

THOUGHT TEAM: USE OF A PERSPECTIVE-TAKING STRATEGY TO ENHANCE
PERSONAL PROBLEM SOLVING WHILE THINKING, WRITING, OR MAPPING

by

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TABLE OF CONTENTS

I.	Acknowledgements.....	ii
II.	Table of Contents.....	iii
III.	List of Tables	vi
IV.	Introduction.....	1
	Problem-Based Writing as the Task	1
	Release of Inhibition Effects.....	2
	Cognitive Restructuring Effects.....	3
	Current Focus on Cognitive Restructuring	4
	Additional Strategies to Enrich Cognitive Reorganization	4
	Knowledge-Mapping and Symbol Cards as Supplemental Strategies.....	5
	Multiple Perspectives Employed to Increase Awareness	5
V.	Present Research Interest in the Utility of Perspective Taking	7
	Perspective Taking in Recall	7
	Perspective Taking and Attentional Focus	8
	Evidence for the Utility of Perspective Taking in resolving Personal Issues..	9
	Effects of Problem-Based Writing Enhanced	9
	Initial Thought Team Research.....	11
	Subsequent Research on the Thought Team.....	11
VI.	Current Study to Further Thought Team Research.....	16
	Extension One: Thinking about the Problem While Using Thought Team...	17
	Extension Two: Mapping the Problem While Using the Thought Team	17
	Dependent Measures.....	18

VII.	Method	21
	Participants	21
	Training Session and Materials.....	22
	Work Sessions and Materials.....	24
	Dependent Measures	25
	Procedure	28
VIII.	Results.....	31
	Preliminary Analyses	31
	Factor Analyses	33
	Primary Analyses	47
IX.	Discussion	72
	Problem Concern	74
	Format	76
	Strategy	81
	General Conclusions	88
X.	References	99
XI.	Appendices	118
	A. Statement of Consent	119
	B. Training Materials.....	120
	C. Work Session Materials	130
	D. Dependent Measures	144
	E. Debriefing Statement	166

XII. Vita

XIII. Abstract

LIST OF TABLES

Table 1: Factor Loadings of Items from the Problem Scales, Work Session One.....	34
Table 2: Means and Standard Deviations for the Problem Scales, by Treatment Group, Work Session One.....	35
Table 3: Factor Loadings of Items from the Barriers to Solving the Problem Questionnaire, Work Session One	37
Table 4: Means and Standard Deviations for the Barriers to Solving the Problem Questionnaire by Treatment Group, Work Session One	38
Table 5: Factor Loadings of Items from the Satisfaction with the Work Session Questionnaire, Work Session One	40
Table 6: Factor Loadings of Items from the Who Questionnaire, Work Session Two.....	42
Table 7: Factor Loadings of Items from the Post Study Questionnaire, General Health; Final Session	43
Table 8: Factor Loadings of Items from the Post Study Questionnaire, Interests; Final Session	44
Table 9: Factor Loadings of Items from the Post Study Questionnaire, Problem; Final Session	45
Table 10: Factor Loadings of Items from the Method Generalization Questionnaire; Final Session	46
Table 11 : Means and Standard Deviations for the Barriers to Solving the Problem Questionnaire Blocked by Strategy, Format, and Level of Problem Concern, Work Session Two.....	48

Table 12 : Means and Standard Deviations for the Barriers to Solving the Problem Questionnaire Change Scores Blocked by Strategy, Format, and Level of Problem Concern, Work Session Two.....	52
Table 13 : Means and Standard Deviations for the Satisfaction with the Work Session Questionnaire Blocked by Strategy, Format, and Level of Problem Concern, Work Session Two.....	56
Table 14 : Means and Standard Deviations for the Who Questionnaire Blocked by Strategy, Format, and Level of Problem Concern, Work Session Two.....	61
Table 15 : Means and Standard Deviations for the Post Study Questionnaire, General Health, Blocked by Strategy, Format, and Level of Problem Concern, Final Session	63
Table 16 : Means and Standard Deviations for the Post Study Questionnaire, Interests, Blocked by Strategy, Format, and Level of Problem Concern, Final Session	65
Table 17 : Means and Standard Deviations for the Post Study Questionnaire, Problem, Blocked by Strategy, Format, and Level of Problem Concern, Final Session	67
Table 18 : Means and Standard Deviations for the Method Generalization Questionnaire, Blocked by Strategy, Format, and Level of Problem Concern, Final Session	70
Table 19: Categories of Experimental Factors	73

Introduction

Several studies have revealed a range of promising results for the implementation of a perspective-taking strategy while writing about a personal problem. An initial study found that the use of the *Thought Team* strategy, a means for learning to use multiple perspectives during therapeutic writing sessions, enhanced the writing process (Atha-Weldon & Dansereau, 2001; Czuchry & Sia, 1998). The Thought Team is composed of a set of mental advisors selected for their problem-solving skills or possible advice. Participants who used the Thought Team reported greater creativity, insight, positive impact, and enjoyment. An additional study provided more evidence for the utility of the strategy as an aid to coherence or organization and as a catalyst to begin and to continue writing. Those participants who used the Thought Team also reported greater creativity, depth, smoothness, and insight. Moreover, the Thought Team strategy led to reports of greater long-term benefits such as general wellbeing, interest in personal life, insight, and perceived ability to solve or manage the problem (Atha-Weldon, 2000).

Problem-Based Writing as the Task

In each of these previous studies, problem-based or therapeutic writing was the main assigned task or activity. Pennebaker, the most reputed investigator in this line of research, has shown that the experience of writing about personal problems produces insightful and coherent thinking leading to emotional and physical improvements. Whereas a confused remembrance of the problem's onset and events could preclude the ability to thoroughly understand the problem or to determine solutions, Pennebaker and Francis (1996) have pointed out that problem-based writing can ameliorate these difficulties. While writing about the problem in a narrative form, release of inhibition occurs; and, the progression of mental

renovation begins (Greenberg & Stone, 1992; Pennebaker, 1997b). Efforts to ignore or to repress disturbing emotions and thoughts concerning the history and consequences of a personal problem could cause participants to exert more mental effort and actually increase their feelings of anxiety (Wegner, 1997). Additional studies connected with the work of Pennebaker have described how disinhibition or emotional release through divulging the problem may result in physiological and behavioral advantages (Esterling, Antoni, Fletcher, Margulies, & Schneiderman, 1994; Gross & Levenson, 1993).

Release of Inhibition Effects

The beneficial effects of the release of inhibition have been measured in terms of reductions in the number of medical visits and the number of medications used, improvements in personal relationships and social interests and in academic performance, and positive changes in motivation and mood (Pennebaker, 1997a). Even so, Pennebaker has acknowledged that the outward expression of emotion is not the only factor contributing to the range of advantages in long-term health. An improved representation of the problem may lead to the awareness of methods to cope with or resolve the problem. In a study by Pennebaker and Beall (1986), it was the participants who wrote about both their emotions connected to the problem and the objective details of the problem who reported significant long-term health benefits. Causal and insightful ideas about the problem that become apparent during the experience of writing may be connected to personal progress in a variety of ways; even small increases in self efficacy may amplify overall self-esteem, inner strength, serenity, and self-confidence as well as provide some immunity to stress (Aleksiuk, 1996; Bandura, 1992).

Cognitive Restructuring Effects

One line of research has focused on the particular significance of the process of mental reorganization that could come about during the writing sessions (Clark, 1993; Donnelly & Murray, 1991; Pennebaker & Francis, 1996). For cognitive restructuring to occur, both the emotional and conceptual aspects of the problem need to be dealt with in order to improve the capacity to recognize the most critical matters; subsequently, a clearer understanding of the problem may emerge. Furthermore, narrative writing requires that a person be able to present his or her version of the problem details in a more logical manner. Relevant information could be accessed with less difficulty, and the individual may then be able to organize and consolidate ideas about the problem. In addition, the act of writing about a situation modifies the way the events are symbolized in memory; various perspectives may develop and a process of self-reflection may begin when ideas are communicated via language (Clark, 1993). The writer must anticipate the reader's perspective, consider specific word choices, and offer causal explanations; therefore, a more rational sequence of problem details and events may be achieved (Pennebaker & Francis, 1996).

After realizing a more lucid recollection, the amount of mental exertion needed for analyzing the disturbing events could be abridged by at least two different avenues. First, people could find that the problem seems more understandable and therefore manageable after they have been able to organize and consolidate so many of the disturbing details. As the amount of concern for the problem diminishes, mental stress could be alleviated. Second, the process of attending to more of the issues connected with the problem situation and fashioning a more comprehensive mental picture is likely to lead to new ways to actually work out the situation. A reduction in the burden put on cognitive resources could decrease

upsetting stress levels, and thus, could result in health, social, and academic improvements (Pennebaker, 1997a; Pennebaker & Francis, 1996).

Current Focus on Cognitive Restructuring

The positive outcomes after the release from inhibition surrounding an upsetting experience have been exhibited in numerous studies (Gross & Levenson, 1993; Pennebaker, 1997a). In addition, the restructuring of specific thoughts about the problem can result with changes in the appraisals of external events and the internal representation in memory (Greenberg & Stone, 1992). The cognitive restructuring process has received less attention; therefore, further inquiries should be conducted to clarify the underlying mechanisms and to determine means of strengthening the effects. The mental representation of the problem as a whole appears to be consequential to the reorganization of related thoughts. Accordingly, additional research should continue to cover possible supplementary strategies that manipulate the problem schema to increase overall awareness and insight.

Additional Strategies to Enrich Cognitive Reorganization

Although the findings for the use of therapeutic writing to date are quite positive, limiting factors may exist in the basic method of problem-based writing that produce a ceiling for the effects. The person's mental set for the problem details may not include explicit awareness of the problem's overall implications; or, they may have a general awareness without any specific guidelines or plan for moving toward a solution. There is a distinct possibility that the utilization of other expressive and organizational strategies would help regulate disturbing thoughts and lend some enrichment to the degree of understanding achieved during the writing experience. In addition, some of the negative consequences resulting from a narrow mind set, a confused memory, and the nurturing of unrealistic

expectations concerning the problem could possibly be prevented. Also, writing can be a difficult task for some people; the introduction of a creative strategy for discovering new viewpoints could make the task more engaging. This novel approach may lead participants to continue to use the strategy even after the experimental premise is removed and to even expand the usage in personal ways.

Knowledge-Mapping and Symbol Cards as Supplemental Strategies

Chmielewski (1999) presented node-link or knowledge mapping as an alternative to the writing process in order to improve the cognitive representation of both personal and objective problem issues. In a knowledge map (k-map), the relevant information is contained in nodes that are interrelated by labeled lines and arrows in a spatial-semantic array with meaningful arrows or connectors. In the Chmielewski study, participants who mapped a personal problem produced significantly more ideas than participants who only wrote about their personal problems. An effect was also found for the updating sessions wherein k-maps facilitated idea generation during the process of revision.

The presentation of picture symbol cards has also been another strategy used to stimulate the problem-based writing process. Logan, Dansereau, Williams, and Schepis (1999) examined the use of basic symbols (i.e., a candle, a chain, a gate) as prompts to begin the writing process. These symbol cards were also expected to help sustain the motivation to continue writing and to increase divergent thinking for the problem-solving task. Evidence was reported to indicate that those who used the symbol cards reported a more satisfactory writing experience.

Multiple Perspectives Employed to Increase Awareness

Even though training in the employment of k-maps and symbol cards did supply

significant indications for the use of supplemental strategies for the generation of ideas and/or for satisfaction ratings by participants during problem-based writing sessions, various other techniques to manipulate the cognitive representation of the problem could be explored. The use of a k-map while writing allowed for better generation and organization of ideas; still, some participants may consider the mapping approach to be too analytical and feel more restraint than when only writing about personal problems. The symbol cards were effective for looking at different facets of the problem; yet, the resulting ideas may have been rather abstract and less practical for finding workable solutions.

An alternative scheme, the Thought Team strategy, proposes a means to achieve both the production of more versatile ideas and the ability to organize them in a more palatable form. The training for the development of the Thought Team illustrates how to select team members as exemplars from a wide range of categories. Each Thought Team member is used to represent a divergent perspective of the problem that may yield fresh ideas. When the team has been formed, a sample exercise is given to show how to integrate the novel ideas with one's own solutions. The integration procedure is designed to allow reorganization of the relevant problem details and to heighten attention to the possibilities of additional solutions. Moreover, once the Thought Team strategy has been practiced, it could easily become mentally "transportable"; it is flexible enough to be used at any time without any other tools or materials.

The Thought Team strategy was initially considered to be useful in problem-solving tasks because a technique commonly suggested for assembling new sets of potential solutions to a given problem is the use of multiple perspectives (Galinsky & Moskowitz, 2000; Halpern, 1996; Haugen, 1999). Perspective taking has been defined as a psychological

process based upon imagining the mental constructs of another person (Kelly, 1963; Krauss & Fussell, 1991; Mead, 1934; Mulcahy, 1999). The terms of *role playing*, *perspective taking*, or *schema shift* have often been used interchangeably. In a review of the use of these constructs, Weyl (1993) attempted to redefine and clarify the current use of the terms. The act of role playing may be considered to include a variety of assumed personality traits across several scenarios or topics; however, perspective taking may only refer to the temporary mental assessment of an alternate viewpoint about a specific issue.

The sphere of perspective taking research includes various types and degrees of perspective-taking tasks. In direct personal communication, perspective taking involves a match-to-target with feedback process with corresponding adjustments to accomplish the transfer of ideas. There can also be more general perspective-taking attempts for taking the overall perspective of an entire culture or of a particular political group. Some researchers have used the phrase “Bottom-Up” perspective taking to describe the means necessary to assemble various clues from words and gestures in context to construct an acceptable perspective of the target. “Top-Down” perspective taking refers to using a hypothetical person with a supposed set of thoughts and actions attributed to the person (Van Boven, Loewenstein, & Dunning, 2004). The Thought Team strategy may be categorized with other types of perspective taking that refer to more speculative endeavors for match-to-target with no feedback activities; therefore, it may also be considered to be a “Top-Down” version of perspective taking.

No clear evidence has been sought as to exactly how participants perceive their deployment of the team members. Moreover, although numerous studies have examined the developmental issues of perspective taking skills, personality correlates, or the accuracy of

perspective taking, the present Thought Team research is focused on evaluating the effectiveness of developing multiple perspectives during problem-based writing sessions (e.g., Davis, Luce, & Kraus, 1994; Eisenberg, Carlo, Murphy, & Van Court, 1995; Ickes, 1997; Rebok, 1987; Selman, 1980; Selman & Byrne, 1974).

Present Research Interest in the Utility of Perspective Taking

Perspective Taking in Recall

Several studies have demonstrated evidence for the relevance of perspective taking in the operation of retrieval processes. Anderson and Pitchert (1978) produced data for the importance of perspective taking in the function of retrieval processes. Participants were asked to assume a particular viewpoint before reading a story; later, they were required to recall information from the text. Details recalled were consistent with the theme of that viewpoint. When instructed to shift to an alternate perspective, participants were able to include additional elements that were more significantly related to the new perspective than to the viewpoint originally assigned. Participants reported that changing their perspective of the story elicited different scenarios from memory and led them to recall facts that had previously been inaccessible.

Ellis (1995) also found an effect of perspective taking on the enhancement of recall; the extent to which learners would be influenced by perspective-taking instructions given prior to viewing museum exhibits was investigated. Regression analyses were performed and significant full model effects for perspective taking on the total score for the multiple choice recall measure were revealed. In addition, further analysis were conducted and indicated that giving a type of perspective-taking instructions before attending an exhibit produced significant positive effects on learning and enjoyment.

Support has been shown for a perspective-taking strategy that is similar to the Thought Team, a learner-generated strategy for taking perspectives called the *Learning Team* (Moreland, 1998). Learners were instructed to develop various perspectives for subsequent use while studying descriptive information. Free recall performance was shown to be higher for those participants who used the Learning Team strategy during study than for those who were instructed to just review stimulus information.

Perspective Taking and Attentional Focus

Many processes used for attention and comprehension could also be directly affected by the particular perspective being taken (Goetz, Schallert, Reynolds, & Radin, 1983). According to the selective attention hypothesis, focus is directed to specific text elements when a definite perspective is adopted. Following the schema provoked by an assigned perspective, participants spent significantly more time concentrating their attention on the sentences that were directly related to their designated viewpoint and the correlated text elements were rated as more important. These results demonstrated the persuasive influence of an assigned perspective on attentional focus to meaningful details. Thus, the incorporation of multiple perspectives could substantially broaden the process of idea generation. Employing a strategy of perspective taking while considering the possible schemas for remembering or solving a particular problem could bring about remembrance of factors that contributed to and/or that could palliate the situation.

Evidence for the Utility of Perspective Taking in Resolving Personal Issues

Perspective-taking training is effective in a wide range of investigative domains. In the particular case of the Thought Team research, the multiple perspectives strategy was used with problem-based writing activities in a manner similar to research conducted by

Pennebaker and others (Pennebaker, 1997a; Pennebaker & Beall, 1986; Pennebaker & Francis, 1996). Various perspectives were developed not to enhance perceptions of the situations of others, but in order to achieve new attitudes toward one's own problem. Again, this particular type of perspective taking could be considered as "speculative perspective taking." The participant aims to match the target perspective of the chosen team member; yet, there is obviously no actual feedback from the team member (Atha-Weldon & Dansereau, 2006).

Effects of Problem-Based Writing Enhanced by Employment of a Thought Team

Imagining a discussion with people with great minds or with more divergent thinkers about a particular issue could result in stimulating more creative insight and build connections to potential solutions. By employing the Thought Team multiple perspectives strategy while writing about personal problems, retrieval could be increased and organization of problem aspects may become more focused.

Thought Team strategy, a method initially introduced by Czuchry and Sia (1998), is designed to concretize the abstract idea of taking multiple perspectives. Functioning as an imaginary committee of mental advisors, the Thought Team members may assist the person in the representation or recall of the problematic event, the generation of new ideas, and the management of the problem-solving process. To assemble a team, members are selected from a broad range of possibilities: historical figures, spiritual leaders, fictional heroes, family members or friends, famous personalities, etc. Each team member probably represents an actual set of specific characteristics, skills, and insights to the participant (Gelb, 1998).

Obviously, the person retains a certain amount of self-traits as intact during any role-taking or perspective-taking activity such as the use of the Thought Team strategy.

Nevertheless, depending upon the personality and training of the individual, measurable changes in the configuration of personal affective and cognitive resources could become apparent as the self and the other (Thought Team member) are merged. Personality research along these lines has shown that a greater amount of overlap is shown for positive traits (Davis, Conklin, Smith, & Luce, 1996). Aron, Aron, Tudor, and Nelson (1991) produced evidence for some of the particular changes by determining three types of self-other merging: merging of personal characteristics, merging of opinions or philosophy, and merging of favorable resources (any combination of these types of merging could be projected according to the individual personalities engaged). The most likely occurrences for self-other merging would be instances where some common denominators between the self and other were assumed to exist given knowledge gained about the target perspective through personal experience or by considering reputable sources. By using a perspective-taking strategy, a person might infer the viewpoint of a person with admirable traits or resources useful for solving problems; as a result, the participant could develop a more competent attitude toward tackling problem issues. However, a Thought Team member need not be a “perfect” character who always conveys commendable traits. Some participants may also find advantages by considering team members with extreme or nontraditional views in order to explore possibilities beyond their own limits of experience. For this reason, participants are encouraged to select some team members with views that oppose or challenge their own set of beliefs about the problem issue.

Initial Thought Team Research

To further investigate additional means of enhancing the effects of problem-based writing, an initial study provided training in the development of a Thought Team for

implementation when writing about objective and personal problems (Atha-Weldon & Dansereau, 2001). Analyses indicated significant effects in favor of the Thought Team on the following factors from the Session Evaluation Questionnaires and the Post Writing Questionnaires: session depth, smoothness, positivity, insight, idea generation, and enjoyment (all p 's < .05). Also, writing about personal problems was rated higher on all factors than was writing about objective problems (higher scores reflected more favorable results), and participants who wrote while using the Thought Team wrote more than did those who did not employ the strategy.

Subsequent Research on the Thought Team

In another study involving the use of the Thought Team Strategy, additional significant findings for participant satisfaction and emotional reactions were revealed (Atha-Weldon, 2000). Participant ratings of positivity, depth, and smoothness were collected following each writing session. Those who used the Thought Team rated the writing sessions as having significantly greater depth and positivity than did those who did not use the Thought Team strategy while writing. Also, Thought Team users reported that work sessions went more smoothly overall.

The cognitive benefits of using the Thought Team strategy were also evaluated. Thought Team users reported greater creativity and insight as some of the cognitive advantages obtained by using multiple perspectives during the writing process. In addition, factors for coherent organization and catalyst were also revealed to be cognitive benefits gained by applying the Thought Team strategy. Also, a Thought Team Generalization Questionnaire given three weeks after the writing sessions demonstrated evidence for the reported generalization of perspective-taking strategies. The cognitive benefits assessed by

the questionnaire in the final session showed that Thought Team strategy users had experienced more insight and expressed greater optimism for coping with or eventually solving the problem.

