

7-17-2003

# A Qualitative Exploration of Reflective Thinking In Experiential Learning Debriefings

Lynn D. Grinnell  
*University of South Florida*

Follow this and additional works at: <https://scholarcommons.usf.edu/etd>

 Part of the [American Studies Commons](#)

---

## Scholar Commons Citation

Grinnell, Lynn D., "A Qualitative Exploration of Reflective Thinking In Experiential Learning Debriefings" (2003). *Graduate Theses and Dissertations*.

<https://scholarcommons.usf.edu/etd/1381>

This Dissertation is brought to you for free and open access by the Graduate School at Scholar Commons. It has been accepted for inclusion in Graduate Theses and Dissertations by an authorized administrator of Scholar Commons. For more information, please contact [scholarcommons@usf.edu](mailto:scholarcommons@usf.edu).

A Qualitative Exploration of Reflective Thinking  
In Experiential Learning Debriefings

by

Lynn D. Grinnell

A dissertation submitted in partial fulfillment of  
the requirements for the degree of  
Doctor of Philosophy  
Department of Curriculum and Instruction  
College of Education  
University of Florida

Co-Major Professor: Lou M. Carey, Ph.D.  
Co-Major Professor: Ellen Kimmel, Ph.D.  
Ann E. Barron, Ph.D.  
Kathryn Borman, Ph.D.

Date of Approval:  
July 17, 2003

Keywords: reflection, david a. kolb, mental rehearsal, emotional processing, depth of processing, goal setting, priming, group development, grounded theory, content analysis

© Copyright 2003, Lynn D. Grinnell

## DEDICATION

To my husband, Rich, the light of my life, whose support and encouragement were essential to my completing this process.

## ACKNOWLEDGEMENTS

I would like to thank my two co-chairs, Dr. Ellen Kimmel and Dr. Lou Carey, for their guidance and support over the course of the extensive research design of this dissertation, as settings changed, methods evolved, new instruction was designed, and my writing improved thanks to their feedback. I would also like to extend my appreciation to Dr. H. Hankinson, one of the first to address learning in debriefings, for spending considerable time with me on the telephone so that I had a good understanding of the connections between his research and this dissertation.

## TABLE OF CONTENTS

List of Tables	v
List of Figures	vi
Abstract	viii
Chapter One. Introduction	1
Rationale	1
Purpose of the Study	3
Research Question	3
Limitations and Delimitations	3
Definitions of Theories Used in this Study	4
Experiential Learning Theory	4
Information Processing Theory and Instructional Systems Design (ISD)	4
Expert Theory	5
Transfer Theory	5
Flow	5
Somatic Marker Hypothesis	5
Meaning-making	6
Depth of Processing	6
Goal Theory	6
Connectionist Theory	6
Chapter Two. Literature Review	7
Theoretical background	7
Reflection	7
Experiential Learning Theory	8
Structured Reflection	9
Written Debriefings	10
Research on the Reflective Stages of Experiential Learning Theory and the Use of Debriefings.	11
Implications for This Study	18
Suggested Cognitive and Emotional Processes in Debriefings	19
Mental Rehearsal	20
Emotional Processing	21
Depth of Processing	23
Goal Setting	24
Literature Review of Methods	25
Grounded Theory	25
Content Analysis	26

Summary	26
Chapter Three. Method	27
Purpose	27
Research Design	27
Variables	27
Participants and Setting	28
Participants	28
Setting	31
Researcher's Background	32
Instruments	32
Demographic Survey	32
Pretests	33
Objective Achievement Tests	33
Debriefings	33
Culture Survey	33
Procedures for Data Collection	34
In-class Experiential Activities	34
Debriefings	35
Data Review	36
Coding	36
Grounded Theory Coding	37
Coding the Content Analysis	37
Data Analysis and Display	39
Integrating Patterns	40
Chapter Four. Results	41
Grounded Theory Analysis	41
Emergence of Patterns	42
Development of Concepts and Categories	42
Pattern-codes	45
Mental Rehearsal	45
Setting the Stage	45
Metacognitive Transfer	45
Motivation	46
Satisfaction	46
Group Development	46
Affiliation Interrupts	46
Central Categories	47
Process Maps	47
Learning Process Map	47
Introduction	48
Mental Rehearsal	48
Abstraction	49
Priming	50
Group Process Map	51
Pre-existing States	52
Problem Solving	53
Consensus-Building	53
Agreement	53

	Teamwork	53
	Conflict	53
	Confusion	54
Themes		55
	Learning Process Themes	55
	Iterative Reflection	55
	Richness of Connections	57
	Attachment of Personal Reactions	59
	Role of Writing in Debriefings	60
	Group Process Themes	61
	Fluid Group Development	61
	Role of Affiliation	62
Content Analysis		63
	Reliability	64
	Stability	64
	Coding Result	66
	Content	66
	Process	68
	Connections	71
	Context	72
	Affect	73
	Relevance	74
	Intent	75
	Content Analysis Summary	76
Chapter Five. Discussion		77
	Triangulation of results	77
	Commonalities	77
	Differences	77
	Discussion of Predicted Findings	79
	Increases in Learning	79
	Mental Rehearsal and Transfer	79
	Attachment of Emotion	80
	Multiple Retrieval Paths	80
	Priming for Future Use	80
	Discussion of Unexpected Results	81
	Setting the Stage	81
	Three-Part Mental rehearsal	81
	Complex Satisfaction	82
	Richness of Connections	82
	Fluid Group Development	83
	Role of Affiliation	84
	Suggestions for Instructional Development	84
	Experiential Learning Activities	85
	Written Debriefings	85
	Directions for Future Research	86
	Research into Learning Theory	86
	Research into Team-Building	86
References		88

Appendices	93
Appendix A. Demographic Survey	94
Appendix B. Course Syllabus	97
Appendix C. Objective Tests	104
Appendix D. Experiential Learning Reflection Questions	112
Appendix E. Class Culture Quality Survey	114
Appendix F. Instructional Design Matrix	118
Appendix G. Grounded Theory Coding Form	121
Appendix H. Example of Cognitive Map	122
Appendix I. Content Analysis Coding Guide.	123
Appendix J. Content Analysis Coding Form	124
Appendix K. Example of Growth Gradient	125
Appendix L. Grounded Theory Analysis Concepts and Categories	126
About the Author	End Page

## LIST OF TABLES

Table 1.	Montgomery's Reflective Learning Process (1992)	12
Table 2.	Streams of Meaning-Making. (Jensen, 1995).	14
Table 3.	Number of Students who Worked in each Size/Type of Organization	29
Table 4.	Experience with or Knowledge of the Concepts Covered in the Course	30
Table 5.	Results of Culture Survey	31
Table 6.	Building Categories	43
Table 7.	Summary of Lasting Effects from Group Interactions	55
Table 8.	Summary of Mean Intensities across Three Debriefings	76
Table 9.	Differences between Content Analysis Variables and Grounded Theory Categories and Concepts	78
Table II.	Content Analysis Coding Guide	123
Table L1.	Cognitive Learning Concepts and Categories	126
Table L2.	Personal Reactions Concepts and Categories	128
Table L3.	Group Dynamics Concepts and Categories	131

## LIST OF FIGURES

Figure 1.	Learning Process Map	48
Figure 2.	Group Process Map	52
Figure 3.	Total Number of Words by Participant	64
Figure 4.	Mean Intensity Ratings for Seven Variables by Participant	66
Figure 5.	Mean Intensity Ratings of the Content Variable by Stages of Debriefing in Three Debriefings	67
Figure 6.	Mean Intensity Ratings for the Process Variable in the Active Experimentation Stage by Criteria Used in Rating the Process Variable in Three Debriefings	69
Figure 7.	Mean Intensity Ratings of the Process Variable by Stages of Debriefing in Three Debriefings	70
Figure 8.	Mean Intensity Ratings of the Connections Variable by Stages of Debriefing in Three Debriefings	71
Figure 9.	Mean Intensity Ratings of the Context Variable by Stages of Debriefing in Three Debriefings	72
Figure 10.	Mean Intensity Ratings of the Affect Variable by Stages of Debriefing in Three Debriefings	73
Figure 11.	Mean Intensity Ratings of the Relevance Variable by Stages of Debriefing in Three Debriefings	74
Figure 12.	Mean Intensity Ratings of the Intent Variable by Stages of Debriefing in Three Debriefings	75

Figure H1. Sample Cognitive Map	122
Figure K1. Sample Growth Gradient	125

# A Qualitative Exploration of Reflective Thinking in Experiential Learning Debriefings

Lynn Grinnell

## ABSTRACT

The purpose of this study was to explore the nature of cognitive and emotional processes during the three reflective stages of the experiential learning cycle of experiential activities using written debriefings. The study examined three written debriefings from five senior-level undergraduate management students enrolled in a business management course. The debriefings consisted of four to five free-response questions modeled after Kolb's experiential learning cycle: concrete experience, reflective observation, abstract conceptualization, and active experimentation. The study triangulated results using two qualitative methods, a grounded theory analysis and a content analysis. In the grounded theory analysis, two process maps were developed from the debriefings. A learning process map identified four stages of learning: introduction, mental rehearsal, abstraction, and priming. A group process map identified four stages of group experiential activities: problem-solving, consensus building, reactions, and resolution. The group decision-making process was seen to follow four paths: agreement, teamwork, conflict or confusion. A possible moderating variable, prior group affiliation, affected the persistence of the groups in finding satisfactory solutions when encountering conflict, or confusion. Six themes emerged from the grounded analysis: iterative reflection, richness of connections, attachment of personal reactions, role of writing in debriefings, fluid group development, and the role of affiliation. In the content analysis, three raters coded the debriefings using seven variables: content, process, connections, context, affect, relevance, and intent. Growth was seen between the first half and second half of debriefings for all variables, and the

presence and intensity of variables was highest for all variables except content during the last stage of the experiential learning cycle, active experimentation. The amount of content present in debriefings was highest during the third stage, abstract conceptualization. The results of this study may provide insight into the mental processes that occur in written reflection and help instructors design experiential learning debriefings.

## CHAPTER ONE

### INTRODUCTION

In 1938 John Dewey stated that learning was a combination of experience and reflection, and, in the late 1940s, Kurt Lewin developed a model of action research that included feedback sessions as a necessary ingredient of the learning process to allow people to reflect on their experience (Kolb, 1984). Since then numerous constructivists have expressed abiding beliefs in the value of reflection in learning (e.g., Bruner, 1986; Cell, 1984; Driscoll, 2001; Lebow, 1993). Seventy-five years have passed since these ideas were first expressed by Dewey (1938), and still there is little actual research on how learning may be enhanced by reflection. Although a considerable amount has been written recently about how reflection might be elicited (Baker, Jensen, & Kolb, 1997; Boud, Keogh, & Walker, 1985; Guild & Garger, 1998; Moon, 1999), there is little description of the mental processes that may be occurring during reflection that affect learning.

#### Rationale

Reflection is a concept used by a number of constructivists (Boud, et al., 1985; Bruner, 1986; Camp, 1992; Cell, 1984; Moon, 1999), and it is most thoroughly explained by David Kolb (1984) in his experiential learning theory. Kolb's experiential learning theory purports that "true" learning must be done through a combination of experience and subsequent reflection on that experience. Kolb considered it necessary to complete the four-part, experience-reflection cycle for learning to transfer to future situations. The four stages of experiential learning he proposed are: concrete experience, reflective observation, abstract conceptualization, and active experimentation.

Planned reflection, either oral or written, is a major ingredient of experiential learning theory (Moon, 1999). In a classroom setting, oral debriefings are often used where the instructor leads the participants through a guided set of questions to generate information about the experience or activity. While oral briefings have been the norm, written debriefings and journals have also been used and are seen as a means of providing the same opportunity for reflection. In fact, when written debriefings require reflection, they may accommodate deeper processing than oral debriefings (Moon, 1999). When debriefings are written, instructors are able to assess more easily whether students have learned the targeted concepts and underlying principles and plans to review their use them in new situations. Further, analyzing the written answers of learners to debriefing prompts might lead to a greater understanding of the mental processes occurring during reflection, an area in which there is little research.

While at least five formats have been proposed for debriefings, most follow the sequence of Kolb's three reflective stages of the experiential learning cycle (Boud, et al., 1985; Guild & Garger, 1998; Lederman, 1992; Petranek, Corey, & Black, 1992; Moon, 1999). Suggested debriefing formats generally include a review of the content of an experience (i.e., what happened, the action), a review of emotional reactions to the experience from different participant perspectives, a discussion of concepts and relationships that can be surmised from the data generated from the reviews of the experience, and a call for developing plans for future action using the new learning.

Despite considerable theory development and implementation of reflection in classrooms, little research has been done on the mental processes that take place during reflection. Five studies have contributed some understanding, but no studies have focused on exploring the cognitive and emotional processes that may occur during written reflection. The authors of several of the studies on reflection (Burgess, 1992; Hankinson, 1987; Jensen, 1995; Montgomery,

1992), however, have recommended more fundamental research on theoretical constructs related to debriefings.

Theorists have speculated that certain processes in debriefings may account for deeper learning. For example, Haskell (2001) suggested that additional mental rehearsal develops additional competence; Guild & Garger (1998) proposed that emotional processing develops meaning during reflective observation; Craik & Watkins (1973) thought deeper learning could derive from the depth of processing that happens during the abstract conceptualization stage of reflection, while Locke & Latham (1990) speculated it could also be due to the goals set during the active experimentation stage of the debriefing.

#### Purpose of the Study

This study will explore the patterns that occur in learning processes during the three reflective stages of the experiential learning cycle using written debriefings of experiential activities.

#### Research Question

What cognitive and emotional processes occur during the debriefing stage of an experiential learning cycle?

#### Limitations and Delimitations

The sample size for this study was selected to be small and homogeneous in order to see common mental processes rather than the range of processes that might occur in a group with highly competent or incompetent extremes. As a consequence, it is not possible to generalize beyond the group studied. The results and conclusions of this study are limited to findings that can be tested in broader samples.

While efforts were made to increase validity and reliability of the research design through the use of multiple methods of analysis, multiple raters, and multiple theories, qualitative

researchers understand bias to be ubiquitous. Concerns over potential bias were included as comments during data analysis.

The researcher had three potential sources of bias as the author and designer of this study: (a) believing that debriefings are useful could have led to seeing positive changes in the data that did not actually happen, (b) reading the literature could have influenced beliefs about mental processes that could be present in debriefings, which was useful for content analysis, but may have had a detrimental effect on the grounded theory analysis, which is supposed to be free of a restricting framework, and (c) as the instructor of the course, the researcher interacted actively with the participants. On the one hand, this provided the opportunity to detect bias or deception by comparing written answers with personal observations. On the other hand, the researcher could have had a tendency to see patterns that were congruent with first-hand observations when coding the results, when the written data did not support the researcher's insights. To ameliorate these potential biases, two additional coders coded the data in the content analysis, and some of the participants were consulted on the validity of the themes derived from their data.

#### Definitions of the Theories Used in this Study

##### *Experiential Learning Theory*

Kolb (1984) identified a four stage experiential learning cycle. Learning begins with a *concrete experience*. This is followed by *reflective observation*, during which learners review the “who, what, when, where, and why” of an experience. Next, the learners engage in *abstract conceptualization*, as they create or elaborate on theories that explain this and other experiences. Finally learners plan and apply their learning in *active experimentation*.

##### *Information Processing Theory and Instructional Systems Design (ISD)*

Gagné (1984) contended that learning is a set of processes happening in the mind that begin with receiving the information, storing it in short-term memory, rehearsing and encoding it for long-term memory, retrieving the information, organizing it for use, and performing.

Feedback on the performance reinforces and strengthens the learning. Gagné believed that instruction should recognize and use each learning process.

#### *Expert Theory*

Chi, Glaser, and Farr (1998) identified characteristics of experts that differentiate them from novices. Among other characteristics, experts have acquired a significant knowledge base in their field; categorize problems in their field by underlying principles rather than surface features; and have developed an automaticity in routine procedures so that they can focus on unique aspects of a problem.

#### *Transfer Theory*

Haskell (2001) identified five conditions that promote transfer: an extensive knowledge base, a positive emotional connection that gives meaning to the learning, a supportive culture, theoretical knowledge, and extensive practice. His five-level taxonomy for transfer identified ever-broadening contexts for transferring learning: (a) from textbook knowledge to a problem or situation, (b) to an identical situation, (c) to a similar situation, (d) to a different situation, and (e) to a novel situation.

#### *Flow*

Czikszentmihalyi (1990) identified the conditions needed to achieve fluency (i.e., flow) in a skill to create optimal experiences. These include a challenging activity that requires skills, concentration on the task, clear goals and feedback, a sense of control, and significant practice to develop expertise.

#### *Somatic Marker Hypothesis*

Damasio (1994) contended that emotion is a key component of all mental processing. He hypothesized that all memories have a feeling attached to them. When memories are retrieved, the emotions stored with them are retrieved as well (Reisberg, 1997). These emotions can contribute to or detract from further learning (Kubler-Ross, 1969).

### *Meaning-making*

Frankl (1959) was the first theorist to postulate that the search for meaning was a strong factor in motivating individuals. Subsequent theorists (Senge, Smith, Roberts, & Kleiner, 1994; Biggs, 1989; Shamir, 1991) contend that relevance increases the attention paid to learning and thus the amount learned.

### *Depth of Processing*

Craik and Watkins (1973) contended that the type of mental rehearsal, maintenance rehearsal that is based on repetition, or elaborative rehearsal that is based on creating multiple connections and paths, determines how deeply information was processed. Information processed more deeply is more readily recalled.

### *Goal Theory*

Locke and Latham (1990) identified characteristics of goals that affect performance. Included in that set is the notion that specific and challenging goals create an expectancy that increases attention to a task.

### *Connectionist Theory*

Spitzer (1999) postulated that the number and weight of connections made between mental concepts facilitate their retrieval. Goal setting helps learning by increasing the connection weights in memory.

## CHAPTER TWO

### LITERATURE REVIEW

Reflection has been discussed in the literature for at least seventy-five years, yet empirical research on the nature and role of reflection in learning is scarce. For this section, landmark theories that incorporated reflection as a necessary part of learning will be reviewed, including an extensive look at Kolb's (1984) experiential learning theory. Research on experiential learning theory will be discussed next, followed by the literature on debriefings, with an examination of the research on the impact of debriefings on learning. A review of existing debriefing formats and an analysis of possible relationships between reflection and mental processes follows. This section concludes with a description of two qualitative methods of analysis that might provide insight into the nature of learning that occurs in debriefings.

#### Theoretical Background

##### *Reflection*

The first theoretical exploration of the role of reflection in learning was written by John Dewey (1938), who believed there were two kinds of processing: the trial and error of experience and the perception of relationships and connections. Conscious reflection was seen as necessary to make conscious decisions about what we will and will not do. To learn, he said, it is necessary to observe surrounding conditions, combine that with past knowledge of similar situations, and create a judgment on the significance of one's experience. Other prominent theorists echoed Dewey's perception of the importance of reflection. For Piaget, reflection was a higher form of development than concrete knowing (Kolb, 1984). Paulo Freire (1974) hypothesized the dialectical nature of learning, in which we learn by engaging in "reflection and action upon the

world in order to transform it” (p. 36). He went on to say, “Within the world we find two dimensions, reflection and action, in such radical interaction that if one is sacrificed...the other immediately suffers” (p. 75). Kurt Lewin discovered, by fortuitous accident, that learning was facilitated by following a concrete experience with analytic detachment (Kolb, 1984). One of the most important theorists to incorporate reflection into the learning cycle was David Kolb, developer of experiential learning theory.

### *Experiential Learning Theory*

Kolb (1984) developed experiential learning theory from the writings of Dewey, Piaget, Jung, Lewin, and others, as well as from seventeen years of his own research. He described two dialectical dimensions of learning that take place in the brain, perceiving and processing. Perceiving occurs when a person has a concrete experience. Processing then transforms those perceptions into knowledge in one of two ways, either through reflection or action.

Learning from experience is increased, Kolb (1984) contended, when people choose to reflect deliberately on their experience, connect it to prior knowledge, and plan their future actions. Kolb identified a four-stage learning cycle that included both experience and reflection. Effective instructional design, he said, would take students through a cycle that addressed all four stages. In the first stage, concrete experience, learners begin the learning process by experiencing some activity or event that has the potential to add to or change the knowledge or skills of the learner. This experience could be as simple as a lecture or as real as a traumatic accident. The second stage of the experiential learning cycle is reflective observation. In order to make the experience relevant and meaningful to the learner, the learner must review the experience and understand its value. This review also allows the learner to extract the salient features (cognitive and emotional) of the experience, which reinforces and clarifies concepts and relationships. In the third stage, abstract conceptualization, the learner is encouraged to connect the new experience to past knowledge and to generalize the salient features of the experience into

enduring concepts or rules. Finally, the fourth stage of the cycle is active experimentation, in which the learner plans to translate this new knowledge into action. The subsequent action becomes the next experience in the experiential learning cycle, testing the veracity of the concepts or rules developed during abstract conceptualization.

### *Structured Reflection*

One method widely used to engage students in reflection after experiential simulations and games is through the post-exercise debriefing (Baker, Jensen, & Kolb, 1997). Debriefings have a long history of use by the military (Lederman, 1992). Participants in military training missions routinely debrief every mission to compare their performance with their past performance and their goals. They analyze both their actions and their emotional reactions to develop “lessons learned.” Researchers in psychology also have used debriefings to de-role participants who have been deceived in experiments because of the experimental parameters. Clinical psychologists have used debriefings to help post-traumatic stress victims. The most recent use of debriefings is by instructors after conducting experiential learning activities, because the reactions evoked by experiential learning are often similar to those in stressful situations.

Most of the literature describes experiential learning debriefings as having four stages, similar to the three reflection stages of Kolb’s experiential learning cycle, but dividing reflective observation into two parts (Boud, et al., 1985; Brooks-Harris & Stock-Ward, 1999; Lederman, 1992; Moon, 1999; Petranek, et al., 1992). After participating in a concrete experience, the first stage of debriefings is to review the experience, both objectively and subjectively. An objective description recalls what happened in the experience. A subjective appraisal describes what the person felt during the experience: positive, anxious, or confident. Often the act of discussing or writing about strong emotions allows students to feel that their emotions have been acknowledged and they can refocus on their learning goals (Kubler-Ross, 1969). The second stage is reflective

observation (Moon, 1999). In this stage students assess the value of the experience to them and to others. They practice looking at the issues from alternate perspectives. In the third stage, abstract conceptualization, students mentally create new knowledge by making connections between the experience and their prior knowledge. They also might use the insights they have gained from new knowledge to revise their prior knowledge. The fourth and final stage of debriefings is active experimentation. In this stage, learners plan for their next experience in light of their recent learning, which could include a timeline for re-engaging with the material. Some of the literature grouped the steps differently, separating the emotional processing or combining the conceptualizing and action planning, but they all identified a debriefing process that went from objective review, to emotional review, to conceptualization, to action planning.

#### *Written Debriefings*

Debriefings can take two forms: group discussions or individual written reflection (Moon, 1999). While oral debriefings can be useful for capturing data on the experience while it is still fresh in the minds of the participants and for sharing alternative points of view on an experience, Moon suggests written debriefings have several other important benefits: they can deepen the quality of critical thinking, increase active involvement in learning, and increase personal ownership of the new learning by the student. Written debriefings are hypothesized to help develop problem-solving skills because the ability to describe a process explicitly transfers to other problem solving situations. Further, written debriefings slow down learning. This can be valuable for the active, extraverted learner, who has the tendency to speed through training material without absorbing much of it. Conversely, for the shy, introverted learner, written debriefings can provide a method to state their knowledge and express their views comfortably (Camp, 1992). For the teacher, they can provide detailed information on what each student has learned. Written debriefings can be fairly unstructured, as some journals are, can be constructed

of a variety of materials, as many portfolios are, or can be fairly structured, as can be found in guided debriefing questions.

*Research on the Reflective Stages of Experiential Learning Theory and the Use of Debriefings*

While over one hundred studies have been done on another aspect of Kolb's (1984) theory, his learning styles model, little research has been done using the four-stage experiential learning cycle to promote learning. After an extensive search of the literature, only three studies could be found that made some use of Kolb's experiential learning cycle as opposed to focusing on Kolb's learning styles, and only two of those made use of Kolb's experiential learning cycles as an instructional strategy. Two additional studies were found supporting the use of debriefings in instruction. Two of the studies, one exploring Kolb's theory and one exploring debriefings, used written reflection to capture data on the learning process. An evaluation of those five studies here will examine the methods, outcomes, and limitations of each study and will show the need for direct research on the experiential learning cycle as a whole.

The only study found that looked at using written reflection to take students through the reflective stages of the experiential learning process was one by Montgomery (1992). The primary purpose of this study was to explore the impact of using a specific strategy for reflective learning on learning styles and adaptive flexibility. The focus of the study was an analysis of quantitative changes in the scores on two instruments developed by Kolb, the Learning Styles Inventory (LSI) (Kolb, 1985) and the Adaptive Flexibility Inventory (AFI) (Boyatzis, & Kolb, 1993), after extensive practice in written reflection. Montgomery used 77 undergraduate and graduate students in three different courses, divided into two control and one treatment group. The treatment consisted of one hour and fifteen minutes of direct instruction on reflective writing with a training manual provided for ready reference and fifteen assigned written debriefings that followed the learning model in Table 1. The quality of the specific concrete experiences could not be determined because the author only provided a general description of the three courses.

