do you remember feeling when reading these messages during the summer?
(2) Explain what you remember about the events leading up to and following these messages.

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(3) What, if any, action did you or other students take as a result of these messages?
(4) Do you have anything else to add?

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STUDENTS CRITIQUE [JONATHAN'S] WEBSITE
Subject: Re: Don't Make me Think - Lesson for the day
Date: Tue, 21 May 2002 09:04:11 -0700
From: [Jonathan]

I struggle with the scrolling thing all of the time. Sometimes it just seems to make sense to be one long page. See [URL] and whack me like a pinata.

Subject: Re: Don't Make me Think - Lesson for the day
Date: Tue, 21 May 2002 12:46:44 -0700
From: [Julie]

<reply to [Jonathan]>

<pinata>
whack whack whackwhackwhack
</pinata>

<constructive criticism>
[. . .]
</constructive criticism>

</reply to [Jonathan]>

<self reference>

Subject: Re: Don't Make me Think - Lesson for the day
Date: Tue, 21 May 2002 20:12:02 -0400
From: Goldi

Okay, [Jonathan], we gotta work on this site! It held my attention for about a minute. I wasn't looking for anything but it was just information over load. Great info just to much. O, please lose the scrolling.

[Goldi]

Subject: Re: Don't Make me Think - Lesson for the day
Date: Wed, 22 May 2002 09:08:55 -0700
From: [Elizabeth]

> and whack me like a pinata.
tempting

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Subject: Re: Don't Make me Think - Lesson for the day
Date: Wed, 22 May 2002 16:33:43 -0500
From: [Helen]

Still scrolling... started about 2 days ago   LOL

Subject: Re: Don't Make me Think - Lesson for the day
Date: Wed, 22 May 2002 17:21:34 -0700
From: [Jonathan]

Brutal! I guess this is what I get when I ask for participation!

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(1) How do you remember feeling when reading these messages during the summer?
(2) Explain what you remember about the events leading up to and following these messages.
(3) What, if any, action did you or other students take as a result of these messages?
(4) Do you have anything else to add?

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[LIA] SHARES HER EXPERIENCES FROM THE PHILIPPINES

Subject: Re: Please share your thoughts regarding this policy statement
Date: Fri, 17 May 2002 18:38:10 -0700
From: [Lia]

How this specific policy was stated is quite dictatorial.. I lived in a country that once had a Dictator...believe me, there are alot of underlying factions to set policies... It may look good from the outside but turmoil from the inside. [. . .]

Just my thoughts... [lia]

Subject: Re: Please share your thoughts regarding this policy statement
Date: Fri, 17 May 2002 19:16:24 -0700
From: [Jonathan]

[. . .] Seriously, which country did you live in?

Subject: Re: Country?
Date: Sun, 19 May 2002 09:02:33 -0700
From: [Lia]

This was in the early 70's in the Philippines, [Jonathan]. [. . .] Our educational system changed within weeks. [. . .]I remember bugs placed on our phones. [. . .] Like the typical Filipino Culture.. All is Forgiven but not Forgotten.. wounds heal but scars remain.

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[lia]

Subject: Re: Country?
Date: Sun, 19 May 2002 10:35:50 -0700
From: [Jonathan]

Yikes! Thanx for sharing.

I found out today that Australia has just passed some crazy law saying that privacy rights are violated if any comment or work by a kid appears on the Web without written consent - oy. Last year they passed a ridiculous law requiring ISPs to censor obscene content and they are allegedly proposing the right for law enforcement to read unopened e-mail to look for porn.

Subject: Re: Country?
Date: Sun, 19 May 2002 20:37:34 -0400
From: [Angela]

Oh, [Lia]. I knew you had a diverse personal history, but I had no idea! [. . .] Thank you for sharing this with us!

Subject: Re: Country?
Date: Sun, 19 May 2002 22:08:03 -0500
From: [Helen]

[Lia],

What a rich history you and your family share. Thank you, [Lia] - I really enjoyed reading your post.

Subject: Re: Country?
Date: Mon, 20 May 2002 01:39:40 -0700
From: [Lia]

Only when asked...is it revisited.. <chuckles> [lia]

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(1) How do you remember feeling when reading these messages during the summer?
(2) Explain what you remember about the events leading up to and following these messages.
(3) What, if any, action did you or other students take as a result of these messages?
(4) Do you have anything else to add?

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ABOUT THE FILEMAKER PRO ASSIGNMENT

Subject: Filemaker assignment
Date: Thu, 13 Jun 2002 04:02:39 -0700
From: [Jonathan]

Folks,

I'd like us to explore using a database online. [. . .]

Therefore, I would like each of you to do the following:

1) Download the trial version of Filemaker Pro (http://www.filemaker.com)unless you already have a copy. [. . .]

2) Keep it simple students! (KISS) Explore the software and create a simple database, design a new layout or two (the format in which the data will be displayed to the user) and make sure you can search and sort your simple database.

3) Grab a buddy and team-up to brainstorm and design a database that would make the [master's program] better or more manageable. What sorts of things should we be keeping track of? YOU SHOULD BRAINSTORM, PLAN AND IMPLEMENT A SOLUTION WITHOUT MY MEDDLING :-) I trust your creativity. [. . .]

4) Ask questions, look for answers online at sites like http://www.filemakerworld.com/ and help each other solve their database problems via the newsgroup. [. . .]

5) Once the databases are built, we'll work on a) putting them on the server and b) writing the HTML code for embedding them in a Web page.

6) Let's say that this should all be done by June 28th.

Capice?

Subject: Re: Filemaker assignment
Date: Fri, 14 Jun 2002 09:08:03 -0700
From: [Michael]

FWIW, we're not ignoring this. We've been batting this one around a lot in e-mail and AIM. I think most of us are a little unsure what to say in NG. It's daunting to look at. But we'll get groups together before long, we've already discussed it a bit.

Subject: Re: Filemaker assignment
Date: Sat, 15 Jun 2002 04:51:07 -0700
From: [Jonathan]

Keep the conversation going, make it public (where possible) and keep the database simple.

Subject: Don't go crazy on data entry for Filemaker!!
Date: Thu, 20 Jun 2002 09:20:05 -0700
From: [Jonathan]

My goal is for you to invent/design an application, build it in Filemaker Pro and then publish it on the Web. THEREFORE, you will NOT need to collect data to put into the database. Users can enter the data themselves.

In other words, finish the design and the way in which you wish new data to be displayed and entered. Then put the database up and ask folks to fill it!!!!

Data entry is not the goal of the project!

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(1) How do you remember feeling when reading these messages during the summer?
(2) Explain what you remember about the events leading up to and following these messages.
(3) What, if any, action did you or other students take as a result of these messages?
(4) Do you have anything else to add?

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[SUSAN]'S COMMENT ABOUT TEACHERS DURING THE SUMMER
Subject: Re: Filemaker assignment
Date: Sat, 15 Jun 2002 11:40:15 -0700
From: [Susan]

I would like to know why we are just now getting an assignment? I really need to bitch - giving an assignments at the last minute does not provide enough time to plan. We are all not teachers - Some of us don't get the summer off....

Subject: Re: Filemaker assignment
Date: Sat, 15 Jun 2002 18:28:08 -0400
From: [Angela]

Uhhh, [Susan], that's a big misconception. Most teachers really don't get the summer "off." [. . .] Wish I HAD the summer off!

Subject: Re: Filemaker assignment
Date: Sat, 15 Jun 2002 16:13:31 -0700
From: [Susan]

The point is I tried of getting last minute project. This stuff should be on the syllbus early enough to plan.

Subject: Re: Filemaker assignment
Date: Sat, 15 Jun 2002 16:49:41 -0700
From: [Elizabeth]

I have to echo [Angela] here....that was a low blow. [. . .]My busiest time is in the summer. Next time you have a point to make, try not to belittle the "teachers" on the way, please.

Subject: Re: Filemaker assignment
Date: Sun, 16 Jun 2002 11:44:28 -0700
From: [Susan]

It was not meant as a low blow - Don't be so sensitive

Subject: Re: Filemaker assignment
Date: Mon, 17 Jun 2002 05:10:08 -0700
From: [Elizabeth]

Try not to be so insensitive and I'll try not to be so sensitive.

Subject: Re: Filemaker assignment
Date: Mon, 17 Jun 2002 18:24:48 -0700
From: [Susan]

Get a life....

Subject: Re: Filemaker assignment
Date: Mon, 17 Jun 2002 18:42:58 -0700
From: [Susan]

Well I guess I ruffled some feathers --- just venting like everyone else does from time to time - wasn't directing it at anyone in particular. [. . .]

Subject: Re: Filemaker assignment
Date: Tue, 18 Jun 2002 07:21:14 -0700
From: [Elizabeth]

lets just kill this conversation....it is stale and going nowhere.
Certainly not productive. I see no point in continuing.

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(1) How do you remember feeling when reading these messages during the summer?
(2) Explain what you remember about the events leading up to and following these messages.
(3) What, if any, action did you or other students take as a result of these messages?
(4) Do you have anything else to add?

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[LIA] AND [GORDON] HELP [SUSAN] CHILL OUT

Subject: Re: Ommmmmmmmmmm
Date: Sun, 16 Jun 2002 03:53:13 -0700
From: [Lia]

breath in.. breath out...breath in...breath out.... [. . .] We are all here for each other [Suz]... we are all in this together..believe me, I don't think any of the [Oaks] will watch us sink.... okay? :-)   [lia]

Subject: Re: Ommmmmmmmmmm
Date: Sun, 16 Jun 2002 10:08:16 -0700
From: [Susan]

Thanks [Lia] - I'm a little stressed [. . .] So sorry for bitching....... [. . .]

Subject: Re: Ommmmmmmmmmm
Date: Sun, 16 Jun 2002 11:48:51 -0700
From: [Gordon]

Our boat has 19 members to help keep it afloat. [. . .] I, like you, wish I had more time to devote to what we are learning. Remember rule #6 and the message on your Palm. Be proactive! :)

Subject: Re: Ommmmmmmmmmm
Date: Sun, 16 Jun 2002 20:35:23 -0700
From: [Lia]

Thanks [Gordon]... The sacrifices and priorities we make will be for 3 more weeks. we can freak out or look at it like ..yeah!! we're almost there!!! LOL!

Subject: Re: Ommmmmmmmmmm
Date: Mon, 17 Jun 2002 18:48:19 -0700
From: [Susan]

I not sure if I should feel happy or shell shocked. Well I'm sure it will look better to me after July 13. [Lia] thanks for always being so supportive....

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(1) How do you remember feeling when reading these messages during the summer?
(2) Explain what you remember about the events leading up to and following these messages.
(3) What, if any, action did you or other students take as a result of these messages?
(4) Do you have anything else to add?

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[JONATHAN] COMMENTS ON STUDENT POSTINGS

Subject: Re: Ackerman's thoughts on Papert & Piaget
Date: Sun, 16 Jun 2002 06:25:02 -0700
From: [Jonathan]

Stop being so weasely!!!

Balance is a code word for inaction and refusing to choose a stance.
… or maybe I'm wrong.

[Lia] wrote on 6/15/02 9:59 AM:

> I don't see any contradiction on [Mike's] statement..just balance.. like everything in
life..
>
> [Jonathan] wrote:
>
>> What do you find to be contradictory between Piaget and Papert?
>>
>> [Michael] wrote on 6/14/02 9:34 AM:
>>
>>> But mostly, I feel that a balance between the two is critical.

Subject: Re: Ackerman's thoughts on Papert & Piaget
Date: Sun, 16 Jun 2002 10:08:50 -0700
From: [Lia]

Heehee! Depends on what side of the glass you're looking at. ;-)

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(1) How do you remember feeling when reading these messages during
the summer?
(2) Explain what you remember about the events leading up to and
following these messages.
(3) What, if any, action did you or other students take as a result of these
messages?
(4) Do you have anything else to add?