Personal concerns and health status were also examined. The follow-up questionnaire given three weeks later was administered to assess improvements in concern for the problem, personal life, and general health and wellbeing. Findings showed that the use of the Thought Team strategy enhanced the findings of Pennebaker (1997a) regarding reductions in poor health symptoms and increases in overall wellbeing and regarding interest in personal life after therapeutic writing sessions.

The initial studies implementing the Thought Team strategy have supported the efficacy of taking multiple perspectives when writing about personal problems. The variety of dependent measures employed in these investigations such as positive impact, creativity, emotional and cognitive variables, coherence, and solvability provide converging evidence for the use of multiple perspectives. The pattern of results suggest that the Thought Team strategy use during problem-based writing may have provoked novel ideas and greater insight as did the symbol cards used by Logan et al. (1998) and may also have led to better organization and coherence of the problem aspects as did the use of k-maps by Chmielewski (1999).

Several possibilities exist as explanations for the success of the Thought Team strategy as an enhancement for therapeutic writing. Since perspective taking improves recall of essential information (Anderson & Pitchert, 1978; Ellis, 1995), a more detailed recollection of the events can guide the participant to take a more objective view of the situation by examining various perspectives. The person might not be able to comprehend the

“big picture” of their experience as long as they are completely absorbed in the emotional turmoil and cognitive confusion. If they find a way to break free from their own viewpoint temporarily and take a more objective role through the eyes of the Thought Team members, they might be able to describe the problem in different terms that could lead to more effective solutions to the problem (Batson, Early, & Salvarani, 1997; Ickes, 1998). Edith Ackermann (1996) has stated that both “diving in” and “stepping out” of a problem experience may be vital to reaching a profound understanding and the varying processes may moderate a connection to the situation that is less disturbing and more insightful.

Given that the Thought Team may act as a catalyst for the process of disinhibition, additional reasons for such utility should also be discussed. Approaching a problem with the Thought Team strategy may be similar to some types of play therapy. It may be a way to express ideas that might be too embarrassing to otherwise acknowledge; therefore, it allows a creative method to vent negative feelings or to disclose intimate details with less discomfort. For ways of thinking that seem uncharacteristic of self or too risky, the strategy may lead participants to loosen their normal hold on reality and venture into new realms for exploring the problem context (Lord, 1987).

As release of inhibition unfolds, cognitive restructuring may begin to transpire. Some of the cognitive benefits reported could result from the creative and insightful changes in how the problem is viewed while using the perspective-taking strategy. In studies that have examined insight and analytic problem solving, restructuring and unconscious search have been identified as two of the elements in the process of insight that contribute to the emergence of a more complete representation of the problem (Schooler, Ohlsson, & Brooks, 1993). Each Thought Team member may provoke a spreading activation network of

unconscious searches for an extensive range of novel ideas or clues to solving the problem. Moreover, the perceived ability of the individual to perform or reason about certain social functions or roles pertaining to the problem may be improved by taking into account the perspective or role of a team member who is believed to be more competent. In this manner, the variety of Thought Team members chosen may be similar to the use of exemplars for particular character traits (Baumeister, 1997; Sia, Lord, Lepper, Blessum, & Ratliff, 1997), and the effectiveness of certain choices of Thought Team members in specific situations could also contribute to the cognitive reorganization process.

Additional reasons may be associated with the reduction in cognitive stress (Francis & Pennebaker, 1991). According to the cognitive-relational theory, stress is defined as a particular relationship between the individual and their environment that places staggering demands on personal problem-solving or coping resources and causes feelings of inadequacy (Lazarus & Folkman, 1984b). The established concept of self-efficacy refers to being able to actually accomplish or complete a goal; low self-efficacy (inability to act or cope) has been associated with depression, anxiety, and feelings of helplessness; whereas, higher levels of self-efficacy (mental or physical actions) can lead to a strong sense of competence and facilitate academic, physical, and emotional processes resulting in improved performance and more productive attitudes toward problem-solving challenges (Aleksiuk, 1996; Bandura, 1992). Moreover, increasing the perception of self-efficacy has been shown to affect specific health outcomes and therapeutic change in a variety of settings (Schwarzer, 1994). One of the four sources of information leading to increased self-efficacy is vicarious learning or modeling of behavior; the Thought Team strategy's process of consideration of the skills of others may induce changes in personal perception of self-efficacy or self-confidence in

dealing with problems. The use of the Thought Team strategy may lead to a sense of satisfaction with effort in having approached the problem in a new way and having discovered means to manage their feelings and cope with the situation even without actually being able to resolve the problem.

Some evidence has also been revealed for the Thought Team strategy as a format to increase the overall coherence or organization of the problem aspects (Atha-Weldon, 2000). In order to make sense of seemingly unrelated or contradictory problem elements, a format or schema may enable a person to determine priorities, set goals, and decide on the most feasible sequence for working out the details of a problem (Gardner, 1983). As the participant consults each team member in turn, they may find a means to navigate through the problem territory, finding previously unseen ideas, and be able to arrive at new conclusions. This process could also keep participants from getting fixed on one train of thought and serve as a guide for arranging their ideas about the problem along the way.

Current Study to Further Thought Team Research

The current study revisited the topic of cognitive restructuring by making further inquiries to clarify the underlying mechanisms for organization of the problem elements and to ascertain means of strengthening the effects of using the Thought Team strategy. After the release of inhibition, the mental representation of the problem seems to be more critical to the awareness of new insights; therefore, the current study involved two extensions of the previous research that entail specific designs for the implementation of the Thought Team strategy in methods not yet addressed. Although thinking about an issue is the typical avenue for dealing with a problem, a comparison to various formats with and without the perspective-taking strategy should be conducted. In addition, similar comparisons are to be

made for comparing the mapping format as well as the thinking and writing formats with and without the perspective-taking strategy.

Extension One: Thinking about the Problem while using the Thought Team

A number of studies have concluded that writing versus talking into a tape recorder may be comparable in outcomes (Pennebaker, 1997b). However, to date, there have been no conclusive studies of writing versus just thinking about a personal problem (Pennebaker, 2002). The present study sheds light on this issue and assesses whether the Thought Team can enhance internal thinking processes without any additional activity (writing, mapping, or other formats); and, therefore, whether the portability of the strategy could make it a highly desirable alternative. In addition, the use of the Thought Team members should allow the participants to avoid dwelling on one aspect of the problem and to move forward in the consideration of various elements pertaining to the issue; the Thought Team members would also serve as reminders of any ideas generated. Finally, the use of the Thought Team members as mental advisors in a creative way could alleviate some of the emotional and motivational barriers to working on the problem.

Extension Two: Mapping the Problem while using the Thought Team

The format in which information is presented may influence a person's ability to incorporate ideas and thus impact the makeup of the mental representation concerning an issue (Chmielewski, 1998; Novick & Hurley, 2001). As an alternative to a text or other linear form of information, knowledge mapping has previously been used successfully in education, communication, and counseling sessions to display a variety of ideas and relationships in a spatial arrangement (Chmielewski & Dansereau, 1998; Dansereau & Newbern, 1998; Motes, Bahr, Atha-Weldon, & Dansereau, 2002; O'Donnell, Dansereau, & Hall, 2002). The

mapping technique may be more favorable to the promotion of cognitive restructuring because mapping may lend more organizational properties for not only the problem elements but also the problem-solving process in general. The nature of the mapping technique could compel more explicit descriptions of relationships between related ideas and could advance more concrete examples for future actions.

Participants who utilized the k-map technique while working on their problem were expected to report higher ratings for coherence. The k-map provides a means to condense the problem into a more manageable set of ideas. As stated by Charles F. Kettering, “A problem well-stated is a problem half-solved” (Simpson, 1988); achieving a more coherent organization of the problem facts was expected to culminate in participants experiencing a greater ability to decide on appropriate solutions or to more clearly understand and manage their present situation.

However, mapping alone may be considered too analytical, formal, or restrictive for dealing with a personal problem for some participants. The mapping procedure alone was not expected to provoke productive mental imagery or positive or important emotions. Adding the Thought Team strategy to the mapping technique was designed to preserve the increase in coherence and organization while still allowing for some creativity and more insightful exploration (Chmielewski, 1999). Participants who did mapping while using the Thought Team strategy may have been able to manage negative emotions more effectively than did those who do not use the team of mental advisors. They were also expected to report greater satisfaction for the effort they put forth and for the ability to face the problem situation.

Dependent Measures

Measures taken before and/or immediately after the work sessions. An important

Measure designed to evaluate each participant's initial and eventual feelings about the obstacles or hindrances was the *Barriers to Solving the Problem Questionnaire*. This questionnaire contained items for assessing motivation and mental or behavioral obstacles, emotional hindrances, and cognitive barriers for both organization and for the generation of novel ideas.

The *Satisfaction with the Work Session Questionnaire* covered how the participant rated each session concerning how they faced the problem, how satisfied they were with their effort, how well they were able to control their emotions, and what they learned about their problem-solving skills. The overall utility and palatability of the methods were examined by items for creativity, coherence, and as a catalyst for ease of engagement in the work sessions.

The *Who Questionnaire* was given after the second work session. Only the three groups who had utilized the perspective-taking strategy, the Thought Team, during the work sessions received the questionnaire. It was used to measure the type of team members chosen for problem solving while thinking, writing, or mapping (people similar to oneself such as family or friends, or someone who was more heroic, bizarre, or extremely opposite of oneself). Participants were also asked if they thought they had made appropriate choices for their team members and had used them efficiently.

Measures taken during the follow-up session. The *Method (Format and/or Strategy) Generalization Questionnaire* was given during the follow-up session to determine which groups were more likely to generalize the method they learned and to see which methods were more readily transferred to later use. It was expected that participants who realized they had learned a new method for problem solving would show some inclination to continue to

use the method in some way to further their skills in problem solving. Items included on the questionnaire assessed which methods were more memorable, more portable, or more easily utilized after the experiment; and, participants rated how willing they would be to take more training or to advertise the method to friends. This measure was a revision of a previous questionnaire to assess the Thought Team strategy (TTQ; Atha-Weldon, 2000), and now covers the methods presented to all the groups.

As in a previous experiment utilizing the Thought Team perspective-taking strategy (Atha-Weldon, 2000), the *Post-Study Questionnaire* (Watson & Pennebaker, 1989) was given three weeks after the last writing session. Participants were asked to rate their general physical and mental health symptoms and their number of visits to medical professionals since the experimental writing sessions. In addition, attention, academic performance, physical activity, and amount of interest in personal life were assessed. The questionnaire also included items pertaining to the amount of remaining concern about the problem, awareness of insight, and potential solutions cultivated pertaining to the problem.

The dependent measures taken immediately after the working sessions were designed to assess the palatability of the methods. The assumption was that if participants view the method they used while working on their problem as more effective and user-friendly, they would be more likely to use the method in the future. Thus, the follow-up measures were designed to provide information on the effectiveness of each method.

In summary, the research objectives of the proposed study concerned two new directions to be taken for the employment of the Thought Team strategy during problem-solving sessions. The first extension compared groups who were asked to write about their problem with or without the Thought Team to groups who were asked to just think about

their problem with or without the Thought Team. The second extension compared groups who were asked to write about their problem with or without the Thought Team to groups who were asked to map their problem with or without the Thought Team.

The new dependent measures given immediately after the work sessions were designed to determine dimensions of change for barriers to solving the problem and to assess participants' satisfaction with the effort put forth during the work sessions. In addition, the follow-up questionnaire used previously to measure changes in health conditions and problem concern or insight was used along with a revised method generalization questionnaire.

Method

Participants

Participants were two hundred sixty six undergraduates from psychology courses at Texas Christian University who received experimental credit for their participation in the experiment; there were 169 females and 97 males. Due to technical difficulties, the data from 22 participants were not used. Although an exact number could not be determined, the majority of these students were first-semester freshmen. Because the experiment required the participants to write about personal issues, strict measures were observed to maintain privacy; all students were treated in accordance with the Ethical Principles of Psychologists and Code of Conduct (American Psychological Association, 1992). The participants were randomly assigned one of six colored folders (colors indicated the instructions given later for the writing activity specified the groups); the resulting groups were: no Thought Team members used while writing about a personal problem (W0, $n = 44$), three Thought Team members used

while writing (W3, n = 46), no Thought Team members while thinking about a personal problem (T0, n = 43), three Thought Team members while thinking (T3, n = 44), no Thought Team members while writing and mapping the personal problem (M0, n = 45), and three Thought Team members while writing and mapping (M3, n = 44) .

Training Session and Materials

During the first session, all participants were trained to develop and implement a Thought Team (Atha-Weldon & Dansereau, 2006; Czuchry & Sia, 1998; Dansereau, 1985). The training materials introduced the concepts and routines necessary to develop a team consisting of four distinctive members: three imaginary communicants plus the individual (see Appendix B). Participants read instructions to explain how to select their own crew of ten Thought Team members from various categories: creative, daring, famous, fictional, historical, scientific, spiritual, or any other choice of the participant. Then, they were directed to make a profile of the unique strategies and characteristic strengths of six of the team members. Participants were encouraged to choose a name for the team with a logo or team motto. A short practice exercise was introduced to give participants an opportunity to practice using their Thought Team while generating potential answers to a sample problem. The *Parking Lot Blues* was an idea generation exercise used to provoke new solutions to campus parking shortages. Participants were instructed to choose three team members from their strategy page (which consisted of members' specific abilities) and to list the ideas from their team members along with their own before integrating the opinions into one final composite solution for the parking lot problems.

The training followed the direction for the highest amount of self-other similarity judgments to be made by guiding the participant to consider the perspectives of each team member and then integrate the ideas into their own to consequence a greater merging of perspectives. An asymmetry effect in self-other similarity judgments has been found by Karylowski and Skarzynska (1992). Results indicated that similarity judgments tended to be higher when self was used as the reference point in the comparison statement (How similar is person X to you?) than when the self is used as the subject of the question (How similar are you to person X?). Higher similarity judgments were made in the Self-Primed condition, but not in the Other-Primed or in the Control condition. Perspective-taking training that incorporates the direction of comparison for the higher similarity of judgment to be made between the self and another person could precipitate a greater self-other merging of perspectives.

Additional training was given to introduce the participants to knowledge maps (k-maps). A sample guide map for the steps involved in following a procedure (*Ordering a Pizza*) was presented for participants to learn this technique for organizing information about a topic (Chmielewski, 1998; Motes, Bahr, Atha-Weldon, & Dansereau, 2002; see Appendix B). All of the nodes and links were already detailed on the guide map, the nodes contained questions about the procedure, and short phrases compiled the information in each node that answered the question. Then, participants were given a blank map with nodes and links in the same configuration and were asked to choose their own procedure and write the answers to the questions contained in the nodes.

Work Sessions and Materials

The two writing groups were in one room, the two thinking groups in a second room,

and the two mapping groups in a third room. Instructions for working on the problem chosen were written on the pages provided; therefore, no oral instructions were given that might reveal what the other group in the same room might be doing (see Appendix C). The thinking groups received instructions on regular-sized paper, the writing groups received instructions on 11 X 17 lined paper, and the mapping groups received an 11 X 17 map for each of the work sessions. Therefore, the two groups in each of the three rooms had similar-looking work materials for the sessions.

The Thought Team training is designated as a “strategy” in the corresponding training and work materials. The knowledge map training is designated as a “technique” in the analogous training and work materials. The term “format” is considered as the expression for all the experimental conditions of thinking, writing, mapping. However, for the questionnaires that were presented to the participants, the a more generic term “method” was used when referring to the activity sessions. Throughout the questionnaires, participants were be asked to respond according to their opinions about the “method” used during the work sessions; thus, the wording did not implicate a particular strategy or technique.

The first session was referred to as the *training session*. The next two sessions were designated as the *work sessions* and involved six groups who used the strategy and/or techniques while working on their personal problem (writing, thinking, or mapping with or without the use of Thought Team members). The last session, which occurred three weeks later, is referred to as the *follow-up session*.

Dependent Measures

The participants’ initial attitude toward the degree of problem concern as well as the amount of insight and perceived solvability was measured by the standard scale used

in many personal problem-writing assignments (Pennebaker, Colder, & Sharp, 1990). Other measures were designed to assess participants' subjective experiences concerning specific aspects of the experiment (see Appendix D). A questionnaire to assess problem-solving barriers to the specific problem being considered was administered to determine obstacles such as motivation, emotional control, organization, and ideas. After each work session, an evaluation of the method as to its utility for developing coherence or organization of the problem, its usefulness in generating creativity or insight, its assistance in coping, and its overall value. This questionnaire also rated the participants' satisfaction with the effort they put forth during the work sessions as well as their awareness specific problem-solving benefits and their possible use of mental imagery. Immediately after the second work session, participants again completed the Barriers to Solving the Problem Questionnaire. A short questionnaire was presented to the three groups who employed the Thought Team strategy to determine if participants thought they had chosen useful members and if they chose team members who were very opposite to themselves or who had extreme characteristics.

During the follow-up session, the Post-Study Questionnaire measured the participants' report of health, personal, and academic issues as well as repeat the questions from the problem scales for concern and solutions (Atha-Weldon & Dansereau, 2002; Pennebaker & Francis, 1996). The method generalization questionnaire examined the generalization of each method since the work sessions. The questionnaires were phrased in more natural patterns of speech using typical phrases and were presented in Likert formats with varying point scales. The debriefing message was also included in the follow-up session (see Appendix E).

Barriers to Solving the Problem Questionnaire (BSPQ). The questionnaire measured the participants' barriers to solving the specific personal problem chosen for the activity and was given immediately after the problem had been chosen. The obstacles considered involved from emotional hindrances, cognitive difficulties, or an inability to take action. All questions were formed in the negative sense because they referred to barriers or obstacles. The Barriers to Solving the Problem Questionnaire was given again after the second work session. The 26-item questionnaire was in a 7-point Likert scale. Analyses were conducted to determine if there were any significant differences among groups before the work sessions began (see preliminary results).

Satisfaction with the Work Session Questionnaire (SWSQ). The Satisfaction with the Work Session Questionnaire was given at the conclusion of the each work session and contained questions concerning how participants felt about having faced the problem and having gained some insight into their problem-solving skills. It also addressed their satisfaction with the effort put forth and their ability to work through disturbing emotions while solving the problem. In addition, the Satisfaction with the Work Session Questionnaire evaluated the effectiveness of each method used (writing, thinking, or mapping with or without the Thought Team) as a catalyst to begin each work session and as a means to improve coherence. The questionnaire also contains items for assessing whether the participant used mental imagery and/or verbal-based thinking. The satisfaction with the Work Session Questionnaire contained 30 items in a 7-point Likert format.

Who Questionnaire. The Who Questionnaire was presented to the groups who had used the Thought Team members; and, then measure inquired about the quality and

types of the members employed. Participants were asked if they thought they had chosen appropriate or valuable Thought Team characters and if they were able to use them effectively. They were also asked if the members were more similar to themselves or if they were more opposite or extreme in their skills and personal qualities. The Who Questionnaire contained 10 items presented in a 7-point Likert format.

Post-Study Questionnaire (PSQ; adapted from the SMU Health Questionnaire; Watson, & Pennebaker, 1989). Three weeks after the last writing session, a survey was presented to the participants in the follow-up session. Participants rated their physical and mental health symptoms and gave a number for their visits to medical professionals since the experimental writing sessions. In addition, attention, academic performance, and amount of interest in personal life were assessed. The questionnaire also included items pertaining to the amount of remaining concern about the problem, awareness of insight, and potential solutions cultivated pertaining to the problem; these questions corresponded with the questions of the Problem Scales given at the beginning of the first work session. The survey had 40 items with varying point scales in a Likert format.

Method Generalization Questionnaire (MGQ). The Method Generalization Questionnaire was implemented to assess continued use of the format and/or strategy or use of some similar perspective-taking strategy and to determine if generalization of the method (thinking, mapping, thought team, writing) used while working on the problem had occurred subsequent to the work sessions. Participants were also asked about how they had been influenced by use of the format and/or strategy, if they desired more training, or if they would recommend the method to a friend. The Method Generalization Questionnaire contained 10 items presented in a 7-point Likert format.

Procedure

At the beginning of the first session, participants were briefed to assure them that all of the experimental sessions for the experiment would involve beneficial instructions and activities; and, the Statements of Consent were collected (see Appendix A). Then, all of the participants received approximately 20 minutes of training to develop and implement their own Thought Team (see Appendix B). Participants read through seven pages of instructions. Very few initial oral instructions were given; and, and the experiment was designed so that no questions needed to be discussed after the work sessions began. The strategy pages detailed how to choose team members and list their strengths; and, the pages included suggestions to choose a team name and logo. The training also included a practice scenario, *Parking Lot Blues*, in order to rehearse their skills for using the Thought Team while writing about a particular issue. Next, participants received approximately 8 minutes of training for the use of knowledge maps (see Appendix B). They looked over a map that was already filled in with a procedure, *How to Order a Pizza*, and then were asked to fill in an empty guide map with an array of nodes and links for a procedure that they chose to describe. When the training was completed, participants were told that the next session would introduce a different phase of the experiment. The only information given was that every participant would be in a group that could experience beneficial results and no additional indication was given as to the future procedures. Each participant was assigned to a room for the next session according to the color of their folder. The two thinking groups were assigned to one room, the two writing groups were assigned to a second room, and the two mapping

groups were assigned to the third room. All of the rooms were of comparable size and furnishings.