The instructional activities in two of the courses were described as lecture, seminar, and laboratory; they were not specified in the third course.

The learning model used by Montgomery (1992) to develop the training on reflection incorporated Kolb's theory and elements of seven other perspectives on reflection.

Montgomery's Reflective Learning Process consisted of ten steps. These steps are compared with Kolb's experiential learning cycle in Table 1.

Table 1

*Montgomery's Reflective Learning Process (1992)*

Montgomery's Reflective Learning Process		Kolb's Experiential Learning Cycle
1. Level I experience	6. Level II experience	Concrete Experience
2. Observe	7. Observe	Reflective Observation (objective review)
3. Reflect/analyze	8. Reflect/analyze	Abstract Conceptualization
4. Evaluate relevance	9. Evaluate relevance	Reflective Observation (subjective review)
5. Plan to apply	10. Plan to apply	Active Experimentation

Of the twelve hypotheses examined in the above study, no significant differences were noted for the author's primary hypotheses on changes in the LSI or the AFI. The one hypothesis that was supported concerned change in the depth of reflection. After reading about reflection, receiving classroom instruction on it, and participating in fifteen written practices with feedback, students showed a significant increase in their depth of reflection, as noted by the presence of

“single-loop” and “double-loop” learning, which are elements of the reflective learning approach of Argyris and Schoen (1982). “Single-loop” learning is defined as “the process of reflecting on experience in a way that produces a change in the learner’s actions in future experiences of a similar nature” (378). “Double-loop” learning is defined as “the process of reflecting on experience in a way that produces a change in the learner’s perspectives for action in future experiences ... This can be seen when the learner monitors both the content and the process of his [*sic*] experience” (p. 378). “Single-loop” learning is similar to the concept of “near transfer” (Haskell, 2000), while “Double-loop” learning is similar to the concept of meta-cognition (Hacker, Dunlosky, & Graesser, 1998). It was difficult to make an independent assessment of the learning that took place because there were no actual data or examples included in the study.

Without knowing the types of concrete experiences that were used in the study or the content of the reflective debriefings, it is difficult to determine the applicability of the results to this study. While Montgomery’s study did explore “depth of reflection,” as measured by the presence of single-loop and double-loop learning, it did not employ any other qualitative measures of learning. Because the primary focus of Montgomery’s study was the impact of reflection on learning styles and adaptive flexibility, the results that were applicable to the learning that occurs in written debriefings were limited to the aspects of “near transfer” and “metacognition.”

A second study on reflection in the experiential learning cycle (Jensen, 1995) used a grounded theory approach to examine what students felt they learned through “conversations” in a college seminar. The study asked sixteen graduate students enrolled in the same class to select one class conversation that stood out for them. The students participated in two pilot study interviews, with revisions after each round. In the third interview, the researcher added questions on the process of learning. The third interview was analyzed in two stages: the first looked at broad questions of connecting, meaning-making, and learning, and the second stage looked at

whether students' learning preferences from Kolb's Learning Style Inventory seemed relevant to the ways the students made sense of their experience. The study identified five approaches, or "streams" to "making meaning" in conversation: resonating and reflecting, expressing and interacting, attending and appreciating, interacting and conceptualizing, and listening and analyzing. Table 2 contains a description of the five approaches to meaning-making found in the data, cross-referenced with the three questions of connecting, meaning-making, and learning.

Table 2

*Streams of Meaning-Making. (Jensen, 1995)*

	<i>Connecting: To whom and to what did the students attend?</i>	<i>Meaning-making: How did they make sense of the experience?</i>	<i>Learning: Did they gain insight through the experience?</i>
<i>Stream 1:</i> Resonating & reflecting	Hearing & resonating	Privately reflecting	Expressing understanding in private/public
<i>Stream 2:</i> Expressing & interacting	Expressing own perspectives/feelings	Interacting & reflecting	Gaining insight on self & understanding of others
<i>Stream 3:</i> Attending & appreciating	Attending to others & self	Appreciating others & self	Gaining insight on self & understanding of others
<i>Stream 4:</i> Interacting & conceptualizing	Engaging by hearing & stating varied perspectives	Considering perspectives	Gaining insight about own & others' perspectives

	<i>Connecting:</i> To whom and to what did the students attend?	<i>Meaning-making:</i> How did they make sense of the experience?	<i>Learning:</i> Did they gain insight through the experience?
<i>Stream 5:</i> Listening & analyzing	Listening to others' perspectives/feelings	Identifying distinctions & evaluating conversational flow	Gaining insight regarding own & others' perspectives

The conclusions drawn in Jensen's (1995) study supported the use of classroom discussions as "oral debriefings" and as concrete experiences in and of themselves. The study did not, however, attempt to use an instructional strategy specifically designed to take students through the four stages of the experiential learning process. The "experiences" from which students learned were traditional reading assignments followed by class discussions. The syllabus described "conversation starters" rather than structured debriefings for the class discussions. From the quotes and analysis provided in the study, the interviews appeared to capture a large amount of data on students' interactions during conversations and their ascribed value of classroom discussion and very little on the processes occurring during the reflective activity. That may be a function of the delay between the original classroom discussion and the interview. That it only used one conversation was identified by the author as a study limitation. The study recommended further research on reflection, with participants describing both "good" and "not so good" conversations (or experiences). Finally, the study suggested that a journal format could be used for capturing students' reflection on classroom activities.

One additional study addressed the three reflective stages of Kolb's experiential learning theory, although it did not involve an academic situation. Burgess (1992) used a quantitative approach to analyze the natural inclinations of clinical supervisors to use each of the four stages of the model. Experienced supervisors were asked to read a short case study and select one of

four responses modeled on Kolb's experiential learning theory. Burgess (1992) pointedly stated that his study was "not to test the effectiveness of experiential learning theory," (p. 65) but, rather, that experiential learning theory could be used to explain the types of guidance given by clinical supervisors to their supervisees. In his results, he believed he was able to confirm his hypothesis that Kolb's theory could be used as a paradigm for understanding supervisory interactions. Sixty-three percent of experienced supervisors selected answers that reflected all four stages of the experiential learning cycle; another 27% used some combination of three stages, with the majority of those remaining (23% of the total sample) using the combination of concrete experience, reflective observation, and abstract conceptualization. Burgess pointed out that his study was limited to a form of self-report, consisting of selections from a set of responses. He suggested that further research was needed using observation of supervisory interactions to validate the self-reported use of all stages of the experiential learning cycle.

Two additional studies were found that examined the use of oral or written debriefings to reveal the learning process. While neither study referenced Kolb or used his experiential learning cycle, the debriefing stages used in the studies roughly followed Kolb's (1984) model.

In a very well-constructed, quantitative study, Hankinson (1987) examined the impact of different forms of debriefing on learning and attitude using a multiple choice test and survey. The participants in the study were 66 black high school students enrolled in a career development program. They were assigned to one of four groups: simulation game with a structured debriefing, simulation game with an unstructured debriefing, simulation game with no debriefing, and watching a film with no debriefing. The study used a MANOVA to analyze four dependent variables: free recall of principles, application of principles, attitude towards the subject, and confidence in answers. A content analysis determined the free recall of seven principles taught in the game. The participants in the structured debriefing group did significantly better on all

measures than the two control groups and significantly better on the application of principles than the unstructured debriefing group.

Hankinson (1987, 2002) made several recommendations for further study. Due to the experimental nature of the study, there were tight parameters for the debriefing questions asked and the amount of time allotted for free recall of principles that may have limited the students' ability to process all aspects of the game and express what they learned. The content analysis performed on the free recall was limited to identifying the number of principles listed rather than examining the quality of the answers. Most importantly, the study lacked an emotional processing component because the game (using playing cards) was not designed to elicit strong emotional responses (Hankinson, 2002). He suggested future studies include the emotional component of debriefings and that they examine the learning from debriefings more qualitatively.

Petranek (1992) cited Hankinson as providing the first evidence that debriefings have a positive impact on cognitive and affective outcomes. Hankinson's (1987) quantitative study, however, was not designed to provide insight into the cognitive and affective processes that took place. As this is a relatively new area of research, qualitative research might be the best approach to study the content of the theory.

Finally, in a report of a four-year joint Harvard Project Zero and Educational Testing Service study on developing strategies for using written reflection, Camp (1992) described the processes and strategies used in developing students' writing abilities over the course of a complete year. The study participants were students from several middle and high schools in the Pittsburgh School District sampled over a five year period (sample size not reported). The study used reflective exercises consisting of open-ended questions to "make learning visible" (Camp, 1998, p.11) to both the instructor and the student. While not specifically designed as experiential activities, writing exercises in a writing class were used as a basis for later written reflection (Camp, 1992). The students were asked to describe the writing assignment they had just

completed and tell what they liked best about their product, what they were least satisfied with, and what they would like to improve in their work. Once deemed proficient with those simple questions, the students were asked to add additional forms of reflection, such as where they got their ideas and what they thought was important to know about them as writers. Finally, the students were asked at three points in the year to select one of their writings that they liked and one that they thought could be improved and write about their reasons for selecting those pieces. These pieces would comprise the students' portfolio for the year. From the students' quotes included in the report it was clear that the researchers were able to discern the students' processes and strategies for writing, criteria and standards for writing, and interests and goals for future writing. At the time of the report, Camp (1992) identified the need for further research on evaluating writing portfolios, which was a subsequent goal of the project.

Camp's (1992) study provides strong support for the use of written reflection to create a continuous learning cycle, as described by Kolb. Although not based on Kolb's theory, the process developed by the study was very compatible with the theory. The questions asked by the study were designed to teach students to (a) observe their own writing carefully and critically; (b) express their feelings about their writing activities; (c) create theories about themselves as writers; and (d) develop their intent to improve. The analysis of themselves as writers and development of portfolios appeared to be particularly effective methods for facilitating students' generalization and abstraction. The primary advantage of the process was the individualized instruction that it provided. The strategy supports the development of a specific skill over a period of time, such as, for younger students, writing or reading comprehension or, for adults, computer skills or case study analysis of management issues.

#### *Implications for this Study*

Given the sparse research in the arena of experiential learning debriefings, what can we say is known at present? First, written reflection appears to deepen with practice (Montgomery,

1992). Second, other cognitive and emotional processes that may be occurring during conversations that could be construed as a form of debriefing might include attending, valuing, and revising views based on others' inputs, which create connections previously unseen (Jensen, 1995). Third, using multiple methods for engaging students, such as experiences, oral debriefings, or written debriefings, allows the students to learn using different approaches. Fourth, experts (at least in the area of clinical supervision) tend to use all the stages of the experiential learning model to guide students through a learning process (Burgess, 1992). Fourth, structured debriefings appear to provide more opportunities for learning the principles underlying an experience than several other methods (Hankinson, 1987). Finally, written debriefings might be able to be used to discern students' processes and strategies for learning (Camp, 1992).

The present study addressed several of the recommendations made for future avenues of research. As Montgomery (1992) suggested, the reflection was made an integral part of the course where the study was conducted rather than a separate component. He also recommended emphasizing qualitative measures of written reflection, which this study did. As Jensen (1995) suggested, this study used a journal-type format and more than one debriefing to provide additional data for analysis. Burgess (1992) suggested that follow-on research use observation of the experiential learning cycle rather than self-report. Analyzing written data allowed for observing first-hand data to describe the learning process. Finally, Camp (1992) suggested that further research should be done on evaluating written reflection. That was beyond the scope of this study, although the cognitive maps developed may provide some insight into what can be evaluated in the future.

#### *Suggested Cognitive and Emotional Processes in Debriefings*

Despite the fact that very little research has been done on reflection connected to experiential learning, there is a great deal of speculation on the processes that may be occurring in debriefings. According to the literature, debriefings may enhance learning in at least four ways:

providing mental practice (Guild & Garger, 1998; Haskell, 2000; Plessinger, 2001; Trafimow & Miller, 1996), processing emotions (Guild & Garger, 1998; Jensen, 2000; Moon, 1999), increasing depth of processing ( Craik & Watkins, 1973; Reisberg, 1997; Ribich & Schmeck, 1979), and establishing goals (Locke & Latham, 1990; Spitzer, 1999).

### *Mental Rehearsal*

Mental rehearsal is defined as experience that resembles the perceptual experience, but occurs in the absence of the external stimuli (Plessinger, 2001). Experiences are considered by many theories (Chi, Glaser, & Farr, 1988; Czikszenmihalyi, 1990; Gagné, 1984; Kolb, 1984) to be critical for learning. Information processing theorists hypothesized that competence was developed by gaining experience in a subject, either by absorbing extensive subject matter knowledge (Chi, et al., 1988) and/or by developing automaticity in performing the steps in a procedure (Shiffrin & Schneider, 1977). According to instructional systems design (ISD) theory, competence is gained through guided practice with feedback (Gagné, 1984). Flow theory postulates that adequate practice is essential for creating the strong mental pathways that promote fluency (Czikszenmihalyi, 1990). Research into expert thinking has shown that learners have to gain considerable expertise over an extended period of time in order for competence to contribute to an increase in ability to use the learning in a wider context (Chi, et al., 1988).

In order to increase the opportunities for practice, Haskell (2001) asserted that mental rehearsal could provide additional experience. Trafimow & Miller (1996) described mental practice as the act of using imagery to “feel” oneself performing various cognitive or motor skills. They found that mental practice could help focus and anticipate problems. Guild & Garger (1998) found that mental rehearsal helped them think through the stages involved in putting a plan into action. Sports psychologists have been using imagery and virtual practice successfully for a number of years (Haskell, 2001). The mind, Haskell contended, made little difference between a vivid, well-visualized mental rehearsal and a physical rehearsal.

Debriefings, as described above, provide students an additional mental practice at two points in the debriefing (Trafimow & Miller, 1996). In the first step of the debriefing, the concrete experience is reviewed in detail. In the fourth step, “what if” scenarios can give learners further mental rehearsal. Since time constraints in the classroom often do not permit sufficient practice of skills, mental rehearsal can provide an additional practice that can help clarify and solidify the steps involved in the skill being learned.

### *Emotional Processing*

Until recently, it was not understood how important a role affect plays in learning (Reisberg, 1997). Feelings affect every step of the learning process: perceiving, encoding, retrieval, and the ability to transfer information (Haskell, 2001). When perceiving outside events, the amygdala, the apparent center of emotional responses, is engaged prior to any other part of the brain (Damasio, 1994). An emotional response accompanies every neural reaction to outside events, and this emotion influences a learner’s attitude while learning and influences values and beliefs that affect future learning.

In the encoding step, every memory that is stored has the affect that accompanied the event attached to it (Damasio, 1994). Positive affect, as opposed to negative, appears to influence how well information is categorized during the encoding process. With positive affect, learners tend to see more associations and then engage in more extensive encoding.

In the retrieval step, emotions associated with the event are recalled with the event (Reisberg, 1997). Strength of affect associated with the event appears to play a role in retrieval. Events are more readily recalled if the person experienced strong emotion during the event, whether positive or negative, but some studies have shown a memory advantage when persons experience positive emotions as opposed to negative emotions during the event.

Learning something meaningful that is congruent with the value system of the learner associates a strong, positive affect with the thing to be learned. Most learning takes place from a

felt need to learn what seems important at the time (Biggs, 1989). Learners are intrinsically motivated to learn when the task learned affirms their identity, strengthens their affiliations, or helps them transcend their own limited personal existence (Shamir, 1991). Values help affirm identity but, more importantly, help strengthen affiliations. Deeply felt values are connections in the mind between positive emotions and beliefs created and reinforced by culture, parents, and past experiences (Senge, et al., 1994). Relevance is enhanced when the learner perceives the lasting effect of the learning. Learning that helps individuals attain goals that add meaning to their lives is highly motivational (Frankl, 1959; Senge, et al., 1994).

For relevance to facilitate transfer of learning to broader contexts, learners need to take a deep approach to learning (Haskell, 2001). This is different from depth of processing, covered next. Haskell defined a deep approach to learning as focusing on the meaning of the material. Research on deep approaches versus surface approaches to learning has shown that deep approaches create much more integrated and coherent mental structures as revealed in written essays (Biggs, 1989).

Emotional processing is an important element of planned reflection (Moon, 1999) because learning is closely linked to emotions (Jensen, 2000). Emotional processing is hypothesized to do two things during the learning process: to lower barriers to further processing by associating positive affect with the experience and to dissipate negative affect through conversation (Guild & Garger, 1998). Discussing the value of the experience can create a positive belief in the relevance of the knowledge gained, while examining experiences from different perspectives can help dissipate negative emotions formed from misunderstandings created by personal frames of reference (Senge, et al., 1994). In this way debriefings can remove obstacles and provide strong incentives to learn.

### *Depth of Processing*

Research on transfer has shown that the ability to perform a procedure in one context does not assure the ability to apply the skill in a slightly different situation (Detterman, 1993). Normally, the brain stores information in a highly contextual form, thus allowing transfer only in very similar situations (Haskell, 2001). To achieve higher levels of transfer (i.e., the ability to apply principles to broader contexts), an increase in the number and complexity of mental patterns will increase recognition and matching of mental patterns. According to associative theory, all learning involves the association of new facts and experiences with existing knowledge and attitudes (Guild. & Garger, 1998). If the learner chooses to think about the information in a number of different ways, multiple connections will be made (Haskell, 2001). The more associations that are formed, the greater the potential for integration and recall. Multiple connections allow knowledge to be applied in a broader set of situations.

Research on the development of expertise has found that novices often use surface features to help them select the relevant skills to use (Chi, et al., 1988). Experts, however, analyze a problem by looking at the underlying principles rather than the surface features, which enables a higher level of transfer. In one research study, for example, participants who worked at understanding each solution were more likely to transfer what they had learned to new problems than those who took a memory-oriented approach (Needham & Begg, 1991). This study and others (e.g., Cummins, 1992) support the premise that, if the salient, underlying principles of a context can be learned during instruction, learners will be more inclined to use new learning when presented with situations that exhibit the same underlying principles.

The type of mental rehearsal done by the learner, maintenance rehearsal or elaborative rehearsal, determines the depth of processing ( Craik & Watkins, 1973). The first focuses on remembering information without being concerned about meaning. The second includes focusing on what the information means, what relationships exist between the information being learned

and other things in the surroundings or in the past. Even though elaborative rehearsal increases and strengthens connections and creates multiple retrieval paths, students have a tendency to rely on maintenance rehearsal whenever they can, because it is easier (Reisberg, 1997).

Debriefings attempt to deepen processing by having students compare recent experience to past experience to discern patterns from which concepts can be generalized (Ribich & Schmeck, 1979). If Kolb's experiential learning theory is valid, abstract conceptualization in debriefings should provide an opportunity to deepen the mental processing done by the students, by asking learners to make connections and search for patterns that are evidence of deeper principles.

### *Goal Setting*

Creating an intention to apply new learning to future situations is another motivational function involved in learning (Reisberg, 1997). Students who show the intention to learn spontaneously use deeper, more elaborative processing, while students who have not developed the intention to learn may use maintenance processing techniques such as memorization and rote practice, which are easily forgotten. Goals create an expectancy to perform an action that prepares the mental pathways to be activated. Because the pathways are "primed" by expectations, they can be triggered at lower activation levels and the learning is retrieved more easily. According to connectionist theory, goal setting increases the connection weights of the memory of the procedure to be learned (Spitzer, 1999). The increased weight allows the retrieval to be made more easily.

When learners encounter a situation in which their new learning can be used, it is much more likely that learning will be used if the learner has established intent to use it (Reisberg, 1997), which can be expressed in the form of a concrete goal. Research has shown that goals that are specific and challenging are more likely to be achieved (Locke & Latham, 1990). Debriefings

that establish goals as a final step should increase the intention to use the knowledge gained through reflection.

Given the minimal amount of research on reflection in experiential activities and the wide range of theories that might contribute to understanding the cognitive and emotional processes in debriefings, the next section includes an evaluation of the methods used in prior research and appropriate methods for this study.

#### Literature Review of Methods

A review of the methods used in the studies on the experiential learning cycle (Burgess, 1992; Camp, 1992; Hankinson, 1987; Jensen, 1995; Montgomery, 1992) showed that each method contributed something to the understanding of the learning that takes place in reflection. The one quantitative study showing a positive effect of structured debriefings on learning (Hankinson, 1987) did not explore how students arrived at underlying principles. In qualitative studies, grounded theory revealed that students' learning may be from attending, valuing, and making connections (Jensen, 1995), content analysis revealed that depth of reflection increased (Montgomery, 1992), and action research improved the process of reflection (Camp, 1992). It may be too early to consider quantitative approaches to study written reflection because there is little research on the variables that should be examined. It seems the next logical step in researching reflection should be a direct look at the cognitive and emotional processes that can be observed in written reflection. The use of both grounded theory and content analysis could provide a useful comparison between concepts emerging from the data and data analyzed using a theoretical perspective.

#### *Grounded Theory*

The typical structure of debriefings has theoretical support from experiential learning theory (Boud, et al., 1985; Lederman, 1992; Moon, 1999; Petranek et al., 1992), but little research has been conducted to describe what types or categories of learning actually happen in

debriefings. Grounded theory is useful when theories have not been developed to describe certain phenomena. This approach, developed by Glaser (1967), uses an inductive method for exploring data for constructs and relationships in order to develop or add to theory, without trying to force it to fit a predetermined model or theory. Preconceived hypotheses are not established so that relationships in the data can emerge that then can be used to develop new theory. Grounded theory would be useful in this study in order to surface constructs and relationships in written debriefings that may not have been observed before.

### *Content Analysis*

While little research has been done on the learning processes in debriefings, a great deal of theory has been generated on the cognitive and emotional processes that may be occurring in learning and transfer. Content analysis uses a theoretical framework to code the content rather than allowing the concepts to emerge (Weber, 1985). Constructs from theories can be used to explore data to search for evidence that the hypothesized constructs are present. By using methods such as category counts, content analysis has the advantage of combining both quantitative and qualitative operations on text.

### *Summary*

The literature review identified key theorists and advocates of reflection as a component of learning, but an extensive search could find little research on the cognitive and emotional processes of learning during reflection. A review of suggested processes that may be occurring in debriefings was then analyzed to determine what constructs might be explored in a qualitative analysis of written debriefings. Finally, a methodological review discussed two qualitative approaches of analyzing the text generated in written debriefings.

## CHAPTER THREE

### METHOD

#### Purpose

The purpose of this study was to explore the cognitive and emotional processes that occur during the debriefing phases of the experiential learning cycle.

#### Research Design

A multiple case study approach examined written debriefings following experiential activities. The study used multiple theories, raters, and methods to strengthen internal validity. The primary theory used to develop the instruments was experiential learning theory, with others (see Definitions of Theories Used in Chapter 1) providing the foundation to develop variables. The data analysis employed two qualitative methods, a grounded theory approach and a theory-based content analysis. First, a grounded theory constant comparative method was used to extract the concepts and patterns from the data rather than using theoretically-derived variables as a basis for analysis. Common themes were summarized and appropriate quotes illustrating key points extracted. Second, a content analysis was used to analyze certain variables that, from the literature, might have been expected to appear in debriefings. Theories used to develop the content analysis variables included information processing, expert, transfer, flow, somatic marker, meaning-making, connectionist, and goal theory.

#### Variables

For the grounded theory approach, no variables were defined in order to allow concepts to emerge. For the content analysis, seven variables were defined in advance: four cognitive variables and the three affective variables.

The four cognitive variables used were content, process, connections, and context. *Content* was defined as written comments that demonstrate the mental rehearsal of verbal or procedural knowledge about the course content. Mental rehearsal is a concept theorized by transfer theory (Haskell, 2001) to increase the opportunities for practice. *Process* was defined as written comments that demonstrate the mental rehearsal of the process used in the assigned activities. Mental rehearsal of a process is theorized to hasten the development of flow and expertise (Czikszentmihalyi, 1990; Haskell, 2001; Plessinger, 2001). *Connections* were defined as written comments that describe the relationships between and among concepts. Connections is a concept hypothesized by information processing theory (Gagné, 1984) and connectionist theory (Spitzer, 1999) to describe the associations used by the brain to retrieve knowledge. *Context* was defined as written comments that describe broader uses of the skills learned in the experiential activity. Context is a concept hypothesized by transfer theory (Haskell, 2001) to increase depth of processing.

The three emotional variables were affect, relevance, and intent. *Affect* was defined as written comments that describe positive or negative emotion arising from the activity. Affect is a concept hypothesized by transfer theory to be important to the learning process (Haskell, 2001). Relevance was defined as written comments describing the meaning or importance of the activity or the skill. *Relevance* is a concept hypothesized to be important to the learning process by transfer theory (Haskell, 2001). Intent was defined as written comments describing the intent to use the skill again. *Intent* is hypothesized to be important to learning by goal theory (Locke & Latham, 1990).

## Participants and Setting

### *Participants*

The five case studies based on the writings of five undergraduate students with senior standing enrolled in an Organizational Theory class in a weekend program at a small, private

university. Students were enrolled in a program of study leading to a business management degree. There were seven students enrolled in the course, six women and one man. Four women and one man agreed to participate in the study and completed the course satisfactorily. One student agreed to participate but did not complete the course and one student elected not to participate.