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Appendix F

Sample Class Member / Participant Tracking Database

Table 4
Sample class member/participant tracking database.

NAME	FIRST CONTACT	INITIAL REPLY	RESTRICT	CONSENT SENT	CONSENT REC'D	REFLECT SENT	INT 1 URL SENT	INT 1 REC'D	INT 1 M.C.
Angela	11/6	12/20		12/20	12/20	12/20	1/6	1/6	1/12
Becky	11/6								
Ben	11/6 11/10 12/9								
Bonnie	11/6	11/7		12/9	12/9	12/9	12/16	12/21	1/12
Carl	11/6 11/10	11/11	public only	12/9 12/19 12/30	1/5	N/A	N/A	N/A	N/A
Elizabeth	11/6	11/6	public only	12/9 12/19 12/30	1/21	N/A	N/A	N/A	N/A
Goldi	11/6 11/10 12/9	12/10		12/10	12/12	12/12	1/28	1/29	1/30
Gordon	11/6 11/10 12/9	12/9	no pvt	12/9 12/19	12/19	12/19	12/21	12/29	1/12
Helen	11/6	12/19	no reflect	12/19	12/20	12/20	1/15	1/21	1/23
Jessica	11/6	11/8		12/9	12/10	12/10	1/14	1/16	1/20
Jonathan	-	11/4		12/19 12/30 1/13	1/31	1/31			
Julie	11/6 11/10 12/9	12/19		12/19	12/20	12/20	1/2	1/21	1/23
Lia	11/6	11/17	public only	12/9 12/19 12/30	1/7	1/8	N/A	N/A	N/A
Marcus	11/6 11/10	11/17	mailbox fills	12/9 12/19		N/A	N/A	N/A	N/A
Marlene	11/6 11/10 12/9	12/19	no reflect	12/19 12/30 1/13					
Michael	11/6	11/6	no pvt	12/9 12/19	12/19	12/19			
Peter	11/6 11/10	11/10		12/9 12/19	12/19	12/19			
Roxanne	11/6	11/11	mailbox fills	12/19 12/30 1/13					
Steven	11/6 11/10 12/9	1/6	public only	1/6	1/31	N/A	N/A	N/A	N/A
Susan	11/6 11/10 12/9	12/24	no reflect	12/27	12/30	N/A	1/2	1/12	1/17

Appendix G

Sample Codes from Codebook

adamant – opinion
    also forceful
agonized - choosing course materials
    making a decision
disappointed - can't do what want
    due to restriction by technology, ability, time, unable to get to
    QuickTime during class, how things work
amazement/amazed - other's ability
    originally awe
amazement/amazed - amount learning
    in class or in program
amusement/amused - playing around
    can be joking or acting playful
amusement/amused - getting along with others
    coincidence - funny you should mention this . . . I feel the same
    way or I know you so well and we finally disagree
amusement/amused - what other said
    also someone else's idea
amusement/amused - own plan of action
    may include taking time to play
annoyance/annoyed – technology
    also bothered - time to load, cost
annoyance/annoyed - other's sensitivity
    may be too sensitive or not sensitive enough
anticipation/anticipation - what's to come
    may be results of what's happened, may be things to do after end
    of program e.g. playing with technology, no due dates, keeping in
    touch with cadre
apologetic/apology - did too much
    also already got started on something
apologetic/apology - late or not at all
    late response or late to turn in assignment or never got to it
apologetic/apology - my confusion
    don't totally remember
apologetic/apology - if not really helping
    or found something wouldn't work or jumping in the middle of
    things
apologetic/apology – unclear
    tone taken differently than intended or not explaining clearly

apologetic/apology - freaking out
    or bitching
appreciation/appreciation – resources
    course materials or technology
appreciation/appreciation - other sharing
    can include shared resource
appreciation/appreciation - other taking time
    being thoughtful
appreciation/appreciation - other's comment
    unsolicited or response to discussion prompts
appreciation/appreciation – feedback
    solicited comments
appreciation/appreciation - other's support
    includes honesty, encouragement, help, patience
appreciation/appreciation - doing as asked
    may be assignment, may be from one peer to another
caring/caring - for other
    also for other's well being
caring/caring - help other
    more than just supportive
cautious/cautious - about experiences
    having different experiences, no experience in this at all
comfort/comfortable - with peers
    e.g. prof using nicknames
confidence/confident - make direct comment
    may be a request
confidence/assertive - position within group
    typically refers to power structure in class
confusion/confused – tech
    also clueless about technology
connected/connected - shared experience
    doing same thing as other person
curiosity/curious - other's plans
    want to work together, what someone will do, intrigued - other's
    plans
curiosity/curious - how it's done if at all
    also why things are like this, what someone else did to get it done,
    is it doable
curiosity/curious - wants to know more
    what's going on
curiosity/curious - what others think
    also other's ideas, am I making sense?

cynicism/cynical - school politics
    includes teacher behavior & techie behavior
defensive/defensive - want to clear things up
    may be about earlier posting
empathetic/empathy - happened to me too
    I'm feeling the same way
encouragement/encouraging - know you can do it
    could be almost there or do something big
encouragement/encouraging - have fun
    can be to play around with something
encouragement/encouraging – share
    e.g. opinions, thoughts, tech know-how
encouragement/encourage – collaboration
    others to join group or just to work together
enjoyment/enjoyment – resource
    may be additional something brought in or a course required
    reference
enthusiasm/enthusiasm - learn new thing
    may be byproduct of actual assignment
enthusiasm/enthusiasm – s/t outside of class
    quality in education
enthusiasm/enthusiasm – resource
    e.g. particular technology, course content [readings]
envious/envious - wish I'd done that
    wish mine looked like that; differs from wistful in "magnitude" of
    thing being wished for
exasperated/exasperated - other's reaction
    may be that they just don't get it
exasperated/exasperated - tired of trying
    giving up - can't see how to do it, done all I can do
excitement/excited – success
    students' accomplishments, own accomplishment, something
    worked
excitement/excited - about class topic
    could be doing an assignment
excitement/excitement - for resource
    new technology
frustration/frustrated - try or want to do st
    also accomplishing something or may be particular to assignment
    or comes from not having experience with tech
frustration/frustrated – technology
    how it works or bad design

frustration/frustrated - with or for teachers

    neediness re. using tech, teachers unable to do, treatment of
    teachers

frustration/frustrated - with author's advice

    sometimes personal preference away from Krug's Web design
    advice, but not always so strong as to say frustrated

hope/hopeful - getting prepared

    also getting materials

hope/hopeful - good enough

    or as good as someone else's

hope/hopeful - it worked

    or argument works [makes sense]

impressed/impressed - others' work

    falls between praise and inspired - stronger than praise, not as
    strong as inspired

inspired/inspired - by other's work

    can be inspired to act or just to think

love/love - class resource

    could be particular technology or class reading

love/love - working together

    working on assignment, compare notes

need/needy - how to do something

    need info from other or curious - can you help me

need/need - more instruction

    includes wanting more of a schedule or syllabus

overwhelmed/overwhelmed - too much info

    or over my head

overwhelmed/overwhelmed - not enough time

    feeling behind, so much to do

overwhelmed/overwhelmed - what others did

    can be by time others took to do something

pleased/pleased - what other said

    agrees with idea, other said something

pleased/pleased – success

    other's accomplishment, own accomplishment

pleased/pleased – technology

    can be free stuff to use

pleased/pleased – collaborating

    with cadre, happy to work with other

praise/praise - other's work

    can be improvement, typically class project

pride/pride - individual class accomplishments

    includes own Web page

reassured/reassuring - in due time
    will give warning, will get to it
regret/regret - too busy
    no time to do something
regret/regret - missed out
    can be hearing about something late or missed seeing someone
    face-to-face
relief/relief - getting it
    also it works
resigned/resigned - asked for it
    also just screwed
sad/sad - other's experiences
    student experiences, that not everyone is excited
self-centered/self-centered - now about me
    also cheeky - doing assignment own way
self-deprecating/self-deprecating – didn't think of it
    also best I can do
shock/shock - what one said
    includes shock at someone's harsh response and taken aback by
    other's praise
stress/stress - class requirements
    struggling with tech, due dates
support/supportive - let me know needs
    emotional side of being helpful [a cog act]
support/supportive – sharing
    emotional side of being helpful [a cog act]; includes offering tech
    support or sharing resources and telling how I did something
support/supportive – generally
    supported by the group
support/supportive - don't sweat it
    emotional side of being helpful [a cog act]
timid/timid - just a beginner
    emotion behind hesitant remarks, out of my element and timid
    with technology
timid/timid - just my opinion
    pointing something out - emotion behind hesitant remarks; may
    also be risking dept on person and statement
timid/timid - on right track
    emotion behind hesitant remarks
timid/timid - since you asked
    emotion behind hesitant remarks
unhappy/unhappy - final product
    miss the old one, unhappy with work I did

unsure/unsure - if on right track
      staying on topic
unsure/unsure - making it work
      what to suggest to do to . . .
unsure/unsure - what others will think
      "just my thoughts" - this buffers them from what others will think
upset/upset - ed tech
      also disturbed/upset - design for girls, upset with state of school
      where teaching
willing/willing - to try something
      also to work at it more

Appendix H

Weekly Profiles

Week 1(Friday, May 10—Monday, May 13)

Everyone checks into the newsgroup and some engage in discussion about upgrading their computers. The students have jumped on the first assignment made on the syllabus and are reading a book about user-centered Web design. Many are finding elements of the book that they like. The instructor, Jonathan, posts the technology policy from a school district and invites the students discuss their thought about the policy. Jonathan gives indications that he expects the class will have real-time meetings in Tapped In, and lets the students know that he will work with their other professors when scheduling. Finally, in preparation for the first assignment from the syllabus—a redesign of the students' Web sites according to the reading—Jonathan asks if the students know how to create screenshots. As a result, many resources are exchanged in the newsgroup to assist those who do not have screen shot experience. Finally, during this initial week of class, Jonathan warns the students not to slack off in the newsgroup.

Week 2 (Tuesday, May 14—Monday, May 20)

This week Jonathan travels to Australia. The class members continue discussing the district technology policy. They also engage in a multifaceted discussion about their first assignment: some ask for technical help, some mention the changes they are planning, and a few begin to criticize the use of particular design elements that are advocated in the reading. Students begin to post their finished Web site redesign and begin offering feedback on each other's work. During these discussions, the students first encounter Jonathan's strong opinions— typically posted in all capital letters. Jonathan also actively offers feedback about the content and quality of the class's discussions. Julie initiates a short conversation about how to keep up cadre communications after graduation which leads to a discussion about how much emotion is or is not conveyed through the text of newsgroup postings. Finally, when asked, Lia shares her childhood experiences living under a dictator in the Philippines.

Week 3 (Tuesday, May 21—Monday, May 27)

Students continue to turn in their first Web redesign and offer each other feedback. Jonathan posts the first of several technology management scenarios. The instructions are minimal, yet as the students respond it appears that Jonathan had some expectations that were not communicated clearly. Some of the students who are not teachers respond to the scenario to reflect their workplaces or the organizations on which they are doing research. The students find other design elements from the reading that they dislike. Jonathan offers up his Web page for their critique, knowing that his design does not model their preferences. Based again on the syllabus students are reading a book about streaming audio and know that they are to create a two minute radio show, but the syllabus does not provide any details. Goldi directly asks for details in the newsgroup and this begins a discussion about both the content and the technical requirements of the project. While some students express that they have no experience with streaming audio, many in the class try to organize collaborative groups for working on the project. During these "negotiations," Jessica suggests that one group work on a radio play instead of doing an interview as suggested in the reading. Jonathan very much likes this idea and his enthusiasm about it confuses students as to his expectations for the assignment. At the students' request, Jonathan extends the deadline for the radio project. Despite this, Angela posts her project along with a detailed description of what she did, to help others. The others seem excited to be able to listen to an example and they immediately begin to offer feedback to Angela. Jonathan again gauges the class's technical abilities by asking who has experience using Filemaker Pro. He also posts the next technology management scenario—changing the amount the students can spend from $10,000 to $100,000.