At the beginning of the session, participants retrieved their folders that they had labeled with a code, and the materials in the folders now specified the instructions for each of the six groups randomly assigned by color of folder (see Appendix C). The participants were randomly assigned to six groups according to instructions given for the writing activity: no Thought Team members while writing about a personal problem (W0, n = 44), three Thought Team members while writing (W3, n = 46), no Thought Team members while thinking about a personal problem (T0, n = 43), three Thought Team members while thinking (T3, n = 44), no Thought Team members while writing and mapping the personal problem (M0, n = 45), and three Thought Team members while writing and mapping (M3, n = 44). The folders for perspective-taking strategy groups also contained the original strategy pages for the groups who used the Thought Team during the work sessions. Two groups were assigned to each of three similar but separate rooms (W0 with W3, T0 with T3, M0 with M3). Every participant was asked to consider a personal problem; therefore, additional space was provided to allow them to sit apart while working on the sensitive issues.

After choosing a problem, the Problem Scales was answered by all participants before they began to work. Subsequently, the Barriers to Solving the Problem Questionnaire was given to determine particular kinds of hindrances that might be involved with the specific problem they had chosen. Next, the only oral instructions given to the participants were to follow the explanations in their folders as to the method they were to utilize in working on their problem (see Appendix C). The basic

instructions given to every group were the same: consider the facts surrounding how the problem began, what your feelings are about the problem, what the consequences of the problem may be, and what you will do about the problem. Therefore, every experimental condition was guided in the same manner; consequently, even the two “thinking only” groups may be considered to actually be examples of directed thinking. One writing group, one thinking group, and one mapping group were asked to write about their personal problem but was not given instructions to use the Thought Team nor did they have the strategy pages they had developed in training (the first work session occurred one week from the training session). One writing group, one thinking group, and one mapping group were given their strategy pages to use while writing about their personal problem and were instructed to utilize three of their Thought Team members as they worked on their problem. Previous research has shown that at least two Thought Team members are needed to increase ratings of creativity and positive impact and that the use of three team members increases ratings of insight and depth (Atha-Weldon & Dansereau, 2006). Therefore, participants were asked to choose three team members in the same manner as the practice given in the training session. The actual portion of the session which involved working on the problem while using a format and/or the strategy lasted approximately 20 minutes (Pennebaker & Francis, 1996).

The first and second work sessions were spaced 2 days apart with the groups meeting at the same time and place. At the beginning of the second work session, the participants were asked to work on the same problem again by following the written instructions in their folders. Those participants who had their strategy pages were urged

to consult the same team members they had used in the first work session to generate additional ideas or solutions.

The Satisfaction with the Work Session Questionnaire was obtained after both the first and the second work sessions. After the second work session, the participants again completed the Barriers to Solving the Problem Questionnaire. The groups who had utilized the Thought Team strategy were also given the Who Questionnaire. Finally, at the conclusion of the second work session, the participants were told that they would receive the debriefing information in written form at the follow-up session three weeks later.

The Post-Study Questionnaire was given during the follow-up held three weeks after the second work session. Participants also completed the Method Generalization Questionnaire. They also received a one-page description of the purpose of the research and were instructed as to how to ask further questions or to receive counseling assistance (see Appendix E). Information was provided concerning on-campus counseling facilities with appropriate names, phone numbers, and locations supplied.

Results

Preliminary Analyses

Scoring. Most questionnaires which contained questions that had been constructed in a negative form on the Likert scale questionnaires were reverse scored (e.g., “I do not feel hopeful about the problem”) as designated by the standard scoring practices for the measure; therefore, a higher score on any question reflected a positive improvement (Pennebaker, Colder, & Sharp, 1990; Watson, & Pennebaker, 1989). Positive changes for the factors from the Barriers to Solving the Problem Questionnaire

were reflected in the second presentation of the measure. The changes were revealed by a reduction in the initial scores taken before the first work session (hence, a reduction in the perceived barriers); therefore, the scores were not reversed. A change score for each factor was calculated for additional analyses. For the Barriers to Solving the Problem Questionnaire change scores, a higher score represented a greater reduction in the perceived barriers to the problem.

The Barriers to Solving the Problem Questionnaire were given during the first work session before the experimental manipulations with variations in format and strategy were begun. The Satisfaction with the Work Sessions Questionnaire, the final Barriers to Solving the Problem Questionnaire, and the Who Questionnaire were given after the second work session was completed. The Post Study Questionnaire and the Method Generalization Questionnaire were given during the final session before the debriefing was presented.

Factor Analyses

All factor analyses were conducted in the same manner and followed the same criteria. Each questionnaire was subjected to a principal components analysis (PCA) with varimax rotation for the purpose of forming composite scores. A quota of at least three items per factor was set for the formation of the composites. Each of the factors had eigenvalues of 1.0 or greater. In forming factor scores, criteria for item inclusion on a factor was that the item's highest loading occurred on that factor and that the loading was .50 or greater (loadings ranged from .51 to .75). Composite scores were calculated by averaging the relevant items using unit weights.

Problem Scales (PRSC; adapted from Pennebaker, Colder, & Sharp, 1990). For

the Problem Scales (see Table 1), the factors were (a) *concern* (e.g., “time dwelling on problem,” “upset when thinking about problem”) with inter-term reliability based on Cronbach’s alpha = .79, (b) *solvability* (e.g., “feel close to a solution,” “have potential solutions”) with Cronbach’s alpha = .74, and (c) *insights / ideas* (e.g., “ all my ideas are the same,” “don’t have any definite ideas about the problem”) with Cronbach’s alpha = .62.

Factor Loadings of Items from the Problem Scales, Work Session One

Factor	Alpha	Item	Loading
Concern (PRSCcon)	0.79	Immediacy	0.75
		Awareness	0.74
		Importance	0.64
		Lot of thought	0.62
		Upset	0.61
		Dwelling on	0.56
		Support	0.55
Solvability (PRSCsol)	0.74	Potential solutions	0.68
		Hopeful	0.65
		Definite plan	0.64
		Direction	0.62
		Close to a solution	0.59
		Workable plan	0.56
Insight/Ideas (PRSCins)	0.62	Intuition	0.69
		Variety of ideas	0.61
		Number of ideas	0.51

There were no significant differences among treatment groups on these factors before the work sessions began (see Table 2).

Table 2

*Means and Standard Deviations for the Problem Scales
by Treatment Group, Work Session One*

Factor/Group	N	<i>M</i>	<i>SD</i>
Concern			
Think/No THTM	43	5.15	1.18
Think/ THTM	44	5.27	0.97
Write/ No THTM	44	5.17	1.03
Write/ THTM	46	5.12	1.27
Map/ No THTM	45	5.12	1.09
Map/ THTM	44	5.00	0.89
Solvability			
Think/No THTM	43	4.49	1.20
Think/ THTM	44	4.45	1.17
Write/ No THTM	44	4.45	0.97
Write/ THTM	46	4.60	1.16
Map/ No THTM	45	4.48	1.23
Map/ THTM	44	4.41	1.09
Insight			
Think/No THTM	43	3.81	0.92
Think/ THTM	44	3.97	1.13
Write/ No THTM	44	3.66	1.35
Write/ THTM	46	4.19	1.14
Map/ No THTM	45	4.03	1.15
Map/ THTM	44	3.92	1.12

Barriers to Solving the Problem (BSPQ). For the Barriers to Solving the Problem Questionnaire (see Table 3), the factors were (a) *lack of ideas* (e.g., “no new viewpoints,” “don’t trust ideas”) with inter-term reliability based on Cronbach’s alpha = .62, (b) *lack of control of emotions* (e.g., “disrupting emotions,” “frustration”) with Cronbach’s alpha = .58, (c) *lack of organization* (e.g., “no plan,” “don’t know where to begin”) with Cronbach’s alpha = .53, and (d) *lack of motivation* (e. g., “low effort,” “no motivation”) with Cronbach’s alpha = .52.

Table 3

*Factor Loadings of Items from the Barriers to Solving the Problem,
Work Session One*

Factor	Alpha	Item	Loading
Lack of Ideas	0.62	Afraid of more problems	0.85
		Make worse	0.72
		No good solutions	0.68
		No self-trust	0.66
		Ideas criticized	0.59
		No viewpoints	0.59
		Going in circles	0.54
		Lack of confidence in ideas	0.51
Emotions	0.58	Bad mood	0.73
		Disrupting emotions	0.72
		Overwhelmed by emotions	0.69
		Nervous	0.61
		Not able to think	0.58
		Frustration	0.57
		Irrational	0.53
No Organization	0.53	Can't remember	0.68
		No plan	0.67
		No way to analyze parts	0.58
		Confused by details	0.54
		No organization	0.53
		No coherence	0.52
		Don't know where to begin	0.50
Lack of Motivation	0.52	No motivation	0.71
		Low effort	0.59

There were no significant differences among treatment groups on these factors before the work sessions began (see Table 4).

Table 4

Means and Standard Deviations for the Barriers to Solving the Problem Questionnaire by Treatment Group, Work Session One

Factor/Group	N	<i>M</i>	<i>SD</i>
BSPQ ideas			
Think/No THTM	43	3.29	1.01
Think/ THTM	44	3.35	1.02
Write/ No THTM	44	3.41	1.25
Write/ THTM	46	3.47	0.94
Map/ No THTM	45	3.26	0.95
Map/ THTM	44	3.36	1.13
BSPQ emotions			
Think/No THTM	43	3.51	1.35
Think/ THTM	44	3.48	1.14
Write/ No THTM	44	3.47	1.34
Write/ THTM	46	2.89	1.16
Map/ No THTM	45	3.39	1.14
Map/ THTM	44	3.41	1.30
BSPQ organization			
Think/No THTM	43	3.06	1.30
Think/ THTM	44	2.78	1.22
Write/ No THTM	44	3.08	1.26
Write/ THTM	46	2.91	1.21
Map/ No THTM	45	3.29	1.64
Map/ THTM	44	3.12	1.14

Table 4

Means and Standard Deviations for the Barriers to Solving the Problem Questionnaire by Treatment Group, Work Session One, continued

Factor/Group	N	M	SD
BSPQ motivation			
Think/No THTM	43	3.22	1.36
Think/ THTM	44	2.93	1.30
Write/ No THTM	44	3.07	1.38
Write/ THTM	46	2.90	1.15
Map/ No THTM	45	2.71	1.12
Map/ THTM	44	3.17	1.30

Satisfaction with the Work Session Questionnaire (SWSQ). For the Satisfaction with the Work Session Questionnaire (see Table 5), the factors were (a) *coherence/ understanding* (e.g., “problem parts,” “where to begin”) with inter-term reliability based on Cronbach’s alpha = .74, (b) *value* (e.g., “meaningful,” “productive”) with Cronbach’s alpha = .72, (c) *coping/managing* (e.g., “coped with feelings,” “overcame hurdles”) with Cronbach’s alpha = .66, (d) *personal effort* (e. g., “pleased with effort,” “frustration controlled”) with Cronbach’s alpha = .65, (e) *creativity/insight* (e. g., “new ideas,” “creative solutions”) with Cronbach’s alpha = .62, and (f) *mental imagery* (e. g., “vivid images,” “mental pictures”) with Cronbach’s alpha = .57.

Table 5

*Factor Loadings of Items from the Satisfaction with the Work Session
Questionnaire, Work Session One*

Factor	Alpha	Item	Loading
SWSQcor Coherence/ Organization	0.74	Distractions	0.69
		Problem parts	0.63
		Smooth start	0.62
		Organized	0.56
		Where to begin	0.55
SWSQval Value	0.72	Meaningful	0.75
		Powerful	0.74
		Valuable	0.73
		Not Shallow	0.72
		Productive	0.56
		Positive Frame	0.52
SWSQcom Cope/ Manage	0.66	Handled	0.63
		Ended procrastination	0.60
		Cope with feelings	0.58
		Manage	0.55
		Overcome hurdles	0.50
SWSQpef Personal Effort	0.65	Lot of effort	0.70
		Worked immediately	0.64
		Controlled emotions	0.63
		Pleased with effort	0.58
		Frustration controlled	0.50
		Used right language	0.50

Table 5

Factor Loadings of Items from the Satisfaction with the Work Session Questionnaire, Work Session One, continued

Factor	Alpha	Item	Loading
SWScris	0.62	New ideas	0.76
		Insights	0.75
		Creative solutions	0.73
Creativity/ Insight		New ways	0.57
SWSQmim	0.57	Mental imagery	0.77
		Vivid images	0.63
		Talked to self	0.62
Mental Imagery		Mental pictures	0.58

Who Questionnaire (WHOQ). For the Who Questionnaire (see Table 6), the factors were (a) *who was used* (e.g., “made the right choice,” “selected range or diverse members”) with inter-term reliability based on Cronbach’s alpha = .84, (b) *who was extreme* (e.g., “famous or hero,” “extraordinary views”) with Cronbach’s alpha = .55.

Table 6

*Factor Loadings of Items from the Who Questionnaire,
Work Session Two*

Factor	Alpha	Item	Loading
Who was Effective (WHOeff)	0.84	Right choices	0.85
		Different choices	0.72
		Diversity	0.65
		Couldn't select	0.57
Who was Extreme or Extraordinary (WHOext)	0.55	Famous, heroes	0.83
		Family or friends	0.81
		Extraordinary views	0.62

Post Study Questionnaire, general health. The 40-item Post Study Questionnaire was analyzed in three segments (medical and general well-being factors, personal and academic interests factors, and problem issues factors) according to previous norms. For the Post Study Questionnaire segment for the general health factors (see Table 7), the factors were (a) *medical* (e.g., “OTC medicine used,” “health center visits”) with inter-term reliability based on Cronbach’s alpha = .84, (b) *general hardiness* (e.g., “felt positive,” “healthier than friends”) with Cronbach’s alpha = .79.

Table 7

Factor Loadings of Items from the Post Study Questionnaire, Final Session; Segment One: General Health and Wellbeing

Factor	Alpha	Item	Loading
Medical Visits/ Medicine and Symptoms (PSQmed)	0.84	Cold/flu	0.89
		OTC medicine used	0.81
		Headaches	0.77
		Stomach upset	0.75
		Health center visits	0.68
		Missed class due to illness	0.67
General Health/ Hardiness (PSQghh)	0.79	General health	0.81
		Felt positive	0.78
		Less stress	0.74
		Energy level	0.69
		Healthier than friends	0.54

Post Study Questionnaire, interests. For the Post Study Questionnaire (see Table 8), the factors were (a) *academic interests* (e.g., “attention level,” “school concentration”) with inter-term reliability based on Cronbach’s alpha = .75, (b) *personal interests* (e.g., “interest in family or friends,” “exercise”) with Cronbach’s alpha = .75.

Table 8

Factor Loadings of Items from the Post Study Questionnaire, Final Session; Segment Two: Interests

Factor	Alpha	Item	Loading
Academic/ Attention (PSQaat)	0.75	Skipped classes	0.78
		Attention level	0.76
		School concentration	0.64
		Interest in grades	0.53
Personal Life (PSQpli)	0.75	Interest in family	0.85
		Interest in friends	0.84
		Exercise	0.52

Post Study Questionnaire, problem. For the Post Study segment for the problem factors (see Table 9), the factors were (a) *insight* (e.g., “looked at differently,” “clearer focus”) with inter-term reliability based on Cronbach’s alpha = .86, (b) *concern* (e.g., “dwelling on problem,” “upset”) with Cronbach’s alpha = .72, and (c) *solvability* (e.g., “hopeful,” “under control now”) with Cronbach’s alpha = .67.

Table 9

Factor Loadings of Items from the Post- Study Questionnaire, Final Session; Segment Three: Problem

Factor	Alpha	Item	Loading
Insight (PSQins)	0.86	New ways	0.82
		Looked at differently	0.80
		Method helped	0.79
		Clearer focus	0.77
		Fresh ideas	0.61
Concern (PSQcon)	0.72	Dwelling on problem	0.78
		Upset	0.75
		Futility	0.60
		Interference	0.56
		Complaining	0.52
Solvability (PSQsol)	0.67	Hopeful	0.75
		Potential solutions	0.64
		Definite means	0.58
		Workable	0.55
		Under control now	0.53
		Ease in solving	0.52

Method Generalization Questionnaire. For the Who Questionnaire (see Table 10), the factors were (a) *influenced* (e.g., “influenced skills,” “changed approach”) with inter-term reliability based on Cronbach’s alpha = .74 and (b) *continued* (e.g., “continued to use,” “desire more training”) with Cronbach’s alpha = .59.

Table 10

*Factor Loadings of Items from the Method Generalization Questionnaire,
Final Session*

Factor	Alpha	Item	Loading
Influenced (MGQinf)	0.74	Other methods	0.82
		Easy method	0.75
		Influenced skills	0.71
		Would recommend	0.68
		Changed approach	0.67
		New skills	0.64
Continued (MGQcon)	0.59	Easy remembrance	0.97
		Continued to use	0.86
		Use in future	0.76
		Desire more training	0.62

Problem concern as a variable. After previous studies utilizing the Thought team strategy, the question was raised as to the effectiveness for different types or intensities of problems. The problem concern factor represented the amount of importance and the degree of intensity associated with the problem issue. There were no significant differences found among the groups for this factor after the problem had been selected yet before the work sessions began (Problem Scales) and after the completion of the experiment (Post Study Questionnaire, problem factors). A dichotomous variable was formed by determining the median for the problem concern factor (5.31); and then, low and high levels of problem concern were designated.

Primary Analyses

Barriers to Solving the Problem Questionnaire MANOVA. A two (problem concern) by two (strategy) by three-way (format) multivariate analysis of variance (MANOVA) was conducted on the Barriers to Solving the Problem Questionnaire factors of *lack of ideas, lack of emotional control, lack of organization, and lack of motivation.* Means and standard deviations are presented in Table 11.

Table 11

Means and Standard Deviations for the Barriers to Solving the Problem Questionnaire Blocked by Strategy, Format, and Level of Problem Concern

Factor	Strategy	Format	PrbConc	N	M	SD
Lack of Ideas (BSPQide)	No THTM	Thinking	Low	20	3.14	0.79
			High	23	3.35	1.10
		THTM	Low	23	2.56	0.82
			High	21	3.17	1.13
	No THTM	Writing	Low	24	2.75	0.93
			High	20	2.88	0.87
		THTM	Low	18	2.61	0.67
			High	28	2.56	0.91
	No THTM	Mapping	Low	23	2.90	0.90
			High	22	3.13	0.83
		THTM	Low	25	2.83	0.68
			High	19	2.37	0.94
Lack of Emotional Control (BSPQemt)	No THTM	Thinking	Low	20	3.21	0.84
			High	23	3.41	1.14
		THTM	Low	23	2.99	0.77
			High	21	3.33	0.92
	No THTM	Writing	Low	24	3.13	0.94
			High	20	3.28	0.95
		THTM	Low	18	2.65	0.89
			High	28	2.89	0.97
	No THTM	Mapping	Low	23	2.89	1.03
			High	22	3.14	0.92
		THTM	Low	25	2.56	1.02
			High	19	2.83	0.93

Table 11

Means and Standard Deviations for the Barriers to Solving the Problem Questionnaire Blocked by Strategy, Format, and Level of Problem Concern, continued

Factor	Strategy	Format	PrbConc	N	M	SD
Lack of Organiz. (BSPQorg)	No THTM	Thinking	Low	20	2.80	1.14
			High	23	3.17	1.19
	THTM		Low	23	2.35	1.07
			High	21	3.10	1.09
	No THTM	Writing	Low	24	2.76	1.25
			High	20	2.95	1.13
	THTM		Low	18	2.35	1.02
			High	28	2.61	1.12
	No THTM	Mapping	Low	23	2.30	0.98
			High	22	2.37	0.87
	THTM		Low	25	2.49	1.27
			High	19	2.24	0.87
Lack of Motivation (BSPQemt)	No THTM	Thinking	Low	20	3.47	1.11
			High	23	3.04	1.14
	THTM		Low	23	2.45	1.04
			High	21	2.67	0.92
	No THTM	Writing	Low	24	2.55	1.12
			High	20	2.66	1.14
	THTM		Low	18	2.53	0.99
			High	28	2.25	0.90
	No THTM	Mapping	Low	23	2.89	1.03
			High	22	2.74	1.10
	THTM		Low	25	2.36	1.20
			High	19	2.57	1.11

No significant multivariate effect was found for the dichotomous variable of problem concern, $F(4, 251) = 2.34, p = .056$. However, a significant multivariate effect was found with reductions in barriers for the groups who used the Thought Team strategy, $F(4, 251) = 3.41, p = .010$ (Pillai's Trace) with significant univariate effects for *lack of ideas*, $F(1, 254) = 9.60, MSE = 7.601, p = .002$, *lack of emotional control*, $F(1, 254) = 6.68, MSE = 6.039, p = .010$, and for *lack of motivation*, $F(1, 254) = 9.43, MSE = 11.01, p = .002$.