All students completed a demographic survey that asked for an age range, work experience, and educational background in various aspects of business management. One student was between the ages of 31-40, two students were between the ages of 41-50, and two students were between the ages of 51-60. All had over ten years of work experience. The students had worked in a wide variety of businesses, as indicated in Table 4 below (note: students could indicate more than one size or type of business in which they had worked).

Table 3  
*Number of Students Who Worked in each Size/Type of Organization*

Size of organization		Type of organization	
Small	2	Service	4
Med	3	Product	1
Nat	2	Manufacturing	1
Global	1		

The participants had received a wide variety of management training experiences. All had received some management training on-the-job. One had attended independent seminars. As seniors, all participants had taken multiple management courses, but there was wide variation in the courses taken: most had taken a human resources and information management course, but

only one participant had taken a course in each of the following: strategic planning, financial management, organizational behavior, and total quality management. Most said they had studied the concepts covered in this course in previous courses (see Table 5), but few had ever been involved in those processes at work.

Table 4

*Experience with or Knowledge of the Concepts Covered in the Course*

	New to them	Heard of it	Studied it	Used by employer	Involved	Led/Trained
Teams				2	3	
TQM			4			
MBO			4			
Strategic Planning		1	3	1		
Org. Development			2	1		
Learning						
Organizations			2	2		
Re-engineering		1	2			
Conflict Resolution	1	1	1		1	
Empowerment		1	3			
Systems Theory		1	2			
Information						
Technology		1	1	2		

In response to the open-ended questions all the participants wrote about difficult experiences, positive experiences, and their vision of their future. The written answers revealed

that all the participants were clear and thoughtful writers and willing to share emotionally difficult experiences.

Students' immediate goals were very similar: all were pursuing their bachelor's degree in management. Three wanted to own their own business eventually, one wanted to change jobs to one that used management skills, and one wanted to pursue a master's degree. From these goals and numerous conversations in the classroom, all appeared to be highly motivated to learn the material, not just complete the course.

In addition to the demographic survey, participants completed a survey adapted from a school culture survey (David C. Anchin Center, 2002) during the last class to identify their levels of trust in their fellow students, professor, and school. The survey examined four core concepts developed from Senge, et. al (1994): shared vision, facilitative leadership, teamwork, and learning community. The sample size did not include sufficient responses to run reliability tests; however, students scored 97% of items in the survey as "often" or "always," indicating a fairly high level of trust (Table 5). This may indicate a level of trust required to respond openly to questions about group work and interactions.

Table 5

*Results of Culture Survey*

	Shared Vision	Facilitative Leadership	Teamwork	Learning Community
Often	.41	.15	.28	.20
Always	.54	.81	.69	.77

*Setting*

The course consisted of eight four-hour classes, with two weeks between classes. The syllabus for the course is in Appendix B. Three experiential activities were conducted each

session, two case studies and one action research project, with oral debriefings following each activity. The setting for two of the written debriefings was the students' home or work environment. Those debriefings were submitted via e-mail. The setting for the last written debriefing was the classroom. Based on the results of pretests and objective tests, students arrived prepared for class.

### *Researcher's Background*

The researcher, a woman in her early fifties, has a master's degree in Organizational Business Management and has furthered her management knowledge with three professional military schools and courses in her doctoral program of studies. Her background includes twenty years of leadership and management experience as an officer of the United States Air Force. Her skill in developing and implementing experiential learning activities and debriefings stems from teaching both technical military skills and management skills for several years, studying Kolb's experiential learning theory during her doctoral coursework, and using experiential learning and debriefings in four different courses she currently teaches in two universities. She was the instructor for the course and had taught the course on three previous occasions.

### *Instruments*

#### *Demographic Survey*

All students were asked to complete a ten-question demographic survey on the first day of class (Appendix A). Seven questions were multiple-choice questions dealing with age range, work experience, and previous management education courses, and three questions were free-response questions requesting their best and worst experiences in organizations and their goals for the course. Questions on students' management education background were derived from the material to be covered in the organizational theory course. The open-ended questions provided an initial assessment of writing ability as well as data on positive and negative experiences related to the content of the course. The demographic survey is found in Appendix A.

### *Pretests*

Prior to class, all students were asked to write short, free-response descriptions of three to five ideas from each chapter they felt were the most important points. The purpose of the pretest was two-fold: to provide an indication of students' learning from the reading and to refresh their memories in preparation for the experiential activities.

### *Objective Achievement Tests*

At the beginning of each class, all students completed an ungraded, five-question, multiple-choice test for each chapter (Appendix C), covering the vocabulary of the theories covered in the chapters from the previous class. The questions were validated by a content expert in organizational theory.

### *Debriefings*

Each written debriefing consisted of four to five questions adapted from a debriefing format developed by Osland, Rubin, & Kolb (2002) related to Kolb's (1984) three stages of reflection: reflection on the experiential activities (with separate questions for objective and subjective review), abstract conceptualization, and planning for use. The questions (Appendix D) were subjected to expert review by a content expert and an experiential learning theory expert.

### *Culture Survey*

In conjunction with the final exam, students completed a 36-question culture survey (Appendix E) adapted from one developed by David C. Anchin Center (2002). The survey, originally designed for school teachers, was adapted for students by the researcher. The original survey was developed using principles of Total Quality Management, Learning Organizations, and Learning Communities and was divided into four sub-scales: Shared Vision, Facilitative Leadership, Teamwork, and Learning Community. The constructs measured in this survey coincide with the underlying concepts used in the design of the Organizational Theory course that was the setting for this study. Factor analyses on the original survey were completed on 666

surveys, with Cronbach Alphas on each factor of over .90. Cronbach Alphas were run on the adapted surveys with the study participants (Cronbach Alpha = .86). The adapted culture survey can be found in Appendix D.

#### Procedure for Data Collection

Students were told on the first day of class that they would have an opportunity to participate in a research study during the second half of the course. They received instruction on experiential learning theory and debriefings early in the semester and again in the fifth week, after which those that chose to participate signed consent forms.

Demographic data were collected in the first week of the course. Students were asked to complete the seven close-ended questions of the demographic survey in class and send their answers to the three open-ended questions via e-mail within a week.

Students completed four practice written debriefings following experiential learning activities to ensure students understood and could complete these satisfactorily before the data collection phase. The instructor provided feedback to the students on the thoroughness and accuracy of their practice written debriefings.

To validate the content of the debriefings, i.e., to determine whether learning was taking place, short, objective tests were given on the vocabulary of the theories covered by the course at the beginning of each class on the previous class' chapters. In addition, students were asked to identify the most important points in each chapter in writing prior to class. All students performed well on the objective tests, and an informal review of the pretests revealed adequate responses from all students on the free-response questions.

#### *In-class Experiential Activities*

The class was divided into two groups in order to double the number of case studies analyzed. Each class session covered two chapters, assigned to be read prior to class, and each group also read two case studies. Some case studies were from the textbook and others were

from outside sources. At the beginning of each hour, the instructor provided guidelines for using a management tool to analyze their case study. The students then participated in a simulation as hired consultants to the case study company or as members of the case study company. The simulation required each group to create a briefing for their case study's board of directors, while the other group acted as the board of directors receiving the briefings. After each group presented their briefing, the sequence was repeated with a second case study for each group, using a different management tool. After the four case studies, the groups participated in an action research project in which they applied one or more of the management theories from the text to their "learning organization." An oral debriefing of the day's activities contained the same questions as the first two questions of the written debriefings (what happened and how did you feel about the process) to provide students with alternative viewpoints from the rest of the class. Data from the oral debriefings were not collected for analysis but were recorded on flip charts and recapped in an e-mail by one of the students.

### *Debriefings*

Participants completed eight written debriefings on the classroom experiential activities during the course, three of which provided the data for this study. To strengthen the internal validity, the debriefing questions were systematically related, having originated from experiential learning theory, and were subjected to expert review for both content and theoretical approach. For two of the written debriefings, students were asked to complete the first three sections of the debriefings within three days after class and the final section within a week after class and submit the assignments via e-mail to the instructor. In the first part of the debriefings students reviewed the activities in class, and in the last section each student employed the same management tools used in the classroom experiential activities to analyze a real-world organization in which they were involved: their workplace, volunteer organization, school, or other organization in which they had a strong interest. The instructor evaluated the academic content of the debriefings and

provided feedback to the students during the next class if needed. The third debriefing was conducted in class in the form of a “final exam.” The students were given instruction on the management tools they were to use and a set of data to analyze individually. After using the data to come to a conclusion, they wrote a debriefing on their individual experience. After the “final exam,” the participants completed a trust survey adapted from a validated school culture survey (David C. Anchin Center, 2002) to examine the level of trust among the students and between students and faculty.

#### *Data Review*

Three written debriefings were coded for each student using both grounded theory and content analysis. Debriefings were copied from the e-mails or typed from hand-written responses into the two coding forms. The participants’ debriefings were first examined to determine whether their responses were thick enough to provide sufficient data for analysis. No debriefings were excluded, though it was noted that there were some missing data. There were three unanswered questions from one student and one unanswered question from another. In two cases, the answer to a question had already been provided in a previous question. In the other two cases, the student appeared to have missed seeing the question. The richness of the remaining answers was deemed to provide sufficient data for inclusion.

#### *Coding*

Due to unforeseen circumstances, the grounded analysis and content analysis overlapped in timing. The researcher had an opportunity to receive additional training in grounded theory analysis, which delayed the start of that portion of the study, and the content analysis proceeded on schedule because of the availability of the other raters. Special care was taken during the grounded analysis to look beyond the potential bias created by the theoretical underpinnings of the content analysis.

### *Grounded Theory Coding*

The grounded theory analysis was conducted by the researcher. Glaser's (1967) four-step constant comparative method of text analysis was used: (a) coding each phrase into as many categories as possible, (b) integrating related categories, (c) discovering underlying uniformities that become the higher-level concepts, and (d) writing about themes. In the third step of this method, the reduction of the data seeks parsimony of variables and broadening of scope to develop a theory that can apply to a wide range of situations.

Four passes were made through the data. The grounded theory coding form (Appendix G) had columns for the debriefing questions, the data, researcher's memos and codes developed from the data. The first pass was used to write memos on points of interest. The second pass was used to generate possible codes, which were then examined for patterns and categorized. After two passes, the coding scheme was validated with the two members of the content analysis team who were very familiar with the data, which will be discussed further below. On the third pass, additional possible codes were generated based on the patterns discerned and other explanations, including other learning theories, were considered when evaluating patterns and searching for themes. Negative evidence, such as evidence that disputed Kolb's views on the experiential learning cycle, was also sought. During the fourth pass, after the coding scheme was refined and patterns identified, the researcher used the patterns to develop process maps and themes.

### *Coding the Content Analysis*

The content analysis coding form (Appendix J) had a column for the debriefing questions, one for the data, and columns for evaluating levels of predetermined variables.

The content analysis team consisted of three coders. All three coders had extensive experience in both organizational management and education: the primary investigator was the instructor for the course, two coders were employed at school district level in measurement and

evaluation, two coders had master's degrees in organizational management, and one coder, a former principal, had a master's degree in education.

The team coded the frequency and intensity of predetermined variables in the data using the content analysis coding guide in Appendix I. The data were divided into three sets, one for each debriefing. The sets were not scored in the order in which they were presented in class, in order to ameliorate any bias that might occur if the coders expected growth in some of the variables. Category counts were then used to create bar graphs in Microsoft Excel XP.

Coder training and refining the coding guide happened interactively as recommended in Neuendorf's (2002) coding process. At the first meeting, the analysis team reviewed the experiential activities done by the participants and the theoretical basis for the variables selected for coding. The team discussed and refined definitions of the six variables originally identified: competence, connections, context, affect, relevance, and intent. It was determined that four levels of intensity (i.e., 0 = none, 1 = low, 2 = moderate, and 3 = comprehensive description or use of superlatives) could be discerned for all variables except context, which used Haskell's (2001) taxonomy levels to determine presence of transfer. To aid in developing consensus, specific criteria and examples were developed for the intensity levels for each variable. For training, the team analyzed early debriefings independently and then met to discuss differences. After the first coding effort, one variable, competence (building competence through mental rehearsal) was split into two, content (mental rehearsal of textbook content) and process (mental rehearsal of the process used). Differences of opinion arose over the scoring of process: the two coders other than the instructor did not feel they could identify mental rehearsal of process other than the classroom process adequately. In contrast, the primary investigator believed that there was a theoretical basis for coding mental rehearsal of process for all processes, including past experiences and planned experiences. The team decided to code the data using the majority opinion and include a dissenting opinion of scores on this point. There were three iterations of

the training cycle before proceeding with analyzing the data for the study. Noting that the questions were different for each debriefing, the team decided to use one student as a pilot for each debriefing, coding the data together to develop consensus on coding expectations. A different student was used for the pilot data for each debriefing. The remaining four students were then coded independently. After all sets of data were coded, the team met to discuss differences and achieve consensus on the scores.

Reliability was calculated in two ways: using Holsti's method (Neuendorf, 2002), the ratio of the items in agreement over total items, and using a Cronbach Alpha measure of internal consistency. Reliability was checked after each training session, after each pilot, after each set of data, and after the final consensus meeting. The Cronbach Alpha was calculated at the end of the coding.

Reproducibility of results was explored by comparing patterns of variable intensities among participants (Miles & Huberman, 1994). If the mean intensities of the seven variables were similar across the five participants' debriefings, that would lend weight to the generalizability of findings.

#### Data Analysis and Display

Using the grounded theory analysis, the researcher developed process maps and themes that helped explain the connections found in the data. The internal validity of the grounded theory analysis was confirmed by asking the other coders and some of the participants to evaluate whether the coder's process maps and themes seemed to reflect the students' experiences accurately. A thick description of the themes, using direct quotes from the written debriefings, was developed from the patterns and process maps to illustrate the cognitive and emotional processes that appeared to be taking place in debriefings.

In the content analysis, the coders' scores on the dependant variables were averaged and totaled for each debriefing. The scores were graphed in seven growth gradients graphs (see

example in Appendix K) showing the levels of the seven variables at each stage of the debriefing over the three debriefings. Patterns found in the scores were discussed among the coders and summarized.

### *Integrating Patterns*

Patterns found in each of the data analysis approaches were compared to look for overall themes. Findings developed were checked for congruency with other theories, and directions for future research were proposed. These themes were summarized and from both analyses to illustrate common patterns.

## CHAPTER FOUR

### RESULTS

The purpose of this chapter is to present the results from the two analyses of data collected in this study. The findings are presented here in two sections. In the first section, qualitative results of each step of the grounded theory analysis are presented, culminating in two process maps and six themes that emerged from the data. In the second section, after some preliminary evaluation of reliability and stability of the data, quantitative results of the content analysis are presented in seven bar graphs, one for each variable developed from multiple theories, and in a summary table.

#### Grounded Theory Analysis

In the first analysis, grounded theory was used to analyze the participants' answers to three sets of debriefing questions. The process used in the grounded theory analysis was a sequence of steps, each more abstract and theoretical: concepts, categories, patterns, process maps, and themes emerged. The analysis began with the development of concepts and categories, which occurred iteratively. The second major step was the identification of pattern-codes that reflected combinations or sequences of categories. These were then used to develop central categories and process maps. Reflecting on the patterns and process maps led to the emergence of themes. There were four learning process themes that emerged: iterative reflection, richness of connections, attachment of personal reactions, and the role of writing in reflection. There were also two group process themes that emerged that could have implications for experiential instruction: fluid group development and the role of affiliation.

## *Emergence of Patterns*

### *Development of Concepts and Categories*

The first step of the grounded theory analysis created lengthy lists of concepts that described each participant's answer to each question. Seventy-six concepts were coded from the data. Coding the data was an iterative process in which concepts were grouped into categories as categories emerged. Table 6 shows the four iterations of coding and categorizing

Initially, some categories emerged that seemed to parallel the variables in the content analysis. Using Miles and Huberman's (1994) coding procedure, the text was first categorized as Content or Process. Codes were added that described the type of content or process seen. Content could be coded as mentions, lists, or descriptions of the textbook content. Processes could be described in numerous ways, such as communication, teamwork, conflict, problem-solving, agreement, observations of others, and a wide variety of other mental and group processes. The similarity between these Content and Process codes and the definitions of the content analysis variables in Chapter 3 was evident.

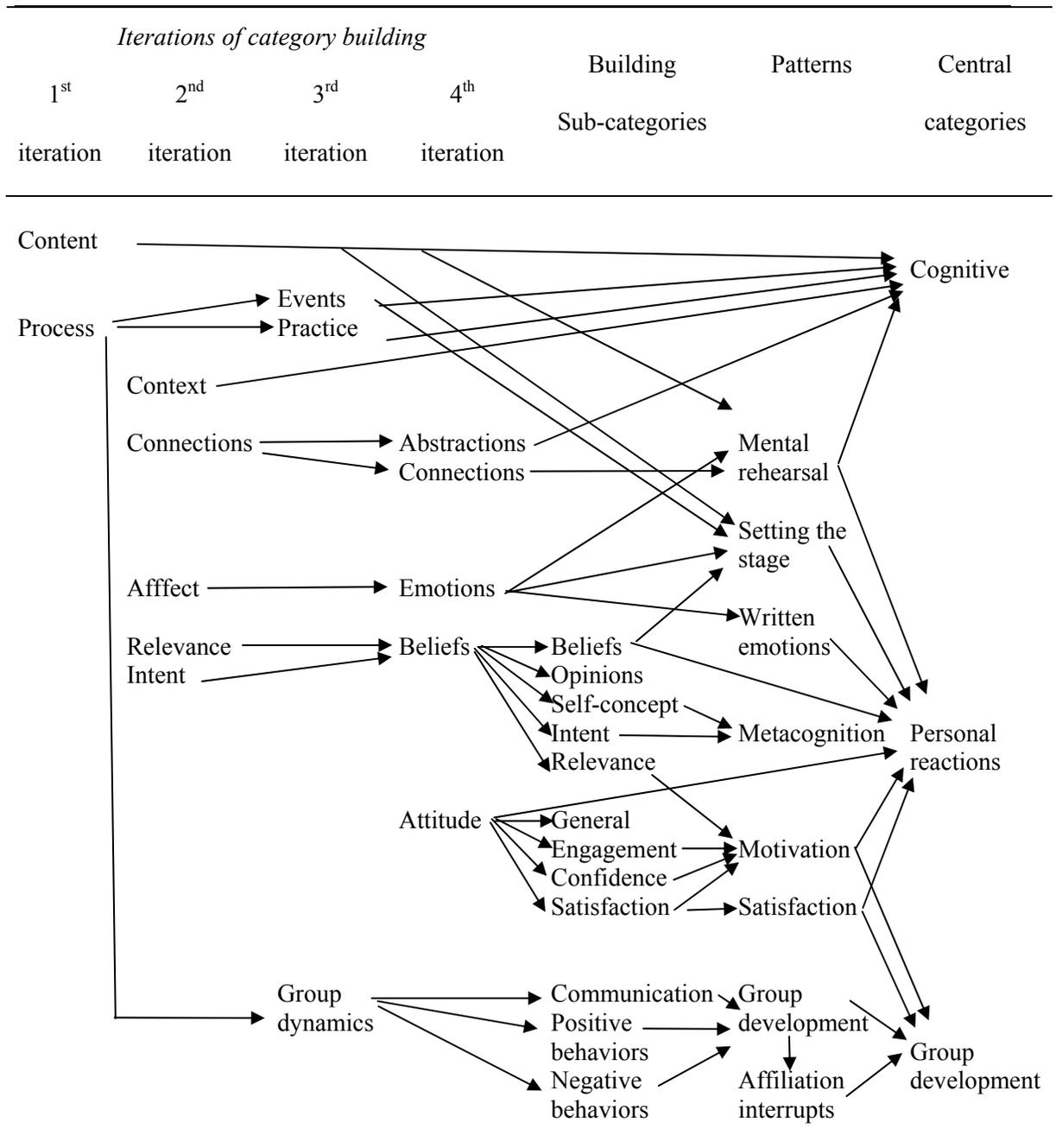
Some of the mental processes described by the students seemed to be connections between two or more concepts. Different types of connections started emerging, such as analysis, synthesis, connections to prior knowledge, cause-and-effect, and generalizations. Connections was yet another content analysis variable. The codes that were emerging, however, seemed to give a more complete picture of the concept than had been envisioned in the content analysis.

It became clear that the categorizing was paralleling the content analysis, as codes that fit the Connections category started emerging. Once Connections began to emerge, another complete iteration of categorizing was made with the other content analysis variables in mind, to see if richer description of those variables also emerged. Concepts were found that could be categorized as all the content analysis variables, but not all provided rich descriptions.

Relevance, for example, emerged with similar characteristics as had been developed for the content analysis

Table 6

*Building Categories*



To ameliorate the potential for the literature review and content analysis to have an undue influence on the categories in the first two iterations of categorizing, the analysis was re-examined to see if categories other than the content variables fit the data better. In the third iteration, the category initially named Process seemed too broad. Students were sometimes simply describing the sequence of events, but on other occasions were describing positive or negative group interactions, and on other occasions seemed to be focused on the problem-solving or practicing with their new knowledge. The broad category of Process could be logically split into Events, Group dynamics, and Practice.

In the fourth iteration of coding and categorizing, further adjustments were made that reflected the greater complexity of variables than those in content analysis: Connections and Affect seemed too broad, and Relevance and Intent seemed too narrow. First, the category of Connections seemed to cover a very broad range. The codes developed in the grounded theory analysis could be grouped into two categories: Connections and Abstractions. This was slightly different from the content analysis, which differentiated between simple, complex, and comprehensive connections. In the codes identifying Affect, students sometimes simply expressed an emotion and other times combined emotion with a belief that led to an inclination or behavior. Affect evolved into more specific and accurate categories of Emotion and Attitude. Finally, Relevance and Intent were only two of several Beliefs that were seen. In addition to those two, students expressed beliefs that certain ideas were true and that certain actions were right or wrong. They had strong opinions about other people and their actions. They also talked of their own abilities and limitations. Beliefs evolved to include truths, values, positive and negative opinions, and self-awareness, self-criticism, as well as relevance, and intent.

At the end of the fourth iteration, there were ten categories. Within those categories, sub-groupings could be seen. Another pass through the codes and categories was made to identify

those sub-categories. Group dynamics codes could be grouped into Positive behaviors, Negative behaviors, and Communication. Sub-categories in Beliefs included Relevance, Intent, Beliefs, Opinions, and Self-concept. Attitude not only had general positive or negative inclinations, but also more specific inclinations, such as engagement, confidence, and satisfaction; and satisfaction itself had sub-categories that included satisfaction with achievement, affiliation, and power.

#### *Pattern-codes*

The next step was to develop pattern-codes (Strauss & Corbin, 1998). Those were combinations of categories or sub-categories that recurred multiple times or across several participants. There were eight patterns that emerged from the text.

*Mental rehearsal.* Regardless of the stage of debriefing, students' mental rehearsal included more than the debriefing questions asked. Each mental rehearsal kernel contained three things: a description of content or events, simple connections, and attachment of personal reactions, whether by stating a belief or evoking an emotion. Even when asked to objectively describe a classroom activity, students frequently included some emotion, attitude, or belief:

*Setting the stage.* Students consistently set the stage for their answer with an introductory sentence or paragraph that summarized the content or events of the activity and attached meaning to it for them. A common combination of codes included Content and Relevance: "The Ugli Orange Case demonstrated the importance of open communication in negotiation."

*Metacognitive transfer.* Students often combined metacognitive awareness with a desire to transfer learning to new contexts by combining beliefs about self-concept with intent. One student, for example, said, "At times I felt overwhelmed, but I realized that the only road to success is by hard work and dedication. However, [*sic*]I am not a very eloquent person, but I will make every effort to improve in the near future."

*Motivation.* Patterns that could be an indication of students' levels of motivation included the perceived relevance of the topic, their engagement with the material, their confidence with their abilities, and their satisfaction with the process or outcomes. Each of these sub-categories had codes that identified either the presence of or lack of confidence, satisfaction, etc. For example, one student's dissatisfaction leading to low motivation in the workplace was stated thus: "The moral [*sic*] of the hospital is very low and they don't think of the hospital as anything other than a pay check. No loyalty is to be seen." This feeling of de-motivation was confirmed in later conversations with the student.

*Satisfaction.* Satisfaction (or dissatisfaction) seemed to be expressed in three ways: satisfaction with their achievement, satisfaction with the distribution of power, or satisfaction with their interpersonal interactions (i.e., affiliation). Satisfaction with achievement was expressed even when the outcome was wrong if the student felt the group had done the process correctly. Satisfaction or dissatisfaction with power seemed connected with level of conflict and resistance to change. Satisfaction or dissatisfaction with affiliation seemed to be a function of group development.

*Group development.* The way participants described group interactions fell into three patterns: polite but not totally open interactions, uncomfortable interactions, and comfortable interactions. Polite interactions tended to happen early in a group's life. The group's interactions could very quickly change to uncomfortable when any confusion or differences of opinion arose. Comfortable interactions surfaced in two circumstances: when there was total agreement or when disagreements were thoroughly discussed and win-win solutions developed.

*Affiliation interrupts.* Feelings of confusion, conflict, or tension were interrupted when students had strong feelings of affiliation within their group. Rather than allow negative outcomes, students exhibited positive intent and persistence to work through the negative

feelings. The same was not true when strong feelings of affiliation were not present. Students were more likely to fall silent and be dissatisfied with their affiliation within the group.