Week 4 (Tuesday, May 28—Monday, June 3)

Students continue to post their radio projects and offer feedback to one another. Those who are struggling with the technology ask for and receive help from the group. A side discussion begins about technology support people at schools who are not at all helpful. Jonathan posts several questions about what school budgets actually look like and under what conditions teachers should be given laptop computers. Other topics discussed this week include the use of Flash and the gender-bias of children's toys. Jonathan provides students with a preview of coming attractions and mentions that he is worried that class members will stop participating in class before the end of the trimester. At the end of the

week, Jessica tells the group that she is going into the hospital to have her baby.

Week 5 (Tuesday, June 4—Monday, June 10)

All discussions that began in the last two weeks continue while students keep posting their radio projects and giving each other feedback. New discussion topics emerge such as getting girls involved in computer activities. Jonathan presents a new technology management scenario for discussion—how do you organize the technology within a school building? He also realizes that there will no be time in the course to work with QuickTime and a few students express their disappointment. The take some initiative and come up with a plan for learning QuickTime together on their own at the end of the program. Comments spring up about the vast amount of messages in the newsgroup. Jonathan poses more questions to spark discussion about who is responsible for technology maintenance in the schools, whether or not Webquests are constructionist, and if there is a need for both Inspiration and Kidspiration. He also posts an article by Jonathan Kozol and welcomes reactions. Jonathan returns from abroad and keeps students apprised of what is coming next week. At the end of the week, some students begin to post their next assignment—a second Web site revision based on a different Web design book.

Week 6 (Tuesday, June 11—Monday, June 17)

Jonathan assigns the Filemaker Pro project. After that the week becomes very quiet, prompting Jonathan to ask, "Where is everyone?" At this time a Jonathan and a few students are attending a national technology conference and the teachers in the group are winding down the school year. Susan takes a moment to express her frustration with the timing of the Filemaker Pro assignment and in doing so inadvertently insults classroom teachers. Several teachers correct her misconception that teachers "have the summer off." Elizabeth's replies are sharper than others' and a "war of words" soon occurs between Susan and Elizabeth. Susan initially does not understand that she has caused such hard feelings and eventually realizes that she upset everyone, while Elizabeth makes sure that she has the last word. During this conflict, most cadre members & Jonathan sat back and watched. Lia and Gordon on the other hand realize that Susan's words came from her frustration and that she needs support, which they provide. Jonathan posts another article and asks for student reaction. Michael's response mentions balance between viewpoints being necessary. This comment begins a

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heated discussion primarily among Michael, Lia, and Jonathan in which Jonathan calls the students "weasely."

Week 7 (Tuesday, June 18—Monday, June 24)

This week the students begin a second round of redesigns on their Web sites based on another design book that they have read. Groups form and begin to work on the database project—including the students who are still attending the national technology conference. Michael has joined Lia and Carl for the project. Elizabeth asks only Michael if she may work with him—discounting the fact that he is working with others. Similarly, Michael replies that it is fine as long as it is okay with Jonathan. Neither one consults the rest of the project group. Class discussions include a book by Papert and a debate about the "cost" of good and bad Web sites. Jonathan modifies the Filemaker Pro project assignment by giving the students a reprieve on data entry—they do not have to include the data in their project, just design and build the shell of the database.

Week 8 (Tuesday, June 25—Monday, July 1)

Jonathan is in Spain at this time. The students work alone or in groups on the Filemaker Pro assignment. Some are still confused. They help and support each other in their work both technically and with content. Jonathan initiates a discussion about wireless networks in schools and assigns a final book to be read. As the students are feeling more and more stress, a few begin reflecting on the nature of their stress. Jonathan contacts university tech support for information about uploading the Filemaker Pro projects to the server. They are not responsive so he instructs students to wait. He keeps them updated often about the problem as his annoyance grows. Students and instructor share information about emerging technologies and begin a discussion on the final readings.

Week 9 (Tuesday, July 2—Tuesday, July 9)

Class comes to an end one week before the students meet face-to-face, at which time they must have their master's projects prepared for public exhibition. The Filemaker Pro projects finally get uploaded to the server. Some discussion continues in the newsgroup along with feedback on Web redesigns. Only a few students are engaged this week. Julie, Angela, & Lia talk to each other while Bonnie catches up on replying to earlier postings.

Appendix I

Individual Profiles

Jonathan

uses subject line to give instructions; obviously cares about the students; can tell when he feels strongly about something—uses CAPS— typically re. general state of tech in schools; playful & humorous—in word choice; publicly praises students—typically one liners; details about his experiences, travel, writings, personal politics, etc; leaves referential quotes at bottom of messages; uses smiley to temper statements; replies are unsigned – original messages are signed – usually first name, sometimes last name; often calls students "kids;" seems to get a bit frustrated with those who don't pay attention to previous posts on a subject – those who ask about the same thing that has already been covered

Carl

teaches at alternative high school & community college; received teacher of the year during this course; shares some information about his son and father; usually short messages; offers praise and appreciation; signs messages "Carl"

Jessica

provides online calendar for group; 1st to post in NG; signs all messages with first name; deletes referenced quotes; mentions side things not directly related to class; appears to remark on everyone's work; offers ideas to other re. what they are doing; always encouraging; pregnant (6/2 induced labor, back online 6/8); has background of acting in the theater; often uses people's nicknames when messaging them directly in the newsgroup; seems to work with others as much as possible; connects learning here to other classes

Julie

changes subject line as thread topic shifts; very knowledgeable about technology; uses LOL often—seems to take the edge off her direct comments; signs name in all lower case or with nicknames; s/t adds to signature to describe self at that moment in 3rd person (TI holdover?); deletes referenced quotations unless using them; her strong feelings are

obvious; pleased with herself and it shows; uses very specific acronyms (ROTFLMAOPMP=rolling on the floor laughing my ass off peeing my pants) praises others; conducting Master's project re. museums; uses Dragon because of wrist problems; gives criticism of others' work directly – statements of what's wrong and tips for correcting it; very active in newsgroup; works at different university's library; member of primary subgroup

Elizabeth

uses ellipses often in her messages; only includes necessary referential quotations; signs with shortened version of name—sometimes using caps; uses others' names when addressing them in messages; praises others (can hear the teacher there); works as teacher at parochial school on west coast; enthusiastic, appreciative of others; seems to become more direct in her comments when she is busy or stressed; member of primary subgroup

Angela

keeps referential quotations; technology specialist in Midwest; uses smileys simply as smileys; responds to others' work; open to collaborate in situations where it makes sense to do so, otherwise works cooperatively; makes personal connections with others & engages in personal conversations in NG; offers tech help to those who ask; engages actively and thoughtfully in discussions; longer messages than most; not afraid to express own opinion—offers examples to support; engages equally in tech-specific topics and education topics
uses humor often

Gordon

no salutation or signature in messages; asks for suggestions from peers directly in re. what they have done on their pages—really took their suggestions; appreciative; Web design newbie & okay telling everyone; admits learning a lot and problems he encounters; engages in discussions; uses creative smileys – confused, etc.; practical – explains how using course stuff at work; subtle humor used occasionally; lots of praise for others; keeps playing with technology even after plea for help; shares opinion / thinks it's okay to disagree

Bonnie

freely refers to personal stuff going on and alludes to that of others; appreciates others' perspectives, suggestions; only keeps needed referential quotations; responds to each suggestion made in reply postings; open about her Starbucks habit; science teacher in Southern non-parochial private school; uses humor; s/t posts only phrases; warns class about absence for family boat trip 5/30 – 6/9; can tell from her messages who she genuinely likes; very engaged in discussions; keeps running list of things to do after the program ends; reflective about what she's gotten from the program

Michael

has no public school experience—uses this position to offer an outsider's perspective on ed topics; works for different education program in same university; can tell he genuinely enjoys his peers; brings in outside info—resources and television references; uses acronyms somewhat beyond the mainstream—LMAO; only uses needed referential quotations; praise—if no suggest doesn't try to find one; understands where others are coming from; is empathetic, shows concern; planning wedding for two weeks after program ends; uses humor; is direct; uses AIM and e-mail because too much in NG – daunting; knows what others do and references that; takes initiative, lets instructor know when he goes off point; engaged in discussion; okay w/& openly; responds when s/o criticizes his ideas

Lia

humor, enthusiasm, praise, playful, optimistic; adds TI emotes here and there; teaches in Montessori school; engages in discussion; uses peer names in messages, no ref quotes; clarifies own thoughts in subsequent messages; shares personal life experience, elaborates when asked; uses ellipses, lots of one line messages; regularly changes subject line to indicate shift in discussion thread; w/in driving distance of [Susan]-offers f2f help w/frustration; nurturing, supportive, encouraging for all including instructor; appreciative of others' help; warns before goes offline; brings in outside stuff

Goldi

enthusiasm, praises others, engages in discussion; alludes to comments made in other course NGs; lots of dropped/wrong words—is aware of this; communication habit; writes in phrases with heavy use of ellipses; Web beginner; warns of going offline for her grandmother's 80th; reflective of own tech habits; replies to individual posts w/o using names–just reply to message; ideas of what projects to do after program ends; uses some humor; shares her opinion freely; reposts something 2x because misspelled author's name; engages in one-on-one conversation with another student via NG; carpel tunnel—uses ViaVoice sometimes

Peter

signature is first name with quote—quote changes with different e-mail address—then a new one altogether appears; enthusiastic for others' accomplishments; offers praise; addresses individuals in his postings; claims not usually on time with assignments; proud of self and it shows, humor, Zen, nature, sarcasm; uses ellipses regularly; aware & empathetic of others' situations; parochial teacher in the South; sometimes predicts peer reaction to his comments; worried about having stepped on toes a couple times; weighs quality of work vs. deadline & lets deadline win; uses pertinent referential quotations; reflective about learning in the program

Helen

works for corporate in support of education in Midwest; only one to consistently use salutations and sign offs; praises others, enthusiastic, clever, funny; use of TI emotes in NG messages; includes referential quotations on messages that directly address those quotations; willing to collaborate, often takes initiative in organizing groups; appreciates other's work & sharing; aware of how others may view her arguments; refs prior working together when disagrees w/peer; refers to comments from other classes; engages in discussion

Steven

deletes referential quotations; most messages are one liners; low class presence w/ minimal discussion; works in tech dept of same university; appreciative of others' suggestions; opens up some about difficulties in program; wants to make end easy so he can spend time on Master's project

Appendix J

Codes Appearing Most Often Per Week

Week 1

4 occurrences of enthusiasm - participation
4 occurrences of enthusiasm - resource
3 occurrences of appreciation - other's work
2 occurrences of annoyed - technology
2 occurrences of anticipation - what's to come
2 occurrences of curious - other's experiences
2 occurrences of enthusiasm - working together

Week 2

66 occurrences of praise- other's work
24 occurrences of curious - how it's done if at all
21 occurrences of appreciation - feedback
11 occurrences of praise - other's ideas
10 occurrences of amused - being playful
9 occurrences of love - someone's work
8 occurrences of curious - what others think