There was also a significant multivariate effect found for format, $F(8, 504) = 2.90, p = .004$ (Pillai's Trace) with significant univariate effects for *lack of ideas*, $F(2, 254) = 3.66, MSE = 2.90, p = .027$, *lack of emotional control*, $F(2, 254) = 3.55, MSE = 3.21, p = .030$, *lack of organization*, $F(2, 254) = 5.86, MSE = 6.99, p = .003$, and for *lack of motivation*, $F(2, 254) = 4.17, MSE = 4.87, p = .017$. Tukey's HSD revealed that groups who used the writing format reported a greater reduction in the lack of ideas concerning the problem than did those groups who used the thinking format. Tukey's HSD also revealed that those groups who used the mapping format reported a greater reduction in barriers associated with a lack of emotional control than those who used the thinking format; moreover, those who used the mapping format reported a greater reduction in lack of organization barriers than did those who used the writing or thinking formats. Finally, Tukey's HSD revealed that the writing groups reported a greater reduction in the lack of motivation barriers than did those who used the thinking format.

Barriers to Solving the Problem Questionnaire Change Score MANOVA. The

difference between the scores for the Barriers to Solving the Problem Questionnaire that was taken before the work sessions began and the scores for the Barriers to Solving the Problem Questionnaire that was taken after the second work session was designated as the Barriers to Solving the Problem Questionnaire Change Score. A two (problem concern) by two (strategy) by three-way (format) MANOVA was conducted on the Barriers to Solving the Problem Questionnaire Change Score factors of *lack of ideas*, *lack of emotional control*, *lack of organization*, and *lack of motivation*. Means and standard deviations are shown in Table 12.

Table 12

Means and Standard Deviations for the Barriers to Solving the Problem Questionnaire Change Scores Blocked by Strategy, Format, and Level of Problem Concern

Factor	Strategy	Format	PrbConc	N	M	SD
Lack of Ideas (BSPCide)	No THTM	Thinking	Low	20	0.33	0.51
			High	23	0.47	0.59
	THTM		Low	23	0.56	0.47
			High	21	0.58	0.45
	No THTM	Writing	Low	24	0.68	0.47
			High	20	0.72	0.49
	THTM		Low	18	0.83	0.48
			High	28	0.90	0.46
	No THTM	Mapping	Low	23	0.63	0.36
			High	22	0.62	0.59
	THTM		Low	25	0.76	0.54
			High	19	0.79	0.46
Lack of Emotional Control (BSPCemt)	No THTM	Thinking	Low	20	0.46	0.40
			High	23	0.42	0.32
	THTM		Low	23	0.54	0.37
			High	21	0.65	0.32
	No THTM	Writing	Low	24	0.63	0.28
			High	20	0.62	0.26
	THTM		Low	18	0.67	0.42
			High	28	0.78	0.31
	No THTM	Mapping	Low	23	0.65	0.32
			High	22	0.75	0.31
	THTM		Low	25	0.67	0.37
			High	19	0.83	0.28

Table 12

Means and Standard Deviations for the Barriers to Solving the Problem Questionnaire Change Scores Blocked by Strategy, Format, and Level of Problem Concern, continued

Factor	Strategy	Format	PrbConc	N	M	SD
Lack of Organiz. (BSPCorg)	No THTM	Thinking	Low	20	0.48	0.48
			High	23	0.37	0.40
	THTM		Low	23	0.60	0.39
			High	21	0.47	0.40
	No THTM	Writing	Low	24	0.68	0.47
			High	20	0.57	0.33
	THTM		Low	18	0.76	0.39
			High	28	0.67	0.36
	No THTM	Mapping	Low	23	0.75	0.37
			High	22	0.69	0.39
	THTM		Low	25	0.79	0.45
			High	19	0.73	0.36
Lack of Motivation (BSPCemt)	No THTM	Thinking	Low	20	0.35	0.39
			High	23	0.55	0.45
	THTM		Low	23	0.59	0.46
			High	21	0.74	0.49
	No THTM	Writing	Low	24	0.74	0.37
			High	20	0.72	0.30
	THTM		Low	18	0.88	0.32
			High	28	0.79	0.49
	No THTM	Mapping	Low	23	0.65	0.37
			High	22	0.73	0.37
	THTM		Low	25	0.79	0.39
			High	19	0.79	0.37

Although a significant multivariate effect was found for the dichotomous variable of problem concern, $F(4, 251) = 3.92, p = .004$ (Pillai's Trace), no significant univariate values were attained. Again, a significant multivariate effect was found with changes in barriers for groups who used the Thought Team strategy, $F(4, 251) = 2.95, p = .021$ (Pillai's Trace) with significant univariate effects for *lack of ideas*, $F(1, 254) = 6.99, MSE = 1.70, p = .009$, *lack of emotional control*, $F(1, 254) = 6.53, MSE = .709, p = .011$, and for *lack of motivation*, $F(1, 254) = 7.62, MSE = 1.26, p = .006$. No significant effect was found for *lack of organization*, $F(1, 254) = 2.91, MSE = .470, p = .089$. There was also a significant multivariate effect found for format, $F(8, 504) = 4.72, p = .000$ (Pillai's Trace) with significant univariate effects for *lack of ideas*, $F(2, 254) = 3.66, MSE = 8.58, p = .000$, *lack of emotional control*, $F(2, 254) = 9.47, MSE = 1.03, p = .000$, *lack of organization*, $F(2, 254) = 9.78, MSE = 1.58, p = .000$, and for *lack of motivation*, $F(2, 254) = 7.79, MSE = 1.28, p = .001$. Tukey's HSD revealed that groups who used the writing and mapping formats reported a greater change in the lack of ideas concerning the problem than did those groups who used the thinking format. Tukey's HSD also revealed that those groups who used the mapping and writing formats reported a greater change in barriers associated with a lack of emotional control than did those who used the thinking format; moreover, those who used the mapping and writing formats reported a greater change in lack of organization barriers than did those who used the thinking format. Finally, Tukey's HSD revealed that the writing and mapping groups reported a greater change in the lack of

motivation barriers than did those who used the thinking format.

Satisfaction with the Work Sessions Questionnaire MANOVA. A two (problem concern) by two (strategy) by three-way (format) MANOVA was conducted on the *Satisfaction with the Work Sessions Questionnaire* factors of *coherence/understanding, value, coping/managing, personal effort, creativity/insight, and mental imagery*. Means and standard deviations are presented in Table 13.

Table 13

Means and Standard Deviations for the Satisfaction with the Work Session Questionnaire Blocked by Strategy, Format, and Level of Problem Concern

Factor	Strategy	Format	PrbConc	N	M	SD
Coherence/ Organization (SWSQcorg)	No THTM	Thinking	Low	20	3.12	0.79
			High	23	2.89	0.81
	THTM		Low	23	3.57	1.02
			High	21	3.26	1.00
	No THTM	Writing	Low	24	3.71	0.69
			High	20	3.36	1.00
	THTM		Low	18	3.97	1.12
			High	28	3.67	1.02
	No THTM	Mapping	Low	23	3.91	1.06
			High	22	4.34	1.15
	THTM		Low	25	4.31	1.17
			High	19	3.86	0.96
Value (SWSQvalu)	No THTM	Thinking	Low	20	2.72	0.84
			High	23	3.16	0.91
	THTM		Low	23	3.60	1.00
			High	21	3.57	0.90
	No THTM	Writing	Low	24	3.92	1.09
			High	20	4.06	1.10
	THTM		Low	18	4.45	1.13
			High	28	3.97	1.07
	No THTM	Mapping	Low	23	3.86	0.89
			High	22	4.22	1.09
	THTM		Low	25	4.21	1.12
			High	19	2.83	0.93

Table 13

Means and Standard Deviations for the Satisfaction with the Work Session Questionnaire Blocked by Strategy, Format, and Level of Problem Concern, continued

Factor	Strategy	Format	PrbConc	N	M	SD
Cope/ Manage (SWSQcope)	No THTM	Thinking	Low	20	2.69	0.80
			High	23	3.03	0.76
	THTM		Low	23	3.26	0.97
			High	21	3.24	0.70
	No THTM	Writing	Low	24	3.45	0.83
			High	20	3.41	0.91
	THTM		Low	18	3.21	0.75
			High	28	4.00	1.09
	No THTM	Mapping	Low	23	3.31	0.92
			High	22	3.56	1.08
	THTM		Low	25	3.64	0.89
			High	19	3.94	0.87
Creativity/ Insight (SWSQcrin)	No THTM	Thinking	Low	20	2.67	1.07
			High	23	2.72	0.89
	THTM		Low	23	3.18	1.16
			High	21	2.98	0.82
	No THTM	Writing	Low	24	3.32	1.06
			High	20	3.03	1.16
	THTM		Low	18	3.94	1.12
			High	28	3.44	1.13
	No THTM	Mapping	Low	23	3.04	1.07
			High	22	3.07	1.15
	THTM		Low	25	3.67	1.16
			High	19	3.64	0.94

Table 13

Means and Standard Deviations for the Satisfaction with the Work Session Questionnaire Blocked by Strategy, Format, and Level of Problem Concern, continued

Factor	Strategy	Format	PrbConc	N	M	SD
Personal Effort (SWSQpeff)	No THTM	Thinking	Low	20	2.81	0.93
			High	23	3.15	0.76
	THTM		Low	23	3.34	0.95
			High	21	3.57	0.99
	No THTM	Writing	Low	24	3.39	0.81
			High	20	3.67	0.94
	THTM		Low	18	3.75	0.68
			High	28	3.86	1.02
	No THTM	Mapping	Low	23	3.52	1.00
			High	22	3.79	1.06
	THTM		Low	25	3.94	1.09
			High	19	4.30	0.98
Mental Imagery (SWSQmimg)	No THTM	Thinking	Low	20	4.12	0.99
			High	23	4.07	0.97
	THTM		Low	23	4.75	1.19
			High	21	4.66	1.14
	No THTM	Writing	Low	24	4.00	1.09
			High	20	3.76	0.89
	THTM		Low	18	4.33	1.05
			High	28	4.52	1.14
	No THTM	Mapping	Low	23	3.62	1.07
			High	22	3.53	0.94

THTM	Low	25	4.12	1.03
	High	19	3.99	1.04

A significant multivariate effect was found for the dichotomous variable of problem concern, $F(6, 249) = 6.32, p = .000$ with significant univariate effects for *coping/managing*, $F(1, 254) = 5.59, MSE = 4.77, p = .019$ and *personal effort*, $F(1, 254) = 6.16, MSE = 5.82, p = .014$. The participants who had initially reported a higher degree of problem concern reported a greater satisfaction with being able to cope with or manage the problem. They also expressed expending more personal effort during the sessions than was reported by those who had revealed a lower initial problem concern.

A significant multivariate effect was also found for groups who used the Thought Team strategy, $F(6, 249) = 3.91, p = .001$ (Pillai's Trace) with significant univariate effects for *value*, $F(1, 254) = 12.82, MSE = 16.28, p = .000$, *coping/managing*, $F(1, 254) = 7.11, MSE = 6.06, p = .008$, *creativity/insight*, $F(1, 254) = 7.89, MSE = 10.53, p = .005$, *personal effort*, $F(1, 254) = 13.40, MSE = 12.67, p = .000$, and *mental imagery*, $F(1, 254) = 16.65, MSE = 20.22, p = .000$. The participants in groups that were instructed to use the Thought Team perspective-tasking strategy during the work sessions acknowledged greater value and an increased ability to cope or to find means to manage the problem than did those who worked without the Thought Team strategy. They also enjoyed more creativity and reported that they put forth more

personal effort than did those who worked without team members. As expected, the use of Thought Team members by these participants evoked a greater use of mental imagery during the sessions.

There was also a significant multivariate effect found for format, $F(12, 500) = 7.75, p = .000$ (Pillai's Trace) with significant univariate effects for *coherence/understanding*, $F(2, 254) = 114.85, MSE = 16.37, p = .000$, *value*, $F(2, 254) = 13.15, MSE = 16.70, p = .000$, *coping/managing*, $F(2, 254) = 9.24, MSE = 7.88, p = .000$, *creativity*, $F(2, 254) = 9.50, MSE = 12.67, p = .000$, *personal effort*, $F(2, 254) = 12.43, MSE = 11.75, p = .000$, and *mental imagery*, $F(2, 254) = 5.74, MSE = 6.97, p = .004$. Tukey's HSD revealed that groups who used the mapping format achieved a greater measure of coherence and understanding of the problem aspects than did those who used the thinking format; they also expressed a greater degree of satisfaction with their ability to cope and with their personal effort than those who only thought about the problem. However, those who used the writing format reported a higher rating for session value and an improved ability to cope or manage the problem than did those who used the thinking format. Participants who wrote also expressed a greater increase in creativity and insight than did those who only thought about their problem. Participants in the thinking groups reported a greater use of mental imagery than did the participants who were in the mapping groups.

Who Questionnaire MANOVA. A two (problem concern) by three-way (format) MANOVA was conducted on the Who Questionnaire factors of *who was effective* and *who was extreme*. Only those groups who had used the Thought Team strategy were given this measure to complete. Means and standard deviations are presented in

Table 14.

Table 14

*Means and Standard Deviations for the Who Questionnaire
Blocked by Strategy, Format, and Level of Problem Concern*

Factor	Strategy	Format	PrbConc	N	M	SD
Who Was Effective (WHOQeff)	Only Groups Who Used The THTM	Thinking	Low	23	3.10	0.82
			High	21	3.23	0.82
Who Was Extreme (WHOQext)		Writing	Low	18	4.04	0.75
			High	27	3.73	0.74
		Mapping	Low	25	3.83	1.01
			High	17	3.60	0.94
Who Was Extreme (WHOQext)		Thinking	Low	23	3.51	0.99
			High	21	3.17	0.98
		Writing	Low	18	3.92	0.76
			High	27	3.72	0.82
Who Was Extreme (WHOQext)		Mapping	Low	25	3.86	0.82
			High	17	3.39	0.89

A significant multivariate effect was found for the dichotomous variable of problem concern, $F(2, 124) = 3.351, p = .034$ with a significant univariate effect for *who was extreme*, $F(1, 125) = 4.63, MSE = 3.62, p = .033$. Participants with high problem

concern were significantly more likely to choose Thought Team members who were family or friends and more like themselves (less extreme) than did participants who had low problem concern.

There was also a significant multivariate effect evidenced for format, $F(4, 250), p = .002$ (Pillai's Trace) with significant univariate effects for *who was effective*, $F(2, 125) = 8.67, MSE = 6.23, p = .000$, and for *who was extreme*, $F(2, 125) = 3.27, MSE = 2.55, p = .041$. Tukey's HSD disclosed that the participants who wrote while using the Thought Team accounted for a greater confidence in the effectiveness of the Thought Team members they chose and were more likely to choose members who were considered to be extreme.

Post Study Questionnaire MANOVA. A two (problem concern) by two (strategy) by three-way (format) MANOVA was conducted on the Post Study Questionnaire factors of *medical* and *general hardiness*. Means and standard deviations are exhibited in Table 15.

Table 15

*Means and Standard Deviations for the Post Study Questionnaire (General Health)
Blocked by Strategy, Format, and Level of Problem Concern*

Factor	Strategy	Format	PrbConc	N	M	SD
Medical Symptoms (PSQmed)	No THTM	Thinking	Low	20	5.05	1.01
			High	23	4.94	0.92
	THTM		Low	23	5.41	1.02
			High	21	5.62	1.12
	No THTM	Writing	Low	24	5.69	0.96
			High	20	5.17	0.88
	THTM		Low	18	5.78	1.08
			High	28	5.70	1.33
	No THTM	Mapping	Low	23	5.53	1.17
			High	22	5.59	1.31
	THTM		Low	25	5.60	1.16
			High	19	5.28	1.30
General Health Hardiness (PSQghh)	No THTM	Thinking	Low	20	2.90	1.30
			High	23	2.71	0.78
	THTM		Low	23	3.29	0.88
			High	21	3.06	1.10
	No THTM	Writing	Low	24	3.42	0.96
			High	20	3.11	0.95

		THTM	Low	18	3.52	0.73
			High	28	3.53	0.79
	No THTM	Mapping	Low	23	3.42	0.98
			High	22	2.89	0.92
		THTM	Low	25	3.56	0.81
			High	19	3.14	1.15

A significant multivariate effect was found for the dichotomous variable of problem concern, $F(2, 253) = 3.06, p = .049$ (Pillai's Trace) with a significant univariate effects for *general hardiness*, $F(1, 254) = 5.63, MSE = 5.10, p = .018$. The participants who had claimed lower initial problem concern on the Problem Scales measure exhibited a greater amount of general health and lack of stress than the participants who had reported a higher amount of problem concern.

Another significant multivariate effect was found for the Thought Team strategy, $F(2, 253) = 3.19, p = .043$ (Pillai's Trace) with significant univariate effects for *general hardiness*, $F(1, 254) = 5.86, MSE = 4.85, p = .021$. The participants who used the Thought Team strategy during the work sessions showed a greater amount of perceived general health than the participants who did not use the Thought Team perspective-taking strategy.

A significant multivariate effect was also found for format, $F(4, 508) = 2.46, p = .044$ (Pillai's Trace) with a significant univariate effects for *general hardiness*, $F(2, 254) = 3.98, MSE = 3.60, p = .020$. Tukey's HSD revealed that those groups who used the writing format indicated a greater general health and wellbeing than did those

who used the thinking format during the work sessions.

Post Study Questionnaire interest factors MANOVA. A two (problem concern) by two (strategy) by three-way (format) MANOVA was conducted on the Post Study Questionnaire factors of *academic interests* and *personal interests*. Means and standard deviations are exhibited in Table 16.

Table 16

*Means and Standard Deviations for the Post Study Questionnaire (Interests)
Blocked by Strategy, Format, and Level of Problem Concern*

Factor	Strategy	Format	PrbConc	N	M	SD
Academic/ Attention (PSQaat)	No THTM	Thinking	Low	20	4.83	0.96
			High	23	4.97	0.87
	THTM		Low	23	5.17	1.04
			High	21	5.21	0.93
	No THTM	Writing	Low	24	5.15	0.90
			High	20	5.03	0.98
	THTM		Low	18	5.29	1.15
			High	28	5.37	1.21
	No THTM	Mapping	Low	23	5.35	0.79
			High	22	5.26	1.13
	THTM		Low	25	5.37	0.93
			High	19	5.28	0.87
Personal Life (PSQpli)	No THTM	Thinking	Low	20	3.85	0.88
			High	23	3.29	1.09
	THTM		Low	23	4.34	0.79
			High	21	3.87	0.78
	No THTM	Writing	Low	24	4.27	1.08

		High	20	3.90	0.76
	THTM	Low	18	4.48	1.00
		High	28	4.26	0.69
No THTM	Mapping	Low	23	3.85	0.78
		High	22	4.13	1.05
	THTM	Low	25	4.23	0.96
		High	19	3.81	0.68

A significant multivariate effect was found for the dichotomous variable of problem concern, $F(2, 253) = 349, p = .032$ (Pillai's Trace) with a significant univariate effects for *personal interests*, $F(1, 254) = 4.17, MSE = 3.55, p = .032$. The participants who had claimed lower initial problem concern on the Problem Scales measure exhibited a greater amount of renewed interest in social activities than did the participants who had reported a higher amount of problem concern.

Another significant multivariate effect was found for the Thought Team strategy, $F(2, 253) = 3.26, p = .036$ (Pillai's Trace) with significant univariate effects for *personal interests*, $F(1, 254) = 4.88, MSE = 4.03, p = .022$. The participants who used the Thought Team strategy during the work sessions showed a greater increase in personal interests than did the participants who did not use the Thought Team perspective-taking strategy.

A significant multivariate effect was also found for format, $F(4, 508) = 2.69, p = .030$ (Pillai's Trace) with a significant univariate effects for *personal interests*, $F(2, 254) = 4.30, MSE = 3.34, p = .015$. Tukey's HSD revealed that those groups who used the writing format indicated greater increases in personal interests than those who

used the thinking format during the work sessions.

Post Study Questionnaire problem factors MANOVA. A two (problem concern) by two (strategy) by three-way (format) MANOVA was conducted on the Post Study Questionnaire factors of *insight, concern, and solvability*. Means and standard deviations are exhibited in Table 17.