#### *Central Categories.*

The last step in the coding process was to produce central categories (Strauss & Corbin, 1998). Ultimately, the ten categories fell into three central categories: *cognitive processes*, *personal reactions*, and *group development*. Cognitive processes included content, events, practice, connections, abstractions, and context. Personal reactions included emotions, beliefs, and attitudes. Group development included communication, positive group behaviors, and negative group behaviors.

#### *Process Maps*

As the core categories emerged, it became obvious that participants were writing about two very different processes; therefore, two process maps were developed to help clarify the sequence of events in each process: a learning process map (Figure 1) and a group process map (Figure 2).

#### *Learning Process Map*

Participants spent a considerable part of their written debriefings describing mental processes that could be defined as *learning*. Their descriptions included concepts from two of the three central categories, Cognitive Learning (i.e., Content, Events, Connections, and Abstraction) and Personal Reactions (i.e., Beliefs, Emotion, Self-motivation, and Transfer), and appeared to take place in four steps: an Introduction, Mental Rehearsal, Abstraction, and Priming for future use.

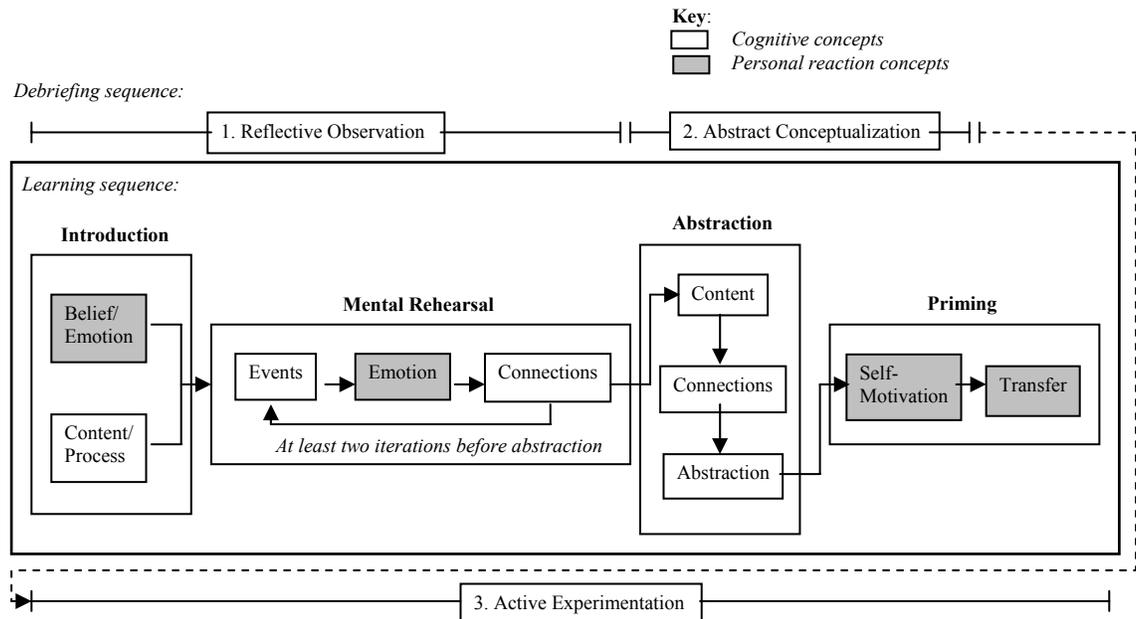


Figure 1. Learning process map.

*Introduction.* In contrast to the anticipated factual debriefing answers, especially since the initial debriefing question asked for an objective review, students' debriefings often began with an introductory sentence or paragraph that attached an emotion or evaluative reaction to the experience. In some cases personal reactions were attached to the content learned in the activity; while in other cases, participants attached their reactions to the events that took place during the activity. Evaluative comments were expressed either as an emotion or as a deeply-felt cognitive belief.

*Mental rehearsal.* Several iterations of mental rehearsal comprised the second step in the process map. Each iteration had three parts: recall of events, recall of emotions, and making of connections. Debriefings included three or more iterations of mental rehearsal, depending partially on the number of questions in the debriefing and partially on how often the student went through the three-part cycle in each question. On long answers, they would sometimes pause in their recall in order to make connections, and then continue. Participants first described the

sequence of events, including the problem solving they did and the new learning they applied. They also recalled the emotions they felt as they described the events. (e.g., “I was very comfortable working with other team members. I am an individual who loves interaction ...”) They then made several types of simple connections between concepts, e.g., application, analysis, synthesis, comparisons, connections with prior knowledge, or cause-and-effect relationships. Sometimes students made multiple connections within the same description, or even the same sentence. For example, the first connection students made was an application of their new learning to the case study or simulation problem they were solving. In the same description, some analyzed a main concept, describing its pertinent parts, while synthesizing two or more concepts in order to draw conclusions. Others compared the different solutions arrived at in the classroom, draw on prior knowledge, identify some relationships as causes and effects, and then synthesize the results from the activities with their prior beliefs.

*Abstraction.* The next step, abstraction, occurred most often in the second half of debriefings, but occasionally made brief appearances in earlier stages and consisted of a review of the content, connecting two or more concepts, and then making abstractions. Content review generally included mention or a listing of concepts from the text (e.g., “The symptoms I would look for would be the sources listed in the text, Goal Incompatibility, Differentiation, Task Interdependence, and Limited Sources.”) Students then connected the content to specific examples (e.g., “The Garbage or Learning Model seems like it could be used with one problem with a lot of departments or steps to solve it.”). Abstraction involved making broader or more complex connections, such as sequencing a procedure, generalizing, or making rules. When appropriate, participants also examined their present knowledge and abilities to develop a deeper self-awareness (e.g., I am still weak in my presentations. I need to improve in my eloquence and confidence.”) At the most comprehensive level, they developed a theory with variables and hypotheses to explain causes and effect relationships.

*Priming.* Priming the mental pathways for future recall, the last step in the learning process, generally occurred in the last two stages of the debriefing: abstract conceptualization and active experimentation. Priming, which creates an expectancy that prepares the mental pathways to be activated, was seen in the debriefings as a combination of motivation and a specific intent to transfer knowledge to some future use.

Students' self-motivation was indicated by engagement, relevance, confidence, or satisfaction. Engagement and relevance were more often inferred than expressed openly, while confidence and satisfaction were usually expressed more directly. Participants sometimes inferred their engagement by owning the decisions they had made or planned to make with the new techniques (e.g., "I made the decision to ..."). They often inferred relevance by listing multiple uses for the concepts, but on occasion made specific comments on the concepts' importance. Confidence, or lack of confidence, was expressed by indicating a level of comfort with dealing with a situation. (e.g., "A person learns to adapt easily to change or at least I have.") Satisfaction was a more complex concept than the others because it addressed a variety of different needs that were met. Students expressed satisfaction with their achievement, with their affiliation (e.g., with their group or workplace), or with the power distribution that took place in the events they described.

In addition to motivation, students provided some indication of the strength of their intent to transfer their new skills to some future scenario by describing hypothetical, possible, successful past, or definite plans for use. Strength of the priming effect might be determined partially by the type of intent expressed. The strongest priming may have occurred when the participant described a specific action plan. Even satisfaction expressed over recent use could prime the recall in some future occasion.

### *Group Process Map*

Two of the three class activities took place in a group context; therefore, participants spent a considerable amount of their debriefings describing group dynamics. The group process map in Figure 2 had some overlap with the learning process map, but it was distinctly different. The group process map included concepts from the Group Development category (i.e., communication, positive and negative group behaviors) and concepts from the Personal Reactions category (i.e., emotions, beliefs, and attitudes). Group interactions appeared to take place in four steps: Problem-solving, Consensus-building, Reactions, and Resolution. Between Reactions and Resolution there was a possible moderating variable, prior group affiliation, that influenced the resolution of the group interaction. There were two additional sections of the map: at the beginning of the sequence there were Pre-existing States (i.e., attitudes, traits, skills, and culture) that influenced the group interactions, and at the end of the sequence there were Lasting Effects (i.e., satisfaction or dissatisfaction) that affected participants' recall of the experience.

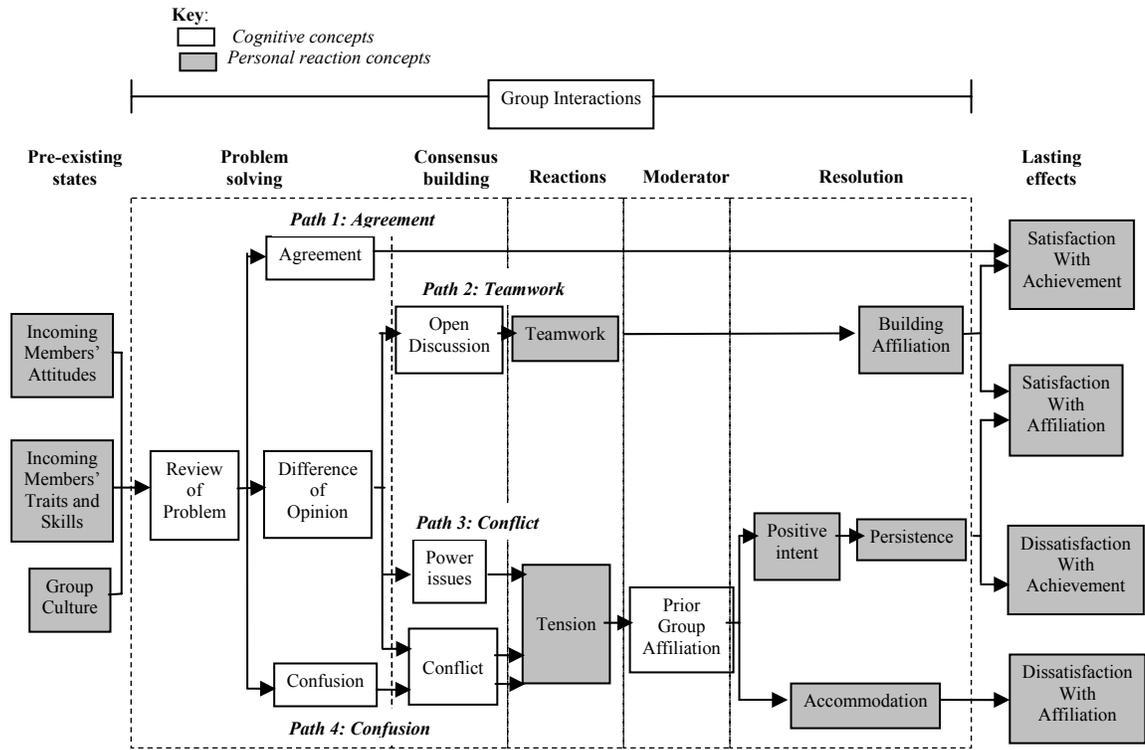


Figure 2. Group process map.

*Pre-existing states.* The effect of pre-existing individual differences (e.g., attitudes, personality traits, and skills) was described in the first two stages of participants' debriefings. Some individuals exhibited very high confidence while others were more hesitant. In each team there was at least one strong-willed person who influenced or attempted to influence their group more than the others did. Several members on each team exhibited strong communication skills that supported good teamwork.

Pre-existing group culture affected group interactions, norms, and personal reactions. Teams established on the first day of the course had developed distinctive cultures over the five class sessions prior to the study. One team tended to be more casual and social and often finished earlier than the other team that was more focused and engaged. Each team developed norms to deal with personality differences. As a result, when one of the activities required class members

to reorganize into different teams, all participants described the discomfort that arose with confronting different group norms. Group culture may also have affected personal reactions, such as persistence and satisfaction. The more focused group may have been more persistent when experiencing confusion. The more social group discussed affiliation more than achievement, while the more focused group discussed both.

*Problem-solving.* The teams started their problem-solving by reviewing the case study or simulation and using a specified analysis technique to attempt to solve the problem.

*Consensus-building.* The groups' process began diverging as the teams got into the heart of the decision-making process. Group interactions appeared to follow four possible paths: agreement, teamwork, conflict, or confusion, depending on the methods they used for building consensus.

*Agreement.* In the first path team members were in agreement on the solution, and the team moved directly to recording their decisions. Since agreement was easy, participants did not describe any emotional reactions to their consensus-building process. In describing results, participants expressed satisfaction with the team's achievement but made no mention of satisfaction with the team interactions.

*Teamwork.* In the second path team members had a difference of opinion on the solution to the problem. They communicated openly on their disagreements and resolved their differences logically and supportively, which produced positive emotions and ownership of the results. Good teamwork appeared to build the affiliation between members. After following this path, they expressed satisfaction with both achievement and affiliation.

*Conflict.* In the third path team members initially reacted to differences of opinion negatively. Rather than having an open exchange and discussion of ideas, team members struggled with conflict and power issues (e.g., holding adamant positions, dismissing others' opinions), which generated a good deal of tension within the group. The team's prior feelings of

affiliation for each other seemed to determine how the team responded to that tension. If the team had not bonded, team members tended to accommodate the strong-willed member and lapse into silence, feeling resentment for having their opinions dismissed. In the debriefings, participants described dissatisfaction with their affiliation and didn't mention their achievement at all. If, on the other hand, there was a strong bond within the team, members expressed their positive intent (i.e., their desire for a positive interaction) and persisted in their discussion until arriving at a solution that was acceptable to all team members. Participants were then extremely satisfied with their affiliation, but not with their achievement.

*Confusion.* In the fourth path team members were confused at some point in the activity. This led to conflict over the way to proceed and tension within the group. In the three instances where there was confusion, the team had strong feelings of affiliation, and the team persisted until they resolved their confusion. This resulted in satisfaction over their affiliation, but not their achievement.

The same statement attaching an evaluative reaction to the activity that started the learning process map ended the group process map. The first statement or paragraph in the debriefing tended to reveal the lasting effects of the group interaction, which ranged from strong satisfaction with their achievement or their affiliation, to hints of the trouble that was encountered in the group. The lasting effects of the activity tended to reflect the path followed by the team (Table 7).

Table 7

*Summary of Lasting Effects from Group Interactions*

Path	Satisfaction with Affiliation	Satisfaction with Achievement
Agreement	No	Yes
Teamwork	Yes	Yes
Conflict (with no prior affiliation)	No	No
Conflict (with prior affiliation)	Yes	No
Confusion	Yes	No

One outcome of concern was the “us-versus-them” attitudes that emerged after the teams re-formed into their original membership. Participants described strong emotions of relief and happiness to be back in their “own” groups and reaffirmed their group norms as superior.

*Themes*

Six themes emerged from the data after examining how the eight patterns interconnected within the sequence of the two processes: four themes were associated with the learning process map and two with the group process map.

*Learning Process Themes.*

Patterns combined to develop four learning process themes: iterative reflection, rich connections, attachment of personal reactions, and the role of writing in debriefings.

*Iterative reflection.* Regardless of the type of question asked, the learning process appeared to use the same three reflective steps: (a) recall of content or events, (b) recall of personal reactions, and (c) connecting concepts. Students re-lived their experiences during objective and subjective review and again during active experimentation, thus reinforcing their learning. This can be illustrated by following a participant’s iterations through one debriefing.

During objective review, Student 1 briefly described the events in the class activity and hinted at some of the emotional turmoil that took place, but then connected the turmoil to better learning:

In the first activity, rearranging the members of the two teams was quite challenging, but meaningful. It was a method of allowing us to adjust to the behaviors of other members, whom we were not familiar with. This exercise taught us about behavior and culture, not just at an intellectual level, but also at a personal level.

Student 1 engaged in the three reflective steps again in answering the subjective review question:

I was very comfortable working with other team members. ... In the first activity, even though our case was identical, I noticed vast differences in the change strategy used. Even though we applied the four types of changes, each team looked at the case from a different perspective. I believe my team viewed the case by examining the product and the proposal to improve on the product, while the other team viewed the case by the approach and reaction of personnel towards the proposal of the change.

Student 1 began by expressing an emotional reaction, moved on to describing the activity, and then making comparisons between the two teams' answers. This led the student to evaluate the reasons for the differences. Student 1 concluded with a belief about the effect of team approach on the types of decisions made.

In the last question of the debriefing, Student 1 first reviewed the types of changes that could be made in an outside organization and determined that cultural changes were needed. The student added the belief that organizations need support from their members and developed a cause-and-effect relationship between organizational culture and results.

The changes needed to improve my organization would not include technology changes, product and service changes, nor strategy and structure changes, but definitely cultural changes. ... Non-profit organizations depend on financial and physical support from members and other interesting individuals or groups. Our current members and

supporters, while they have great expectations of our organization, there are no efforts shown by their attitudes [*sic*].

Other participants showed similar patterns of mental rehearsal in the three stages of the debriefings. Mental rehearsal did not occur as often in abstract conceptualization because the abstraction of ideas rarely led to students' re-living an experience. Emotions were rarely attached to abstractions.

*Richness of connections.* Connections between and among concepts, knowledge, and experiences were made in every stage of debriefings. Connections could be described in multiple ways and increased in complexity as the debriefing progressed. This created a richness of connections that was seen repeatedly throughout the debriefings.

Rarely could a connection be categorized as only one type. Connections could be described as various combinations of application, analysis, synthesis, evaluation, cause-and-effect relationships, rules, or generalizations. For example, descriptions of classroom or organizational experiences usually began by applying the textbook theory or management tool to the problem they were trying to solve (i.e., application). In the same description, participants brought in an axiom developed from prior learning. In other examples, connections could be described as both analytical (i.e., breaking down a concept into a sequence of steps) and synthetic (i.e., synthesizing the steps into a whole). In a third type of connection, cause and effect statements were developed from observation and analysis of a situation and then synthesized into rules and generalizations. As a last type of connection, students often made connections between concepts while describing their involvement in an activity, which made an additional connection within episodic memory as well as semantic memory.

Consider the following example, in which Student 3 was applying a win-win strategy learned in class to a planned intervention at work.

The win-win strategy I intend to use would be to schedule a meeting with all three committees, define the problem, support my definition of the problem with financial information, suggest ideas to solve the problem, and welcome alternative suggestions from each member of the three committees.

The student analyzed a problem-solving strategy, breaking it down into sequential steps. These steps were synthesized into an integrated method of applying a win-win strategy. Applying this strategy was anticipated to have an effect of solving the problem in a way that satisfied all participants. By describing the future event so vividly, Student 3 was creating connections between the semantic meaning of win-win strategy and episodic memory.

Connections also increased in complexity as debriefings progressed. In general, early connections involved direct application, analysis, and synthesis for an individual problem. For example:

[Our team] took the position of being an outside consultant firm who would advise the company on its best course of action. The other team looked at it as though they were the decision makers. I felt there were several crucial points in the case study that would direct a consultant to proceed cautiously.

Student 4 compared the different solutions developed by each team and saw a cause-and-effect relationship between the roles the teams had assumed and their risk-taking behavior.

Abstraction involved generalization, creating rules and the criteria for using them, developing procedures, and increasing self-awareness, all of which were applied beyond the individual problem. For example, Student 4 developed generalizations about organizational change later in the same debriefing:

When determining the best action to take in organizational change one must look at the organization, the culture, and the internal and external influences. Second, it needs to be determined what the organization wants or needs to happen.

The above examples give an indication of the richness of connectivity that seems to be developing in the minds of the participants.

*Attachment of personal reactions.* Students also attached personal reactions (i.e., beliefs, emotions, or attitudes) to their experience throughout the debriefings. Participants frequently started their debriefings with a statement that summarized their belief in the value of an activity. Student 4 wrote of the relevance of a concept, “The Ugli Orange Case demonstrated the importance of open communication in negotiation. The results of the exercises completed by both teams had different outcomes due to the teams [*sic*] willingness or unwillingness to share information.”

Participants also typically added emotion to each iteration of mental rehearsal. For example, in answer to an objective review question (i.e., requesting only facts), Student 5 said, “It was her suggestion to share the oranges, and from then on, only the small details needed to be worked out. Everyone was happy with that. If only in real life it worked like that!” Students were equally likely to share unhappy emotions. Student 1, for example, said: “In the second activity, we were just happy to be back together again, especially our team leader, whom I believe was not quite happy with at least one of [the] alternate team members.”

Participants’ attitudes were either modified or strengthened by combining their belief in the relevance of a concept with a stated willingness to transfer their learning to future situations. This was often accompanied with a metacognitive awareness of the participant’s current abilities and weaknesses. For example, Student 2 combined the importance of review with the impetus to make changes:

I need to remind myself that I am in control and reuse my books, notes, etc., to gain a good foundation. Remembering what I don't like about organizations, management, etc., and making the changes when I get the chance. [*sic*]

In another example, Student 1 combined self criticism with the value of persistence:

At times I felt overwhelmed, but I realized that the only road to success is [sic] by hard work and dedication. [sic] However, I am not a very eloquent person, but I will make every effort to improve in the near future.

*The role of writing in debriefings.* Written debriefings provided opportunities for participants to develop more connections and acknowledge stronger emotions than they made in oral classroom debriefings. Although the results from the oral debriefings are not formally presented in this chapter, the researcher took detailed notes on some oral debriefings and taped others, and the connections that students made were primarily simple relationships between events and concepts in the activity. In one activity, for example, the class was instructed to use a particular decision-making approach, without being told the name of the approach being used. In the oral debriefing, they were very slow to identify the approach they had taken, even though they had spent the previous hour analyzing all the different approaches.

In written debriefings, students drew conclusions and made generalizations that they did not express in class. For example, Student 1 reassessed the conclusions drawn in class and wrote:

The facts of the cases or situations would definitely lead me to select one decision-making process over another. For example, we both used the Management Science Approach initially, then applied the Carnegie Model. Had we looked [at] the cases more intently, we would have probably applied the Carnegie Model first.

Student 4 was able to extend the conclusion drawn in class and determine when it would not apply in other situations:

This was a great exercise and it really did a good job of demonstrating the need for communication to ensure the best outcome for all involved. However, given the scenario described in the case regarding the espionage and mistrust between the parties, it is doubtful they would have been as open and honest with each other. In fact, they may not

have even been willing to share the oranges given the level of competition that existed between them.

In addition to re-examining their conclusions, students tended to exhibit more trust in revealing negative feelings in written debriefings than in oral debriefings. After the team member exchange, for example, two students described the experience as “different” during the oral debriefing. In the written debriefings, however, some students were more willing to describe the tensions that had occurred in the groups. Student 2 wrote: “It was noticed that the other team was not comfortable with the team member exchange. The ones from our team felt that their opinion didn’t count and [were] dismissive of their input.” Student 5, who was in the conflicted group, wrote, “I really didn’t have a problem with it, but was a little hesitant to voice my opinion ... I felt that [*the other member*] already made up her mind ... I guess I wasn’t as comfortable as I thought I was.” This realization may have had an impact on a later answer: “I’ve had supervisors ask for input and when they leave, you know they’d *already made up their mind ahead of time* [*italics added*], but wanted to make them feel better about asking you in the first place.”

#### *Group Process Themes*

The group process patterns provided two of the six themes: fluid group development and the role of affiliation.

*Fluid group development.* Rather than proceeding along an expected group development path (forming, storming, norming, performing, adjourning), the groups in this study changed quickly from polite to resentful, or from high-performing teams to confused and tense, argumentative groups, and back to adequately-performing teams within the scope of one activity.

In one example, when the team membership was unexpectedly revised, team members behaved very politely until there was a difference of opinion. Very quickly, the person who was most adamant in expressing an opinion dominated the discussion. The other team members acquiesced to the dominant member’s opinion, but expressed a considerable amount of

resentment. Student 5 commented: “Having to work with a different member in a group was quite different. ... After 3-4 suggestions, I just let [*the other member*] ‘do her own thing.’”

In another example, a team that had been working well together for weeks struggled for a considerable period of time when the members didn’t agree on a solution to a case study. Student 5 characterized the interaction thus: “The decision process we took ... was a little more difficult, because we, as a team, did not really have the understanding of what we were supposed to do with the matrix.” Student 5 re-lived the team difficulties in great detail in answering both objective and subjective questions and concluded:

After we discussed this problem, I don’t think we really accepted the end result fully, but did go along with it. When the break came, and we refigured the numbers, I think [*Student 4*] and [*Student 2*] were a little more satisfied with the numbers.

Note that, while the team did struggle, it persisted through the class break in order to find a solution that all members could accept.

*Role of affiliation.* Group interactions were different when team members had formed a bond of respect and affection than when they had not. When teams had a strong affiliation among members, they used differences of opinion to increase the bond between them. As could be seen in the previous example, members had a tendency to slow the process down, express a positive intent to listen to each other, and persist until reaching a solution acceptable to all team members rather than acquiesce to one member. Student 5 described their process in the following way:

Where I understood the problem to be more a money problem, [*Student 4*] was thinking that the problem dealt more with the closing of either the Speech department or the High School. ... We as a group like to use specific details from the readings to discuss our viewpoints, without getting upset or loud, and respect each other’s views.

While Student 5 expressed satisfaction with the team, a later comment identified less satisfaction with the team’s achievement. The lower satisfaction with the team’s achievement, though, did

not diminish the bond among them. “A comment was made that any set of numbers can be made to look anyway you want them to. [Student 4], [Student 2], and I all kind of laughed about that.” Conflict that resulted from changing team members seemed to bond team members more closely to their *original* team. Student 5 reflected, “Our ‘regular’ team seems to click a bit better...not as ‘social’ I guess. ... [The visiting member] seemed to want to be more ‘gossipy’ and ‘friendly’ rather than to do our work efficiently.”