Week 3

87 occurrences of praise - other's work
26 occurrences of appreciation - feedback
21 occurrences of amused - being playful
16 occurrences of love - someone's work
15 occurrences of amused - what other said
19 occurrences of praise - other's ideas
12 occurrences of amused - joking
10 occurrences of timid - just my opinion
10 occurrences of appreciation - other's comment

Week 4 (radio projects posted)

56 occurrences of praise - other's work
8 occurrences of amused - being playful
8 occurrences of amused - what other said
8 occurrences of appreciation - other's support

7 occurrences of frustrated - treatment of teachers
7 occurrences of love - someone's work
6 occurrences of praise - other's ideas
6 occurrences of appreciation – feedback

Week 5 (radio projects posted)

47 occurrences of praise - other's work
20 occurrences of praise - other's ideas
17 occurrences of amused - what other said
11 occurrences of appreciation - other sharing
16 occurrences of appreciation - feedback
9 occurrences of nostalgic - personal stuff
8 occurrences of amused - getting along with others
8 occurrences of pleased - own accomplishment

Week 6

30 occurrences of praise - other's work
9 occurrences of appreciation - feedback
9 occurrences of praise - other's ideas
9 occurrences of curious - how it's done if at all
9 occurrences of praise - other's accomplishment
8 occurrences of amused - what other said
7 occurrences of amused - being playful
6 occurrences of appreciation - other sharing

Week 7

32 occurrences of praise - other's work
20 occurrences of praise - other's ideas
9 occurrences of amused - being playful
9 occurrences of amused - what others said
7 occurrences of appreciation - other sharing
6 occurrences of appreciation - feedback
6 occurrences of anticipation - what's to come
6 occurrences of appreciation – feedback

Week 8

12 occurrences of praise - other's work
11 occurrences of amused - what other said
9 occurrences of praise - other's ideas

5 occurrences of amused - being playful
5 occurrences of amused - by what I said
5 occurrences of appreciation - feedback
5 occurrences of curious - wants to know more
5 occurrences of curious - what others think

Week 9

2 occurrences of amused - how something happened
2 occurrences of amused - what other said
2 occurrences of curious - what others think

Appendix K

Sample Spreadsheet Showing Codes by Person

Table 5
Sample spreadsheet showing codes by person.

	WEEK SIX Tue 6/11 - Mon 6/17												
Lia	6-5	6-7	6-8	6-10	6-10	6-10	21-1	21-3	21-3	21-5	21-5	21-5	21-8
	21-10	21-10	21-12	21-12	21-12	22-2	24-1	36-1	36-6	39-4	39-3	45-4	45-7
	45-12	54-1	54-4	54-9	57-5	60-11	60-13	63-5	63-5	69-2	81-2	90-1	90-3
	90-3	90-3	90-3	90-3	90-4	90-5	90-5	90-6	90-6	93-1	96-1	100-2	117-7
Helen	6-3	15-3	21-3	21-3	39-4	45-7	51-2	54-11	57-4	69-2	69-5	71-3	90-3
	90-3	90-4	90-5	90-5	90-6	93-8							
Carl	49-1	71-9											
Elizabeth	6-10	12-8	18-6	21-10	57-6	69-5	69-6	87-5	87-5	91-2	91-3	92-4	
Susan	9-4	12-1	12-6	12-8	18-12	18-12	21-12	39-7	45-7	45-12	45-12	49-2	49-2
	84-4	93-4	105-4	111-4	117-8	123-1	126-4						
Jonathanb	6-4	21-4	21-5	36-9	40-2	42-1	42-5	45-4	45-12	48-2	49-2	49-2	51-2
	54-7	54-9	54-11	87-7	87-6	90-3	90-4	90-5	90-5	90-5	100-2	100-3	100-3
	102-1	102-1											
Peter	6-4	21-7	24-1	45-7	57-4	78-4	78-4	78-4	90-5	90-5	90-5	90-6	
Michael	6-10	21-3	27-4	36-4	40-2	45-7	49-1	49-1	49-4	62-4	78-2	78-5	84-4
	87-13	90-5	90-5	114-4	117-2	AD							
Angela	6-4	6-4	6-7	6-10	6-11	12-4	15-3	18-4	18-8	21-10	45-4	49-1	49-1
	51-2	51-6	51-6	54-7	63-8	69-5	74-2	90-5	90-5	90-5	90-5	90-5	90-5
	90-6	93-8	100-1	114-5	114-4	117-2	126-4						
Jessica	6-5	6-3	18-6	21-2	21-2	21-10	40-2	90-3	90-5	90-5	90-5	90-5	93-4
	117-1												
Goldi	18-7	21-2	21-3	21-4	21-10	21-10	24-1	39-1	40-3	45-7	45-7	45-7	45-12
	57-5	63-8	63-15	67-2	69-6	71-3	75-1	76-1	76-1	84-4	90-5	90-5	90-5
	90-5	90-5	90-5	90-6	99-3	100-3	101-3	115-2					
Julie	6-10	45-7	49-2	63-13	63-13	63-11	69-10	87-6	90-6				
Gordon	21-8	51-6	54-12	77-4	84	90-5	90-6						

	WEEK SIX Tue 6/11 - Mon 6/17												
Bonnie	6-10	21-1	21-2	21-10	45-4	45-12	45-13	51-6	54-7	60-4	60-4	69-2	84-4
	84-4	84-4	84-4	84-4	90-5	96-1	101-1	101-1	120-7				
Steven	45-4	90-6											

Appendix L

Sample Timeline of Critical Conversation
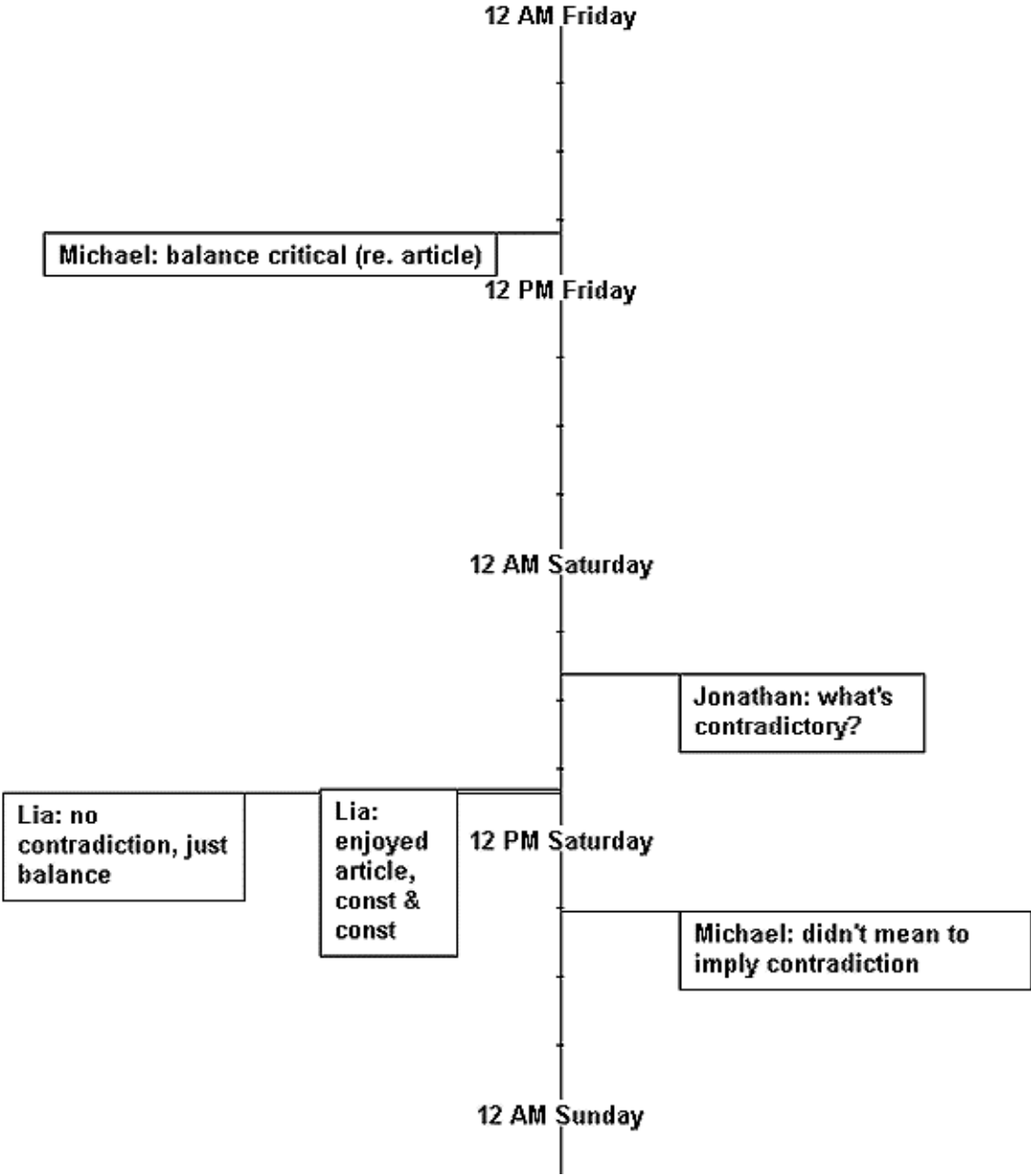
Figure 7. Sample timeline of critical conversation about "balance."

Jonathan: asks Lia re. const & const

Jonathan thanks for

Lia: laugh

12 PM Sunday

Helen: appreciates article

Michael fights back

Jonathan: "weasely" & balance is inaction

Lia: "well said"

Lia: asks for clarification on Jonathan's question

Jonathan: balance=relativism, Nazism

12 AM Monday

Michael: makes stand stronger

12 PM Monday

Lia: questions balance=relativism, chicken & egg

12 AM Tuesday

12 PM Tuesday

Lia: responds to Jonathan's question w/outside source

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12 AM Wednesday

12 PM Wednesday

Jonathan: praises Lia's response & shock at research

12 AM Thursday

Lia: thanks Jonathan for praise

Jonathan: going to challenge a bit

Jonathan: critique of Michael's argument

Michael: rebuttal

Thursday

Jonathan: praises & calls Lia silly

Lia: apologizes for silly

Jonathan: agrees, shifts to public support for progress

Peter: ex of lacking public support

Lia: understands Peter's ex.