Table 17

Means and Standard Deviations for the Post Study Questionnaire (Problem) Blocked by Strategy, Format, and Level of Problem Concern

Factor	Strategy	Format	PrbConc	N	<i>M</i>	<i>SD</i>
Insight (PSQins)	No THTM	Thinking	Low	20	3.42	1.19
			High	23	3.65	0.99
	THTM		Low	23	3.82	0.95
			High	21	3.91	1.13
	No THTM	Writing	Low	24	3.49	1.05
			High	20	4.17	1.26
	THTM		Low	18	4.16	0.93
			High	28	4.49	1.06
	No THTM	Mapping	Low	23	3.83	1.17
			High	22	3.62	1.13
	THTM		Low	25	4.10	1.17
			High	19	3.84	1.25
Concern (PSQcon)	No THTM	Thinking	Low	20	3.10	0.87
			High	23	2.91	0.99
	THTM		Low	23	3.17	0.83
			High	21	3.03	0.88
	No THTM	Writing	Low	24	3.53	0.86
			High	20	2.94	0.72

	THTM		Low	18	3.46	0.88
			High	28	3.41	0.89
	No THTM	Mapping	Low	23	3.13	0.76
			High	22	3.14	0.83
	THTM		Low	25	3.31	0.90
			High	19	3.03	0.74

Table 17

*Means and Standard Deviations for the Post Study Questionnaire (Problem)
Blocked by Strategy, Format, and Level of Problem Concern, continued*

Factor	Strategy	Format	PrbConc	N	M	SD
Solvability (PSQsol)	No THTM	Thinking	Low	20	3.14	0.84
			High	23	2.85	0.79
	THTM		Low	23	3.53	0.77
			High	21	3.00	0.79
	No THTM	Writing	Low	24	3.43	0.74
			High	20	3.28	0.76

A significant multivariate effect was found for the dichotomous variable of problem concern, $F(3, 252) = 7.90, p = .000$ (Pillai's Trace) with significant univariate effects for *concern*, $F(1, 254) = 5.381, MSE = 3.89, p = .021$, and for *solvability*, $F(1, 254) = 7.61, MSE = 5.06, p = .006$. The participants who had claimed lower initial problem concern on the Problem Scales measure claimed a lower amount in problem concern than did the participants who had reported a higher amount of problem concern; these results are obviously expected given that the questions on the original Problem

Scales parallel the questions on this section for the Post Study Questionnaire. Moreover, the dichotomous variable of problem concern was formed from this factor. Finally, the participants who had claimed lower initial problem concern reported greater predictive or accomplished success in solving the problem than did the participants who had reported a higher amount of problem concern.

Another significant multivariate effect was found for the Thought Team strategy, $F(3, 252) = 2.76, p = .043$ (Pillai's Trace) with significant univariate effects for *solvability*, $F(1, 254) = 5.61, MSE = 3.73, p = .019$, and for *insight*, $F(1, 254) = 6.82, MSE = 9.12, p = .010$. The participants who used the Thought Team strategy during the work sessions showed a greater achievement or expectation of solving the problem; and, they also attained more insight and understanding of the issue than did the participants who did not use the perspective-taking strategy.

A significant multivariate effect was also found for format, $F(6, 506) = 2.78, p = .011$ (Pillai's Trace) with significant univariate effects for *solvability*, $F(2, 254) = 5.25, MSE = 3.49, p = .006$, and for *insight*, $F(2, 254) = 4.17, MSE = 5.58, p = .017$. Tukey's HSD revealed that those groups who used the writing format indicated greater increases in expected or accomplished solvability than did those who used the thinking format during the work sessions. In addition, participants who wrote also reported that they achieved a greater degree of insight than did those who used the thinking format.

Method Generalization Questionnaire MANOVA. A two (problem concern) by two (strategy) by three-way (format) MANOVA was conducted on the Method Generalization Questionnaire factors of *continuation* and *influence*. Means and standard

deviations are presented in Table 18.

Table 18

*Means and Standard Deviations for the Method Generalization Questionnaire
Blocked by Strategy, Format, and Level of Problem Concern*

Factor	Strategy	Format	PrbConc	N	M	SD
Influenced (MGQinf)	No THTM	Thinking	Low	20	2.62	1.12
			High	23	3.04	0.81
	THTM		Low	23	3.02	1.12
			High	21	3.40	1.08
	No THTM	Writing	Low	24	3.49	1.00
			High	20	3.67	0.96
	THTM		Low	18	3.74	0.99
			High	28	3.99	1.05
	No THTM	Mapping	Low	23	3.36	0.89
			High	22	3.59	0.93
	THTM		Low	25	3.60	1.07
			High	19	3.66	1.18
Continued (MGQcon)	No THTM	Thinking	Low	20	2.63	0.83
			High	23	2.81	0.80
	THTM		Low	23	3.21	1.04
			High	21	3.35	1.16
	No THTM	Writing	Low	24	3.23	0.84
			High	20	3.61	0.82
	THTM		Low	18	3.57	1.04

No THTM	Mapping	High	28	3.86	1.08
		Low	23	3.03	0.77
THTM		High	22	3.53	0.86
		Low	25	3.40	0.95
		High	19	3.57	1.04

A significant multivariate effect was found for the dichotomous variable of problem concern, $F(2, 253) = 2.99, p = .049$ (Pillai's Trace) with significant univariate effects for *continuation*, $F(1, 254) = 5.64, MSE = 5.04, p = .018$, and for *influence*, $F(1, 254) = 4.13, MSE = 4.32, p = .043$. The participants who had claimed higher problem concern on the original Problem Scales measure exhibited a greater desire to continue to use or learn about the method they used during the work sessions; in addition, they professed a greater degree of influence from the method they used and a greater willingness to share the idea with others.

Another significant multivariate effect was found for the Thought Team strategy, $F(2, 253) = 4.61, p = .011$ (Pillai's Trace) with significant univariate effects for *continuation*, $F(1, 254) = 9.17, MSE = 8.19, p = .003$, and for *influence*, $F(1, 254) = 4.68, MSE = 4.9, p = .031$. The participants who used the Thought Team strategy during the work sessions showed a greater eagerness to continue using or learning about the strategy; and, they perceived a greater degree of influence from the method they used than did the participants who did not use the Thought Team perspective-taking strategy.

A significant multivariate effect was also found for format, $F(4, 508) = 5.50$, $p = .000$ (Pillai's Trace) with significant univariate effects for *continuation*, $F(2, 254) = 8.20$, $MSE = 7.32$, $p = .000$, and for *influence*, $F(2, 254) = 11.64$, $MSE = 11.69$, $p = .000$. Tukey's HSD also revealed that those groups who used the writing format attested to a greater willingness to continue to use or to learn about their method than did those who used the thinking format; moreover, those who used the writing format reported having experienced more influence from the method than did those who used the thinking formats.

Discussion

Overall, writing as a format produced the most favorable outcomes; moreover, the use of the perspective-taking strategy, the Thought Team, enhanced the writing experience on several dimensions. Therefore, the current study replicates previous findings. In addition, the implementation of the Thought Team strategy was also found to enhance the thinking and mapping formats.

In order to arrange the findings in a meaningful manner, both short-term measures and long-term outcomes for Personal Satisfaction and Motivation, Emotional Adjustments and General Hardiness, and Cognitive Benefits will be discussed for the Problem Concern, Strategy, and Format used in the experimental setting (see Table 19).

Table 19

Categories of Experimental Factors

Category	Factors	Source
Personal Satisfaction and Motivation	Motivation	BSPQ
	Value	SWSQ
Long Term Outcomes	Personal Effort	SWSQ
	Continuation	MGQ
	Influence	MGQ
Emotional Adjustments	Emotional Control	BSPQ
	Coping/Managing	SWSQ
Long Term Outcomes	General Hardiness	PSQ
	Personal Interests	PSQ
	Concern	PSQ
Cognitive Benefits	Ideas	BSPQ
	Organization	BSPQ
	Coherence/Understanding	SWSQ
	Creativity	SWSQ
	Creativity	SWSQ
	Mental Imagery	SWSQ
	Effectiveness	WHOQ
	Extreme	WHOQ
Long Term Outcomes	Insight	PSQ
	Solvability	PSQ

In most cases, main effects were found for Strategy and Format with no significant interactions. In addition, some main effects were also revealed for Problem Concern.

A problem space can be described as a domain consisting of various subgoals which can lead to the solving of the problem; and, a vital step in the problem-solving process is to recognize the specific hindrances to the goals (Mayer, 1992). The problems were personal, and therefore, might be considered to be unstructured or ill-defined without any clear subgoals (Sternberg, 2003a). The Barriers to Solving the Problem Questionnaire assisted the participants in identifying the obstacles of emotional control, motivation, ideas, and organization at the outset and allowed a more defined problem space to emerge. The work sessions with various formats allowed the participants to search through the problem space via various creative means and to understand the reasons behind their problem barriers (Sternberg, 1994).

Problem Concern

In previous studies utilizing the Thought Team perspective-taking strategy, the matter of problem type was explored. The assignment to write about personal problems was found to be more important to the participants than was the assignment to write about objective problems; moreover, the participants generated more words while writing about personal problems (Atha-Weldon, 2000). Subsequently, the question was raised as to differences that might be found because of the level of personal problem intensity. Although personal problems might actually fall into at least one of four categories (short term-low concern, long term-low concern, short term-high concern, long term-high concern), it was not possible to determine degrees other than high and low concern. Therefore, the degree of

problem concern (high or low) was considered in the present study; and, the results followed an understandable pattern.

Personal Satisfaction and Motivation. For the category of Personal Satisfaction and Motivation, no differences were found between low and high problem concern for motivation or value; however, those who indicated high problem concern reported greater personal effort for the work sessions than did those participants who indicated low concern. For the long-term outcomes of continuation and influence, those with high problem concern noted a greater amount of continuation or the desire to continue to learn and were more influenced by the experience. Evidently, the participants who felt that their problems were more intense were also more interested in finding viable means to work through the situation.

Emotional Adjustments. In consideration of the category of Emotional Adjustments, those participants with high problem concern expressed greater fulfillment from the coping or managing aspects of the work sessions. Apparently, those with higher concern had stronger reasons to need some means of assistance in finding a way to cope with or to manage a problem that was very difficult, which had few alternatives, or had no immediate solutions. The long term outcomes show an obvious direction where those participants who had indicated lower initial problem concern report more general hardiness, a greater interest in their social life, and less overall problem concern. These findings correspond with many other experimental outcomes (Pennebaker, 1997b).

Cognitive Benefits. The only Cognitive Benefits were for the type of use of the Thought Team members and for the long-term outcome of solvability. The participants who had claimed to have higher problem concern were much less likely to use Thought Team members who were extreme or who were opposite to them. It seems that even in an

imagined scenario with Thought Team members, those participants in more extreme distress might prefer to consider the thoughts and feelings of those who are more like their friends or family members (Aron, Aron, Tudor, & Nelson, 1991). Participants who had denoted a low initial problem concern indicated a greater expectation for solvability for the chosen problem as a long-term outcome.

Conclusions concerning problem concern. The high and low problem concern groups indicated no significant differences in their assessment of motivation to participate or in their determination of value for the work sessions; yet, as would be expected, participants with high problem concern felt they had a greater need for the coping and managing benefits to be gained from the format and strategy conditions that they had experienced and had expended more effort during the sessions. A clinical indication could be made to suggest that those with higher problem concern might warrant additional work sessions (Pennebaker & Seagal, 1999).

Format

The current study once again underlined the importance of therapeutic writing (Wright & Chung, 2001); for most factors, the writing condition was considered to be the most favorable by participants. The work sessions which directed the participants to use thinking without any writing or mapping always resulted in the lowest means with only one exception (mental imagery). Participants were much more satisfied when allowed to engage in some type of written expression; and, there were no consistent statistical differences found between mapping or writing. The significant differences found were between writing and thinking or mapping and thinking.

Participant Satisfaction and Motivation. For the Participant Satisfaction and

Motivation category, there was a greater reduction in motivational barriers and a greater amount of value assessed for those who used the writing format than for those who used the thinking-only format. Use of the mapping format lead to reports of greater personal effort than did the use of the thinking format. The long-term outcomes also revealed the writing format to be superior to the thinking format for the desire to continue the method learned or for the amount of influence recognized during the work sessions.

Relevant academic literature for the use of reflection practices with students Often stresses the importance of structured reflection experiences in order to facilitate self-understanding and problem-solving skills that can lead to personal development and greater emotional and mental change (Bringle & Hatcher, 1999). The current study provided novelty through a perspective-taking strategy for some participants and structure through an active format for the writing and mapping groups. However, the participants in the thinking groups did not have any apparent structure provided for them. They might have been frustrated by the lack of a strategy or format design; and therefore, they might have never moved very far past the barriers of motivation and rumination.

Emotional Adjustments. The advantages attained from using the writing or mapping formats were also apparent in the increases in Emotional Adjustments. Those participants who used the mapping format reported a greater reduction in emotional barriers than those who used the thinking format; and, they also claimed to have realized greater means for coping with the problem or finding new ways to manage the situation than did the thinking groups. Moreover, the long-term outcomes gained by those who worked with the writing format also included more general hardiness and an increase in personal interests; this finding extends to many other related studies (Esterling, et al., 1994; Francis & Pennebaker,

1991; Greenberg & Stone, 1992; Pennebaker, 1997b).

The reasons behind the success of the writing and mapping formats may be found in the creative insight they stimulated and the structure they provided in the work sessions. An appraisal of one's emotional levels along with knowing the importance of the experience is required to achieve an awareness of positive feelings (Heppner & Richards, 1981; Ortega, 2006). Linguistic style has been linked to emotional states that can have an impact on immunity and health when informational value is attached to the emotions (Pennebaker & King, 1999); and thus, positive emotions can guide thought processes and beliefs about control and self-efficacy. Moreover, changes in mood may influence decision-making attitudes and open the avenues of social support (Salovey, Rothman, Detweiler, & Steward, 2000). Practices that introduce meaning in the sense of a cognitive restructuring and that result in a shift in priorities or perspectives have led to improved health benefits in populations such as HIV-seropositive men; on the other hand, ruminative thought in the absence of meaning or structure often leads to negative thought patterns and poorer health measures (Taylor, Kemeny, Reed, Bower, & Gruenewald, 2000). Again, the writing and mapping formats afforded guidelines for problem exploration and allowed a more expressive means to download or unpack ideas.

Cognitive Benefits. There were Cognitive Benefits exemplified for the format of mapping in the reduction of organizational barriers and the increase in coherence and understanding as compared to the thinking only format. Evidence has been found to support the theory that humans possess elementary abstract schemas for spatial diagrams that have been deduced from normal experiences in the real world (Novick & Hurley, 2001). Therefore, the structural properties of spatial diagrams (e. g., global structure, linking

relations, traversals) serve as special semiotics to influence the mental representations that result from viewing the spatial configurations with nodes and links. The arrangement of the map used while working on the problem exhibits properties that are consistent with network and hierarchical global structures that can provide frameworks for the participants.

Subsequently, a more clear representation of the problem schema could have emerged with the problem details specified in a more logical order. As the participant answered questions contained in each node, a certain amount of closure might have been experienced. Moreover, after the map was completed, the overall picture of the problem as mapped could have revealed the relationships simultaneously (Czuchry & Dansereau, 1996). A more clear organization was readily apparent with the spatial display of the maps because there were less sequential restraints. These types of restraints considered to be inherent when viewing written passages in their linear form (Sadoski & Pavio, 2001).

The format of writing led to a reduction in barriers for ideas and resulted an increase in the degree of creativity achieved than those who used the thinking only format. Also, those who used the writing format reported using more effective Thought Team members and using members who were more extreme than the participants who used the thinking only format. Empathic accuracy has been linked to the verbal information processed; therefore, writing could allow for a wider range of thoughts and ideas to be selected in the writing activity (Gesn & Ickes, 1999). The extensive use of mental imagery by those using the thinking only format is likely due to the fact that it was the only means available for those groups. The long-term outcomes for insight and solvability were also greater for those who used the writing format than for the thinking only groups; the writing format yields more self-expression and a greater output of actual words than does the more contained mapping

format or the easier to forget thinking only format. The ability to form a narrative can allow for the problem to be redefined and seems to be the most beneficial experience for working on personal problems (Pennebaker & Seagal, 1999; Sternberg, 2003).

Conclusions about the format effects. The current study follows the same pattern as have many others in that writing is seen as a favorable means for exploring a problem issue; many narrative therapists now practice and emphasize the importance of deconstructing and reconstructing the events concerning difficult experiences in life (Stephenson & Haylett, 2002). Changes in appraisals of life events can occur from ongoing writing activities with cognitive restructuring resulting from the various processes. Moreover, many college students find journaling and creating “blogs” to be particularly engaging activities (Freeman, 2004).

Pennebaker (1997b) has stated that high or low levels of thinking may influence the measured outcomes of an experiment. High-level thinking encompasses a broader perspective with more conscious emotional states and more deep self reflection; low-level thinking involves consideration of only the superficial details. Participants who adopt a higher level of thinking are less affected by stressors and perform better on creative tasks (Pennebaker, Czajka, Cropanzano, & Richards, 1990). The use of a writing format rather than the thinking format may move participants to choose specific language and achieve higher levels of thought leading to metacognitive adjustments and a new approach to the problem (Pennebaker, Mayne, & Francis, 1997).

The differences between writing and mapping may be due to the nature of the design of a guide map; although the same amount of space to write was provided, participants may have felt restricted to the boundaries set by the lines as drawn around

certain boxed areas. Whereas participants in the mapping groups usually wrote only inside the boxes, those participants in the writing groups continued to write along the sides, the edges, and on the back of the pages. In addition, people who wrote in the mapped sections tended to use only phrases, not complete sentences.

Mapping is a relatively novel activity for most college students; therefore, the activity may require the use of more cognitive resources to complete the activity. Since mapping was rated as requiring the most personal effort and as providing the best organization, these two factors could both be underlying reasons that helped distract the mappers from their emotional concerns. With the addition of the Thought Team strategy, the mapping format would present even more novelty and complexity and could allow more systematic perspective taking.

Strategy

The use of the Thought Team was found to be useful across all formats; however, it yielded the best results in conjunction with the writing format for most factors. Given that the time for the sessions had been increased from earlier studies, all groups who used the strategy employed three team members (Atha-Weldon, 2000). The exploration of three outside opinions in comparison with the person's own view possibly leads to a greater degree of shift in perspective (Epley, Keysar, Van Boven, & Gilovich, 2004). The degree of shift could depend upon how different the views were from the individual's own perspective.

Personal Satisfaction and Motivation. For the Personal Satisfaction and Motivation factors, the participants found the Thought Team strategy to induce greater motivation regardless of the format in which they used it. The use of the strategy also led to reports of greater personal effort while working on the problem and more value for the work sessions

acknowledged; current research has linked the construct of personal effort to the perception of value for the activity (Epley & Gilovich, 2001). For the long-term outcomes, those participants who used the Thought Team strategy expressed a greater amount of actual continuation or aspirations for learning about the method they used; and, they professed having been more highly influenced by the method they used when the strategy was combined with any of the three formats. The strategy provided a creative and more palatable means to overcome mental inertia and therefore acted as a catalyst for motivation. When participants are directly instructed to see both sides in a creative manner, more motivation may occur (Frantz, 2000).

Emotional Adjustments. The Thought Team strategy was also found to be beneficial for facilitating the Emotional Adjustments experienced during the work sessions. The participants who used their Thought Team members while delving into their problem reported a greater reduction in the barrier of a lack of emotional control and an improved ability to find ways to cope with or manage the problem issue. Problem solving may be considered to be synonymous with coping or basic stress management; therefore, the participants who felt more successful in their problem-solving efforts because of seeing alternatives would report an increase in their ability to cope with or manage the situation (Heppner & Petersen, 1982).

As people recognize that although they might not have control over circumstances but that they might exercise some control of the feelings associated with them, they can find tools for construing and framing events in a new way (Pearsall, 2003). Pearsall draws from the theories of Piaget to explain how those who know how to thrive use an inventive skill of “creative accommodation” through mental shifting and even humorous twists. A conscious

strategy is needed to learn how to alter mood states; and, it can become adaptive for healthy changes.

“How to Achieve Emotional Control” training teaches that control of emotions may be achieved from monitoring thoughts and by adding meaning to events; further restructuring of thoughts may be accomplished through a technique of observing yourself as if you were another person in order to shift focus without losing sight of the problem (Lindsay, 2003). *Thought Field Techniques* advocate the same basic themes (Callahan, 2006); the use of multiple perspectives may increase a type of flexible optimism and lead to the cultivation of a variety of improved coping skills. The use of team members could distract the participant from their own feelings while considering the emotions of the chosen character.

Long-term outcomes for those participants who employed the perspective-taking strategy were exhibited in the greater amount of general hardiness reported and the increases in personal interests conveyed by these groups. Many hardiness training programs encourage methods for taking alternate perspectives or for emulating role models (Judkins & Ingram, 2002; Kobasa, Maddi, Pucetti, & Zola, 1985; Maddi, 2004; Reivich, Gillham, Chaplin, & Seligman, 2005; Waite, 2004). Perspective changes also facilitate adjustments in perceptions relating to social contracts; thus, many participants may have discovered means to renew their personal interests (Gigerenzer & Hug, 1992) Perspective-taking manipulations can also lead to more positive attributions and facilitate forgiveness (Tanaku, 2001); and, an improved ability to take perspectives can lead to greater empathy and more benevolent attitudes (Epley, Savitsky, & Gilovich, 2001).