Affiliation, however, did not seem to be a determiner of success in solving problems.

Student 1 described the team’s results this way:

However [*sic*], my teammate and I failed to observe some important factors in our cases.

These factors were so important, that had we noticed them our decision-making may have been different, but the approaches may have been the same. ... We were both satisfied with the idea of collaboration, despite the consequences.

It was interesting that the participant concluded that they would use the same process again even though they came up with the wrong answer. This appeared to be driven by the strong affiliation with the team members and how they worked together. Furthermore, strong feelings of affiliation, without intent, were not sufficient to follow through on a solution. As Student 1 described an organization outside the classroom, “The members are positive thinkers, with great ideas and strategies, but their downfall is the failure to implement them.”

#### Content Analysis.

A content analysis used coded data from the three raters to analyze the debriefings from a theoretical perspective, using seven variables derived from the theories presented in the literature review. Results presented here include reliability, reproducibility, and coding results. Coding results are analyzed using seven figures (Figure 5-12) showing mean intensities for the seven variables at each point of the debriefing cycle in three debriefings, and a table summarizing the mean intensities for each variable across all debriefings.

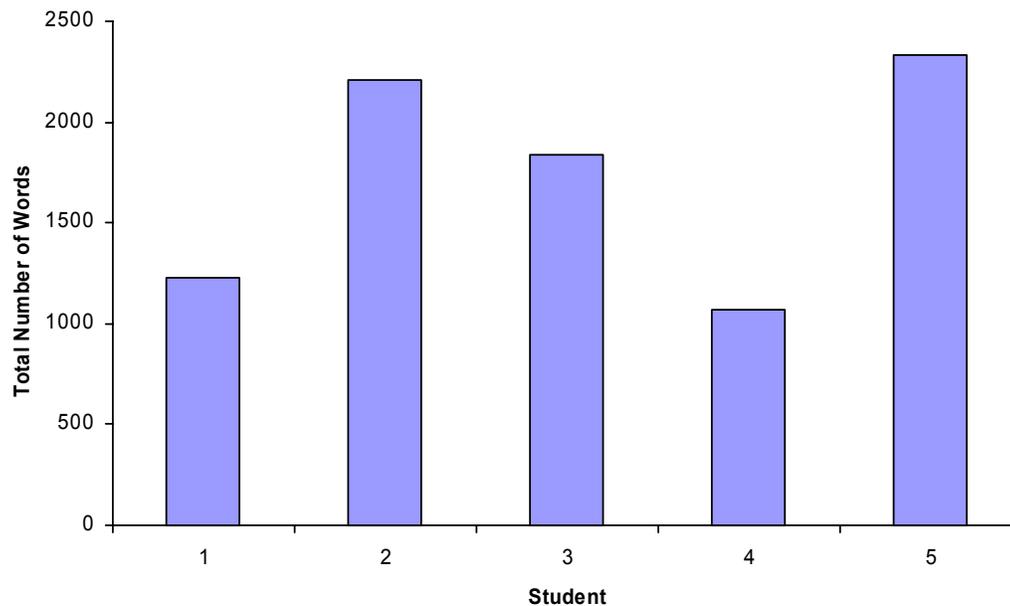
### *Reliability*

Two methods of Inter-rater reliability were tested. Holsti's method (Neuendorf, 2002), a standard measure of reliability for content analyses, divided the number of agreements by the total number of comparisons. This method was used after coder training and at the conclusion of the coding, and, at the end, gave an inter-rater reliability of .95. In addition, a Cronbach alpha, a common measure of internal consistency, was run on the final coding results, providing an alpha of .86. Both measures indicated acceptable levels of reliability.

### *Reproducibility*

Reproducibility of the variables across five cases added confidence to the possible generalizability of results and was checked by comparing the total number of words written by each student, which varied widely, with the mean variable intensities coded by the raters, which proved to be very stable.

Figure 3 shows the total number of words for all three debriefings written by each participant.



*Figure 3.* Total number of words by participant.

There was considerable variability among the participants in the amount written. Some participants wrote twice as much as others, ranging from a low of 1070 words to a high of 2328 words. Two participants wrote almost twice as much as two other students, with the fifth participant falling in between the two extreme groups.

Figure 4 depicts the mean intensity of each of seven variables by participant. Intensity was the amount or depth of a variable seen by the content analysts. The intensity in the content variable, for example, is the number of mentions of textbook content, while the intensity of the affect variable is the level of emotion displayed, e.g., 1 for positive attitude, 2 for an emotional verb used, and 3 for a superlative used. (See Chapter 3 for a complete description of how variables were coded.)

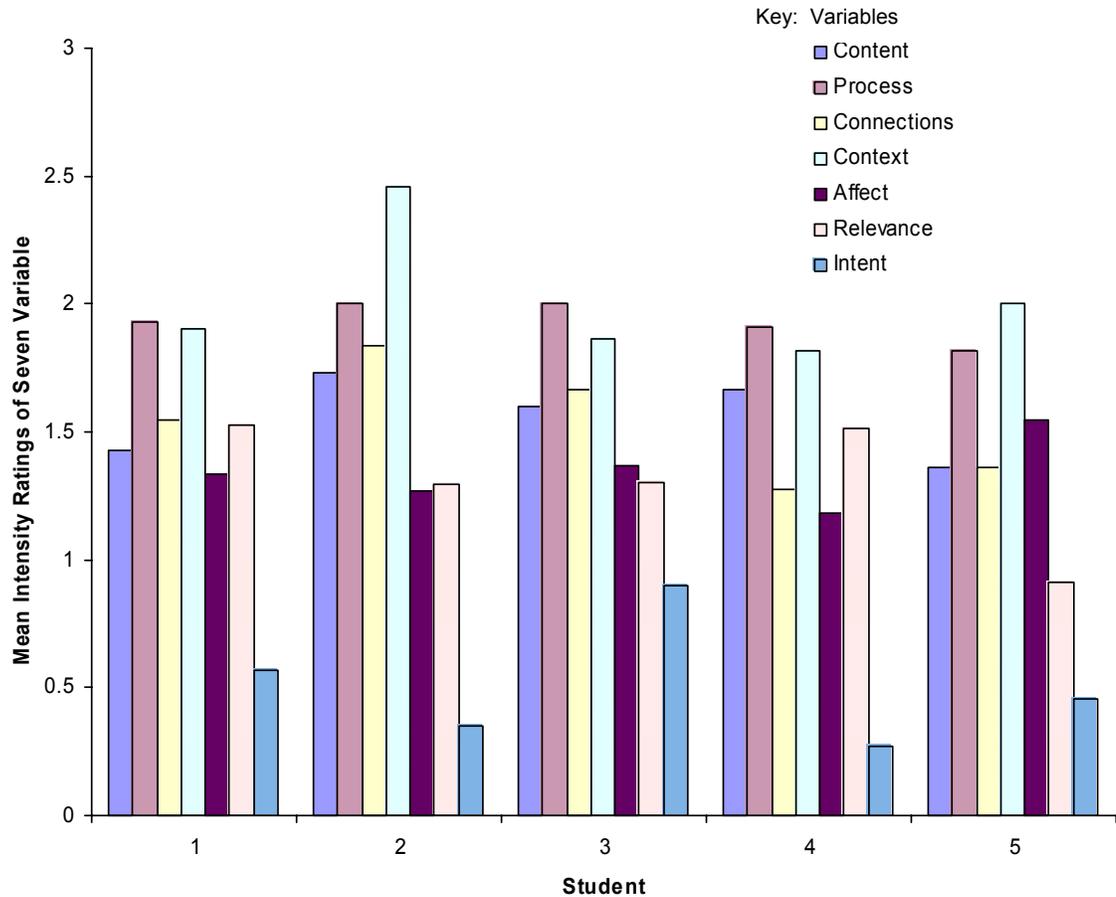


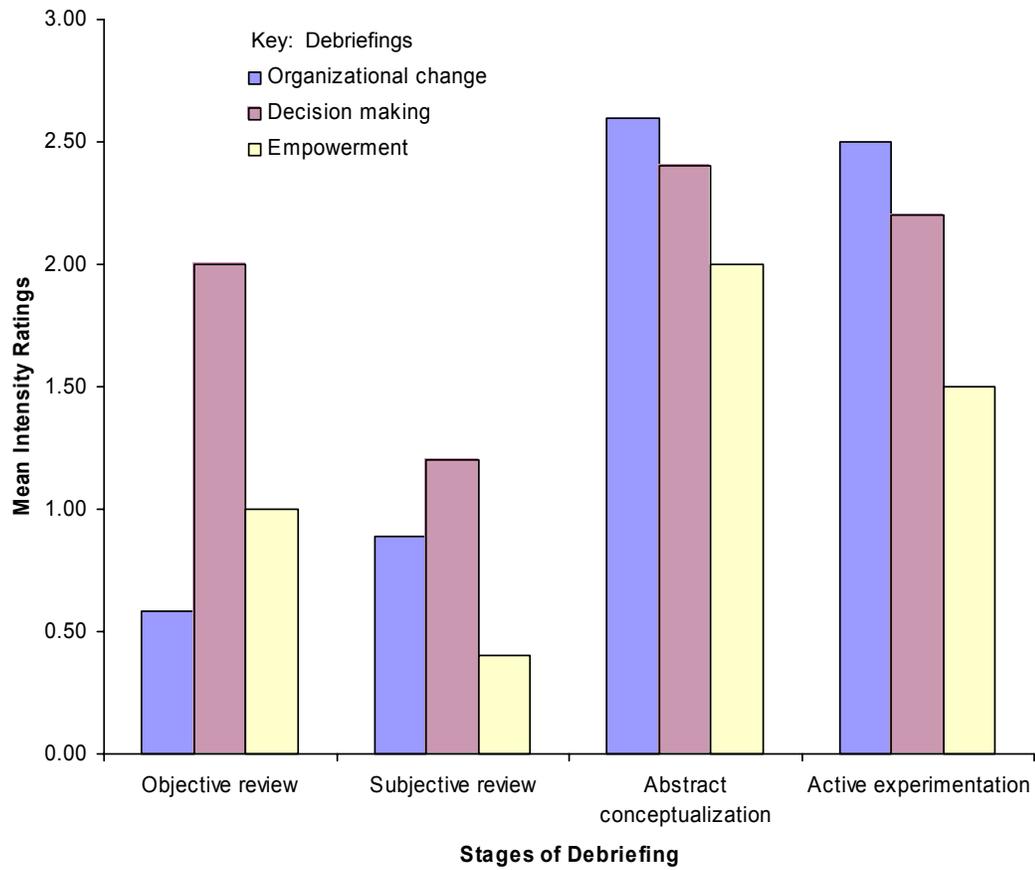
Figure 4. Mean intensity ratings for seven variables by participant.

Regardless of the amount written, however, participants were coded with remarkably similar levels of intensity. Thus, it appeared that the same level of intensity could be achieved with half the words.

#### *Coding Results*

Results of the content analysis were examined across stages of each debriefing in three debriefings.

*Content.* Figure 5 displays the mean levels of intensity for Content (i.e., mention of textbook material) across the four stages of debriefings during each of three debriefings.



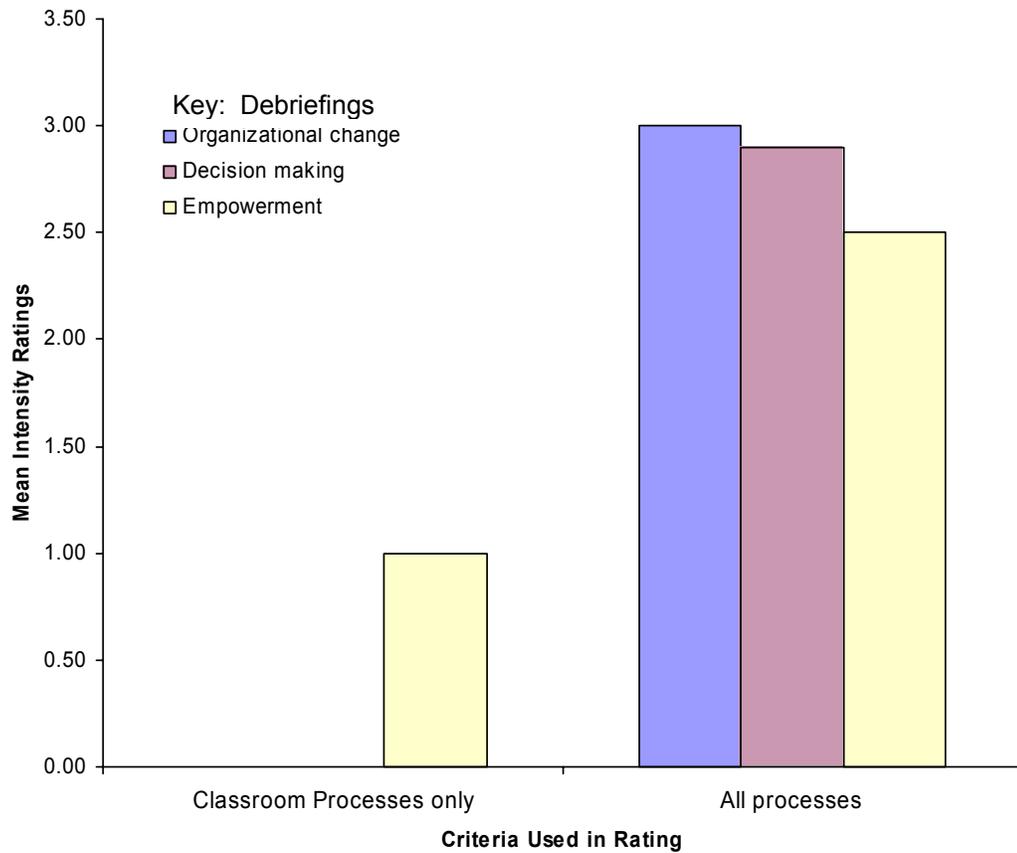
*Figure 5.* Mean intensity ratings of the Content variable by stages of debriefing in three debriefings.

The number of mentions of textbook material was noticeably lower in first two stages of the debriefing, objective and subjective review, regardless of the experiential activity. The amount of content mentioned in the first stage of the decision-making debriefing, however, was visibly higher than the levels of content mentioned in the other two activities.

*Process.*

Two raters felt strongly that they could not accurately code the mental rehearsal of processes that took place outside the classroom activities. The other coder felt equally strongly that all mental rehearsal should be coded since theory did not differentiate between past experience (i.e., classroom activities) and vivid hypothesized experience (Haskell, 2001). This had the greatest impact on the coding results of Active Experimentation, in which students applied their learning to an outside organization of their choice. Using the classroom experiences only, coders saw very little mental rehearsal in this phase. Students rarely mentioned their classroom experience when mentally rehearsing how they might apply their learning in another organization. If all mental rehearsal of processes was coded, however, a significant amount of mental rehearsal took place in Active Experimentations.

Figure 6 shows the intensity ratings of the Process variable (i.e., descriptions of the processes taking place in an experience) during the Active Experimentation stage when just the classroom activities were included and when all activities were included.



*Figure 6.* Mean intensity ratings for the Process variable in the active experimentation stage by criteria used in rating the Process variable in three debriefings.

When all mental rehearsal was coded regardless of the context, participants consistently demonstrated their ability to apply the concepts from classroom simulations to their workplace or other organizations, indicating a fairly high level of transfer (Haskell, 2001). The results presented below are the ratings for all mental rehearsal of processes, whether classroom, workplace, or other context.

Figure 7 displays the mean intensity ratings of Process across the four debriefing stages in three debriefings.

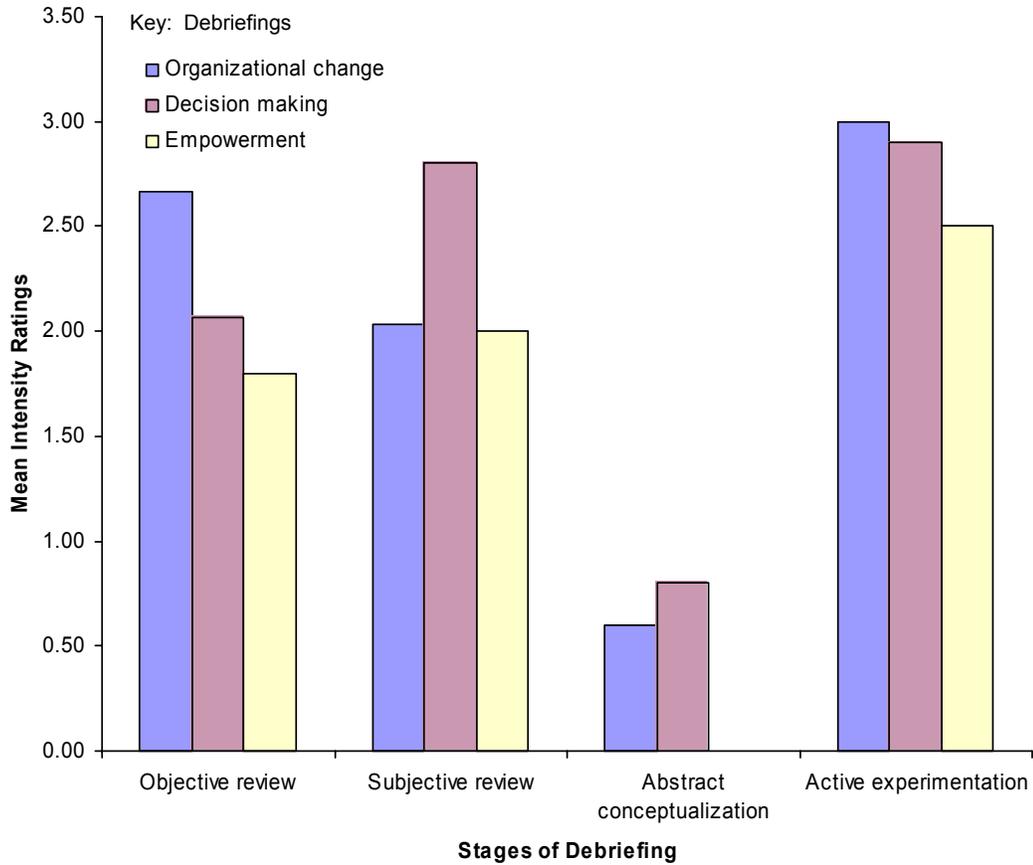
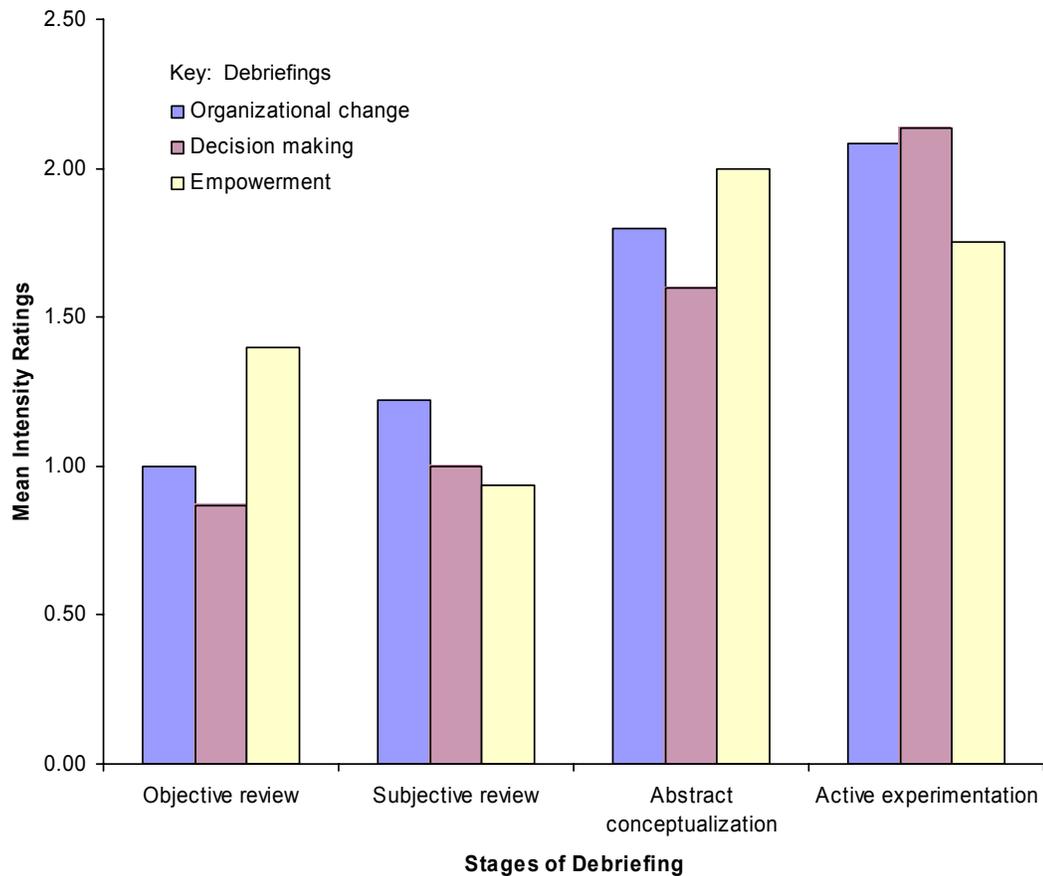


Figure 7. Mean intensity ratings for the Process variable by stages of debriefing in three debriefings.

The overall pattern of discussing process was similar across activities. There was considerably less discussion of process in the abstract conceptualization phase. The opposite pattern was observed, however, in the first two debriefing stages for the organizational change debriefing than in the decision-making debriefing. More of the organizational change process was discussed in the objective review than in subjective review in the first debriefing; whereas, in

the second debriefing, more of the decision-making process was discussed in the subjective review.

*Connections.* Figure 8 displays the mean intensity ratings for the Connections variable (i.e., simple to comprehensive) across the four debriefing stages in three debriefings.

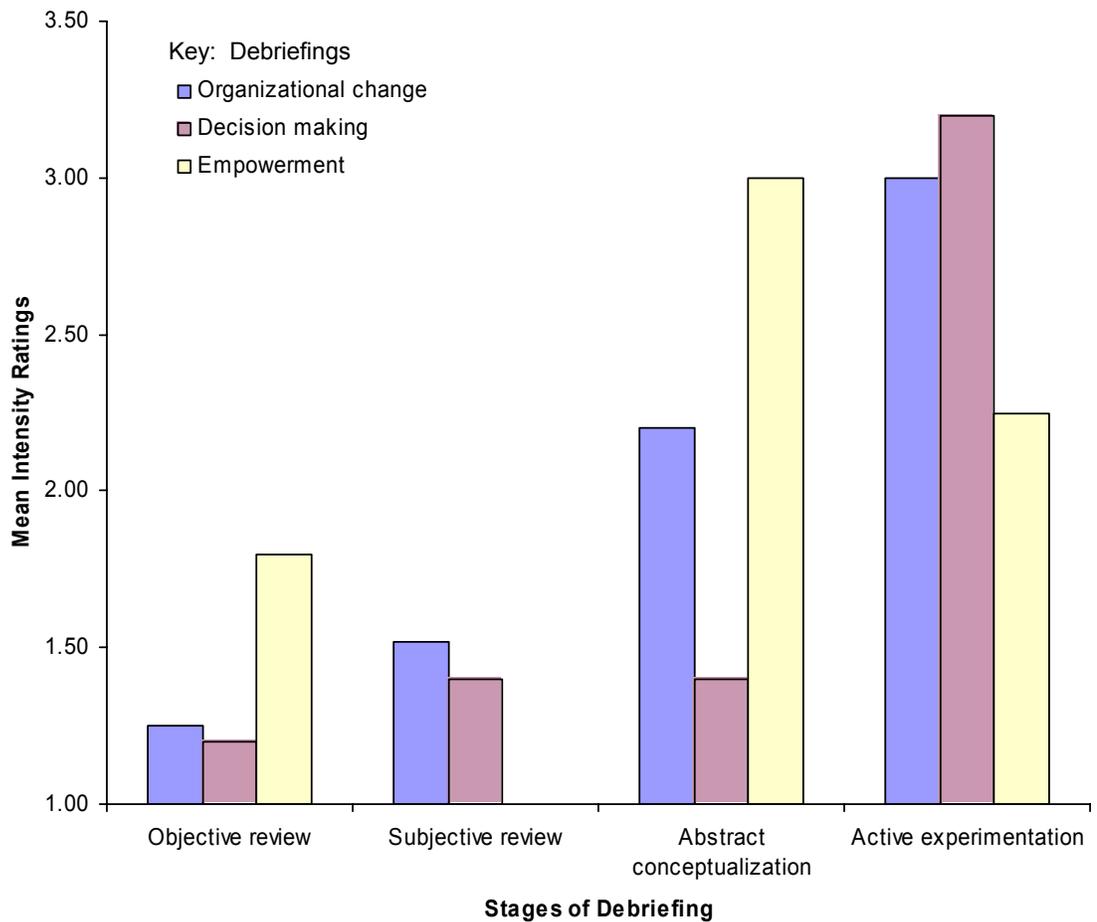


*Figure 8.* Mean intensity ratings for the Connections variable by stages of debriefing in three debriefings.

The complexity of connections increased as debriefings progressed. Simple connections in were more commonly made in objective and subjective reviews. More complex connections

were made in abstract conceptualization and active experimentation. The pattern of simple-to-complex connections was similar across debriefings.

