THINK A WHILE IN MY SHOES: PERSPECTIVE TAKING, STUDYING, AND ATTITIUDES

by

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Philippians 4:13 …I can do everything through him who gives me strength.

Philippians 1:6… Being confident of this, that he who began a good work in you will carry it on to completion until the day of Jesus Christ.

Heather

TABLE OF CONTENTS

List of Tables

Think a While in My Shoes: Perspective Taking, Studying, and Attitudes

Each year college students report problems with keeping up with the demands of college studying. Recent reports show an alarming trend that 75 percent of high school students are not equipped to deal with the demands of college level work (Arenson, 2004). Non-traditional students especially need help meeting academic standards (Boulard, 2004). Perhaps the transition is difficult because college textbooks are different from high school books. Textbooks are generally written at a higher reading level, are longer, and are more "idea dense." Not only are students required to learn more material, they are expected to do so in much less time.

Researchers and educators have attempted to find solutions for those who struggle with learning. Years of research have shown that academic performance depends on cognitive, physiological, and emotive states (Herrmann, 2002). It is believed that study skill improvement is a result of making changes in these domains. Many strategies and curricula have been developed to help strengthen students' academic performance. Although techniques such as SQ3R, S-Run, self-questioning and summarization have been shown to help when used by students, they often are not used because of the time and effort required (King, 1992). Most college students report that the sole strategy they use for learning is taking verbatim notes during lectures (Bretzing & Kulhavy, 1981; Kiewra & Fletcher, 1984; Peper & Mayer, 1986) and then rereading those notes at a later time (Kiewra, 1989).

College textbooks are difficult for some students to utilize because some students lack sufficient prior knowledge to understand and retain the information presented. According to Wittrock's (1990) model of generative learning, students comprehend and remember new

material best when they use their own prior knowledge and experience to interpret and integrate it in a new and personally meaningful way.

Perhaps what is needed is a simple, time efficient strategy that would allow students to use some of their own background information in a creative way to help them while studying. One thing that all people have in common is a large databank of information about people. What would happen if periodically when learning new information, they thought about how someone else they knew might interpret and remember the information? How would taking the perspective of another person effect one's learning process? If such a simple, creative technique were effective, it would seem to have a high likelihood of being used, unlike many study techniques developed in the past (King, 1992).

Prior Research on Perspective Taking

In the last few decades, there has been an increased interest in the area of perspective taking. "Taking the perspective of another person is the ability to understand how a situation appears to another person and how that person is reacting cognitively and/or emotionally to the situation. It is the ability to put oneself in the place of others and recognize that other individuals may have points of view different from one's own" (Johnson, 1975, p.241). Perspective taking is a challenging activity that requires two equally important components: (a) cognitive ability and (b) the motivation or propensity to engage in the process (Gehlbach, 2004). Research has often used the terms of role-playing and perspective taking, interchangeably. Weyl (1993) attempted to clarify the current use of terms. According to Weyl, the act of role-playing is 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 alternative viewpoint about a specific issue.

There are two general approaches to perspective taking. The most common approach is for the individual to adopt the perspective of a person key to the task at hand (e.g. taking the perspective of the audience members when giving a speech, or when in a heated argument with a loved one, considering the loved one's viewpoint). The majority of research has been conducted using this "task specific" approach.

Task Specific Perspective Taking

The ability to consider the perspective of another individual and being motivated to engage that ability in judgment and decision making has come to be seen as a critical component of social/cognitive competence. Piaget (1932) marked the ability to shift perspectives as a major developmental breakthrough in cognitive functioning, and Kohlberg (1976) included this ability in his classification of moral reasoning.