Cognitive Benefits. The Cognitive Benefits to be accrued by using the Thought Team strategy were exemplified in the reduction in the barriers for lack of ideas and in

the increase in creativity for those who considered the perspectives of their team members; again, these results are similar to previous findings (Atha-Weldon, 2000; Atha-Weldon & Dansereau, 2006). A sequence of small variations may lead to the discovery of a unique and valuable conception (Ward, Smith, & Vaid, 1997); each Thought Team member had a new step to add and could change the overall choreography performed on the problem-solving stage.

As would be expected, the use of the Thought Team greatly amplified the inclination to use mental imagery during the work sessions. Each Thought Team member could have contributed one idea or sparked a spreading activation for a network of resourceful ideas. Under self-observation, cognitive processes change and can lead to associative connections that reorganize and facilitate redirection of the mind through metacognition or “multimind” control of various perspectives being considered (Ornstein, 2003; Tardiff & Sternberg, 1988). Attempting to match the perspective of the Thought Team member could lead to several inferences and could result in a more general form of analogy (Holyoak & Thagard, 1996).

Insight can be described as the arrival at a place of greater mental awareness in relationship to an idea (Claxton, 1997; Sternberg & Davidson, 1995). The phenomenon seems to be a sudden shift in perspective; however, cognitive restructuring may actually occur gradually as an incremental accumulation of aspects finally culminate in some form of synthesis (Smith, Ward, & Finke, 1995). The use of three mental advisors would provide a medley of “idea reagents” that might coalesce into a more meaningful solution. Guidelines for stimulating intuition include means to improve speculation by adopting diverse roles and by asking them why or what happened to find evidence that

would show you were mistaken (Hogarth, 2001). Additional instructions suggest imagining your future self and asking this person to give advice. These types of activities elucidate the truth that we may already possess knowledge that may help us if we find a way to bring it into mind through creative choices.

Conclusions about the strategy effects. From the viewpoint of evolutionary psychology, an individual, whether predator or prey, needs to rely on perceptual input (sight, sound, proprioceptive cues, etc.) to maintain the perspective of its spatial location and therefore feel safe. From the viewpoint of social psychology, everyone from the alpha male to the smallest of the litter develops confidence based on the perspective of their social role. From cognitive psychology, an individual usually relies on its own perspective or assessment of predicted outcomes and on the ability to select corresponding behaviors. Consequently, any attempt to shift any of these perspectives could result in a sense of threat to the perceived survival of the individual.

However, in the current research, participants were given the freedom to choose their own Thought Team members. Implicitly, and perhaps explicitly, the participants knew they were in control of the perspectives being explored. Finally, the act of taking a new viewpoint was not being judged by any external source. The freedom allowed for the use of the strategy seemed to dispel any attitude of threat to the individual's own perspectives.

Both the facts and the accompanying feelings must be explored to achieve more successful cognitive restructuring that leads to a variety of positive outcomes (Pennebaker, 1997a). Facing a challenge and acting on it in some way may be less daunting by envisioning a broader perspective through imaginative processes (Warshaw

& Barlow, 1995). The use of a novel strategy seems to enhance the problem-solving experience in diverse ways. Rumination without a strategy or technique can result in continual re-visitations of past failures.

The Thought Team might also influence the choice of words used in the writing and mapping work sessions to the extent that there are significant changes in the type of words used and the patterns of usage; these kinds of changes have often been linked to health benefits (Pennebaker & Graybeal, 2001). For example, a pronounced flexibility in the use of personal pronouns and referential words can indicate specific attitudes of inclusion and exclusion as well as a broader scope of the interrelationships problem elements (Campbell & Pennebaker, 2003; Pennebaker, Mehl, & Niederhoffer, 2003). The use of a perspective-taking strategy could definitely affect the use of pronouns, words with emotional valence, and more vivid descriptions of the issue.

Stress can be reduced through the recognition of support systems; actual contacts or even thoughts of those who care about you enhances perceived control (McKhann & Albert, 2002). Many participants chose team members from among family members, spiritual leaders, and idealistic heroes to represent the symbolic support they desired for their problem. As exemplars, the Thought Team members would have a wide degree of variability (Ennis, 1988; Fried & Holyoak, 1984; Nisbett, Krantz, Jepson, & Kunda, 1983; Sia, et al., 1997). Assessment of the other person's views based upon some stored representation of that actual person or a type of ideal person with their attitudes, ideologies, and philosophies allows for a merging of the self with these preferable characteristics (Davis, Luce, & Kraus, 1994). Any individual Thought Team member selected could provide a range of variance; comparisons between and among the members as well as with oneself could lead to many

personal insights.

Cognitive astuteness and flexibility can lead to better coping proficiency. The ability to manage a problem could emerge from diverse cognitive processes related to the monitoring of a situation. Cheng and Cheung (2005) found that if a greater range of possibilities or perspectives were recognized (degrees of differentiation) and a means to incorporate them is acknowledged (integration), more adaptive coping strategies result. Those with higher coping skills display an ability to use various perceptual dimensions for assessing the stressful situation and show greater integration in their strategies from conceptual blending.

Active instruction to take perspectives is often associated with changes in cognitive appraisals and with resulting positive outcomes (Epley, Savitsky, & Gilovich, 2002). Considering various perspectives might shift the weights of values placed on certain factors associated with the problem and change the perceived probability of particular outcomes as judged probabilities are mediated by the input of evidential support for or against the hypothesis (Tversky & Koehler, 1984). Viewpoints change constantly through small variations due to new information being received; therefore, the importance of re-sampling and reevaluating is crucial for adjustments to occur (Carlson, 1970; Rotter, 1978). Sternberg advocates that wisdom results from embracing an attitude towards developing and understanding diverse view points to stimulate creativity along with the practical skills of applying the wisdom to solve problems (Bharucha, 2006; Sternberg, 1997).

Cognitive strategies must be consciously brought into play when a stressful event occurs (Lazarus & Folkman, 1984); and, after training and practice, the Thought Team

strategy is relatively easy to evoke. Divergent thinking through the generation of multiple viewpoints, and then, convergence thinking through the conceptual blending of the Thought Team members' views with the personal ideas are vital processes to create a sufficient shift in the overall tone of the problem and to lead to quality solutions (Fauconnier & Turner, 2002; Jones, 1998). The most adaptive defenses are often creative and transformative (Vaillant, 2000); and, some forms of humor allow the problem to be approached with lessened pain. In this case, Thought Team members may have inspired humor or other expressive behaviors.

A growing number of medical doctors, such as Dr. Dennis Charney at the Mount Sinai School of Medicine in New York, are conducting research and advocating the teaching of resilience to stress through training to develop a purpose in life. He promotes the consideration of role models for optimism, altruism, and humor to attain meaningful attitudes and behaviors (Charney, 2005). The Thought Team strategy opens the way for the use of bold, bizarre or humorous as well as kind, brave, and wise characters, each of which could lead to small and large transformations in emotional and cognitive states contributing to health.

General Conclusions

In the past few decades, numerous accounts of the psychological and physiological advantages to be gained from written emotional expression have been recorded and even reviewed through meta-analysis (Pennebaker, 1997b; Smyth, 1998; Wright & Chung, 2001); this study as has produced parallel findings for the use of a therapeutic writing task. Also, the benefits of enhancing the writing experience with a perspective-taking strategy were replicated with this research. Although self-report measures were used in this investigation,

many of the measures have been used in a great number of previous studies and a similar pattern of results were revealed. The measures that had been created and used in early Thought Team research were redesigned for this investigation and new measures were added; and yet, the same basic results converged. Thought Team research has not used single one-time self reports; a variety of measures are used throughout the weeks of the experiment. Moreover, some of the standard measures (Pennebaker, Colder, & Sharp, 1990) contained questions for the “number of times” when asking about medical usage, exercise, classes missed, and renewed social interactions. Epley & Gilovich (2001) purport from their perspective-taking research that successive adjustments are quite calculated and prompt a demand on cognitive resources; therefore, they are available to the conscious appreciation and may be measured with self-report data.

The type of measures used for the Thought Team research might also be considered in the category for measures of subjective wellbeing (SWB); subjective wellbeing is the person’s own assessment of their cognitive or affective states (Diener & Lucas, 1999). The content of these satisfaction measures are often interconnected with a range of factors; and, the term implies an overarching concept of subjective wellbeing. Scientific researchers may consider qualitative methods to measure “life-worlds” which include experiences with accompanying emotions and motivations because these components of personal development are recognizable routines and are evident to the individual (Berg, 2004; Schwartz & Jacobs, 1979). The general health comparisons, academic interests, and social situations measured in this research are events which may be considered in the same manner and must be based upon qualitative opinions about the satisfaction, moods, and emotions experienced. For more recent discussions on the

validity of qualitative measures for subjective wellbeing, see Blanton and Jaccard (2006) and Kazdin (2006).

Mechanisms for the strategy. Many participants might not have considered their own specific problem-solving abilities or the use of a strategy before the current experiment. Gardner (1984; 2004) insists on the need for a schema or a more dynamic understanding of one's problem-solving ability in order to become a more-skilled problem solver. He also describes an effective lever for shifting a person's opinion by presenting alternative views for the same idea in order to change the mental representation; each perspective may stimulate a different type of human intelligence until a "tipping point" is reached (2004; p. 65) and finally results in a more profound understanding. This process may work through "representational re-descriptions, resonances, and resistances" (Gardner, 2004, p.123); furthermore, a person who knows his or her own mind well is able to make more effective mental adjustments. Thought Team members can act as filters to compare and contrast while sifting through the problem experience revealing new evidence and even counterfactual thinking. The modification of attention may lead to an emergence of new themes that replace old versions or ideas (Davis-Floyd & Arvidson, 1997).

Perspective taking has most often been viewed in social settings and actual communicative activities; yet, speculative perspective taking is now being investigated as well. It might be relevant to consider that all types of perspective taking could be explained by the same underlying cognitive mechanisms; and, the anchoring and adjustment theory that has gained momentum from a continuing series of experiments might offer the best explanation for the perspective-taking process (Epley & Gilovich,

2001; 2004; Epley, Keysar, Van Boven, & Gilovich, 2004). The model considers an initial state of being anchored; then, if initiated, successive adjustments occur. The anchoring and adjustment sequence is considered to be a literal description of the progression of normal perspective-taking activity. New perspectives may be assumed by serially adjusting from the personal default or anchor by judging the target's potential access to information and weighting the factors associated with the context (Dixon & Moore, 1990).

Although this ability to take multiple perspectives evolves developmentally (Selman, 1980), even adults have been found to be quite egocentric in their default perspectives (Epley, Morewedge, & Keysar, 2004). It takes sufficient time and effort, along with reasonable incentives, to achieve a noteworthy change (Schober, 1998). The person's own perspective is usually the starting point; yet, maturity or an external prompt can bring the awareness that there may be a need for adjustment to match the perspective of another person(s) or target(s). The actual process of taking another perspective requires deliberate mental effort that must continue until the process and effort ends with the decision that a plausible estimate has been reached. To move away from the egocentric view, certain factors could influence the threshold; sufficient time and appropriate incentives were found to influence the move away from the egocentric anchoring point. Furthermore, the expression of perspective taking often relies on specific knowledge of appropriate language because the use of verbal capacity is necessary to designate and distinguish between and among various viewpoints (MacWhinney, 1999); the combination of writing while exploring perspectives could yield the greatest changes in mental representations because of the types of languages

changes often discussed by Pennebaker and others (Wright & Chung, 2001).

In the current research, the participants were permitted to design their own team; therefore, the types of people chosen and the task of working on a personal problem could have lead to greater incentive and motivation to make adjustments. In addition, the Thought Team research trains the participants to use three Thought Team members; and, they must make three adjustments, and then, integrate the ideas. Previous Thought Team research looked at the impact of the number of members used; two members were found to be optimal for the time allotted. However, the time of the work sessions was lengthened in the present study to allow more time than in previous Thought Team studies; and, three Thought Team members were used by all participants in the strategy groups for this project. Thus, three adjustment levers were in place for assisting in the move from the anchored perspective. Using the Thought Team members extends the boundaries with each new member; consequently, the serial adjustment phase can continue even longer before a return toward the egocentric anchoring. According to Epley and others, the adjustment phase ends when some concept of plausibility is reached. The use of a multiple perspective strategy can delay the early termination of the multistage process (Epley, Keysar, Van Boven, & Gilovich, 2004); therefore, a greater departure from original attitudes and ideas is possible with three team members.

Strategy and format effects lead to resiliency. The current study has focused on a population of college students, mostly freshmen, who were instructed to use various formats and a perspective-taking strategy while working on a personal problem. College is a time when young people begin to learn about how to develop their own coping skills;

consequently the superordinate category for this type of study would be one for the investigation of hardiness and college adaptation (Gatchel, 2005; Gonnella, 1999). The related themes of hope, hardiness, and self-efficacy are all components of the concept of resilience, the retention of competency during an attempt to face certain difficulties.

Resiliency was first defined by Kobasa (1979) as a cognitive appraisal of facing a reasonable challenge with an active commitment with perceived control. Hardy people are more able to buffer themselves against many stressors they encounter by actively engaging in certain affective, cognitive, and behavioral responses (Antonovsky, 1987; Kobasa, Maddi, & Courington, 1981; Kobasa, Maddi, & Kahn, 1982; Maddi, 2004; Peterson, 2000; Wiebe & McCallum, 1986). Factors that have been found to comprise the construct of resiliency are the ability to maintain positive relationships, the effective use of valuable life skills with good decision-making, the display of a sense of humor, the development of perceptivity and insight, an active flexibility in thought and action to cope with stressful situations, a sense of motivation and self-worth, all resulting in ongoing perseverance (Henderson & Milstein, 1996). Not only do some people show an innate resilience, resiliency skills can also be taught (Brooks & Goldstein, 2004; Prince-Embury, 2005). The current research with a college population implementing a strategy with formats for exploring a personal problem coincides with the findings from many of the studies related the components of resiliency (face the challenge, make a meaningful commitment, and find means for coping with the issue and exercising personal control).

Hope, a positive motivational state that is based on an interactively derived sense of successful agency (goal-directed energy) and pathways (planning to meet goals) is obviously a critical component contributing to resiliency (Snyder, C., 2000). Hope

theory discusses the need to expend some kind of mental or physical activity to overcome despair in order to find alternate routes around barriers and obstacles; high-hope people do not experience the negative emotions of low-hope people because they can adjust their thinking to consider means to overcome the barriers (agentic thinking) and can see a problem as a challenge not a threat. Practice is required for seeing or making different routes, to learn new skills or how to ask for help; therefore, hope theory has common ground with Problem-Solving Therapy and Solution-Based Therapy (Levine, 1997; Snyder, C., 2000). When a person can recognize the barriers and generate potential alternatives, they should be able to increase thoughts of mastery in problem-situations and generalize across similar domains. This process is called building “waypower” and allows one to envision outcomes or explore possible avenues.

High-waypower people see larger goals and can break them down into parts, recognize flexible and options, and learn from setbacks (Snyder, C., 2000). The use of the Thought Team strategy certainly fulfills some of the hope theory requirements; and, the theory also sheds light on the satisfaction with mapping as a means to organize the parts of the problem. If a problem-solving schema is compared to a flight checklist, the use of the Thought Team could be a plan to follow in order to navigate more successfully through difficult territory.

Self-efficacy is certainly another subset of concepts related to resiliency and hardiness (Kobasa, Maddi, & Kahn; 1982); one of the significant aspects of self-efficacy concerns the effects of vicarious learning (Bandura, 2001). According to social cognitive theory, self-reflection paralleled with vicarious experience in a positive setting can instill beliefs of personal success. As for the performance of the type of perspective taking with

Thought Team members, you do not imagine walking a mile in their shoes; you imagine them walking a mile in yours. Awareness of self-efficacy can lead to an improved sense of self-management and emotional control; if a person believes that the skills that have been introduced can be learned, the person is more likely to set goals and follow them (Bandura, 2001). Self-efficacy is normally domain specific; therefore, the perceived gains would be for the problem just worked on in the session.

Power therapy, a specific self-efficacy program, is developed to teach that empowerment may be achieved when one realizes that although you cannot control others or the problem, you can control yourself in both physical and psychological ways. Achievement of even minor goals can lead to generate a sense of efficacy, boost self-esteem, and can yield health advantages (Aleksiuk, 1996); and the personal effort put forth while using a perspective-taking strategy could advance personal confidence in many of these ways. In the current study, the design of the work sessions accentuated the need for facing the problem and taking the challenge after the specific barriers had been identified. Moreover, novel methods for approaching the problem were provided in many of the experimental conditions. Many participants might consciously recognize that the ideas for the Thought Team members actually came from their own storehouse of ideas and discover that they were prospecting in previously unmined personal resources; consequently, they may feel encouraged in their own ability.

The topic of resiliency has become so critical in recent years that the American Psychological Association began a campaign in 2002 called the “Road to Resilience” (Martin, 2002); and, a growing number of Resiliency in Action training programs have commenced in public schools, on universities and college campuses, as well as in many

major corporations in order to teach people to successfully make adjustments in face of obstacles by focusing on strengths based on authentic self-esteem from real actions and meeting challenges (Henderson, 2002; Henderson & Milstein, 1996; Lepore, Fernandez-Berrocal, Ragan, & Ramos, 2004; Richardson 1997; 2002; Waite & Richardson, 2004). One of the repeated suggestions is to learn to argue with yourself by considering alternatives and thus realizing that most events have a wide range of contributing factors. In this manner, a person can recognize what is changeable and accept nonpersonal causes. Optimism can be cultivated through social learning and modeling shared experiences; the use of positive role models provides means to meet and successfully approach troubling events (Petersen, 2000). The Penn Resiliency Project (PRP) teaches a means for “decatastrophizing” through cognitive behavior that identifies problem-solving skills which include more inclusive appraisals in order to produce an “immunization” against learned helplessness (Reivich, Gillham, Chaplin, & Seligman, 2005; Seligman, 1998). A reduction of alcohol consumption has been found to be a result of resiliency training on some campuses; and, positive impacts on morale have been found in many businesses (Gonnella, 1999; McCallum, 1986; Tierney & Lavelle, 1997).

Almost 3,000 schools nationwide are using a program that includes perspective taking called HOTS (higher-order thinking skills) to teach methods for expanded viewpoints and specific language for problem solving (Pogrow, 2004). PATHS (promoting alternative thinking strategies) is another perspective-taking strategy to improve interpersonal relations, control emotions, and prevent violence (Greenberg, Kusche, & Mihalic, 1998). The LET model of control for emotions and thought

management also emphasizes the necessity for clarity of ideas through creative language expansion surrounding emotions; the acquired self-knowledge can lead to improved wellbeing and health (Kibby, 2002; (Larson, 2000). Antonovsky (1987) created the term “salutogenesis” to refer to a list of ways to identify strengths, find alternative attitudes, and enhance means for coping (Violanti, Paton, & Dunning, 2000). Certainly, the Thought Team strategy should be considered as another successful method for accomplishing these same goals because it provides an active and creative means to tackle a problem and to no longer remain passive.

All of these examples and many more maintain that there are distinct psychological and even physiological rewards associated with the ability to explore alternate viewpoints. Perspective taking has also been shown as a successful method to reduce stereotypes and the resulting violence; the knowledge of the workings of perspective-taking mechanisms can lead to the reduction of prejudice through the same mechanisms that activated the initial bias (Galinsky & Ku, 2004). Environmentalists have used perspective taking as a way to increase empathetic connections to nature and change human behavior towards the environment (Schultz, 2000). The growing field of Integrated Studies on university campuses requires academic perspective-taking strategies (Klein, 1996). Accordingly, the call for means to train people to be able to recognize the skill of taking multiple perspectives is being heard in all areas of education, as well as in executive boardrooms, in stress-management programs, in clinical settings, communication networks, and in cross-cultural ventures.

The increasing interest in the cognitive mechanisms involved in perspective taking are evident in recent research projects in cognitive neuroscience as well as functional imaging studies by cultural anthropologists (Vogeley, May, Ritzi, Falkai,

Zilles, & Fink, 2004; Whitehead; 2001). The studies have revealed many unique features of the neural pathways involved in empathic interactions, role-playing, and changes in agentic thinking processes; these findings are raising many questions about the nature of cognitive development (Decety & Jackson, 2004; Frith & Frith, 2001). The insight resulting from perspective-taking activities may be the result of various spontaneous changes in psychological constructions and therefore in the underlying biological processes (Mazzoni & Nelson, 1998). The upcoming decades of research in these new areas of cognitive neuroscience of perspective taking as a key element of human consciousness and as related to the philosophy of the Theory of Mind could reveal many connections to human evolution and the foundations of culture (Decety & Jackson, 2004; Voegeley et al., 2004; Whitehead, 2001).