12 AM Friday

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Appendix M

Public Feedback among Students

Table 6
Public feedback among students.

student receiving feedback

	Lia	Helen	Carl	Elizabeth	Susan	Peter	Michael
Lia	web 1 5/20 radio 6/1_ web 2 6/10	web 1 __X__ radio __X__ web 2 __X__	web 1 __X__ radio __X__ web 2 __X__	web 1 __X__ radio ____ web 2 __X__	web 1 ____ radio ____ web 2 ____	web 1 __X__ radio __X__ web 2 __X__	web 1 __X__ radio ____ web 2 __X__
Helen	web 1 __X__ radio __X__ web 2 __X__	web 1 ____ radio ____ web 2 ____	web 1 __X__ radio __X__ web 2 __X__	web 1 __X__ radio __X__ web 2 __X__	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 __X__
Carl	web 1 ____ radio ____ web 2 ____	web 1 __X__ radio ____ web 2 ____	web 1 5/21 radio 6/4_ web 2 6/10	web 1 ____ radio __X__ web 2 ____	web 1 ____ radio __X__ web 2 ____	web 1 ____ radio __X__ web 2 ____	web 1 ____ radio __X__ web 2 ____
Elizabeth	web 1 ____ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio ____ web 2 ____	web 1 5/21 radio 6/2_ web 2 6/12	web 1 ____ radio ____ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio ___-_ web 2 __X__
Susan	web 1 ____ radio ____ web 2 ____	web 1 ____ radio ____ web 2 ____	web 1 ____ radio ____ web 2 ____	web 1 ____ radio ____ web 2 ____	web 1 5/22 radio 6/1_ web 2 ____	web 1 ____ radio ____ web 2 ____	web 1 ____ radio ____ web 2 ____
Peter	web 1 __X__ radio __X__ web 2 ____	web 1 ____ radio ____ web 2 ____	web 1 ____ radio ____ web 2 ____	web 1 __X__ radio __X__ web 2 __X__	web 1 __X__ radio ____ web 2 ____	web 1 5/20 radio 6/5_ web 2 6/12	web 1 __X__ radio __X__ web 2 ____
Michael	web 1 ____ radio __X__ web 2 ____	web 1 ____ radio ____ web 2 ____	web 1 ____ radio ____ web 2 ____	web 1 ____ radio ___--_ web 2 __X__	web 1 ____ radio ____ web 2 ____	web 1 __X__ radio ____ web 2 ____	web 1 5/20 radio 6/2_ web 2 6/11
Angela	web 1 __X__ radio __X__ web 2 __X__	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio ____ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____
Jessica	web 1 __X__ radio ___--_ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 __X__	web 1 __X__ radio ____ web 2 ____	web 1 __X__ radio __X__ web 2 __X__	web 1 __X__ radio __X__ web 2 __X__
Goldi	web 1 ____ radio __X__ web 2 __X__	web 1 __X__ radio __X__ web 2 ____	web 1 ____ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 __X__	web 1 __X__ radio ____ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 __X__
Julie	web 1 __X__ radio __X__ web 2 ____	web 1 ____ radio __X__ web 2 __X__	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 ____ radio ____ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____
Gordon	web 1 ____ radio ___--_ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 ____ radio __X__ web 2 __X__	web 1 ____ radio ____ web 2 ____	web 1 ____ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____
Bonnie	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio ____ web 2 ____	web 1 __X__ radio __X__ web 2 ____

	Lia	Helen	Carl	Elizabeth	Susan	Peter	Michael
Steven	web 1 ____ radio ____ web 2 ____	web 1 ____ radio ____ web 2 ____	web 1 ____ radio ____ web 2 ____	web 1 ____ radio ____ web 2 ____	web 1 ____ radio ____ web 2 ____	web 1 ____ radio ____ web 2 ____	web 1 ____ radio ____ web 2 ____

student receiving feedback

	Angela	Jessica	Goldi	Julie	Gordon	Bonnie	Steven
Lia	web 1 __X__ radio __X__ web 2 __X__	web 1 ____ radio __--__ web 2 __X__	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 ____ radio ____ web 2 __X__	web 1 ____ radio __X__ web 2 __X__	web 1 __X__ radio __X__ web 2 ____
Helen	web 1 __X__ radio __X__ web 2 __X__	web 1 __X__ radio ____ web 2 __X__	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 __X__	web 1 __X__ radio __X__ web 2 __X__	web 1 __X__ radio ____ web 2 ____
Carl	web 1 ____ radio ____ web 2 ____	web 1 ____ radio ____ web 2 ____	web 1 ____ radio __X__ web 2 ____	web 1 ____ radio __X__ web 2 ____	web 1 ____ radio ____ web 2 ____	web 1 ____ radio ____ web 2 ____	web 1 ____ radio ____ web 2 ____
Elizabeth	web 1 __X__ radio __X__ web 2 __X__	web 1 ____ radio __X__ web 2 ____	web 1 __X__ radio ____ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 ____ radio __X__ web 2 ____	web 1 __X__ radio ____ web 2 ____	web 1 __X__ radio ____ web 2 ____
Susan	web 1 ____ radio ____ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio ____ web 2 ____	web 1 ____ radio __X__ web 2 ____	web 1 __X__ radio ____ web 2 ____	web 1 ____ radio ____ web 2 ____	web 1 ____ radio ____ web 2 ____
Peter	web 1 ____ radio ____ web 2 ____	web 1 __X__ radio ____ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio ____ web 2 ____
Michael	web 1 ____ radio ____ web 2 __X__	web 1 ____ radio ____ web 2 ____	web 1 ____ radio ____ web 2 ____	web 1 ____ radio ____ web 2 ____	web 1 ____ radio __X__ web 2 ____	web 1 __X__ radio ____ web 2 ____	web 1 __X__ radio ____ web 2 ____
Angela	web 1 5/20 radio 6/5_ web 2 6/12	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 __X__	web 1 __X__ radio __X__ web 2 __X__	web 1 __X__ radio __X__ web 2 __X__	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio ____ web 2 ____
Jessica	web 1 __X__ radio __X__ web 2 ____	web 1 5/19 radio 5/31 web 2 6/16	web 1 __X__ radio __X__ web 2 ____	web 1 ____ radio __X__ web 2 ____	web 1 __X__ radio __--__ web 2 ____	web 1 ____ radio __X__ web 2 __X__	web 1 ____ radio __X__ web 2 ____
Goldi	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 5/19 radio 5/31 web 2 6/16	web 1 ____ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio ____ web 2 __X__	web 1 __X__ radio ____ web 2 ____
Julie	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio ____ web 2 ____	web 1 5/21 radio 6/3_ web 2 6/19	web 1 __X__ radio __X__ web 2 ____	web 1 __X__ radio ____ web 2 ____	web 1 ____ radio __X__ web 2 ____

	Angela	Jessica	Goldi	Julie	Gordon	Bonnie	Steven
Gordon	web 1 __X__ radio __X__ web 2 _____	web 1 _____ radio __--__ web 2 _____	web 1 __X__ radio __X__ web 2 __X__	web 1 __X__ radio __X__ web 2 _____	web 1 5/19 radio 6/1_ web 2 6/9_	web 1 __X__ radio __X__ web 2 _____	web 1 _____ radio __X___ web 2 _____
Bonnie	web 1 __X__ radio __X__ web 2 _____	web 1 _____ radio __X__ web 2 _____	web 1 __X__ radio __X__ web 2 _____	web 1 __X__ radio _____ web 2 _____	web 1 __X__ radio __X__ web 2 _____	web 1 5/18 radio 5/30 web 2 6/11	web 1 _____ radio _____ web 2 _____
Steven	web 1 _____ radio _____ web 2 _____	web 1 _____ radio _____ web 2 _____	web 1 _____ radio _____ web 2 _____	web 1 _____ radio _____ web 2 _____	web 1 _____ radio _____ web 2 _____	web 1 __X__ radio _____ web 2 _____	web 1 5/18 radio 6/6 web 2 _____

Appendix N

Sample Member Checking

Level One: Follow Up Questions

Bonnie—Follow Up to Interview #1

Follow Up Questions:
1. How did the subgroups that you mentioned form? What brought those people together?
2. Who were the "natural question posers"?
3. What do you think caused you to feel timid about posting?
4. What were the emotional postings about?
5. Who did you have "gripe sessions" with? Who initiated them?

Level Two: Interview Summary

Participant: Angela—Member Check for Interview #3
(words in italics were added by Angela after reading the summary)

[Cohort Oak] was very supportive. I think some peers lost out on this support because they were not willing to honestly express their emotions. Most of the changes in cadre members' emotions happened prior to this trimester. The things that happened during this course just seemed to support those changes.

I think we all felt challenged through this course. Many of us felt varying levels of stress. This seemed to differ based on what each student was willing to put into the class. Those who wanted to do their best felt more stress than those who simply worked to "get by."

Prior to the class I had introduced myself to [Jonathan] and he told me that the course would be "geeky." I found that to be a correct assessment of what we did during the course. It was also a nice break from the rest of the program which was largely reading-intensive & theory-driven. I enjoy working with computers and trying to figure out software & hardware. Being able to accomplish something with technology is always an emotional high for me. Most of my peers did not share this enthusiasm.

This was the only course not to have a Tapped In sessions with the professor. This may be due to [Jonathan]'s travel schedule and/or our

hectic Tapped In schedule for other classes. No one in the class seemed to miss meeting in Tapped In for this class.

I found the newsgroup for this course to be stressful—especially [Jonathan]'s weekly discussion prompts. *It was not his prompts that I found so stressful but what his reply might be—how he might express it. Would he attack it, take my response to task, or would it be OK?*

[Jonathan] was a very active instructor in the newsgroup—more than most other [Master's program] instructors. He expressed himself very directly in the newsgroup. [Jonathan] seemed to be more focused on what he was doing than what we students were doing, but was enthusiastic through the course. I never shared any of my feelings with [Jonathan]. After knowing him in person, I did not feel that I could trust him with confidences. *(I don't know that I would put it this strongly. He didn't inspire confidences—I do not quite equate that with trust. It's a matter of emotional distance.)* I also didn't feel that my feelings would be welcome in the class environment. *(Again, this is a little strong. It's not that my feelings would not be welcome, it just was not the place to express them.)*

I felt enthusiastic about the work since it fell within my comfort zone, but could also stretch somewhat. In this course I found myself in the role of technology specialist/mentor—the same role that I have in my job as a district technology specialist. This role was very comfortable for me. I was happy to share many of the resources that I had from work with the class. My relationship to the others in this class was slightly different due to my technology knowledge.

I was also more focused on survival. I tended to work more on my own than in other classes because I did not have to go to others for help. I am aware that many conversations concerning technical problems happened via phone, e-mail, TI, and IM, but I was not involved in them. *(I believe that most of the conversations concerning technical problems were those I tended to be involved in. However, those conversations that revolved more around the emotional factors of the class, I was not involved in. That was the emotional distance I had in this class.)* I also kept a little more to myself in this class as May and June are the busiest times for me at work.

People seemed very positive about redesigning our Web pages at the beginning of the course. For the radio project, I found developing the content, not streaming the audio, to be the most challenging part of the

radio project. Most of my peers were more challenged by the technology, as evidenced by the large number of e-mails expressing concern.

I was the first to post my intentions for the radio project and also the first to post the link to my finished assignment. I included a detailed description of how I had streamed and uploaded my project because I had heard from many classmates that they were struggling with the technology. Many of them expressed relief after reading my posting. I gave additional help to [Goldi] and [Bonnie] by phone when their projects were not working. *(I also exchanged some e-mails with others, helping them, too.)* When we got them working we were all very excited and it made me feel good to be able to help in that way.

Having to post to the newsgroup caused me to feel trepidation and worry. I sometimes fell back into an old habit of wanting to "get it right." That would lead to some trepidation, but gave way to the understanding that there is no "right" in the things we were doing in class.

I was worried about [Jonathan]'s response to my postings because of how he had responded to others' postings. He was sure of his opinion and expected us to be as sure of ours. If someone posted a weak or conciliatory response he tended to "take them on." This seemed to happen especially to the women in the class—[Goldi], [Marlene], and especially [Lia]. At one point he referred to [Lia] as being "wishy-washy," but she handled the criticism graciously, as she did everything. He also put [Michael] on the defensive and [Michael] took it in stride, perhaps because they know each other personally. When [Jonathan] would come out swinging like this [Helen] and I felt badly for the person on the receiving end.

I felt a constant fear that I would be on the receiving end of one of [Jonathan]'s strong postings. I think that most class members were also cautious like me about what they posted so as not to receive such a response from [Jonathan]. When I expressed this fear to cohort-mates at [a national technology conference], [Elizabeth], who knows him personally, said that [Jonathan] respected me. I was shocked and pleased to hear that.

When I posted my how-to about the radio project I was nervous about [Jonathan]'s reaction. I was concerned whether or not this was cheating and how he would respond. I got positive feedback from [Jonathan] on the project and this reaction boosted my confidence in posting to the

newsgroup. *(Well, it helped my confidence level in his class, but as this was just the first project, there was a long way to go yet!)*

The FileMaker Pro project also caused worry among the cadre. Only about 2-3 class members had ever used the program and I was the only one who had used it to make a database for the Web. The cadre seemed to mostly feel extreme frustration, especially when faced with the database project. Some members expressed anger publicly through the newsgroup and privately through e-mails and phone calls. I believe this project was not the best-designed or best-timed project. It felt like [Jonathan] needed to get one last project in before the end of the course. The project was also hampered by technical problems from [the University].