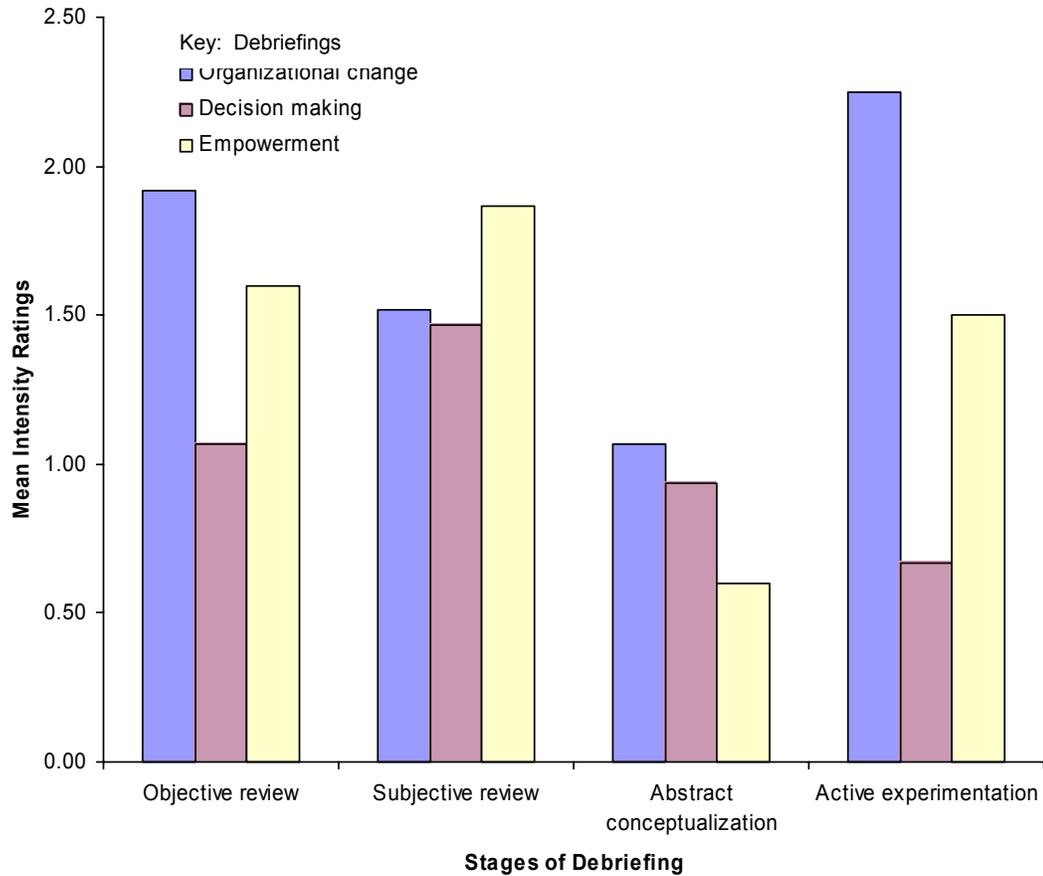
*Context.* Figure 9 displays the mean intensity ratings of the Context (i.e., near to far transfer) variable across the four debriefing stages in three debriefings. The scale of the y axis ranged from 1 to 4 rather than 0 to 3, reflecting levels of transfer in Haskell's taxonomy (see Chapter 3). The raters determined that there was no score of 0, because there was always a context for an answer. A score of five, indicating a novel application (Haskell, 2001), was possible, but not observed.



*Figure 9.* Mean intensity ratings of the Context variable by stages of debriefing in three debriefings.

It can be seen that Context broadened as the debriefings progressed. There was some delay in the broadening of context in the decision-making activity, but the final level of context was similar to the other activities.

*Affect.* Figure 10 displays the mean intensity ratings for Affect (i.e., positive or negative reactions and emotions) across the four debriefing stages in three debriefings.

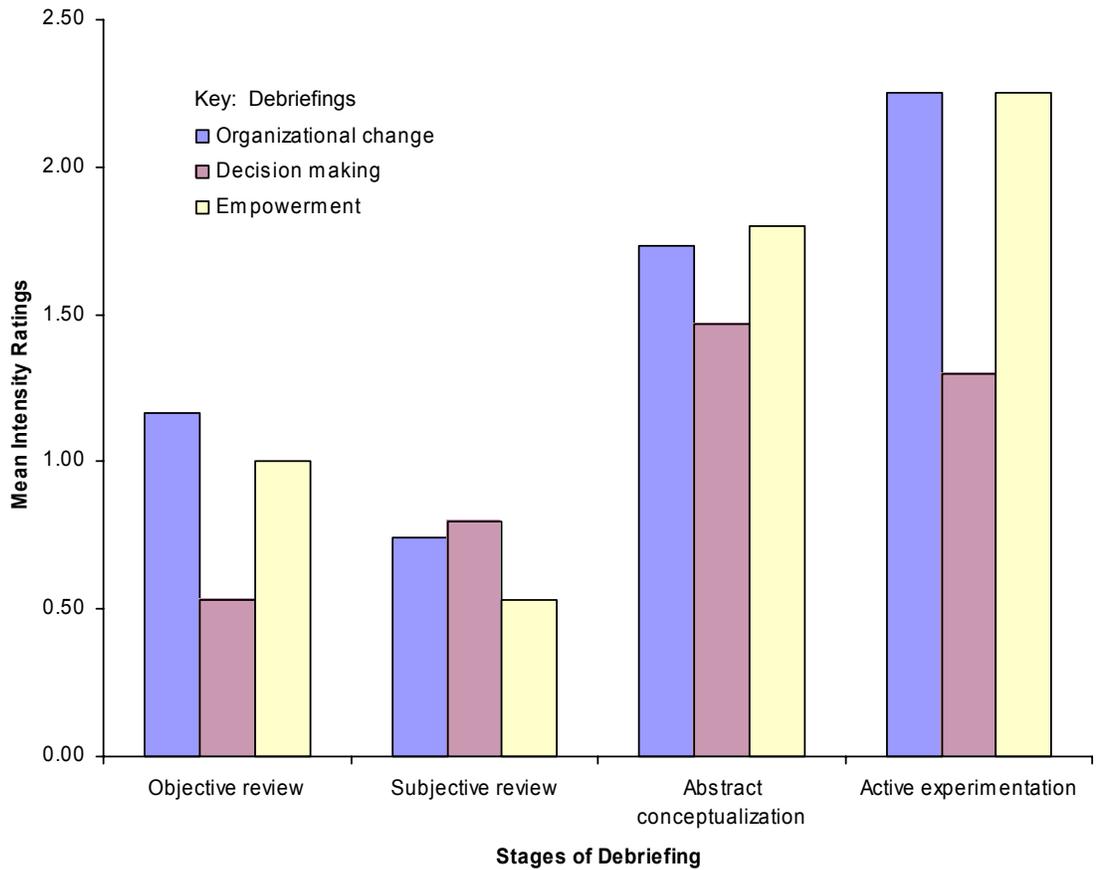


*Figure 10.* Mean intensity ratings of the Affect variable by stages of debriefing in three debriefings.

There were surprisingly high levels of affect in the objective review stage, which asked students to objectively describe the sequence of events. The only stage with a noticeably lower

level of affect was the abstract conceptualization stage. The average affect was somewhat lower in the decision-making debriefing than in the organizational change and empowerment debriefings. Affect was highest when students were discussing organizational changes needed in their organization.

*Relevance.* Figure 11 displays the mean intensity ratings of Relevance across the four debriefing stages in three debriefings.



*Figure 11.* Mean intensity ratings of the Relevance variable by stages of debriefing in three debriefings.

The recognition of the relevance of the concepts being studied increased noticeably in the second half of debriefings. Of interest, students used stronger language when expressing relevance for the skills learned in organizational change and empowerment than in the decision-making activity.

*Intent.* Figure 12 displays the mean intensity ratings of Intent (i.e., intentions for future use) across the four debriefing stages in three debriefings.

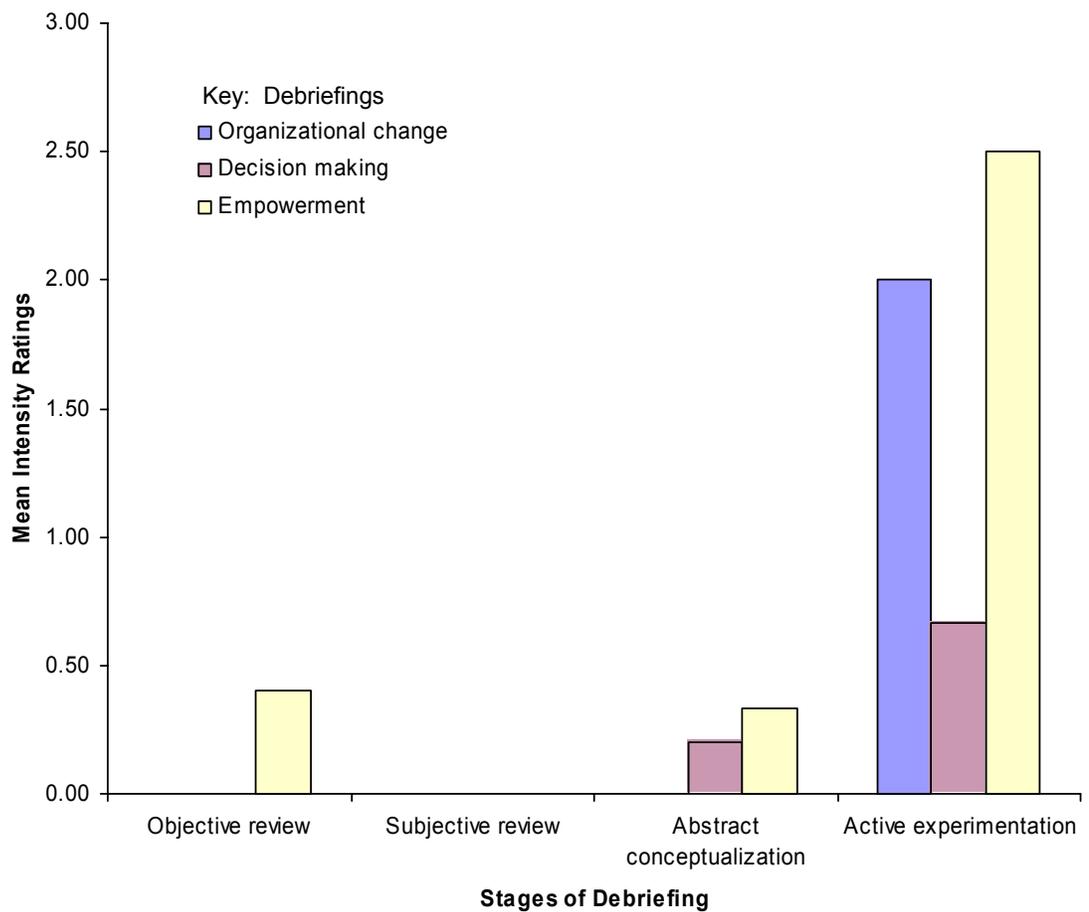


Figure 12. Mean levels of the Intent variable by stages of debriefing in three debriefings.

Intent to use the concepts was rarely expressed until the active experimentation stage of debriefings. There was much stronger intent expressed in the organizational change and empowerment activity than in the decision-making activity.

*Content analysis summary.* In general, growth in variable intensity appeared to increase over the course of debriefings. In contrast, growth did not increase over the span of three debriefings, which may be a function of the different nature of the experiential activities or of the practice prior to the study. Table 8 provides a summary of the mean intensities for each variable across the three activities.

Table 8

*Summary of Mean Intensities across Three Debriefings*

Variable	Objective review	Subjective review	Abstract conceptualization	Active experimentation
Content	1.19	0.83	2.33	2.07
Process	2.18	2.28	0.47	2.80
Connections	1.09	1.05	1.80	1.99
Context	1.42	1.28	2.20	2.82
Affect	1.53	1.62	0.87	1.47
Relevance	0.90	0.69	1.67	1.93
Intent	0.13	0.00	0.18	1.72

The active experimentation stage had high intensities for all variables and the highest intensity for all variables except content. Of interest: (a) Content, Connections, Context and Relevance were higher in the second half of debriefings, (b) Process and affect were very low during abstract conceptualization, and (c) Intent was virtually non-existent until active experimentation. The implications of these results are examined in the next chapter.

## CHAPTER FIVE

### DISCUSSION

The purpose of this study was to examine the cognitive and emotional processes involved in experiential learning debriefings. In this chapter, two qualitative analyses of the data collected in debriefings are first examined for commonalities and differences. Study results are linked to the theories presented in the literature review, and further discussion addresses findings linked to other theories. Unexpected patterns in the data not explained by theory are presented, along with possible explanations. Finally, the results suggest some recommendations for instructional development and directions for further research.

#### Comparison of Results from the Two Methods

##### *Commonalities*

All of the variables that were used in the content analysis also emerged in the grounded theory results, although in the grounded analysis they were sometimes either renamed for a more accurate portrayal or split into finer distinctions. The increase in complexity of connections within debriefings was clear in both analyses.

##### *Differences*

The content analysis identified the presence and intensity of variables at various stages of debriefings more clearly than the grounded analysis. The absence or low intensity of variables in the content analysis gave some indication of a typical flow of debriefings, and increases in the intensity of variable over the course of a debriefing provided some evidence of growth in learning. The increases in intensity or presence in all variables in the second half of debriefings, for example, were very obvious in the content analysis. Data from the grounded theory analysis

were not as sensitive to these changes in intensity. On the other hand, the grounded theory analysis uncovered additional concepts, refined or expanded properties and dimensions of categories, and highlighted relationships between concepts and categories. Additional learning concepts such as practice were discussed in the literature review but not developed into variables for content analysis, and group dynamics were not addressed in the literature review at all (see Table 9). The grounded theory method allowed those concepts to emerge and be examined in relationship with other concepts. The grounded analysis also surfaced properties and dimensions of categories such as connections (e.g., application, analysis, synthesis) and abstractions (e.g., rules, procedures, generalizations). In the content analysis the visibility of relationships between variables was limited to examining their presence relative to each other at each stage of the debriefings. The emotional process variables in the content analysis (Affect, Relevance, and Intent) were greatly expanded in the grounded analysis to include a number of other beliefs and attitudes such as self-efficacy, values, confidence, and satisfaction.

Table 9

*Differences between Content Analysis Variables and Grounded Theory Categories and Concepts*

Content Analysis	Grounded Theory Analysis	
	Categories	Examples of Concepts
Process	Practice	New learning, problem-solving
	Events	Sequence, observations, points of view
	Group dynamics:	Communication, group behaviors
Connections	Connections	Application, analysis, synthesis
	Abstractions	Rules, procedures, generalizations
Affect	Emotions	Tension, happiness
Relevance	Beliefs	Relevance, self-efficacy, values
Intent	Attitudes	Confidence, satisfaction, intent

Not clearly fitting the table is the fact that certain patterns, such as mental rehearsal (i.e., events, emotions, and connections) and satisfaction (i.e., affiliation, achievement, power), were much more apparent in the grounded theory analysis than in the content analysis.

### Discussion of Predicted Findings

#### *Increases in Learning*

In the descriptions of (a) connections and (b) mental rehearsal, learning appeared to increase through engagement in deliberate reflection after a concrete experience. Kolb's (1984) two learning dimensions – perception and process – could be observed being transformed into knowledge through reflection or action, despite the fact that students did not always follow the prescribed briefing format order.

Students made more complex connections and abstractions in the second half of debriefings than in the first half or in classroom oral debriefings as they developed personal theories and engaged in mental rehearsal of contemplated action. They brought in textbook content to the greatest extent in the abstract conceptualization stage of debriefings, when they were making connections between their actions in the activity and prior knowledge. The extent to which content was discussed, however, depended on the type of activity. One debriefing that explicitly instructed students to apply textbook material directly to a problem generated more discussion on textbook content throughout the debriefings than did other activities.

#### *Mental Rehearsal and Transfer*

In this study, mental rehearsal in different settings appeared to provide vivid additional practice for the participants. Students engaged in at least three mental rehearsals in their debriefings: (a) recalling their team's problem-solving, (b) comparing the other team's solution, and (c) applying their skills to an outside organization. The use of Kolb's (1984) experiential learning cycle in constructing the debriefing questions appeared to take students through several

levels of Haskell's (2001) transfer taxonomy. Having to apply classroom learning to other contexts during subjective review (i.e., the identical situation of the other team, Haskell's Level 2) and engaging in thinking about applications to active experimentation (similar or different situations, Haskell's Levels 3 and 4) helped students create rules and generalizations that transferred learning to a range of contexts.

#### *Attachment of Emotions*

The data suggested that emotions were consistently retrieved with recall of events, even when participants were asked to recall factual data. Students wrote as though they were as happy (or as dissatisfied) as when the event occurred. This supports D'amasio's (1994) contention that emotions evoked at the time of an event are stored with the event.

#### *Multiple Retrieval Paths*

The written debriefings provided evidence that students created multiple paths for knowledge and skills retrieval when they analyzed relationships among the aspects of the experience and synthesized newly-learned concepts with prior knowledge. Students described complex mental maps in which concepts were connected to events, values, causes, effects, evaluations, rules, and generalizations, among others. This contrasted with the simpler connections students made in oral debriefings. The latter two stages of written debriefings provided students with the opportunity to do elaborative rehearsal, which include meaning and relationships, rather than maintenance rehearsal, which uses memorization ( Craik & Watkins, 1973). Kolb (1984) suggested that this would happen primarily in the abstract conceptualization phase, but in written debriefings it also happened in the active experimentation phase.

#### *Priming for Future Use*

In the debriefings two concepts – relevance and intent – formed a pattern for how, when, and under what circumstances participants would use their learning in the future. This primed their mental pathways for recalling the skill or concept when they recognized similarities of their

class activities to events in their workplace. Spitzer's (1999) connectionist theory suggests that goal-setting creates mental connections that prepare learning to be retrieved more easily. In the debriefings, students seemed to have a range of intent, from imagining a hypothetical use to having a specific goal, that may have primed the mental pathways at different levels based on their perceived relevance of the learning.

## Discussion of Unexpected Results

### *Setting the Stage*

Despite the demand for facts in the initial debriefing questions, students often felt compelled to start their debriefings with the meaning of their experience, which they used to create advanced organizers for developing further connections. Students often began with the lasting effect from the experience, which was often the satisfaction (or dissatisfaction) their team felt with their achievement or affiliation. This set the tone for subsequent mental rehearsal, connecting causes and effects to the events and emotions from the experience.

Personal reactions seemed to be the most important aspect of the experience to convey first. In contrast, Kolb's (Osland, et al., 2002) debriefing format asked for a factual review of the experience as the first step in reflective observation. In this study, students ignored the limitation and added their feelings and beliefs about the experience. If feelings affect the ability to encode, retrieve, and transfer information, as Haskell (2001) contends, then initial attitude in debriefings may be the retrieval tool to recall the rest of the experience.

### *Three-part Mental Rehearsal*

Mental rehearsal consisted of a three-part process that repeated frequently, using fairly small chunks: (a) recalling events, (b) recalling emotions, and (c) making connections. Students did not describe events and associated emotions without also immediately making connections (e.g., between steps in a procedure, textbook content and simulation characteristics, or possible causes and effects). Mental rehearsal also made connections between events and concepts,

linking episodic and semantic memory, which primed the mental pathways for recall in similar situations. Students appeared to be using mental rehearsal to create mental maps or schema of what they learned. Kolb's (1984) model sequences the learning cycle into discrete stages: recalling all the facts and feelings in an event and then developing connections, but the written debriefings worked differently. In a systematic way, students made numerous connections as they recalled the experience. It may be that, since students' memories are limited (Miller, 1956), chunking their recollections and making connections after recalling short pieces of their experience is a natural way for students to develop their schema. They may also be constructing multiple paths in an interconnected web for easier retrieval (Spitzer, 1999).

#### *Complex Satisfaction*

Students revealed their level of motivation through engagement, relevance, confidence, and satisfaction. These concepts resembled those in Keller's (1987) ARCS model, a prescriptive model of motivation that describes actions that should be taken by instructors to motivate students: gaining attention, enhancing relevance, building confidence, and generating satisfaction. In contrast to Keller's model, which describes satisfaction in terms of natural consequences, extrinsic rewards, or equity, the students described satisfaction (or dissatisfaction) in terms of achievement, affiliation, or power, which resembled McClelland's theory of needs: achievement, affiliation, and power (Stahl, 1986). Prior research on Keller's model using factor analysis (Pearson, 1992) revealed only three clean factors in Keller's ARCS model (i.e., attention, relevance, and confidence) and concluded that satisfaction may be a more global factor. The results from this study support the factor analysis research that satisfaction is a more complex construct than originally envisioned, but suggest that Keller's description of satisfaction may be incomplete.

### *Richness of Connections*

During the grounded theory analysis, concepts such as application, analysis, synthesis, and evaluation emerged that described properties and dimensions of the Connections category. These concepts also resembled the terms in Bloom's (Bloom, et al., 1956) taxonomy of learning objectives (knowledge, comprehension, application, analysis, synthesis, and evaluation) that implied hierarchical cognitive levels. Upon further analysis, however, most connections that students made were far too complex to be coded as one discrete type. In one short description, students applied their knowledge to solve problems, analyzed the problem, made judgments on the validity of alternative solutions, and synthesized concepts into new rules for solving future problems. Sometimes, one phrase could be described as evidence of application, analysis, synthesis, and evaluation.

Bloom's taxonomy has largely been replaced by other theories, such as Gagné's (1984) cognitive learning theory, but continues to be appear prominently in college textbooks (Good & Brophy, 1995; Ryan & Cooper, 2001) and widely used in educational settings. In this researcher's recent experience, a research team encountered great difficulties using Bloom's taxonomy in a content analysis. The results in this study may provide some insights into the shortcomings of Bloom's taxonomy for developing instruction or evaluating learning.

### *Fluid Group Development*

Some of the concepts that emerged from the data described attitudes of the group as a whole. Groups could be: (a) polite but reserved, (b) respectful and open, or (c) tense and unproductive. These characteristics resembled some constructs described in Tuckman's (1965) five stages of small group development, but the patterns that emerged did not resemble the progression hypothesized. The five-stage model contends that groups go through predictable stages during their existence: forming, storming, norming, performing, and adjourning. In contrast, the debriefings described teams surging from one stage to another, and sometimes back,

within the scope of one activity. Group behaviors seemed to depend on two concepts, differences of opinion and affiliation for group members: (a) if both were missing, groups behaved as though they were in the forming stage; (b) if affiliation was missing, groups behaved as though they were in the storming stage; and (c) if both were present, groups behaved as though they were in the norming or performing stage. More recent research by Prochaska, DiClemente, & Narcross (1992), suggested that groups are more fluid in their development than the five-stage model implies. Results in this study support that line of research.

### *The Role of Affiliation*

Prior affiliation appeared to play a major role in the direction of group process and satisfaction with results. When encountering confusion or conflict, teams that had had time to develop affection and respect for one another persisted in their efforts to find a satisfactory solution. In at least one instance, a participant was very satisfied with the outcome, even though they had come up with the wrong answer. On the other hand, if there was no prior affiliation, differences of opinion created dissatisfaction with both the solution and the affiliation, even when the solution was satisfactory.

Affiliation also appeared to incite feelings of superiority when comparisons were made between groups. When the groups exchanged members in one activity and then re-formed into their original groups, students from both groups commented on how much better their original group's culture was. The teams developed an "us vs. them" attitude (Johnson & Johnson, 1999) that had not existed prior to the exchange. This common pattern in groups can be a cause for concern in a team-oriented learning environment.

While affiliation appeared to have a moderating effect on the direction of group behavior, another explanation for positive group behaviors under adverse conditions may have been the individual's contribution (e.g., skills or traits) to a team's efforts. Some of the team members had better conflict resolution skills than others. Some team members were consistently persistent, and

when the teams were switched, the more persistent members may have ended up on one team and the less persistent on the other team. The influence of affiliation, however, appeared to be pervasive in all group interactions.

#### Suggestions for Instructional Development

The results of this study may assist in developing more effective instructional activities. Instructional designers should consider the most effective use of experiential activities and the format of written debriefings.

#### *Experiential Learning Activities*

Results from this study identified three advantages of using experiential learning activities: the vividness of the experience, which aids recall, the use of teams, whose members provide additional perspectives to a student on a problem, and the debriefing, which aids transfer. On the other hand, experiential activities can be time consuming and narrowly focused. In this study, the content discussed in debriefings was a fraction of that covered in the textbook. Experiential activities, by their nature, usually cover one theory or one concept, while textbook chapters often cover dozens of concepts. If the concepts are important to learn, other means of instruction must be included to ensure the material is covered.

#### *Written Debriefings*

In this study, a three-stage debriefing process provided students with three forms of connections: (a) oral debriefings in class immediately after the activity provided students with alternative solutions and alternate points of view, (b) written reviews of the class activity helped develop complex and abstract connections, and (c) mental rehearsal (written, again) of an application outside the classroom helped with transfer. Two changes are suggested to Kolb's (Osland et al., 2002) debriefing format, one planned in the study and one that emerged from the results. First, the recommended division between objective review and subjective review of the classroom experience seemed unnatural to the students, based on their refusal to separate the

answers to the two. Unless there are specific reasons for additional mental rehearsal, the two sets of questions can be combined into one “reflective observation,” as it originally was conceived in Kolb’s theory (1984). Students should be encouraged to begin their reflective observation with an evaluative judgment on the value of the activity, to create motivation to pursue the next phases of the debriefing more deliberately. Second, delaying active experimentation by dividing written debriefings into two after-class assignments seemed to encourage students to engage in a second complete experiential learning cycle, which provided additional practice that the students appeared to find particularly meaningful.