For these reasons, there is a burgeoning interest in the ability to learn to take perspectives; and, the Thought Team strategy should be considered as an effective tool. Many variations of the training are possible; for example, a Gardner Model could be developed that would include a team member for each of the possible intelligences (Atha-Weldon, 2000; Gardner, 2004). In addition, the type of language produced by shifting perspectives could be investigated by means of the Linguistic Inquiry Word Count textual analysis software program (Pennebaker & Francis, 1999). Future research should also explore other cognitive measures or experimental designs to uncover more aspects of the cognitive mechanisms involved in perspective taking (Gorenflo & Crano, 1998; Crano, 2003; Martin & Rubin, 1995). These designs should include the use various measures such as the *Multiple Perspectives Inventory* (Gorenflo & Crano, 1998) or *Thinking Styles* (Sternberg, 1997) in order to ascertain individual differences in perspective-taking abilities and the

connections to particular thinking styles. These measures combined with disambiguation tasks or tolerance of ambiguity tests (Gorfein, 2001), field dependent/independent measures (Canfield, 1980), or even classic Loftus memory experiments (Loftus & Loftus, 1980) could reveal further clues as to the cognitive mechanisms involved. Knowledge of the specific cognitive systems relating to perspective taking could lead to more effective methods of teaching the skill in a variety of domains.

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Appendix A:

Statement of Consent

Statement of Consent

I, the undersigned, do hereby give my consent for participation in the current experiment. I have been informed concerning the times and procedures and I understand that I may withdraw at any time before or during the experiment at my option.

Recognizing the importance of avoiding bias in the results of this experiment, I agree not to discuss any details of the procedure with any other potential participants. I understand that all the research and evaluation materials will be confidentially maintained. The means used to maintain confidentiality are:

1. My data will be given a code number for research identification, and my name will be kept anonymous.
2. Data, along with the consent forms, will be kept in a locked cabinet or closet.
3. Only the principle investigator will have access to my identification data.

I understand that if I have any questions concerning the research, I can call the following persons:

Cindy Atha-Weldon, principle investigator
Department of Psychology
817 257-7415

Dr. Don Dansereau
Department of Psychology
Human Subjects Committee
817 257-6414

Darryn Willoughby
Department of Kinesiology
Chairman of University Human Subjects Committee
817 257-6865

Participant's Name (Please Print) Gender Date

Participant's Signature Phone Email

Participant's ID# Professor Course for Credit

Appendix B:
Training Materials



How to Develop Your **THOUGHT TEAM**

Have you ever heard the expression that two heads are better than one? What about three, or even four? Imagine the magnitude of ideas you could generate by connecting your own brilliance with the minds of three people you would choose to be your **THOUGHT TEAM**.

So, just what is a **THOUGHT TEAM** ? Well, you might describe it as being like the combination of all the individual contributions from the fans, cheerleaders, coach, and team members to make a winning season. Also, you could think of the way the characters on *Friends* exchange and benefit from their varied personal viewpoints as they face everyday situations. In other words, you are choosing a group of people with valuable insights that you could rely upon to help you **THINK** about problems. Often we are limited in our ability to see a variety of solutions to any obstacle because we are confined in our own realm of experience. By developing a team of **THINKERS** with diverse perspectives, we can expand our comprehension dimensions and discover many new possibilities. Of course, this team will only be participating in the arena of your mind, and YOU will always be the team manager.



What type of person should you select for a team member? It could be a famous historical figure or great leader (Eleanor Roosevelt, Mayor Giuliani), a spiritual guide (Moses, Buddha, Jesus), a scientist or inventor (Madame Curie, Da Vinci), an adventuresome person, (Amelia Earhart, Marco Polo), or a friend or relative you really trust, (teacher, grandmother). Perhaps you might choose a fictional character from literature, movies, or television (James Bond, Harry Potter, Spiderman) or a very courageous person (Lance Armstrong, a New York Firefighter). Consider the insights or qualities you believe are important for your team members to possess. Are they *Resourceful* and *Creative*? *Intuitive* or *Cooperative*? *Compassionate* and *Spiritual*? *Daring* and *Brave*? *Logical* and *Intelligent*? *Humorous* or *Serious*? You should choose team members that you know directly, have read about, or have learned about by their reputation. The greater the variety of viewpoints you investigate, the more multifaceted your overall perspective may become (just as a diamond is said to be more reflective and have more fire or brilliance with many facets).



Folder # _____

Now It's Time to Form Your **THOUGHT TEAM**

Step 1. Make a list of SIX people who you would want for members. Ask yourself how well you know the possible thoughts and reactions of each person. Choose team members who would be the best to give you unique advice or ideas quite different from your own.

NAME	BASIC CHARACTERISTICS
1.	
2.	
3.	
4.	
5.	
6.	

Your THOUGHT TEAM 's Problem Solving Strategies

Folder # _____



Step # 2. Consider the different styles of decision-making and problem-solving strategies of your team members and yourself. PUT in a ✓ for YES.

THOUGHT TEAM Names: 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ You

- | | | | | | | | | | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1. Is creative and relies on intuition or inspiration. | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| 2. Thinks about the problem for a long time. | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| 3. Sees the big picture. | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| 4. Is logical and objective. | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| 5. Considers how it affects other people. | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| 6. Looks for all the details. | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| 7. (other skills) _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| 8. _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| 9. _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

Get your **THOUGHT TEAM** Organized

Folder# _____



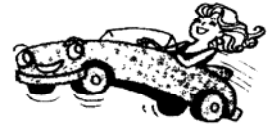
Step 3. You may want to give your **THOUGHT TEAM** a special name, choose a mascot, and/or add a logo.

Whenever you need additional insight, you may connect with your team members and consult their opinions. For you to see how effective your team members really are, try them out on this practice problem exercise. The following pages give you an example situation for team members to exhibit their individual talents. After listing the reactions of each member, consolidate or combine these ideas with your own into one conclusion or set of ideas.

Please STOP here until the experimenter tells you to begin again.

Got the **NO PLACE to PARK BLUES** ?

Folder# _____



Unless you make a parachute jump to class, you may have noticed that there is a shortage of parking spaces on this campus. Maybe while you were cruising and waiting, you thought about some changes in the campus or student lifestyles that could help alleviate this problem.

Now that you realize that you can seek help from your list of potential **THOUGHT TEAM** members, choose 3 of the team members who you think could offer the best advice for this situation. Consider what each team member might offer as a solution and write those answers beside the names and include your own as well. Combine the ideas and write the final decision for "Solution."

Team Members' Names and Ideas about Parking:

1. _____ Advice: _____

Got the NO PLACE to PARK BLUES ?

Folder# _____

2. _____ Advice: _____

3. _____ Advice: _____

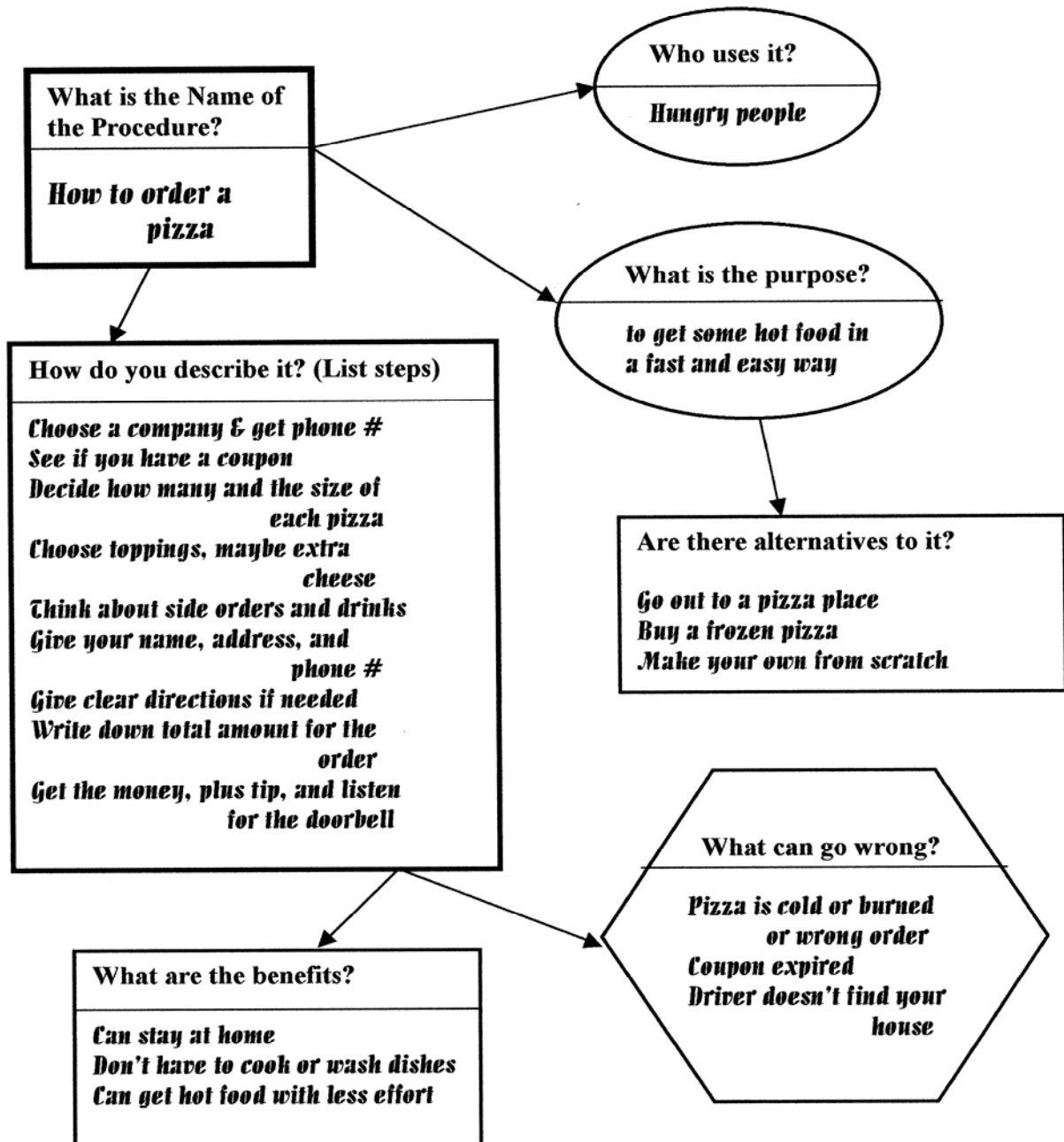
You: _____

SOLUTION: _____



How to Do a Knowledge Map (K-Map)

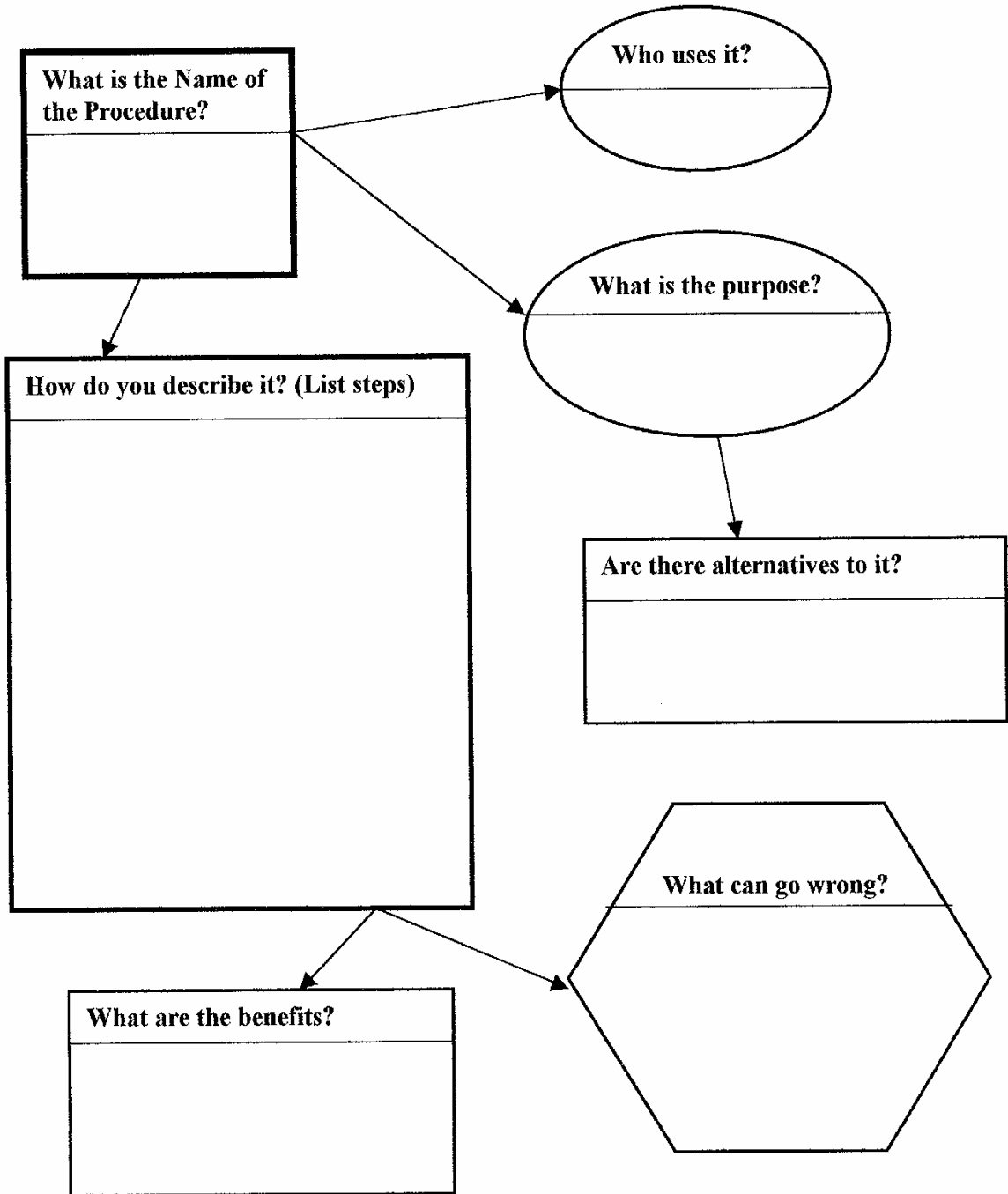
Here is a sample k-map to show you how knowledge or information may be contained in the nodes (boxes, circles, etc.) and may be linked (by the arrows) to other questions and ideas. This k-map describes a procedure.



Do Your Own Knowledge Map (K-Map)

Folder # _____

Now, fill in this blank k-map with a procedure. Think of something you do often, know most of the steps for, or have seen many times.



Appendix C:
Work Materials

WRITE ABOUT A PERSONAL PROBLEM

Please try to think of a personal problem that may be concerning you right now. You probably have at least one issue that is meaningful to you but that is not overly distressing. Think about your relationship with your significant other or friends or parents, concerns at work, or academic difficulties. The number assigned to you will be used to identify all materials and your privacy will be protected.

Now I would like for you to select a particular problem. You may choose to write about how the problem began, how it currently affects your life, and ways to solve the dilemma.

DEFINE THE PROBLEM.

PROBLEM PLANNING PAGE



RESTATE THE PROBLEM:

THINK ABOUT THE PROBLEM:

We would like you not to write at this time. Please just think about the problem you have chosen. Consider the facts, the feelings, and the consequences of the problem as well as what you will do about it.

PROBLEM PLANNING PAGE



RESTATE THE PROBLEM:

THINK ABOUT THE PROBLEM:

We would like you not to write at this time. Please just think about the problem you have chosen. Again, consider the facts, the feelings, and the consequences of the problem as well as what you will do about it.

PROBLEM PLANNING PAGE



RESTATE THE PROBLEM:

THINK ABOUT THE PROBLEM: We would like you not to write at this time. Please just think about the problem you have chosen. Consider the facts, the feelings, and the consequences of the problem as well as what you will do about it. Choose 3 **THOUGHT TEAM** members from your strategy page and use them to help you think about the problem.

What ideas would your first team member have?

What would the second team member tell you?

What advice would the third team member add?

What are your own ideas?



PROBLEM PLANNING PAGE

RESTATE THE PROBLEM:

THINK ABOUT THE PROBLEM: We would like you not to write at this time. Please just think about the problem you have chosen. Consider the facts, the feelings, and the consequences of the problem as well as what you will do about it. Again, consult the 3 THOUGHT TEAM members from your strategy page and use them to help you think about the problem.

What ideas would your first team member have?

What would the second team member tell you?

What advice would the third team member add?

What are your own ideas?

PROBLEM PLANNING PAGE



RESTATE THE PROBLEM:

WRITE ABOUT THE PROBLEM: Consider the facts, the feelings, and the consequences of the problem as well as what you will do about it. Choose 3 THOUGHT TEAM members from your strategy page who have the best skills to help you with this particular problem.

Team Member #1: _____

Team Member #2: _____

Team Member #3: _____

Your ideas: _____

Conclusions: _____

(use back if needed)

PROBLEM PLANNING PAGE



RESTATE THE PROBLEM:

WRITE ABOUT THE PROBLEM: Consider the facts, the feelings, and the consequences of the problem as well as what you will do about it. Again, choose 3 **THOUGHT TEAM** members from your strategy page who have the best skills to help you with this particular problem.

Team Member #1: _____

Team Member #2: _____

Team Member #3: _____

Your ideas: _____

Conclusions: _____

(use back if needed)



PROBLEM K-MAP

START →

What is the Problem you have chosen?

Now fill out the K- Map.

1.

A. What events or actions led to this problem or issue?	B. How can problems like these be avoided in the future?	C. What exactly will you do?
	Your ideas: 	

2.

A. What feelings are involved with this problem?	B. How can you control or cope with the feelings?	C. What exactly will you do?
	Your ideas: 	

3.

A. What are the consequences of this problem?	B. What can be done to improve the consequences?	C. What exactly will you do?
	Your ideas: 	

Use back if needed



PROBLEM K-MAP

START →

What is the Problem you have chosen?

Now fill out the K- Map.

1.

A. What events or actions led to this problem or issue?	→	B. How can problems like these be avoided in the future?	→	C. What exactly will you do?
		Your ideas:		

2.

A. What feelings are involved with this problem?	→	B. How can you control or cope with the feelings?	→	C. What exactly will you do?
		Your ideas:		

3.

A. What are the consequences of this problem?	→	B. What can be done to improve the consequences?	→	C. What exactly will you do?
		Your ideas:		

Use back if needed



PROBLEM K-MAP

START

What is the Problem you have chosen?

Consult your 3 **THOUGHT TEAM** members again to help you with this particular problem.

1.	2.	3.
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1. Now fill out the **K- Map**.

A. What events or actions led to this problem or issue? 	B. How can problems like these be avoided in the future? Team member #1: Team Member #2: Team Member #3: Your ideas: 	C. What exactly will you do?
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2.

A. What feelings are involved with this problem? 	B. How can you control or cope with the feelings? Team member #1: Team Member #2: Team Member #3: Your ideas: 	C. What exactly will you do?
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3.

A. What are the consequences of this problem? 	B. What can be done to improve the consequences? Team Member #1: Team Member #2: Team Member #3: Your ideas: 	C. What exactly will you do?
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Use back if needed



PROBLEM K-MAP

START

What is the Problem you have chosen?

Consult your 3 **THOUGHT TEAM** members again to help you with this particular problem.

1. 2. 3.

1. Now fill out the **K-Map**.

A. What events or actions led to this problem or issue?	B. How can problems like these be avoided in the future?	C. What exactly will you do?
	Team member #1: Team Member #2: Team Member #3: Your ideas:	

2.

A. What feelings are involved with this problem?	B. How can you control or cope with the feelings?	C. What exactly will you do?
	Team member #1: Team Member #2: Team Member #3: Your ideas:	

3.

A. What are the consequences of this problem?	B. What can be done to improve the consequences?	C. What exactly will you do?
	Team Member #1: Team Member #2: Team Member #3: Your ideas:	

Use back if needed

Appendix D:
Dependent Measures



Subject Number: _____

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BSP

Please answer these questions about the problem you have chosen.

1. The feelings caused by this problem have kept me from being very rational about helpful solutions.

Strongly Disagree Strongly Agree

2. I have had trouble coming up with good solutions to this problem.

Strongly Disagree Strongly Agree

3. I haven't been able to figure out where to begin when I think about this problem.

Strongly Disagree Strongly Agree

4. I'm not confident enough to try the ideas I have had about this problem.

Strongly Disagree Strongly Agree

5. I haven't been able to break the problem down into parts.

Strongly Disagree Strongly Agree

6. I haven't been able to remember enough information to solve this problem.

Strongly Disagree Strongly Agree

7. Trying to decide on a good solution to the problem has made me very nervous.

Strongly Disagree Strongly Agree

8. I have had a hard time developing a plan to deal with the problem.

Strongly Disagree Strongly Agree

9. I haven't trusted my own judgment for deciding on solutions to this problem.

Strongly Disagree Strongly Agree

10. I am afraid people will criticize my way of handling this problem.

Strongly Disagree Strongly Agree

Subject Number: _____

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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BSP

Please answer these questions about the problem you have chosen.

11. The ideas I have had would take too much effort to carry out.

Strongly Disagree Strongly Agree

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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12. I don't think it will help me to consider other people's viewpoints about the problem.

Strongly Disagree Strongly Agree

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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13. It has been hard to get my thoughts organized around this problem.

Strongly Disagree Strongly Agree

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14. I have gotten confused by all the details of the problem.

Strongly Disagree Strongly Agree

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15. The feelings I have had when I think about this problem usually lead to a bad mood.