[Helen] and I got the impression that [Susan] felt the database assignment was beneath her. This was not the first time that we got that impression from [Susan]. We also felt it during the previous trimester and it seemed to have been building since the first trimester.

For me, feelings arose during collaborative work based on the other members of the subgroup. By this time in the program, we were all aware of who was less reliable during collaborative work. Some feelings of frustration and resentment toward these people were evident when they worked with others but did not do their share of the work. I would get more frustrated and anxious working with people who are unreliable, just doing enough to get by, or were late. On the other hand, I would feel pleased working with people who did their best and were always on time. In this case, I enjoyed the fact that group members pushed one another to do our best work. For example, I worked as part of a collaborative group (with [Bonnie], [Becky], and [Marlene]) on the database project. I served as the group's technical person. Our division of labor brought relief to all group members and we worked together well.

Our cadre experienced our first heated disagreement in the newsgroup during this course. This was one of only two "cracks" in the community of practice that had formed among the cadre members. During [Susan's] frustration with the database project, she made a comment about how teachers "have the summers off." This comment seemed like an insult against teachers. I felt that I had to respond to her misconception and tried to do so tactfully. [Elizabeth] also responded, but in a much more direct way. We were not surprised by her response since she had "taken on" a professor in an earlier class. *(The disagreement/argument with the other professor was not done in NGs, but with a very small audience, F2F.)*

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The postings that followed were quite emotional. They also drew my curiosity as I found myself logging on more frequently to see what was going on, finding them a distraction during a stressful time. [Jonathan] expressed to me that he enjoyed following that conversation as well.

I think the physical distance between myself and other cadre members led to my knowing most strictly as fellow students. Those cadre members who lived close to [one major city] seemed to grow closer together than the rest of us. They were not closed off in any way, but had the chance to get together socially, face-to-face. Out-of-towners who visited the area were welcomed into this subgroup wholeheartedly.

During [the winter face-to-face meetings], [Marlene] and I connected on a more personal level and spent some social time together away from the rest of the group. We have shared hobbies and interests, are of similar ages, and have children near the same age. She expressed to me that she was ready to give up toward the end. [Helen] and I became close through phone calls and instant messenger. We have the same work ethic and temperament. I also got to know [Goldi] more personally, but due to her being so much younger, we had more of a mentoring relationship. [Becky] and I got a bit closer toward the end of the program. [Julie] and I had a closer, but still professional relationship, and [Lia] and I tended toward more personal communications. All of these relationships may have gotten stronger had the physical distance not been so great.

[Helen] and I came into this class as close friends. We spoke freely via e-mail, phone, and sometimes IM and trusted each other to keep confidences. I also shared my feelings with [Goldi], [Bonnie], [Marlene], and [Becky] when our phone conversations would steer in that direction. When others expressed their feelings to me, I offered sympathetic support. If I sensed that they wanted real honesty from me, I tried to offer it in a tactful way. We also had a couple of IM sessions with all of us. Occasionally [Julie] would join us.

Some members of the [cohort] seemed to isolate themselves from the rest of us. For example, [Susan] never fully participated in the cadre ListServ, preferring to receive only the digest version. I was surprised that she asked me to assist on her [Master's project] but was happy to help in this way.

My emotions changed depending upon the nature of the assignment in which I was engaged. In this class, being able to work alone and really focus on assignments was enjoyable. I also felt supported by my peers,

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knowing that I could send out a call for help if I needed. [Julie] was one of these strong supports in the Web assignments.

I try to keep my emotions separate from my problems. In other words, I may feel something privately, but I would not necessarily express it publicly. This is what I do in my job and it carried over into the cadre. I found that the physical distance from my peers helped me to keep my emotions separate. It was also easier to handle my emotions by reminding myself that I was taking "baby steps" in my learning. Only twice during the program, but not this course, did I emotionally "melt down."

Participant Response to Interview Summary

Date: Sun, 12 Jan 2003 21:00:45 -0500
Subject: Re: Summary of Interview
From: Angela

Here you are! My comments, clarifications, and replies are in italics.

Angela

On Sunday, January 12, 2003, at 05:37 PM, Courtney wrote:

> Hi [Angela],
>
> I have attached the summary of my understanding of your responses to
> the reflection prompt and interview questions. (Did that make sense?)
> I would appreciate it if you could read through this and let me know
> if there is anything that needs to be corrected, changed, or added to.
> I also included one question that I thought about while I was reading
> what you had written. It's tucked into the summary in green italics,
> toward the end. Can you give that one a shot?
>
> Thanks again for all your info. I so appreciate your candidness. :)
> Courtney

Level Three: Grand Member Check

Participant: Jessica

The fact that [Cohort Oak] had been together for ten months prior to the [Organization of Technology in Schools] course meant that, as one student put it, "we had already bonded and formed impressions of one another."

Thus, the mood of the cohort during this particular course varied from "tense, since we were all wrapping up our research projects and preparing for [Showcase.]"

[Jessica] confessed that the students were generally "stressed" preparing for Showcase.

According to [Jessica], he "liked to challenge us and make us think about our positions."

Many of the students found [Jonathan] syllabus for the course to be unclear or incomplete. For example, [Jessica] remarked that "books and assignments were not totally laid out in advance" and "no clear guidelines [for assignments] were given" on the syllabus.

Not having a "full" syllabus meant that, according to [Jessica], "some of us started out confused and angry." She went on to say, "This class added a little bit to our stress only due to the fact that [course elements] were not totally laid out in advance."

[Jessica]'s reaction stemmed from her individual situation: "This [lack of syllabus] particularly worried me because I was 9 months pregnant and had a baby 5 weeks before the trimester ended. I wanted to get all of my readings and assignments underway prior to delivery."

Since the students were expected to support one another, they talked about these feelings in "the cohort listserv out of view of the instructor." Here, according to [Jessica], "some venting took place about not having our assignments and not knowing what was going on [in the course]."

Regarding her role in the listserv, [Jessica] said, "Usually [I reacted to other's emotions with] support because I was feeling the same way."

[Jessica] saw the cohort as serving a similar purpose and pointed to the fact that "having already been with the cohort for 10 months before this class started, we had already bonded." She described the group as "very cohesive" and appreciated that "[m]ost of us had the same feelings and reactions, and we shared them readily."

[Jessica] explained that "the listserv was subscribed to by all cohort members as well as [an advising professor]. As a group, we decided that other professors not be allowed. The listserv was used for a lot of communication among the cohort—due dates, TI notices, 'outside' discussion. Some postings were about [Master's program] related things, while others were not."

[Jessica] often used e-mail to convey her emotions in the context of working collaboratively.

[Jessica] similarly loads emotions from earlier in the program, albeit briefly. While working on an assignment she exclaims, "AAGH!!! Having flashbacks of having to build that fax machine at [our initial face-to-face]!!! :-P" She easily recalled the frustration of the prior assignment and expressed those feelings with the same humorous spin that [Lia] did.

[Jessica] also played a role in which she did cognitive work that benefited the other group members emotionally—group organizer. [Jessica]'s role as group organizer involved keeping "one place for information from all classes." She began her organization because, "It was too time consuming to have to visit each individual professor's calendar to see due dates, reading assignments, TI schedules, etc. Better to have it all in one place with links to the syllabus." In fact, [Jessica] was the first student who posted in the course newsgroup: "Syllabus and assignment info has been added to our cohort summer schedule. [URL] :-)" She explained, "[M]y mind is constantly multitasking. I could tell the cohort due dates and project assignments off the top of my head without much reference to the syllabus or calendar. Since I would rattle due dates off in TI, people would ask me to remind them or post a calendar." Interestingly, [Jessica]'s role in the group emerged because she needed to organize things that "made [her] life easier." She explained, "I tend to be a scheduler and knew I had to do these things for myself. If others could benefit from the work I had to do for myself, all the better." Others in the group were able to benefit both cognitively and emotionally from her organization. Many students expressed their appreciation and awe to [Jessica] for "keeping us organized."

[Jessica]'s empathy was communicated mostly outside of the newsgroup. She explained, "I am extremely empathetic to others. [I try] to be as helpful as possible and tend to worry if others are not comfortable with their assignments/skills/etc."

[Jessica] mentioned, "A few of us were discussing alternatives to interviews [for the radio project]. Scripts came up and some people were interested in recreating a play or movie." Thus a group began to form among those students who wanted to work together on a project involving a script.

[Jessica] summed up the experience when she told the cohort, "The project was great fun and the collaboration made the content that much more interesting. On our own, we could not have come up with something so creative. Thanks [Lia] and [Gordon]!"

[Helen]'s radio show also involved an interview with a relative, but the content was more humorous. As a result, the students responded back with humor. [Jessica] replied, "Great work. You even got mom to sing...very cute! :-)"

Participant Response to Grand Member Check

From: Jessica
To: Courtney
Subject: Re: Checking In

Courtney,
I too am a little slow responding. The summary you provided was fine. It is funny to read about how I felt, since it seems so far removed from my life right now. Good luck with your dissertation defense. I look forward to reading your completed paper.

Jessica

> Hi Jessica,
>
> How have you been? I'm sorry it has taken me a while to get back in
> touch with you. I've been busy analyzing and writing and writing some
> more.
>
> I wanted to thank you again for all the wonderful information you
> provided. I have one final check that I would like to run past you

> before I finalize my work and send it to my committee. I've attached
> yet another document--this one has all of the pieces of my paper that
> reference things you told me or things you said in the newsgroup. I
> would appreciate your reading through the pieces (I hope they don't
> come across too disparate) and letting me know one last time if
> everything seems in order.
>
> I am set to defend my dissertation on June 16 and plan to place a copy
> of it online after I have made any changes that my committee requests.
> I will keep you posted where you might be able to snag a copy if you
> are interested.
>
> If I don't hear from you, I will figure that what I sent sounds good
> to you. Have a great week!
>
> Best,
> Courtney

Appendix O

Evidence of Peer Debriefing

Sample Face-to-Face Meeting Minutes

Tuesday, February 18

all gave updates on administrative details, e.g. number of member check
responses, number of sections written
I shared information from meeting with Stuart re. findings
      we discussed distilling findings better into themes & the possibility
          of cutting and pasting info from one structure into another
      as writing happens
discussion about structure for writing findings in chapters 4 & 5
      chapter 4 being case studies and chapter 5 being analysis on a
larger level

Tuesday, April 15

Lynda is awaiting greening from Judi & is glad she cancelled going to
AERA
Laurie is working on her final draft for her committee.
Court presented her revised plan for chapter 5 since the first draft was
way off base
      all considered the new plan and followed on the points of where
      distributed emotion is and isn't in this context

Sample E-mail Correspondence

The following messages occurred in place of a face-to-face meeting on
Tuesday, February 25.

Date: Mon, 24 Feb 2003 09:11:46 -0600
From: Courtney Glazer
To: Laurie Williams, Lynda Abbott
Subject: Meeting Tomorrow?

Hi team!

Laurie, I hope everything has gone well for the beginning of your
recovery—that the family is behaving and you are feeling good! I've been

thinking about you as I battle with the structure of what now is back to just chapter 4. I was wondering what you are feeling "up to" as far as a meeting tomorrow. If you are still loopy or tired or sore, we understand. If you do want to meet, let us know what is most convenient for you. We can come to you or can "spring you" and give you a ride somewhere.

I really need to run this latest plan and my findings past one or both of you tomorrow, if possible.