Social psychologists have shown that task specific perspective taking has been connected with developing historical understanding (Foster, 2001), fostering cooperation (Johnson, 1975), promoting moral reasoning and development (Hoffman, 2000), encouraging altruism and helping behaviors (Batson et al., 1995), reducing prejudice (Rokeach, 1960), and resolving conflicts (Deutsch, 1993). Recently Galinsky and Moskowitz (2000) reported that perspective taking decreased stereotypic bias on both a conscious and nonconscious specific task, and reduced evidence of in-group bias by increasing positive evaluations of the out-group. In clinical and counseling psychology, perspective taking has been regarded as one of the significant factors common to all successful therapeutic outcomes (Rodgers, 1957; Marks & Tolsma, 1986). All of the above findings resulted from participants being asked to take the perspective of a person(s) that was specifically related to the task at hand.

Taking experimenter-directed perspectives has also been found effective for improving free recall of descriptive information. Anderson (1970) suggested the role that perspective taking might play when he identified the three mediating processes required for learning verbal material: attention to the stimulus, encoding, and conceiving the relationships or linkages between the aspects of the stimulus, in particular, the aspects that would later serve as cues to the response. It is also suggested that learning is facilitated when the learning task requires some form of deep semantic processing, making the material more meaningful to the learner (Anderson, 1970). Anderson, Pitchert, and Shirey (1983) demonstrated that individuals while reading and trying to understand text consistently make inferences and recall information that is based on their perspectives and/or schemata. A key assumption of the perspectives approach to knowledge acquisition is the belief that the knowledge each individual possesses forms the basis for what a person can learn (Anderson, 1977, 1984). A possible problem that learners might face is not having the personal background needed to make inferences or realize the important meaningful information in a learning situation. This is where using the perspectives of another "known" person might prove beneficial for a learner. These perspectives can aid the learner by providing "ideational scaffolding" as well as an "interpretative framework" needed for comprehending text, discourse, etc. (Anderson, Reynolds, Schallert, & Goetz, 1977b; Pitchert & Anderson, 1977).

To determine if using another's perspectives could be beneficial, Pichert and Anderson (1977) asked participants to read a story from one of two specific perspectives, a homebuyer or a burglar. After reading a story that contained a description of a home and its contents, participants were asked to rate the importance of several facts from the story. Results demonstrated that different facts were rated as important depending on the assigned

perspective of the participant. Participants reading as “homebuyers” rated the facts that would be important for a home buyer to note (e.g. new roof, neighborhood watch). These important “facts” were different than those facts deemed important from those reading as “burglars (e.g. bushes hiding the porch, neighbors gone during the day).”

In a second experiment, Pichert and Anderson asked different participants to read the story as either a homebuyer or a burglar. Then participants were instructed to recall as many facts from the story as they could. Results demonstrated that different facts were recalled from the story depending on the perspective assigned during reading. Most of the facts recalled by “homebuyers” were those independently judged important to a homebuyer by participants in the first experiment. Those read by “burglars” recalled more facts that were independently judged to be important to a burglar.

In a later experiment, Anderson and Pichert (1978) demonstrated the importance of perspective taking during retrieval. Participants were asked to assume a particular viewpoint (homebuyer or burglar) before reading a story; later they were asked to recall information in the text. Details they recalled were consistent with their reading role. However, when instructed to shift to the alternate perspective, participants were then able to recall additional elements of the story that were more related to the new perspective than to the viewpoint they were originally assigned. By changing their perspective after recall, they were able to recall facts that had previously been inaccessible.

Ellis (1995) has also revealed the 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. Museums are unique learning environments where information and education are provided almost entirely through objects

and their interpretive display. It is the expectation of society that museums are a place of learning and instruction, and that patrons will experience education and enrichment (Booth, Krockover, & Woods, 1982; Falk, Koran & Dierking, 1986). To facilitate these goals, understanding the unique challenges this environment entails, museum professionals have tried to understand and mediate the individual's cognitive and affective growth gained during the museum visit.