#### Directions for Future Research

##### *Research into Learning Theory*

The study suggests two areas for future research in learning theory: (a) mental rehearsal and (b) learning from experiential activities. Debriefings appeared to reveal a very interesting three-part pattern for mental rehearsal. Further research is needed to confirm the relationship between events, emotions, and abstract conceptualization, which could make a solid contribution to our understanding of how people learn. It also appeared that certain types of activities (e.g., activities that directly applied theories from the textbook to a case study) lent themselves to learning content, while others (e.g., the organizational change activity that exchanged team members) encouraged emotional processing. Despite the differences in focus, this study found that complex connections and abstractions could be made from either type of activity. Further research into the learning achieved in different experiential activities could lead to criteria for selecting the most appropriate activity for particular types of concepts.

##### *Research into Team Building*

There were interesting patterns affecting team-oriented class activities that should be addressed in future research as well: (a) affiliation vs. individual skills; (b) affiliation and achievement; and (c) affiliation and culture. In this study, it was unclear whether individual skills

(e.g., communication or conflict resolution skills) or affiliation among team members had more influence in developing high-performing teams. Future studies should include measures of individual skills to allow comparisons with the effects of affiliation. The study also showed a relationship between affiliation and achievement that needs to be examined further. Action research on optimizing the effects of team affiliation on achievement could provide tools to help alleviate the dissatisfaction often expressed by students when told they will have to work in teams. Finally, the sense of superiority that emerged after a brief interruption in team membership was troubling. The role of affiliation in developing an “us vs. them” culture needs to be understood. These patterns, if confirmed by research, could have important implications for the use of small groups in the classroom.

## REFERENCES

- Argyris, C., and Schoen, D. (1982). *Theory in practice: Increasing professional effectiveness*. San Francisco, CA: Jossey-Bass.
- Baker, A., Jensen, P., & Kolb, D. (1997). In conversation: Transforming experience into learning. *Simulation and Gaming*, 28, 6.
- Biggs, J. (1989). *Learning in medical school: A model of the clinical profession*. Hong Kong: Hong Kong University Press.
- Bloom, B., Englehart, M., Furst, E., Hill, W., & Krathwohl, D. (1956). *Taxonomy of educational objectives: The classification of educational goals. Handbook 1, Cognitive domain*. NY: Longmans Green.
- Boud, D., Keogh, R., & Walker, D. (1985). *Reflection: Turning experience into learning*. NY: Nichols Publishing Co.
- Boyatzis, R. & Kolb, D. (1993). *Adaptive Style Inventory: Self scored inventory and interpretation booklet*. Boston: TRG Hay/McBer, Training Resources Group.
- Brooks-Harris, J. & Stock-Ward, S. (1999). *Workshops: Designing and facilitating experiential learning*. Thousand Oaks, CA: Sage.
- Bruner, J. (1986). *Actual minds, possible worlds*. Cambridge, Ma: Harvard University Press.
- Burgess, (1992). *A Validation of David A. Kolb's Experiential Learning Theory as a paradigm of the dyadic process in clinical supervision*. Baltimore, MD: Loyola College.
- Camp, R. (1992). Portfolio reflections in middle and secondary school classrooms. In Yancy, K.B. (ed.). *Portfolios in the writing classroom*. Urbana, Il: National Council of Teachers of English.
- Camp, R. (1998). Portfolio reflection: The basis for dialogue. *The Clearing House*, 72, 10-12.

- Cell, E. (1984). *Learning to learn from experience*. Albany, NY: State University of New York.
- Chi, M., Glaser, R., & Farr, M. (1988). *The nature of expertise*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Craik, F. & Watkins, M. (1973). The role of rehearsal in short-term memory. *Journal of Verbal Learning and Verbal Behavior*, 12, 599-607.
- Cummins, D. (1992). Role of analogical reasoning in induction of problem categories. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 18, 1103-1124.
- Czikszentmihalyi, M. (1990). *Flow*.
- David C. Anchin Center (2002). School Culture Quality Survey. Tampa, FL: University of South Florida.
- Damasio, A. (1994). *Descartes' error: Emotion, reason, and the human brain*. NY: Avon Books, Inc.
- Detterman, D. (1993). The case for the prosecution: Transfer as an epiphenomena. In D. Detterman & R. Sternberg (Eds.), *Transfer on trial: Intelligence, cognition, and instruction*. Norwood, NJ: Ablex.
- Dewey, J. (1938). *Experience and education*. Kappa Delta Pi.
- Dick, W., & Carey, L. (2002). *The systematic design of instruction*. Boston: Allyn & Bacon.
- Driscoll, M. (2000). *Psychology of learning for instruction*. Boston: Allyn & Bacon.
- Frankl, V. (1959). *Man's search for meaning*. Ashland, OR: Blackstone.
- Freire, P. (1974). *Pedagogy of the oppressed*. NY: Continuum.
- Gagné, R. (1984). *Conditions of learning*. Ft. Worth: Holt, Rinehart, and Winston.
- Glaser, B. & Strauss, A. (1967). *Discovery of grounded theory*. Chicago: Aldine.
- Good, T., & Brophy, J. (1995). *Contemporary Educational Psychology, 5<sup>th</sup> ed.*, NY: Longman.
- Guild, P. & Garger, S. (1998). *Marching to Different Drummers, 2<sup>nd</sup> ed.* Alexandria, VA: ASC

- Haskell, R. (2001). *Transfer of learning: Cognition, instruction, and reasoning*. San Diego, CA: Academic Press.
- Hankinson, H. (1987). The cognitive and affective learning effects of debriefing after a simulation game. Bloomington: Indiana University.
- Hankinson, H. (2002). Telephone interview, July 2002.
- Jensen (1995). Streams of Meaning-making
- Jensen, E. (2000). *Brain-based learning*. Del Mar, Ca: Turning Point Publishing
- Jensen, P. (1995). *Streams of meaning-making in conversation*. Cleveland, OH: Case Western Reserve University
- Johnson, D. & Johnson, R. (1999). *Learning together and alone: Cooperative, competitive, and individualistic learning*. Boston: Allyn & Bacon.
- Kolb, D. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice-Hall.
- Kolb, D. (1985). *Learning Style Inventory*. Boston: TRG Hay/McBer, Training Resources Group.
- Kubler-Ross, E. (1969). *On death and dying*. NY: Macmillan.
- Lebow, D. (1993). Constructivist values for instructional systems design: Five principles toward a new mindset. *Educational Technology Research & Development, 41*, 4-16.
- Lederman, L. (1992). Debriefing: Toward a systematic assessment of theory and practice. *Simulation and Gaming, 23*, 145.
- Locke, E. & Latham, G. (1990). *A theory of goal setting and task performance*. Englewood Cliffs, NJ: Prentice-Hall.
- Miles, M. & Huberman, M. (1994). *Qualitative data analysis*. Thousand Oaks, CA: Sage.
- Miller, G. (1956). The magical number seven, plus or minus two: Some limits on our capacity for processing information. *Psychological Review, 63*, 81-87.

- Montgomery, J. (1992). *The development, application, and implications of a strategy for reflective learning from experience*. Miami: Florida International University.
- Moon, J. (1999). *Reflection in Learning and Professional Development*. Sterling, VA: Stylus Publications Inc.
- Needham, D., & Begg, I. (1991). Problem-oriented training promotes spontaneous analogical transfer: Memory-oriented training promotes memory for training. *Memory & Cognition*, 19, 543-557.
- Neuendorf, K. (2002). *The content analysis guidebook*. Thousand Oaks, CA: Sage.
- Osland, J., Rubin, I., Kolb, D. (2002). *Organizational behavior: An experiential approach* (7<sup>th</sup> ed). Englewood Cliffs, NJ: Prentice-Hall.
- Pearson, L. C. (1992). The construct validation of a course evaluation instrument based on Keller's ARCS model of academic motivation. Tampa, FL: University of South Florida.
- Petranek, C., Corey, S., Black, R. (1992). Three levels of learning in simulations: Participating, debriefing, and journal writing. *Simulation and Gaming*, 23, 174.
- Plessinger, A. (2001). *Effects of mental imagery on athletic performance*. Available: [www.vanderbilt.edu/AnS/psychology](http://www.vanderbilt.edu/AnS/psychology)
- Prochaska, J., DiClemente, C., & Narcross, J. (1992). In search of how people change. *American Psychologist*, 47, 1102-1114.
- Reisberg, D. (1997). *Cognition: Exploring the science of the mind*. NY: W. W. Norton.
- Rickard, T. (1997). Bending the power law: A CMPL theory of strategy shifts and the automatization of cognitive skills. *Journal of Experimental Psychology*, 126, 288-311.
- Ryan, K. & Cooper, J. (2001). *Those who can, teach*. Boston: Houghton-Mifflin
- Shiffrin, R. & Schneider, W. (1977). Automatic and controlled processes revisited. *Psychological Review*, 91, 269-276.

- Senge, P, Ross, r. Smith, B., Roberts, C., & Kleiner, A. (1994). *The fifth discipline fieldbook*. NY: Bantam Doubleday Dell.
- Shamir, B. (1991). Meaning, self, and motivation in organizations. *Organization Studies*, 12, 405-424.
- Spitzer, M. (1999). *The mind within the net: Models of learning, thinking, and acting*. Cambridge, MA: MIT Press.
- Stahl, M. (1986). *Managerial and technical motivation: Assessing needs for achievement, power, and affiliation*. NY: Praeger.
- Strauss, A., & Corbin, J. (1998). *Basics of Qualitative Research*. Thousand Oaks, CA: Sage.
- Tuckman, B. W. (1965). Developmental sequences in small groups. *Psychological Bulletin*, 63, 384-399.
- Trafimow, D. and Miller, A. (1996). Predicting and understanding mental practice. *Journal of Social Psychology*, 136, 173.
- Weber, R. (1985). *Basic content analysis*, 2<sup>nd</sup> ed. Newbury Park, CA: Sage.

## APPENDICES

Appendix A. Demographic Survey

1. Name: \_\_\_\_\_

2. Age (select a range)

<input type="checkbox"/>	a. Under twenty-one
<input type="checkbox"/>	b. 21-30
<input type="checkbox"/>	c. 31-40
<input type="checkbox"/>	d. 41-50
<input type="checkbox"/>	e. 51-60
<input type="checkbox"/>	f. Over 60

3. Work experience

<input type="checkbox"/>	a. None
<input type="checkbox"/>	b. Part time only
<input type="checkbox"/>	c. Less than five years
<input type="checkbox"/>	d. Five to ten years
<input type="checkbox"/>	e. Over ten years

4. Size of organization where you work or have worked (mark all that apply):

<input type="checkbox"/>	a. Small
<input type="checkbox"/>	b. Medium
<input type="checkbox"/>	c. National
<input type="checkbox"/>	d. Global

5. Type of organization where you work or have worked:

<input type="checkbox"/>	a. Service
<input type="checkbox"/>	b. Product
<input type="checkbox"/>	c. Manufacturing

Appendix A (Continued)

6. Formal management education

a.	On the job training
b.	One to four day seminars
c.	Personnel management (at least one three-hour undergraduate course)
d.	Strategic planning
e.	Financial management
f.	Information management
g.	Organizational behavior
h.	Total/Continuous Quality Management

7. Experience with or knowledge of:

	New to me	Heard of it	Studied it in a course	Used by my company	I was personally involved	I led or trained
Teams						
Total Quality Management (TQM)						
Management By Objectives (MBO)						
Strategic planning						
Organizational Development (OD)						
Learning Organizations						
Re-engineering						
Conflict resolution						
Empowerment						
Systems theory						
Information technology						



## Appendix B. Course Syllabus

### **MGT 398 Organizational Theory** Ms. Grinnell

**Course description:** This course will consider the macro aspects of organizations, such as organizational structures and its determinants, organizational effectiveness, and structural design options. It will balance theory with applications.

**Prerequisite:** MGT 301 and senior standing required.

**Required text:**

Daft, Richard L. (2001). Organization theory and design (7<sup>th</sup> ed.) Cincinnati, OH: South-Western College Publishing.

**Expectations**

1. Complete all work energetically
2. Come prepared for class
  - a. Read the instructional material and the case studies
  - b. Contribute to the class group activities
3. Arrive on time to class. Class must start promptly on the hour in order to have sufficient time to accomplish all the activities.
4. Analyze the homework assignments thoroughly
5. Don't miss class. If you must miss class, you must still do the work

**General Course objectives:**

1. Understand the nature of organizational structure and what determines that structure.
2. Become aware of organizational effectiveness and how to measure that effectiveness.
3. Determine structural design options and when these design options should be implemented

**Specific Course objectives:** The student must demonstrate proficiency in the following skills:

1. Analyze organizations using a case study approach.
2. Display organizational analysis using organizational charts, flow charts, and matrices.
3. Analyze organizational effectiveness using various approaches.
4. Analyze an organizational environment.
5. Recommend appropriate inter-organizational linkages to contend with the environmental realities of an organization.
6. Design an information system to support an organization.
7. Analyze an organizational culture and identify gaps between the current and a culture more supportive of organizational goals.
8. Analyze current and improved distribution of power in an organization and develop a plan for moving the power structure in a way that supports organizational goals.
9. Design an "ideal" organization. The design should address structure, vision, goals, values, inter-organizational relationships, information flow, and decision-making processes.

## Appendix B (Continued)

**Attendance:** Except for reasonable cause, students are expected to be present at all regularly scheduled class meetings. As you can see from the schedule, a tremendous number of activities take place each class session. Should you need to miss a class, you must independently complete the activities done in class.

**Students with special needs:** Saint Leo University recognizes that the decision to self-identify any disability is a personal one, and we respect an applicant's decision not to do so. To be eligible for academic accommodations, a student should contact Dr. Karen Hahn at (352) 588-8464 or go to the ADA website, <http://video.saintleo.edu/khahn> to fill out the appropriate paperwork. Please discuss the logistics of the accommodations with the instructor as soon as the accommodations are approved.

**Academic Honor Code:** Saint Leo University students are expected to be honest in every phase of their academic life and to present as their own work only that which is genuinely theirs. Students are expected to complete homework assignments and the take-home final by themselves and examples given in the assignments are expected to be unique to each student. Teams are expected to derive unique solutions based on their research. Infractions will be referred to the Office of Academic Affairs. A complete copy of the Academic honor code is available from the instructor.

**Grading policy/procedure:** Students will be graded on two types of assignments, class presentations of case studies and homework assignments, and a short final exam. Case studies are worth 40%, homework is worth 50%, and the final exam is worth 10%. The rubrics for grading each type of assignment are included in this syllabus.

**Research opportunity:** There is an opportunity during this course to participate in a research study that assesses the learning accomplished in certain activities. This requires no additional work on the part of the students; however, students who wish to have their comments included in the study will be asked to sign a participant's form.

**Curriculum/learning strategies:** Learning strategies are based on well-researched instructional design. The format will consist of case studies analyzed in class, simulations or workshops to provide practice, and practical applications using your choice of a real world organization.

- a. **Small Group Case Study Analysis:** Small group collaboration on case studies will give you practice in analyzing different aspects of organizations using different types and sizes of organizations. There will be four case studies per class, two analyzed by each small group. The case studies must be read carefully in advance of class so that you are prepared to enter the discussion. Each group will use a specified management tool, either from the textbook or taught during class, to analyze your assigned case study. You will be asked to present your analyses of the cases at the end of class. Flip charts may be used to create your presentation. The rubric for grading the case studies is at the end of this syllabus. **The ten case studies are 40% of your grade.**
- b. **Homework.** The homework consists of a review and analysis of the class activities and the application of theories to a real-world organization. **The homework is worth 50% of your grade.**

## Appendix B (Continued)

- c. **Small Group Action Research Project.** A part of each class will consist of small group discussions of the applicability of the text material to an action research project. You will modify your project each week and brief the class on the proposed improvements. This activity involves direct application of the material to the class environment. It is ungraded.
- d. **Final Exam.** There is a final exam which consists of analysis of a situation and justification of your conclusion.
- e. **Homework assignments:** Homework assignments are listed below. Each assignment is divided into two parts. In the first part, you will be asked to answer some debriefing questions based on your understanding of the case studies and the action research done in class. **The first debriefing will be due no later than the Monday after class.** The instructor will provide feedback by that Wednesday. In the second part, you will be asked to select an organization with which you are familiar and can obtain organizational information. You may select one organization for all the assignments or select different organizations that lend themselves better to the particular assignment. Ideally, you should pick an organization that could benefit from your analysis and your advice. You will be taking the role of organizational design consultant for each these assignments and will conduct the same type of analysis as was done in the case studies in class. After completing the analysis, you will again answer the debriefing questions on what your understanding is of the theories behind the assignment. **The second debriefing is due on the Sunday after class.** The two written debriefings will be **submitted via e-mail.** The analyses of your organization, which may be handwritten or computer-generated, should be brought to the next class. The rubric for grading the homework assignments is at the end of this syllabus. **The five homework assignments are 50% of your grade.**

### **Assignment #1. Purpose and Structural Design.** Analyze a current organization.

- Review and analyze the theories used in class (due Monday)
- List your current organization's vision, mission, and goals.
- Measure the effectiveness of the organization using an approach from the text.
- Create an organizational chart.

### **Assignment #2. External and Inter-organizational Design Elements.** Analyze a current organization.

- Review and analyze the theories used in class (due Tuesday)
- Assess the external environment using an environmental scan.
- Recommend inter-organizational linkages using an inter-organizational framework

### **Assignment #3. Internal Design Elements: Manufacturing, Service, and Information.** Analyze a current organization.

- Review and analyze the theories used in class (due Tuesday)
- Flowchart the key processes of the organization (at least 1, not more than 3)
- Draw an information flow diagram for the key process(es)
- Design an improved information system to support the organization using an RFP format.

Appendix B (Continued)

**Assignment #4. Organizational change.** Design an improved organization.

- Review and analyze the theories used in class (due Tuesday)
- Identify changes needed to grow or re-energize the organization using a method suggested in the text. The changes can be structural, technological, or cultural, or some combination to improve the organization.
- Identify strategies for implementing change, given the organizational culture.
- Identify the measures in each area of the balanced scorecard that will provide needed information on the progress of the organizational change.

**Assignment #5. Decision-making.** Develop a strategy for an important decision for your company (recent or upcoming)

- Review and analyze the theories used in class (due Tuesday)
- Develop a solution selection matrix for making the decision and estimate the values you would fill in. Identify the solution you would recommend.
- Develop a win-win negotiation strategy for implementing the solution. How will you overcome resistance to this decision?

Appendix B (Continued)

Grading

**Rubric for grading case studies:**

<b>Expectation</b>	<b>Scoring</b>
<ul style="list-style-type: none"> <li>• Analysis form is complete</li> <li>• Explanations and examples clear</li> <li>• Application of concepts is appropriate</li> </ul>	0 = not present 1-2 = parts missing or incorrect 3 = competent work 4 = demonstrates depth/breadth of knowledge/creative work

**Rubric for grading homework:**

<b>Project area</b>	<b>Expectation/Grading areas</b>	<b>Scoring</b>
Assignment #1 Purpose & Structural Design	1. Goals 2. Organizational chart	0 = not present 1-3 = parts missing or incorrect 4 = competent work 5 = demonstrates depth and breadth of knowledge
Assignment #2 External & Inter-organizational design elements	3. Environmental scan 4. Inter-organizational framework	
Assignment #3 Manufacturing, Service, & Information	5. Flowchart 6. Information flow plan/RFP	
Assignment #4 Size & culture, Innovation & change	7. Balanced scorecard 8. OD Strategy	
Assignment #5 Processes and Trends	9. Negotiation 10. Solution selection matrix	

Appendix B (Continued)

**MGT 498 Organizational Theory  
Schedule**

Date	Class Activities	Reading/Assignments
<i>Organizational Theories Overview</i>		
Saturday Aug 31	<p><i>Hour 1</i> Introductions and Syllabus overview</p> <p><i>Activity 1</i> Group: Designing a learning organization</p> <p><i>Activity 2</i> Organizational theories</p> <p><i>Activity 3</i> Simulation: The Hawthorne Studies</p>	<p>Read Chapters 2 and 3</p> <p><i>For the next class, be prepared to discuss:</i></p> <ul style="list-style-type: none"> <li>• <i>Your action research project</i></li> <li>• <i>Two case studies: p. 76 or 79, p. 119 or 122 (ungraded)</i></li> </ul>
<i>Organizational Purpose and Structural Design</i>		
Saturday Sep 14	<p><i>Briefing</i> Action research framework</p> <p><i>Activity 1</i> Case studies: University Art Museum Airstar, Inc.</p> <p><i>Activity 2</i> Case studies: Aquarius Advertising C&amp;C Grocery Stores, Inc.</p> <p><i>Activity 3</i> Action research project</p>	<p>Written debriefing due Mon, Sep 16 Assignment #1 due Sun., Sep 22 Read Chapters 4 and 5</p> <p><i>For the next class, be prepared to discuss:</i></p> <ul style="list-style-type: none"> <li>• <i>Your action research project</i></li> <li>• <i>One case studies from the first set of handouts</i></li> <li>• <i>Either the handout or p. 189</i></li> </ul>
<i>Open Systems, part 1</i>		
Saturday Sep 28	<p><i>Activity 1</i> Written summary (<i>fifteen minutes</i>)</p> <p><i>Activity 2</i> Case studies: McDonald's Butt Out Action research project</p> <p><i>Activity 3</i> Case studies: Liaison officer Hugh Russel, Inc.</p> <p><i>Activity 4</i> Action research project</p>	<p>Written debriefing due Mon, Sep 30 Assignment #2 due Sunday, Oct 6 Read Chapters 6 and 7</p> <p><i>For the next class, be prepared to discuss:</i></p> <ul style="list-style-type: none"> <li>• <i>One of the handouts (ungraded) and one of the following case studies: p. 270 or 272</i></li> <li>• <i>The workbook, p.229</i></li> </ul>
<i>Open Systems, part 2</i>		
Saturday Oct 12	<p><i>Activity 1</i> Written summary (<i>fifteen minutes</i>)</p> <p><i>Activity 2</i> Case study: Lincoln Electric The Goal</p> <p><i>Activity 3</i> Case study: Century Medical Product X</p> <p><i>Activity 4</i> Action research project</p>	<p>Written debriefing due Mon, Oct 14 Assignment #3 due Sun, Oct 20 Read Chapters 8 and 9</p> <p><i>For the next class, be prepared to discuss:</i></p> <ul style="list-style-type: none"> <li>• <i>Two case studies: one of the two handouts, and the case study on p. 342 (both groups).</i></li> </ul>

Appendix B (Continued)

<i>Midterm Grades Calculated</i>		
<i>Internal Design, part 1</i>		
Saturday Oct 26	<i>Activity 1</i> Written summary ( <i>fifteen minutes</i> )  <i>Activity 2</i> Case studies: John Paul II Ben & Jerry's  <i>Activity 3</i> Case study: Does this milkshake taste funny?  <i>Activity 4</i> . Action research project	Written debriefing due Mon, Oct 28 Read Chapter 10  <i>For the next class, be prepared to discuss:</i> <ul style="list-style-type: none"> <li>• <i>Two case studies: one handout, and p. 386 or 391.</i></li> </ul>
<i>Internal Design, part 2</i>		
Saturday Nov 9	<i>Activity 1</i> Written summary ( <i>fifteen minutes</i> )  <i>Activity 2</i> Case studies: Southern discomfort Shoe Corporation  <i>Activity 3</i> Case study: Dim Lighting Co.  <i>Activity 4</i> Action research project	Written debriefing due Mon, Nov 11 Assignment #4 due Sun, Nov 17 Read Chapters 11 and 12  <i>For the next class, be prepared to discuss:</i> <ul style="list-style-type: none"> <li>• <i>One case study: p. 433 or 435</i></li> </ul>
<i>Processes</i>		
Saturday Nov 23	<i>Activity 1</i> Written summary ( <i>fifteen minutes</i> )  <i>Activity 2</i> Case studies: Aliesha State College Cracking the Whip  <i>Activity 3</i> Workshop: The Ugli Orange Case  <i>Activity 4</i> Action research project	Written debriefing due Mon, Assignment #5 due Sun, Dec 8 Read Chapter 13  <i>For the next class, be prepared to discuss:</i> <ul style="list-style-type: none"> <li>• <i>One case study: p. 550 or 586,</i></li> </ul>
<i>Trends</i>		
Saturday Dec 14	<i>Activity 1</i> Written summary ( <i>fifteen minutes</i> )  <i>Activity 2</i> Case studies: Microsoft The Audubon Zoo  <i>Activity 3</i> Workshop: Windsock, Inc  <i>Activity 4</i> Final Exam	