Thanks,
Court

Date: Thu, 27 Feb 2003 11:16:26 -0600
From: Courtney Glazer
To: Lynda Abbott, Laurie Williams
Subject: Need Virtual Debriefing

Hi there,

I've been trying to work with a new organization format for chapter 4 that Stuart & Judi & I agreed would convey the organic nature of distributed emotion better than simply pulling out stray examples here and there.

The plan is to discuss the things and people in the course, but in such a way that context is present throughout the whole discussion. So, unless it is important to convey each detail, there's no reason to put some of them in there.

With that in mind, I completely redid my outlines with all my data. Yesterday I started to write "around the data" and it was just awful! But, during the afternoon I put the data away and sat down to write what I know and in what order I should present it.

I've attached these bits of prose and hope that you will read through them and let me know what you think. I know that the grammar is all over the place, but this represents the distributed emotion that I found in the class. I will be adding quotations and examples and very explicit statements like "so the distributed emotion here is . . . " later. For now, any comments would be much appreciated.

Thanks!
Court

Date: Thu, 27 Feb 2003 12:35:03 -0600
From: Lynda Abbott
To: Courtney Glazer
Subject: Re: Need Virtual Debriefing
Cc: Laurie Williams

cglazer@mail.utexas.edu writes:
>I've attached these bits of prose and hope that you will read through
>them and let me know what you think. I know that the grammar is all
over
>the place, but this represents the distributed emotion that I found in
>the class. I will be adding quotations and examples and very explicit
>statements like "so the distributed emotion here is . . . " later. For
>now, any comments would be much appreciated.

I'm heading off to a physical therapy session (my back HURTS! owwww.),
but I did read through your draft. Seems like it makes sense to me --
but I'm not sure if I'm looking at what you're wanting me to look at. For
example, I'm not sure if I'm seeing the kinds of "organic nature of
distributed emotion" in the way you want to present them.

I think you might be on a good track -- hard to tell, though. (That's
normal, though, when you know so well what you're after and I don't.)

I'll be back later. You can call me this evening. I hope I can try to help.
Mostly, I think you're probably on a workable track, but you may have to
keep going before it's really clear to me.

Did that just make sense??

;}

Lynda

Date: Thu, 27 Feb 2003 16:51:05 -0600
Subject: Re: Need Virtual Debriefing
From: Laurie Williams
To: Courtney Glazer; Lynda Abbott

Court,
   One thing that popped up for me was mixed use of present and past
tense.

You may want to go through and see if the action is something that still exists. (e.g. Stephanie is a teacher at a K-5 school) or is something that cropped up during the course of the time being studied (e.g. Stephanie was
concerned about projects being "bells and whistles").

   Also, will you be including quotes of any kind as examples? Duh, I may
be so quote focused because of mine, so ignore this question if it doesn't apply. ;-)

Laurie

The following e-mails were sent in addition to regular face-to-face meetings.

Date: Sun, 23 Mar 2003 14:27:34 -0600
Subject: About this Tuesday :/
From: Laurie Williams <wmslcw@perfectfit.org>
To: Courtney Glazer; Lynda Abbott

Hiya,
   Hope you've had a relaxing weekend. We've been busy around here getting ready for our exchange student who comes next weekend.
   I was wondering if we could meet a bit earlier this week. John's car has to go into the shop, and Sarah is getting her braces Tuesday afternoon. I have to be at Bailey by 1:30 to pick her up to take her to the orthodontist. Could we meet at 11??

   Also, I've been working on my appendices/appendixes :-) Here's what I've got slated and done so far:

Appendix A: Researcher as Instrument **? 5p**
Appendix B: Consent Forms **? 10p**
               -Initial Consent Form ?
               -Continuing Participation ConsentForm?
Appendix C:: Sample Coded Phone Interview
Appendix D: Sample Summary **? 3p**
Appendix E: Sample of Categories **? 2p**
Appendix R: Sample E-mail Interview **? 3p**
Appendix G: Samples of Member Checking
               -During Phone Interviews
                 *Clarifying

       *Summarizing
      -During E-mail Interviews
       *Clarifying
       *Correcting Researcher's Understanding
Appendix H: Sample of Additional Sources of Information
      -Found Online
      -Sample of E-mail Logs
      -Web Site Information
Appendix I: Sample Reflexive Journal **? 13p**
Appendix J: Samples of Peer Debriefing Communication **?4p**
       -Team Minutes ?
       -E-mail ?
Appendix K: Sample of Themes **? 3p**
Appendix L: Authenticity Examples
Appendix M: Afterword
Appendix N: Table of Recommendations

Cya Tuesday :-)

Laurie

Date: Sun, 23 Mar 2003 14:34:18 -0600
From: Courtney Glazer
To: Laurie Williams
CC: Lynda Abbott
Subject: Re: About this Tuesday :/

11 is fine for me.

About the appendixes -- I was going to put my consent form in there and
then realized that, even a blank one will completely violate the
confidentiality that I promised to my informants. Something to consider.

Court

Date: Sun, 23 Mar 2003 15:17:10 -0600
Subject: Re: About this Tuesday :/
From: Laurie Williams
To: Courtney Glazer
CC: Lynda Abbott

Court,

How will a blank one "completely violate the confidentiality" of your informants? In mine, I X'd out phone and e-mail information. Like my phone number (XXX)XXX-XXXX. I don't want someone getting ahold of this and contacting me! My blank one doesn't' address the informants except by saying they were chosen because they took part in one of 6-9 online projects. Here's an excerpt from my first consent form:

You are invited to participate in a study of perceptions of K-12 teachers who have joined online projects for the first time. My name is Laurie Williams, and I am a graduate student in the College of Education at the University of Texas at Austin. This project is being done as part of a Directed Research pilot study. I am interested in the stories of teachers who are participating in their first online projects.

You are being asked to participate in the study because you have recently signed on to take part in an online project hosted by one of the following online organizations: KIDLINK/KIDPROJ, iEARN, 2Learn, ePals, the Electronic Emissary Project, the Global School Network (Hilites Archive), Oz-TeacherNet, NASA Quest, ThinkQuest, or the Jason Project. If you choose to participate, you will be one of 8-10 people in this study. From now through August, we will work together using phone interviews and e-mail to develop the story that you have to tell about taking part in your online project.

<whew> I just finished the member-checking appendix stuff. :-)

Laurie

Date: Sun, 23 Mar 2003 16:35:11 -0600
From: Courtney Glazer
To: Laurie Williams <wmslcw@perfectfit.org>
CC: Lynda Abbott
Subject: Re: About this Tuesday :/

For me it's in that second paragraph -- I name their university, the instructor, the course title, etc. I figure the fact that I got the study by the DRC implies that there was a kosher consent form.

Glad you are still working away. Don't overkill before we get to the next round of fun stuff. :)

Court

Date: Sun, 23 Mar 2003 16:43:54 -0600
Subject: Re: About this Tuesday :/
From: Laurie Williams <wmslcw@perfectfit.org>
To: Courtney Glazer <cglazer@mail.utexas.edu>
CC: Lynda Abbott <Lynda_Abbott@teachnet.edb.utexas.edu>

Hmmm....

    Could you insert something like this below--I don't' know exactly
what's in your second paragraph, so I'm just making this up:

**You are being asked to participate because you go to [university
name] and are in [professor's name]'s [name of class].**

I just finished the samples of other sources of information. I'm quitting
on it for today and will chip away at the last bit a teensy bite at a time :-)

Laurie

Date: Sun, 23 Mar 2003 17:13:42 -0600
From: Courtney Glazer
To: Laurie Williams
CC: Lynda Abbott
Subject: Re: About this Tuesday :/

I thought about that and then decided that there wasn't any real need in
having it in there. If Judi insists, I'll add it, but I think I'm fine without it.

Appendix P

Sample Reflexive Journal Entries

Excerpt from December 27, 2002

FIRST READ THROUGH BY PERSON
JULIE
changes subject line as thread topic shifts
very knowledgeable about technology
modifies assigned scenario to reflect what wants to talk about
uses LOL a ton
    it doesn't feel like the appropriate places – makes it a bit awkward and
stilted
    e.g. p. 34 "The pictures were quite good and helpful but the text
    explanations less so, LOL."
born in Hawaii, mother Filipino
excessive response to [Jonathan's] questions re. Filemaker pro – sets self
up as expert often
signs name in all lower case
    s/t adds to signature to describe self at that moment in 3rd person (TI
holdover)
deletes referenced quotes unless using them
her strong feelings are obvious
pleased with herself and it shows
uses very specific acronyms (ROTFLMAOPMP=rolling on the floor
laughing my ass off peeing my pants) do the others understand these? *is
this not another way of demonstrating prowess (yes, accd to Baym's
research)*
praises others
seems to have experience in corporate sector
like [Jonathan]. . . yeah, that's good about you, but here's about me
seems to answer many more questions than asks – what does that say?
defends [Jonathan] when s/o questions assignments not on syllabus –
easily slips into teacher role???
major project re. museums
p. 30 "I don't mean to sound like a snot"
uses Dragon because of wrist problems (not only one)
    interesting to explore how that external pain affected experience
posts work sites but typically with an excuse or explanation that serves
to put off others' critiquing, e.g. p. 49 don't want to redo but will if have
too – only the strong would offer suggestions to that!!

gives criticism of others' work directly – statements of what's wrong and tips for correcting it
very active in newsgroup

ELIZABETH
uses ellipses often
only includes necessary ref quotes
uses names when addressing others in message
5/17 comment on newsgroup and her learning
praises others (can hear the teacher there)
enthusiastic
appreciative of others
5/24 mentions difft forms of communication – DE!!!!!
seems to become more direct in her comments when she is busy or stressed – check this out

Excerpt from January 18, 2003

Laurie & Lynda helped me immensely in figuring out what needs to go where in chapters 1 –3. I realized that just because I came up with this theory along a particular line of reasoning does not mean that that reasoning seems the most logical to others.

I know that this theory sprang out of my learning about distributed emotion and asking, Clara Peller style, where's the emotion. Most people consider emotion literature as a starting point for a theory of emotion and so I must begin my work there.

They also helped me to realize that it is okay to make assertions in chapter one that will be supported in detail in chapter 2. I kept feeling like someone would look at chapter 1 and figure I just made this stuff up and not ever get to looking at chapter 2. I suppose chapter one is almost an extended abstract.