In an attempt to investigate some of the components that may facilitate learning in the museum experience, Ellis (1995) investigated the effects of exhibit sequence, visitor characteristics, and the extent to which learners could be influenced by perspective taking instructions given prior to visiting an exhibit. For the purpose of this introduction, only the perspective taking condition will be discussed. Participants were assigned to conditions and were instructed to individually tour specific exhibits in order, using one of three perspectives: pretending to be a zoologist, a geologist, or just touring the exhibits (control). Participants in the perspective taking conditions were given definitions of a zoologists and geologists, and detailed lists of some of the things that members of these professions would be interested in and would focus on while learning information in the exhibit (i.e., where animals lived, what they feed on, general characteristics of animals; periods of time, formation of rocks and layers, fossils). After their self-paced tour through the museum, participants were led to a location adjacent to the exhibit where they were given a free recall exam and a 75 item multiple choice exam to measure their learning. Regression analyses were performed with significant full model effects for perspective taking on the total score for the multiple choice recall measure. Further analyses demonstrated that perspective-taking instructions given prior to exhibit viewing produce significant positive effects on learning and enjoyment.

Person Specific Perspective Taking

The second approach to perspective taking involves taking the viewpoint of another person not directly related to the task at hand in order to develop new ideas and understanding (e.g., when faced with an ethical dilemma asking oneself, "What Would Jesus Do?" or "What would my mom think about that?" Although there has not been a study conducted outside of our research group that has directly looked at person specific perspective taking, research in the areas of brainstorming and cooperative learning supports the idea that using other people's thoughts, ideas, and opinions can be helpful to people when thinking, making decisions, and learning. Brainstorming is a group technique for generating new, useful ideas and promoting creative thinking. Osborn (1957) suggested that an idea generated by one individual would create associations not only in the mind of that particular idea generator, but also in the minds of other members participating in the group. Associative theorists report that an individual's concepts and ideas are stored in an interconnected network of nodes known as a semantic network (Anderson, 1983). The strength of the individual connections within the network represents the degree of association between the concepts. Concepts or ideas that are similar or related to one another have much stronger connections than concepts or ideas that are very different from one another. When a particular node is activated, other nodes with strong connections to that node are also activated. This process is termed spreading activation (Anderson & Bower, 1973). It is believed that the power of brainstorming as a tool is that members in the group benefit from hearing the ideas of other group members, and could activate or make more accessible ideas that without some external cue might not have been activated.

In recent years the effectiveness of brainstorming has been challenged. Research has demonstrated that people who generate ideas in groups produce fewer, more redundant ideas than they otherwise would have, had they spent the same amount of time trying to come up with creative ideas on their own (Bond & Van Leeuwen, 1991; Diehl & Stroebe, 1987; McGlynn, Tubbs & Holzhausen, 1995). Social psychologists have offered several explanations why brainstorming can be counterproductive. First, when working in a large group (4 or more people), production blocking occurs because all members cannot speak at the same time. A member may have an idea to share, but in waiting for their turn may get distracted by another member's conversation and forget what he or she planned to say while waiting to speak (Diehl & Stroebe, 1987, 1991). Second, evaluation apprehension can be another important factor in brainstorming. People might generate fewer ideas for fear of being evaluated negatively. This fear hinders brainstorming, as members may be inhibiting or suppressing creative but controversial ideas (Mullen et al., 1991; Bond & Van Leeuwen, 1991). Third, social loafing can also be a deterrent. If groups are too large, then it is easy for members to fade into the background. Social loafing can frequently occur in brainstorming groups when individuals believe that their ideas will be pooled with others, so that their own contributions will be unidentifiable and dispensable (Diehl & Stroebe, 1987, 1991).

Despite these findings brainstorming is still widely used in business organizations and advertising agencies (Stroebe at al., 1992). People believe that they are productive in these groups, and they are more satisfied with what they accomplish than are people who work individually. Most importantly, people who work in groups report enjoying it more and report feeling stimulated by the contributions of their group members (Paulus et al., 1993). Although it appears that brainstorming with a group may not always yield a higher quantity

and/or quality of ideas than individual brainstorming, the motivational benefits to the members of a group may be worth the loss of a few more ideas.