Strongly Disagree Strongly Agree

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16. I fear that any attempt to resolve this problem would lead to even more problems.

Strongly Disagree Strongly Agree

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17. The emotions related to this situation have disrupted my thinking about the actual details.

Strongly Disagree Strongly Agree

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18. It is hard for me to come up with another way of looking at the problem.

Strongly Disagree Strongly Agree

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19. I have not had enough motivation to do anything about this problem.

Strongly Disagree Strongly Agree

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20. I keep going around in circles when I try to think about this problem.

Strongly Disagree Strongly Agree

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BSP

Please answer these questions about the problem you have chosen.

21. I haven't tried to deal with this problem because I don't want to make it any worse.

Strongly Disagree

Strongly Agree

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22. Continuing to work on this problem has been hard because I become frustrated.

Strongly Disagree

Strongly Agree

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23. I have not been able to think of more than one part of the problem at a time.

Strongly Disagree

Strongly Agree

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24. The emotions of this problem have overwhelmed me, and I have had to stop working on it.

Strongly Disagree

Strongly Agree

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25. I haven't been able to ignore other thoughts when I'm trying to think about this problem.

Strongly Disagree

Strongly Agree

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26. I have trouble holding all the information about the problem in my head.

Strongly Disagree

Strongly Agree

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BSP b

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Strongly Disagree Strongly Agree

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BSP b

Please answer these questions about the problem you have chosen.

21. I haven't tried to deal with this problem because I don't want to make it any worse.

Strongly Disagree

Strongly Agree

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Strongly Agree

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Strongly Agree

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Strongly Agree

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26. I have trouble holding all the information about the problem in my head.

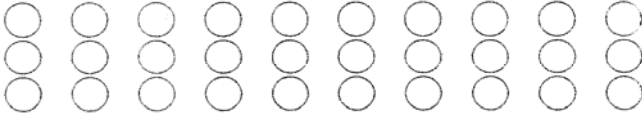
Strongly Disagree

Strongly Agree

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Subject Number: _____

SWS



1. I was able to begin working on the problem right away.

Strongly Disagree

Strongly Agree

2. This method helped me from getting distracted by other thoughts.

Strongly Disagree

Strongly Agree

3. I did not come up with very many new ideas.

Strongly Disagree

Strongly Agree

4. Most of my thoughts about this problem were in pictures.

Strongly Disagree

Strongly Agree

5. Using this method allowed me to get a smooth start.

Strongly Disagree

Strongly Agree

6. During this session, I found new and creative solutions to the problem.

Strongly Disagree

Strongly Agree

7. While thinking about this problem, I did a lot of talking to myself.

Strongly Disagree

Strongly Agree

8. Most of my thoughts about this problem were in descriptive words.

Strongly Disagree

Strongly Agree

9. During this session, I found new ways to manage the problem.

Strongly Disagree

Strongly Agree

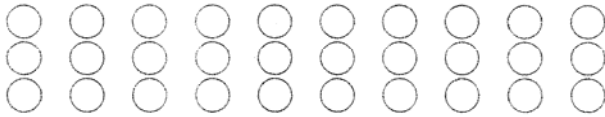
10. It seemed easier to organize my thoughts with the problem-solving method I used.

Strongly Disagree

Strongly Agree

Subject Number: _____

SWS



11. This method didn't help me decide where to begin.

Strongly Disagree

Strongly Agree

12. I gained some new insights while using this method.

Strongly Disagree

Strongly Agree

13. I wasn't able to see how parts of the problem fit together.

Strongly Disagree

Strongly Agree

14. During this session, I was able to keep on working on the problem in a productive way.

Strongly Disagree

Strongly Agree

15. I did not run out of ideas while using this method.

Strongly Disagree

Strongly Agree

16. Although it was difficult, I am glad I worked on the problem and stopped putting it off.

Strongly Disagree

Strongly Agree

17. I used a great deal of mental imagery while working on this problem.

Strongly Disagree

Strongly Agree

18. I am not satisfied with the amount of effort I put into working on this problem.

Strongly Disagree

Strongly Agree

19. Dealing with this problem helped me see ways I could handle other issues.

Strongly Disagree

Strongly Agree

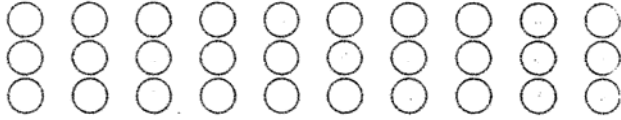
20. I wasn't able to control my emotions very well while working on this problem.

Strongly Disagree

Strongly Agree

Subject Number: _____

SWS



31. I thought that using this method seemed shallow.

Strongly Disagree

Strongly Agree

32. Using this method meant that my time was filled with meaningful activity.

Strongly Disagree

Strongly Agree

33. I didn't find this method to be a very powerful way to work on my problem.

Strongly Disagree

Strongly Agree

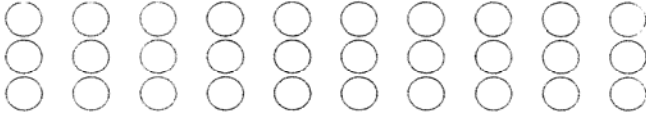
34. I think that using this method made this activity a valuable experience.

Strongly Disagree

Strongly Agree

Subject Number: _____

SWS b



1. I was able to begin working on the problem right away.

Strongly Disagree

Strongly Agree



2. This method helped me from getting distracted by other thoughts.

Strongly Disagree

Strongly Agree



3. I did not come up with very many new ideas.

Strongly Disagree

Strongly Agree



4. Most of my thoughts about this problem were in pictures.

Strongly Disagree

Strongly Agree



5. Using this method allowed me to get a smooth start.

Strongly Disagree

Strongly Agree



6. During this session, I found new and creative solutions to the problem.

Strongly Disagree

Strongly Agree



7. While thinking about this problem, I did a lot of talking to myself.

Strongly Disagree

Strongly Agree



8. Most of my thoughts about this problem were in descriptive words.

Strongly Disagree

Strongly Agree



9. During this session, I found new ways to manage the problem.

Strongly Disagree

Strongly Agree



10. It seemed easier to organize my thoughts with the problem-solving method I used.

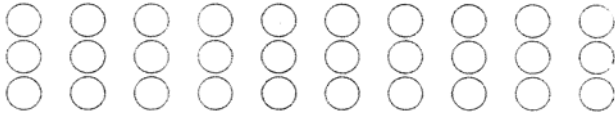
Strongly Disagree

Strongly Agree



Subject Number: _____

SWS b



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Strongly Disagree

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12. I gained some new insights while using this method.

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Strongly Disagree

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Strongly Disagree

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Strongly Disagree

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Strongly Disagree

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18. I am not satisfied with the amount of effort I put into working on this problem.

Strongly Disagree

Strongly Agree

19. Dealing with this problem helped me see ways I could handle other issues.

Strongly Disagree

Strongly Agree

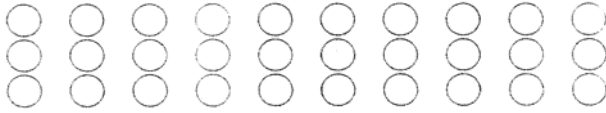
20. I wasn't able to control my emotions very well while working on this problem.

Strongly Disagree

Strongly Agree

Subject Number: _____

SWS b



21. While thinking about the problem, I could vividly imagine different events or scenarios.

Strongly Disagree Agree Strongly Agree

22. During the session, I put a lot of effort into trying to deal with this problem.

Strongly Disagree Agree Strongly Agree

23. I was able to get over some of my usual problem-solving hurdles during this session.

Strongly Disagree Agree Strongly Agree

24. I found that I could manage my frustration while pondering the issue.

Strongly Disagree Agree Strongly Agree

25. During the session, I gained insights about my problem-solving skills.

Strongly Disagree Agree Strongly Agree

26. This method helped me cope with the disturbing feelings I usually have about the problem.

Strongly Disagree Agree Strongly Agree

27. I don't think I am able to manage the problem any better now that I have worked on it.

Strongly Disagree Agree Strongly Agree

28. I am pleased with the way I dealt with the problem during the session.

Strongly Disagree Agree Strongly Agree

29. I was able to think clearly about the right language I would use to explain the problem.

Strongly Disagree Agree Strongly Agree

30. This method helped keep me in a more positive frame of mind than I would usually have while thinking about this issue.

Strongly Disagree Agree Strongly Agree

Subject Number: _____

SWS b

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

31. I thought that using this method seemed shallow.

Strongly Disagree

Strongly Agree

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

32. Using this method meant that my time was filled with meaningful activity.

Strongly Disagree

Strongly Agree

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

33. I didn't find this method to be a very powerful way to work on my problem.

Strongly Disagree

Strongly Agree

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

34. I think that using this method made this activity a valuable experience.

Strongly Disagree

Strongly Agree

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Subject Number: _____

WHO

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

1. I think I chose the right Thought Team members to help with this problem.

Strongly Disagree Strongly Agree

2. If I had it to do over, I would have considered different Thought Team members with abilities that were more connected to my problem.

Strongly Disagree Strongly Agree

3. My Thought Team members had viewpoints very similar to my own opinions.

Strongly Disagree Strongly Agree

4. I chose Thought Team members with a great variety of ideas and skills.

Strongly Disagree Strongly Agree

5. I didn't understand how to select team members that would really help me come up with new solutions.

Strongly Disagree Strongly Agree

6. I tried to choose team members with extreme viewpoints or extraordinary skills.

Strongly Disagree Strongly Agree

7. Most of my Thought Team members were family or friends.

Strongly Disagree Strongly Agree

8. I chose more Thought Team members who are famous people, heroes, experts in their field.

Strongly Disagree Strongly Agree

POST-STUDY QUESTIONNAIRE

Subject Number: _____

0	1	2	3	4	5	6	7	8	9
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

very poor

very good

0 1 2 3 4 5 6 1. Since the experiment, my physical health has been

0 1 2 3 4 5 6 7 8 9 10 11 or more 2. How many times have you visited TCU's health center since the experiment?

0 1 2 3 4 5 6 7 8 9 10 11 or more 3. How many times have you seen a private doctor (outside TCU's health center) since the experiment?

0 1 2 3 4 5 6 7 8 9 4. How many times do you estimate you have used an over-the-counter remedy since the experiment (e.g., aspirin, tylenol, alks-seltzer, pepto-bismo, or a cold/allergy medicine)?

0 1 2 3 4 5 6 7 8 9 10 11 or more 5. Since the experiment, how many times have you missed class at TCU because you were "too sick to go"?

very little

a great deal

0 1 2 3 4 5 6 6. Since the experiment, how much stress have you felt?

strongly disagree

strongly agree

0 1 2 3 4 5 6 7. Since the experiment, I have had many headaches.

0 1 2 3 4 5 6 8. Since the experiment, my stomach has often been upset.

0 1 2 3 4 5 6 9. Since the experiment , I have has cold/flu symptoms.

very negative

very positive

0 1 2 3 4 5 6 10. Since the experiment I have felt:

POST-STUDY QUESTIONNAIRE

Subject Number: _____

0	1	2	3	4	5	6	7	8	9
⓪	①	②	③	④	⑤	⑥	⑦	⑧	⑨
⓪	①	②	③	④	⑤	⑥	⑦	⑧	⑨
⓪	①	②	③	④	⑤	⑥	⑦	⑧	⑨
⓪	①	②	③	④	⑤	⑥	⑦	⑧	⑨

strongly
disagree

strongly
agree

⓪ ① ② ③ ④ ⑤ ⑥ 11. Since the experiment, I have been healthier than my friends.

very low

very high

⓪ ① ② ③ ④ ⑤ ⑥ 12. Since the experiment my energy level has been

⓪ ① ② ③ ④ ⑤ ⑥ 13. Since the experiment my attention level has been

0 1 2 3 4 5 6 7 8 9 10 11 or more 14. How many times have you
⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ missed class since the experiment
(include all absences from TCU
classes):

very low

very high

⓪ ① ② ③ ④ ⑤ ⑥ 15. Since the experiment, my interest in school has been

decreased not
changed increased

⓪ ① ② ③ ④ ⑤ ⑥ 16. Since the experiment, my grades have

very low

very high

⓪ ① ② ③ ④ ⑤ ⑥ 17. Since the experiment, my interest in my friends has been

⓪ ① ② ③ ④ ⑤ ⑥ 18. Since the experiment, my interest in my family has been

not
at all very
often

⓪ ① ② ③ ④ ⑤ ⑥ 19. Since the experiment I have exercised

POST-STUDY QUESTIONNAIRE

Subject Number: _____

0	1	2	3	4	5	6	7	8	9
⓪	①	②	③	④	⑤	⑥	⑦	⑧	⑨
⓪	①	②	③	④	⑤	⑥	⑦	⑧	⑨
⓪	①	②	③	④	⑤	⑥	⑦	⑧	⑨
⓪	①	②	③	④	⑤	⑥	⑦	⑧	⑨

The following questions refer to the personal problem you identified on the first day of the experiment.

not at all a great deal

⓪ ① ② ③ ④ ⑤ ⑥ 20. Since the experiment, how much have you thought about your problem?

strongly disagree strongly agree

⓪ ① ② ③ ④ ⑤ ⑥ 21. Since the experiment, I have found new and helpful ways to deal with my problem:

⓪ ① ② ③ ④ ⑤ ⑥ 22. Since the experiment, the problem has not bothered me:

not at all a great deal

⓪ ① ② ③ ④ ⑤ ⑥ 23. Since the experiment, to what extent did you look at your problem differently?

strongly disagree strongly agree

⓪ ① ② ③ ④ ⑤ ⑥ 24. Since the experiment, I have put many aspects of the problem into focus:

⓪ ① ② ③ ④ ⑤ ⑥ 25. I think writing/mapping really helped me.

⓪ ① ② ③ ④ ⑤ ⑥ 26. I feel hopeful about this problem.

⓪ ① ② ③ ④ ⑤ ⑥ 27. I have come up with several potential solutions to my problem.

⓪ ① ② ③ ④ ⑤ ⑥ 28. I do not feel close to a solution to my chosen problem.

① very easy ② easy ③ moderate ④ hard ⑤ very hard

29. I think this problem will be _____ to find a solution. (fill in the best one).

POST-STUDY QUESTIONNAIRE

Subject Number: _____

0	1	2	3	4	5	6	7	8	9
⓪	①	②	③	④	⑤	⑥	⑦	⑧	⑨
⓪	①	②	③	④	⑤	⑥	⑦	⑧	⑨
⓪	①	②	③	④	⑤	⑥	⑦	⑧	⑨
⓪	①	②	③	④	⑤	⑥	⑦	⑧	⑨

①	②	③	④	⑤
No	Only One	A Couple	A Few	Many

30. I have had _____ definite ideas about my chosen problem.
(fill in the best one)

strongly
disagree

strongly
agree

- | | |
|---------------|--|
| ① ② ③ ④ ⑤ ⑥ ⑦ | 31. When I think about my chosen problem, I feel upset about it. |
| ① ② ③ ④ ⑤ ⑥ ⑦ | 32. I spend a lot of time dwelling on my chosen problem. |
| ① ② ③ ④ ⑤ ⑥ ⑦ | 33. People close to me show concern about my chosen problem. |
| ① ② ③ ④ ⑤ ⑥ ⑦ | 34. My chosen problem is not interfering with my daily life. |
| ① ② ③ ④ ⑤ ⑥ ⑦ | 35. The solutions I have thought of for my chosen problem are not workable. |
| ① ② ③ ④ ⑤ ⑥ ⑦ | 36. I haven't discussed this problem with anyone yet. |
| ① ② ③ ④ ⑤ ⑥ ⑦ | 37. It's easier to complain than to try and solve the problem. |
| ① ② ③ ④ ⑤ ⑥ ⑦ | 38. My chosen problem has shown up in my dreams. |
| ① ② ③ ④ ⑤ ⑥ ⑦ | 39. I really don't know what to do about this problem. |
| ① ② ③ ④ ⑤ ⑥ ⑦ | 40. All the ideas I have had concerning this problem are pretty much the same. |

Subject Number: _____

MGQ

1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

1. I have continued to try the problem-solving method I learned in the experiment to work on my problem.

Strongly Disagree Strongly Agree

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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2. The new method was not too difficult for me to remember how to use after the experiment.

Strongly Disagree Strongly Agree

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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3. I plan to use the method I learned in the future.

Strongly Disagree Strongly Agree

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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4. I would like to learn more about personal problem-solving methods.

Strongly Disagree Strongly Agree

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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5. I will recommend the method I learned to my friends.

Strongly Disagree Strongly Agree

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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6. This problem-solving method has influenced me to consider some new skills for personal problems.

Strongly Disagree Strongly Agree

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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7. Since the experiment, I developed some other methods to gain more insight into my personal problems.

Strongly Disagree Strongly Agree

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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8. I have found that it is easy to use this method any time I want to work on a problem.

Strongly Disagree Strongly Agree

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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9. As a result of the experiment, I will change my approach to solving personal problems.

Strongly Disagree Strongly Agree

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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10. I would be willing to take more training in this problem-solving method.

Strongly Disagree Strongly Agree

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Appendix E:
Debriefing Statement

DEBRIEFING STATEMENT

for the

“Purple Porsche” Experiment

Thank you for participating in all the sessions of this experiment. There has been a great deal of research evidence to show that therapeutic writing, that is, writing about a personal problem, yields many benefits. Also, knowledge-mapping has been used during therapy sessions. While participating in this activity, you may have found ways to solve the problem, cope with or manage the problem, or discovered a new way to consider the troubling situation. Some of you used Thought Team members while writing, thinking or mapping to stimulate new ideas about the problem. Although we were investigating the use of the Thought Team with the other methods, all participants were expected to experience certain advantages from participation. The questions about health, family, stress, and academic success were to discover some of these benefits.

You were asked to choose a problem that was not too intense, but if you are still concerned about this problem issue, we urge you to contact the counseling office or contact one of us in the Psychology department. You will be guided in reaching the appropriate assistance for further help with the problem.

Every one of you has contributed to the research, so I want to extend a huge **THANK YOU** to all participants once again.

Cindy Atha-Weldon
817 257-7415

TCU Counseling Center
Brown Lupton Health Center (West Entrance)
817 257-7863
M-F 8-4:30

VITA

<p>Personal Background</p>	<p>Cindy Shira Simcha Atha-Weldon Fort Worth, Texas Daughter of Charles and Betty Atha (TCU students) Married: Dr. Bill Weldon; Son: Dr. Jared McElhaney</p>
<p>Education</p>	<p>Diploma, O. D. Wyatt High School, Fort Worth, Texas, 1971, Ranked first (4.0) Oxford University Scholarship, Oxford, UK, 1971 WOFWOCBC, Associates Degree, 1984 Bachelor of Arts, Psychology, University of Texas at Arlington, Arlington Texas, 1996 (with honors) Master of Science, Psychology, Texas Christian University, Fort Worth, Texas, 2000 Doctorate of Philosophy, Psychology, Texas Christian University, Fort Worth, Texas, 2006</p>
<p>Experience</p>	<p>Founder of Watersrping, Intl., 1984, international author, lecturer, publisher, teacher cross-cultural education and communication 1979-present; teaching public and private schools Weldon Medical Clinic, office & financial manager, 1993-present Grant Research, University of North Texas Health Science Center, 1996-1997 Teaching Assistantship, Texas Christian University, 2000 Cognitive Enhancement Therapy of Probationers, Grant, 2000 Undergraduate Advisor and Adjunct Lecturer in Psychology 2000-2005 senior courses, cognitive lab (Awards) Interdisciplinary Studies 2002-present (senior courses, advising, and curriculum development) Sponsor for PSI CHI; Founder and Sponsor for INLO (Awards)</p>
<p>Professional Memberships</p>	<p>Alpha Chi, Golden Key, PSI CHI, AACW, AOA, APA, APS, AAAC & U, AIS, PSI CHI, INLO, UTAAA</p>

ABSTRACT

THOUGHT TEAM: USE OF A PERSPECTIVE-TAKING STRATEGY TO ENHANCE PERSONAL PROBLEM SOLVING WHILE THINKING, WRITING, OR MAPPING

By Cindy S. S. Atha-Weldon, M. S., 2000; PhD, 2006.
Department of Psychology
Texas Christian University

Dissertation Advisor: Dr. Don Dansereau, Professor of Psychology

Research has shown that therapeutic writing improves an individual's sense of well-being. Positive affective and conceptual transformations resulting from the effects of disinhibition and cognitive reconstructing have been implicated in this process (Clark, 1993). The current study examined whether the restructuring might be enhanced by the development of a set of mental advisors, the Thought Team strategy (Atha-Weldon & Dansereau, 2001; Czuchry & Sia, 1998), to manipulate the problem schema while thinking, writing, or mapping. Analyses revealed significant effects in short-term and long-term outcomes for strategy and format in participant satisfaction and motivation (motivation, value, personal effort, continuation, influence), for emotional adjustments (emotional control, coping and managing, general hardiness, personal interests, concern), and for cognitive benefits (ideas, organization, coherence and understanding, creativity, mental imagery, effectiveness, extremeness, insight, and solvability).