Excerpt from February 1, 2003

Notes from Coding Weeks 6—9

- difference in degree - exasperated & hostile for other not getting it - that degree is indicated by CMC - all caps seems hostile
- week 6: just been assigned the database project, it gets quiet, people heading to [tech conference] and finishing out school year, two other projs for other classes coming due, [Susan]'s "bitch" & [Jonathan]'s "weasly" comment

- database project: (the initial assignment did not mention NOT entering data)
- frust - how tech works = some may fit under "trying to do something"
- [Michael] comes to [Lia]'s defense re. "weasly" through a Papert discussion on how better to talk to others as a leader - very subtle?
- who else besides [Lia] & [Gordon] address group support during the [Susan] incident??
- when [Elizabeth] wants to join a group, she addresses only [Michael] who had joined at someone else's invitation - more signs of her exclusivity & [Michael] responds it is okay with him as long as [Jonathan] is okay -- WHY IS NO ONE ASKING THE OTHER (ORIGINAL) GROUP MEMBERS??????
- [Jonathan] later asks [Julie] if she managed to get a Web face on her db and can she tell everyone how to do it
- like on the radio project with the scripts, [Jonathan] makes it known what he would like to or would have liked to have seen
- [Goldi] tells [Jonathan], "Wow, you don't have to yell...*grin*" and he replies, "I'm not yelling."
- [Elizabeth] & [Goldi] feel the need to repost to correct names & sw titles that are misspelled - so others know they know better??
- difference between encouraging feedback and curious what others think is position in the class -- encouraging is an instructor role
- check amusement against sarcasm??? think I did okay with this

Excerpt from February 22, 2003

Preliminary Findings for Chapter 5
ABOUT THIS CLASS ONLY—NOT TO BE DRAWN TO LARGER UNIVERSE
connection between people who use multiple forms of communication and how close they perceive themselves to be to one another
   could be because of types of communication
   could be because of different sized audiences for communication
students play similar roles when working on projects or engaged in discussion
when some people have offloaded their emotions about a particular topic and others bring this topic up, tolerance is much lower—or is this reliant on personality
   e.g. Susan on lack of planning vs. Elizabeth or Peter on amount of postings
when majority of class feels more stress (like at the end of the course) they tend to lose sight of the support role they could be playing

those who keep their eye on this role have a strong inclination toward supporting *everyone* – it comes more naturally to them?

professor stays at a distance/helps crystallize cadre even more—harsh critiques, lack of planning—things that require the students to look within their own ranks

>	interesting that even though he provides specific tech support the group continues to look within—this is that professor as outsider thingy
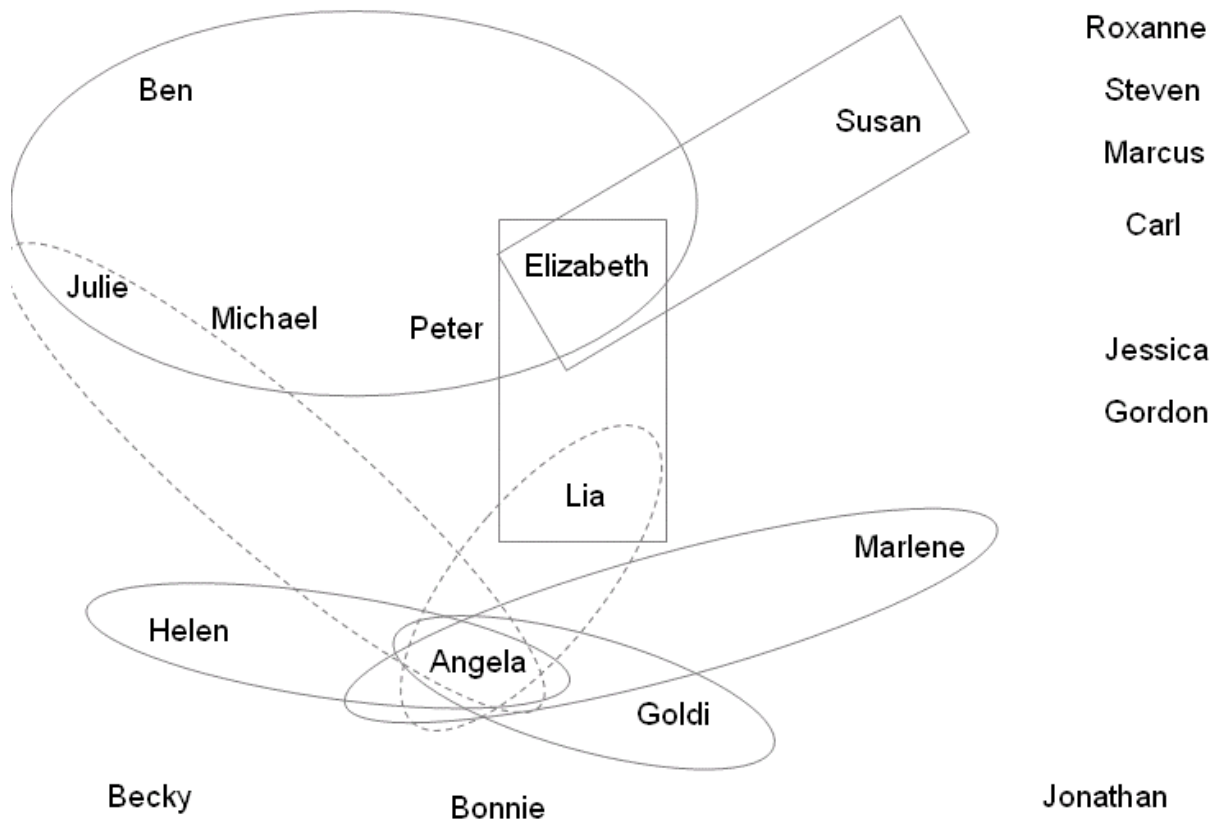
Appendix Q

Personally-Based Subgroups

Figure 10. Diagram showing personally-based subgroups. Circles/ovals denote subgroups. Squares denote antagonistic feelings. Dotted lines denote slight closeness, but not full subgroup status.

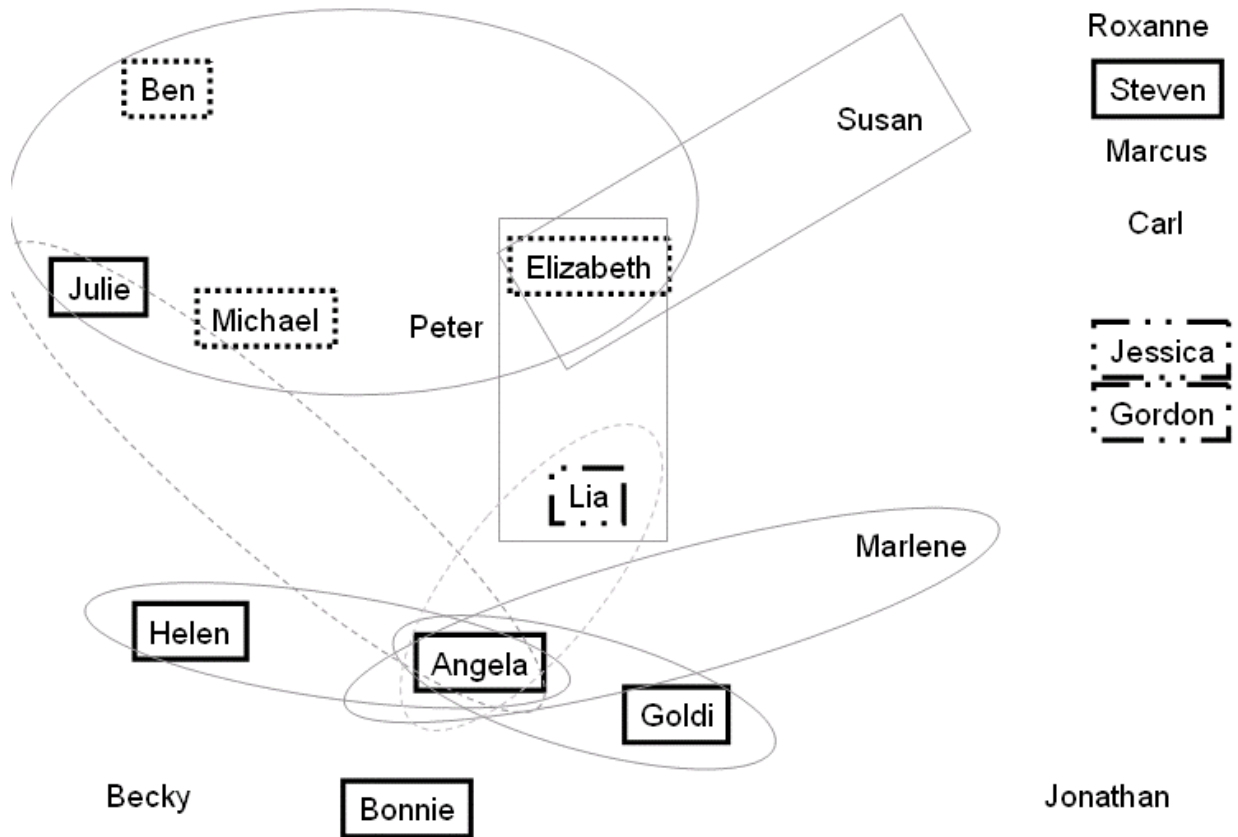Assignment-Based Subgroups

Radio Project

Figure 11. Diagram showing project-based subgroups for radio project. Grey lines indicate personally-based subgroups. Other marks indicate students working together on the streaming audio project.
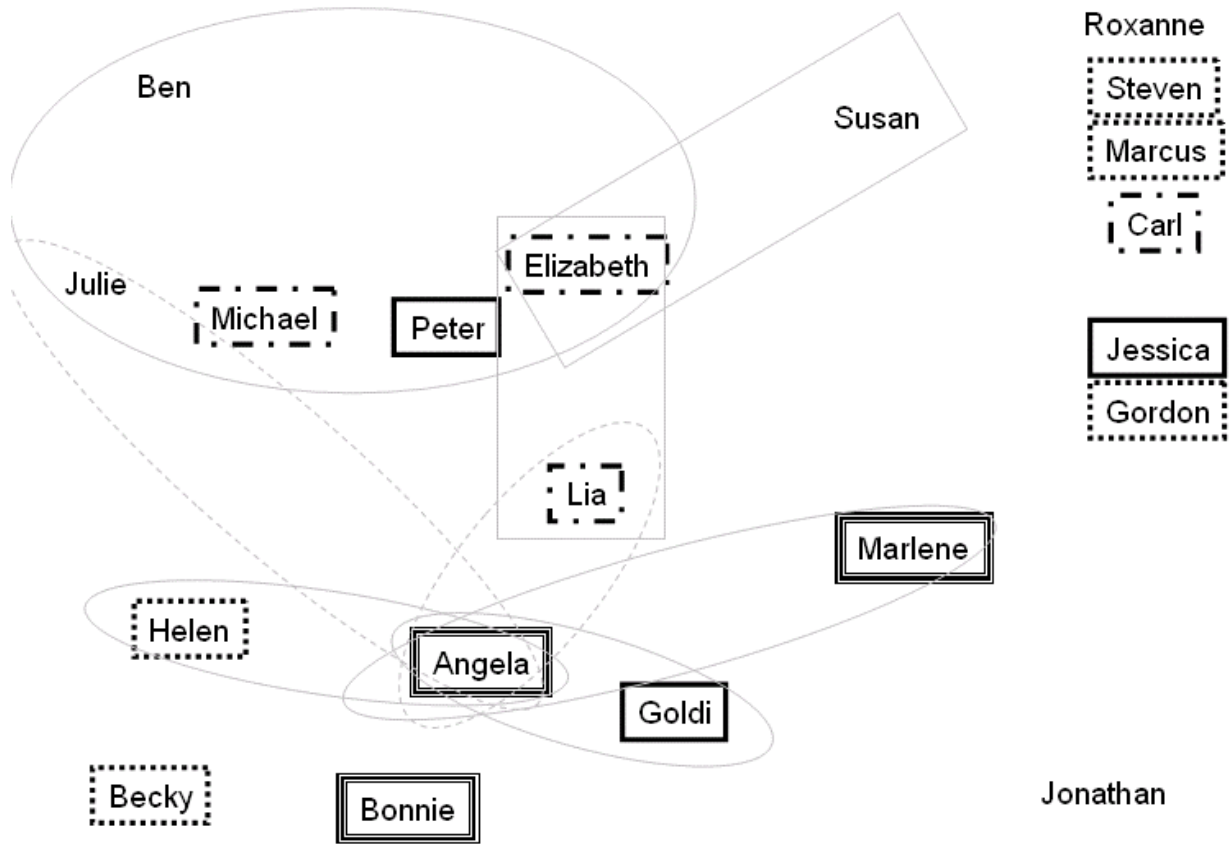
Figure 12. Diagram showing project-based subgroups for database project. Grey lines indicate personally-based subgroups. Other marks indicate students working together on the Filemaker Pro database project.

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VITA

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