## Appendix C. Objective Tests

### Knowledge questions for Chapter 10

1. One technique for encouraging technology change is:
  - a. Specialization
  - b. Boundary spanning
  - c. Venture teams
  - d. Large group intervention
2. One method of helping new products succeed is to use:
  - a. Large group intervention
  - b. Technical champions
  - c. Reengineering
  - d. Horizontal linkages
3. Barriers to change might include:
  - a. Aligning the solution to user needs
  - b. Creating change teams
  - c. Incremental implementation
  - d. Uncertainty avoidance
4. One technique to successfully implement change is to:
  - a. Design the change for incremental implementation
  - b. Avoid uncertainty by increasing stability
  - c. Focus on costs
  - d. Reduce the sense of urgency

Appendix C (Continued)

5. *SouthWest Airlines has developed an innovative approach to turning planes around that has reduced the time between landing and next takeoff to 45 minutes. Everyone pitches in at every step in the process: even their pilots help load baggage. As a result, SouthWest is used by many industries to benchmark their:*

- a. Technology changes
- b. New products and services
- c. Organizational culture
- d. Strategy and structure

## Appendix C (Continued)

### Knowledge questions for Chapter 11

1. The management science decision process model uses:
  - a. Streams of events
  - b. Satisficing
  - c. PERT charts and computer simulations
  - d. Consensus
2. The incremental decision process model uses:
  - a. Loops or cycles in the decision process
  - b. Streams of events
  - c. Satisficing
  - d. PERT charts and computer simulations
3. The contingency decision making model is used to:
  - a. Go through decision learning by allowing mistakes
  - b. Escalate commitments to solutions
  - c. Make intuitive decisions in a high velocity environment
  - d. Select appropriate approaches based on the organizational setting
4. The garbage can model is used when
  - a. Problem consensus and solution knowledge are certain
  - b. Problem consensus and solution knowledge are uncertain
  - c. Problem consensus is uncertain but solution knowledge is certain
  - d. Problem consensus is certain but solution knowledge is uncertain

Appendix C (Continued)

5. *Congress modifies and approves the budget submitted by the military every year. As a result, the military suggests budget items that distribute the manufacture of their equipment to as many congressional districts as possible.* This decision-making strategy is an example of the:
- a. Management science approach
  - b. Carnegie model
  - c. Incremental approach
  - d. Garbage can model

## Appendix C (Continued)

### Knowledge questions for Chapter 12

1. Vertical sources of power include:
  - a. Dependency
  - b. Generating income
  - c. Formal position
  - d. Nonsubstitutability
2. Horizontal sources of power include:
  - a. Control of decision premises
  - b. Formal position
  - c. Network centrality
  - d. Dependency
3. Tactics for increasing power include:
  - a. Creating joint problem-solving task forces
  - b. Using collective bargaining
  - c. Using win-win negotiating tactics
  - d. Creating dependencies
4. Tactics for increasing collaboration include:
  - a. Providing resources
  - b. Controlling the decision premises
  - c. Entering areas of high uncertainty
  - d. Using collective bargaining

Appendix C (Continued)

5. *Managing the explosion of growth in certain areas of Tampa is a challenging balancing act.*

*The developers want to maximize their profits by building as many units on their land as possible. Neighborhood activists complain about traffic and school impacts. The Sierra Club does not want any development.* The source of this conflict is:

- a. Differentiation
- b. Goal incompatibility
- c. Limited resources
- d. Task interdependence

## Appendix C (Continued)

### Knowledge questions for Chapter 13

1. Simple form, a lean staff, and empowerment are design attributes of:
  - a. Strategic orientation
  - b. Top management techniques
  - c. Organization design
  - d. Corporate culture
  
2. Being close to the customer, providing a fast response, and establishing inter-organizational linkages are design attributes of:
  - a. Strategic orientation
  - b. Top management techniques
  - c. Organization design
  - d. Corporate culture
  
3. A strategic orientation leads to:
  - a. A simple, lean staff
  - b. Clear business focus and goals
  - c. Empowered employees
  - d. Facilitated knowledge management
  
4. Empowerment leads to:
  - a. Increased self-efficacy
  - b. Balanced measurement and control
  - c. Centralization of decisions
  - d. Increases in inter-organizational linkages

Appendix C (Continued)

5. *Lincoln Electric, one of our case studies, created a compelling vision, mobilized commitment, and institutionalizing a culture of change.* These are aspects of:

- a. Benchmarking
- b. Transformational leadership
- c. Strategic orientation
- d. Reengineering

## Appendix D. Experiential Learning Debriefing Questions

### *First written debriefing*

1. Objectively describe what happened in your teams during each activity.
2. How did it feel working with different people?
3. What differences in opinion arose in your team? What differences were there between the two teams? Why did the differences occur?
4. What symptoms should you look for to determine the best action to take in organizational change? What rules of thumb could you use to match actions with symptoms? How can creativity be inspired?
5. Design an improved organization.
  - a. Identify changes needed to grow or re-energize the organization using a method suggested in the text. The changes can be structural, technological, or cultural, or some combination to improve the organization.
  - b. Identify strategies for implementing change, given the organizational culture.

### *Second written debriefing*

1. Objectively describe the decision-making and negotiating processes that took place in the action research project.
2. What other points of view emerged? How did they influence your point of view? What power and influence did you feel you had? What power and influence did you feel your teammates had?
3. What would lead you to select one decision-making process over another? What symptoms should you look for to be able to analyze conflict? What symptoms indicate a healthy or unhealthy negotiating process?

Appendix D (Continued)

4. Using the contingency framework (p. 426), select a strategy for an important decision for your company (recent or upcoming)
  - a. Using the strategy (If you select a strategy that requires collaboration, approximate your colleagues' input based on your past experience with them), identify the solution you would recommend.
  - b. Describe potential sources of conflict in terms of the text's "sources of inter-group conflict", p. 443)
  - c. Develop a win-win negotiation strategy for implementing the solution. How will you overcome resistance to this decision?

*Third written debriefing*

1. Write one paragraph justifying your grade using the information about your performance and the performance of your learning organization.
2. Write one paragraph evaluating your contribution. How do you feel about your contribution? Did you put forth your best effort?
3. Given your past experience with empowerment (or lack of it) and your empowerment experience today, under what circumstances should organizations (including families) use empowerment and how should an empowerment strategy be implemented?
4. Using the data from today's activities, write one paragraph evaluating your current reality. Where are you on the path to personal mastery in your ability to choose solutions and make decisions making wise use of theory where applicable? What are your weak areas? What will you do in the future to apply your learning?

Appendix E. Class Culture Quality Survey

Please mark an “x” in the appropriate square for each question

<i>Please respond to the following statements in terms of how frequently each statement is descriptive of your class</i>	<i>NEVER</i>	<i>RARELY</i>	<i>SOME-TIMES</i>	<i>OFTEN</i>	<i>ALWAYS</i>
1. Students respond eagerly to each other’s needs.					
2. The professor and students work together very well.					
3. Students on our teams understand how the work that they do fits in with what others do.					
4. When something doesn't go well in the course we don't blame anyone, we just try to figure out a better way.					
5. In this course we have a clear notion of the kind of learning organization we would like to be and what each of us has to do to move us toward our goals.					
6. In this course the teams are encouraged to work together to find new ways to help each other.					
7. My team classmates and I are a great team.					
8. There is a feeling of mutual respect and caring between the professor and students.					
9. There is a sense of commitment and excitement in our course because of the new things we are learning together.					
10. In this course the professor does all he/she can to facilitate the students' work.					
11. In this course we observe the other team(s) and give supportive feedback to each other.					
12. In this course the professor and students work together to develop goals and values that guide us.					

Appendix E (Continued)

13. The professor associated with this program of study has the freedom to make decisions about what is best for students.					
14. Professors associated with this program of study know they will be supported if they want to try some promising new alternative.					
15. My classmates and I are eagerly exploring new ways to be successful.					
16. The professor and the students collaborate to solve any academic and behavior problems.					
17. Students in this course recognize each other for the contributions they make to the success of the school.					
18. The professor tries to find ways to get regular feedback from students about how well we are learning.					
19. In this course students have a say in how the course is organized and how time is used.					
20. In this course we try to reach consensus on any major changes before we proceed.					
	<i>NEVER</i>	<i>RARELY</i>	<i>SOME-TIMES</i>	<i>OFTEN</i>	<i>ALWAYS</i>
21. Each student understands clearly how he/she contributes to the overall success of the team.					
22. The atmosphere among my classmates is one of mutual respect and caring.					
23. We get a lot done in this course because we work well together.					
24. If I have a good idea, the professor will help me implement it.					
25. In this learning organization we think of our work (learning) as including our team, our workplace, and our families.					

Appendix E (Continued)

26. We all work together to shape our ideas about how to make the course as useful as possible.					
27. One of the best things about this course is that everyone wants to learn new and better ways to do what they do.					
28. In my course the professor is eager to respond to the needs of students.					
29. Another good thing about our learning organization is that we work together to learn new ways to make the learning organization better.					
30. In this course we plan what we want to do, then we do it, and look carefully at the results before we plan the next step.					
31. In this course we share everything we learn so the whole class can learn.					
32. As our class goals are met we see new and more challenging opportunities.					
33. When we try something new we plan a way of knowing whether it worked or not.					
34. The professor regularly gathers and uses information about how well we are learning to make changes in how he/she teaches.					
35. The professor and students share the same values and goals for the course.					
36. In this course we celebrate successes together.					

Appendix F. Instructional Design Matrix for MGT 498 Organizational Theory

Week 6

Chapter 10. Innovation and change

<b>Concepts</b>	<b>Facts/Recall</b>	<b>Analysis</b>	<b>Decision-making</b>	<b>Abstract concept.</b>
<i>Cases: Shoe Corp, Southern Discomfort, Dim Lighting</i>	<i>Recognize/Recall components of the theory</i>	<i>Apply theory to isolate problems, design solutions</i>	<i>Select/develop the appropriate approach based on criteria</i>	<i>Construct concepts, rules, relationships</i>
Change	Incremental Radical Strategic: Technology <i>Techniques:</i> Switching structures Creative depts. Venture teams Entrepreneurship Product/service <i>Reasons for success</i> Customer needs Outside advice Top mgt support  <b>Horizontal linkage</b> Specialization Boundary spanning <i>Rapid prototyping</i> Strategy Dual core approach Culture Reengineering Horizontal org TQM Learning org OD Leadership Barriers Techniques	Force field analysis  Strategic types of change		- Change, not stability, is the natural order of things - People don't like the unfamiliar – change evokes discomfort, fear - Resistance to change can completely sabotage improvement - Change must be managed deliberately in order to overcome resistance
Innovation			Visualization	Creativity is the combination of the unexpected

Appendix F (Continued)

Week 7

Chapter 11. Decision-making processes

<b>Concepts</b>	<b>Facts/Recall</b>	<b>Analysis</b>	<b>Decision-making</b>	<b>Abstract concept.</b>
<i>Cases: Alisha State Cracking the whip</i>	<i>Recognize/Recall components of the theory</i>	<i>Apply theory to isolate problems, design solutions</i>	<i>Select/develop the appropriate approach based on criteria</i>	<i>Construct concepts, rules, relationships</i>
Organizational decision making	<ul style="list-style-type: none"> <li>- Management science approach</li> <li>- Carnegie model</li> <li>- Incremental decision process</li> <li>- Garbage can model</li> <li>- Contingency framework</li> </ul>	Solution selection matrix		<ul style="list-style-type: none"> <li>- What approach is the tool?</li> <li>- Decisions are not made by individuals</li> <li>- Most decisions are not made in a logical, rational manner,</li> <li>- Adopt the decision process to fit the organizational model</li> </ul>

Appendix F (Continued)

Chapter 12. Conflict, power, politics

<b>Concepts</b>	<b>Facts/Recall</b>	<b>Application</b>	<b>Decision-making</b>	<b>Abstract concept.</b>
<i>Case: Ugli Orange</i>	<i>Recognize/Recall components of the theory</i>	<i>Apply theory to isolate problems, design solutions</i>	<i>Select/develop the appropriate approach based on criteria</i>	<i>Construct concepts, rules, relationships</i>
Power	Sources of power <i>Vertical</i> Position Resources Decision Information Centrality <i>Horizontal</i> Dependency Financial resources Centrality Non-substitutability	Negotiation strategies		- When the alternatives are clear, use the rational model - When conflict arises, use tactics to enhance collaboration
Inter-group conflict	Reasons for conflict		Win-win negotiation or 7 habits	- Differences in goals, tasks, and backgrounds create conflict

Appendix F (Continued)

Week 8

Chapter 13. Trends: Globalization, Empowerment, Decline

<b>Concepts</b>	<b>Facts/Recall</b>	<b>Analysis</b>	<b>Decision-making</b>	<b>Abstract concept.</b>
<i>Cases: Microsoft Audubon Zoo</i>	<i>Recognize/Recall components of the theory</i>	<i>Apply theory to isolate problems, design solutions</i>	<i>Select/develop the appropriate approach based on criteria</i>	<i>Construct concepts, rules, relationships</i>
Learning organizations	Transformational leadership	Lessons learned using learning organization model: Microsoft & Audubon zoo		Leaders of learning organizations help form shared vision, values, commitment, empowered employees, culture of change
Culminating activity			Design windmill Plan and check organizational structure, linkages, process, decision-making, learning organization	
Empowerment	Reasons Elements		Grade yourself	Empowered employees have info, knowledge, power, & rewards

Appendix G. Grounded Theory Coding Form

Concepts	Text	Memos

Appendix H. Example of a Cognitive Map

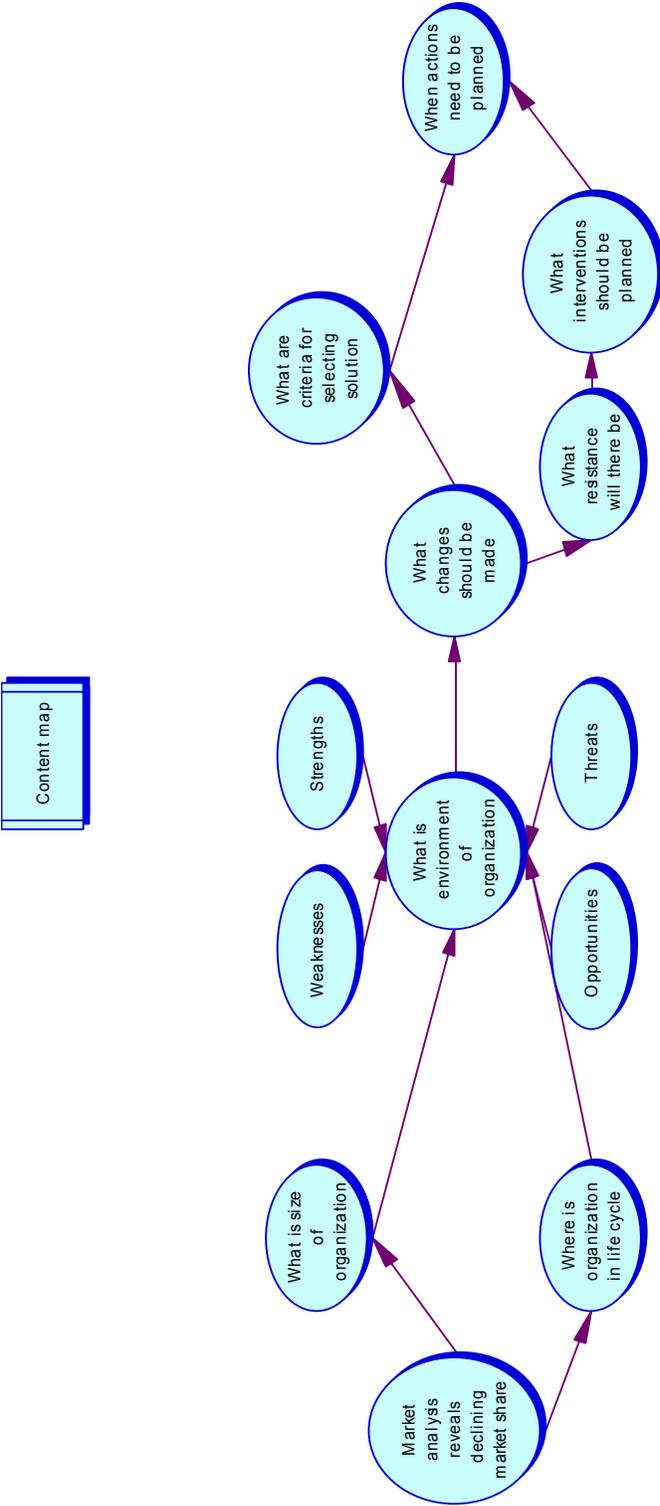


Figure H1. Sample cognitive map.

Appendix I. Content Analysis Coding Guide

Table I-1

*Content Analysis Coding Guide.*

<b>DVs</b>	<b>Levels</b>				
	<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	
Developing <i>Competence</i>	No mental rehearsal	Minimal mental rehearsal	Moderate mental rehearsal	Comprehensive mental rehearsal	
	<i>1</i>	<i>2</i>	<i>3</i>		
Making <i>Connections</i>	Simple relationships observed within experience	Complex connections within and to past experiences	Comprehensive theories/ principles		
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Broadening <i>Context</i>	Application of reading (application transfer)	Identical situations (context transfer)	Similar situations (near transfer)	Very different contexts (far transfer)	New similarity (creative transfer)
	<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	
<i>Affect</i>	None	Low	Medium	High	
<i>Relevance</i>	None	Low	Medium	High	
<i>Intent</i>	None	Low	Medium	High	

Appendix J. Content Analysis Coding Form

Text	Content	Process	Connections	Context	Affect	Relevance	Intent

Appendix K. Example of Growth Gradient

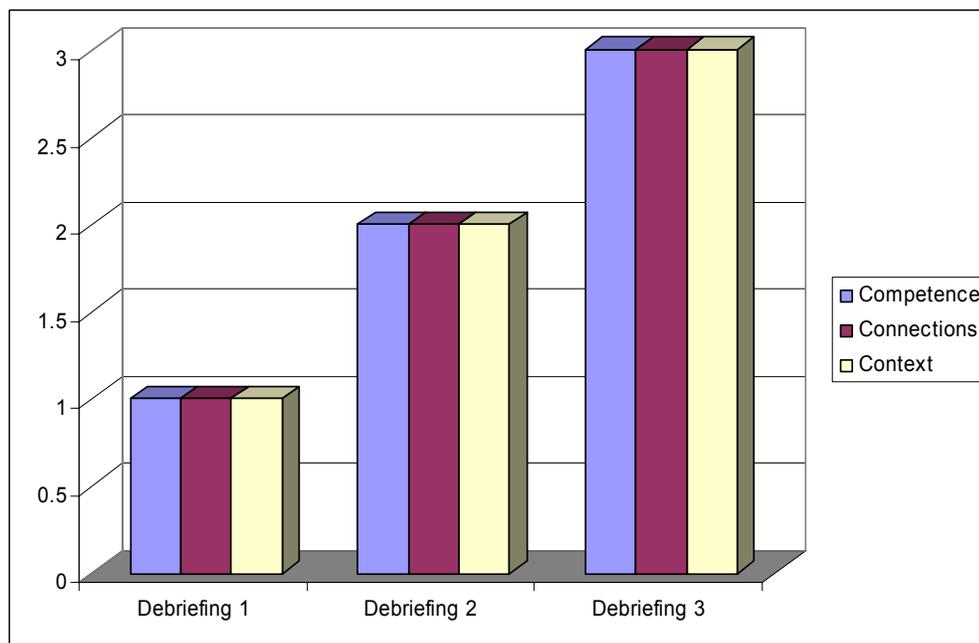


Figure K1. Sample growth gradient.

Appendix L. Grounded Theory Concepts and Categories

Table L1

*Cognitive Learning Concepts and Categories*

Category	Concepts	Definitions
Content	Mention	Mentioning a concept from the text
	List	Listing several concepts from the text
	Describe	Describing a concept or theory from the text
Events	Sequence of events	Describing the sequence of event in an experience
	Observations	Observing participants' actions and reactions in an experience
	Other points of view	Descriptions of other people's points of view
Practice	New learning	Practicing with new information
	Problem-solving	Solving a problem using new procedures
	Feedback	Reacting to feedback
Connections	Application	Application of text/class knowledge to a situation
	Comparisons	Comparison/contrast of two observations
	Analysis	Breaking task into pieces
	Connection	Synthesis of two or more concepts
	Prior knowledge	Synthesis with prior knowledge
	Personal experience	Synthesis with personal experience into answer
	Evaluation	Connecting a judgment to an event

Appendix L (Continued)

Category	Concepts	Definitions
Abstraction	Cause-effect	Cause and effect statements (if-then)
	Generalizing	Stating a general rule
	Sequencing	Developing a step-by-step procedure
	Theory building	Creating variables and hypotheses to explain a phenomenon
Context	In class application	Classroom application of in-class instruction
	Text application	Classroom application of text
	Identical situation	Classroom solving identical problem
	Own organization	Used own organization as the context
	Organizations	Used organizations in general as a context
	Home application	Applied learning to home context
	Life skill	Identified learning as a life skill, broadly applicable

Appendix L (Continued)

Table L2

*Personal Reactions Concepts and Categories*

Category	Concepts	Definitions
Beliefs	Beliefs	Beliefs about the truth or falseness of an idea
	Values	Beliefs about the goodness, right, or wrong of ideas
Opinions	Positive opinion	Positive opinion of a person, an event, or a decision
	Criticism	Criticism of a person, an event or a decision
Self	Self awareness	Belief about their current capabilities and strengths
	Self criticism	Belief about their weaknesses or mistakes
Relevance	Relevant use	Belief about relevant uses of a concept or theory
	Useful	Belief that the concept or theory is useful
	Important	Belief that the concept or theory is important
	Superlatives used	Use of superlatives when describing a concept
Intent	Recent use	Belief that a concept was useful when recently used
	Hypothetical use	Belief that a concept learned in the experience could be used in a hypothetical situation
	Potential use	Belief that concept could be useful in their organization
	Definite future use	Belief that one would definitely use the concept in the future

Appendix L (Continued)

Category	Concepts	Definitions
Emotions	Enthusiasm	A feeling of enthusiasm for an experience
	Humor	A description of an event evoking laughter
	Happiness	A feeling of happiness recalling an experience
	Appreciation	An expression of appreciation for other people
	Frustration	A feeling of frustration evoked by confusion or conflict
	Tension	A feeling of tension evoked by conflict
Attitudes		
General	Positive	A belief in goodness or rightness with a happy or content feeling that evokes a positive approach to an event
	Negative	Belief something is wrong that evokes a feeling of anger or tension and demotivated behavior
	Negative to positive	A negative attitude that changes as a result of writing about it
Engagement	Engaged	Evidence of full attention as a result of a belief that the activity is worthwhile and a positive feeling
	Ownership of ideas/decisions	Evidence that the writer accepts responsibility for an idea or decision

Appendix L (Continued)

Category	Concepts	Definitions
Confidence	Confidence	Belief in their abilities combined with positive feeling
	Lack of confidence	Belief that their ability is unreliable or poor
Satisfaction	Satisfaction with achievement	Belief that one has achieved something and feels satisfied with the result
	Satisfaction with affiliation	Belief that a relationship is contributing something positive to a situation
	Dissatisfaction with affiliation	Belief that a relationship is detracting from the success of an experience
	Satisfaction with power distribution	Belief that the power distribution in a situation is right and feels good
	Dissatisfaction with power distribution	Belief that the power distribution is wrong and creates a feeling of anger or tension

Appendix L (Continued)

Table L2

*Group Development Concepts and Categories*

Category	Concepts	Definitions
Communication	Communication	Description of communication within the group
	Open communication	An open exchange of ideas implying trust
	Agreement	
	Differences of opinion	Communication that reveals agreement  Communication that reveals a difference of opinion between members of the group
Positive group behaviors	Support	Supportive behaviors between members of a group
	Affiliation	Expression of appreciation for the relationships within the group
	Positive intent	Positive purpose served by a communication or behavior
	Persistence	Determination to continue until a satisfactory outcome is achieved
	Teamwork	Behaviors indicating a high-performing team
	Adapting to a group	Modifying individual behavior to adapt to the group's culture
	Management support	Recognition and appreciation of support from the hierarchy outside the group

Appendix L (Continued)

Category	Concepts	Definitions
Negative group behaviors	Confusion	Confusion over the activity that leads to tension
	Conflict	Conflict due to differences of opinion
	Resistance	Resistance to change
	Power issues	Resistance to other members due to power issues
	Inaction	Inaction due to implementation problems
Group development	Forming	First stage of group development, characterized by politeness
	Storming	Second stage, characterized by conflict
	Norming	Third stage, characterized by establishing norms of behavior
	Performing	Fourth stage, characterized by high performance

## ABOUT THE AUTHOR

Lynn Grinnell received a Bachelor's Degree in Spanish from Southern Methodist University in 1973 and an M.S. in Organizational Business Management from the University of Laverne in 1984. She served twenty years in the United States Air Force, retiring in 1994 as a Lieutenant Colonel. She is a Distinguished Graduate of Air War College, Master Quality Instructor, and Master of Air Defense, one of 50 air weapons controllers to achieve that skill rating in 25 years. She entered the Ph.D. program at the University of South Florida in 1997.

While in the Ph.D. program, Ms. Grinnell began teaching Management courses at Saint Leo University and Education courses at Hillsborough Community College, and was a member of a USF research team for a National Science Foundation grant.

Ms. Grinnell has been very active in the community in Tampa in 1994, including serving as President of the New Tampa Community Council.