It must be noted that the majority of studies on brainstorming and group research has been conducted using relatively large groups of people (5 or more). It seems likely that some of the barriers to group effectiveness would be reduced with smaller groups. This has certainly been the case in research on cooperative learning. Focusing on groups of 2-3 members, cooperative learning research has consistently shown that academic achievement is enhanced when an individual learns information with others as opposed to when he or she studies alone (Johnson & Johnson, 1989; O'Donnell & Dansereau, 1992; Slavin, 1983). The benefits of cooperative learning are apparent when it comes to learning new descriptive material. Students working in dyads significantly outperform individuals in the initial acquisition of textbook information (Larson, Dansereau, & Hythecker, 1985; O'Donnell et al., 1985).

When engaging in scripted cooperative learning, each individual may play one of two roles: learner or learning facilitator. The learner role involves processing, elaborating upon, and ultimately remembering information. The learning facilitator role involves teaching the material, serving as a "sounding board" for ideas, and provides a supportive emotional learning environment. Each individual may play only one role throughout the cooperative interaction or may enact both roles, alternating between the learner role and the learning facilitator role (Horn, Collier, Oxford, Bond, & Dansereau, 1998). It appears that the benefits of cooperative learning are gained by having the additional perspective of the other person. Students working in dyads are able to share their ideas and monitor their learning progress

with the help of a partner. They are also able to create additional elaborations using their partner's experience/perspective.

Person specific perspective taking has shown to be an effective way to aid in creating new ideas and helping learners learn and recall new material. Having the perspective of another appears to give individuals additional insight into new material or problems, aids in attentional focus to other meaningful details, as well as creates additional retrieval cues. Since person specific perspective taking is beneficial, it would be useful to create a "portable" perspective taking technique that individuals could use by themselves (i.e., when other people are not available). The question arises, "Could an imaginary team of people promote effective perspective taking?"

Thought-Team

Based on previous research that indicated the potential benefits of person specific perspective taking, a simple strategy was developed to help individuals cope with personal problem solving using a perspective taking strategy. The Thought Team strategy, a method utilizing a team of mental advisors initially introduced by Czuchry and Sia (1998), was designed to simplify and concretize the abstract idea of using the perspectives of others to help solve problems. This particular type of perspective taking could be considered "speculative perspective taking," as the participant aims to produce the target perspective of a chosen team member, without actual input from the team member (Atha-Weldon & Dansereau, 2000). Functioning as an imaginary committee of mental advisors, the Thought Team members appear to 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 (Atha-Weldon & Dansereau, 2006).

An individual wanting to use the Thought Team strategy would first be directed to assemble their own personal team; made up of three or four members. Individuals are encouraged to think of a variety of people in their personal knowledge bank such as historical figures, spiritual leaders, fictional heroes, and family members or friends. Each team member presumably has his or her own special personality, skills, insights, and expertise. In order to explore a wide range of possibilities, participants are encouraged to choose a variety of people that have different strengths and weaknesses; even members with opposing, extreme, or nontraditional views are encouraged. By selecting diverse people, the individual can create a team that represents several sets of characteristics, skills, insights, expertise, and experiences that should provide them access to additional knowledge and new ideas. After team members are selected a profile is developed for each team player to clarify each member's distinctive value and to appraise the overall competence of the team. A team name, logo, and motto are created to induce an attitude of team cooperation. At this point a problem is selected and the participant spends time considering the individual perspective of each Thought Team member in sequence and writing what insight, solutions, and ideas each member provides. It was hypothesized that the cumulative perspectives of the team members would lead to the generation of more novel, potentially effective solutions to personal problems.

An initial study found that the use of the Thought Team strategy during therapeutic writing sessions enhanced the writing process (Atha-Weldon & Dansereau, 1998). Participants who used the Thought Team while writing about a personal problem reported greater creativity and insight when thinking about solutions to their problems. Participants using the Thought Team also viewed their session as having more positive impact and

enjoyment than those participants who wrote without the aid of a Thought Team. In an additional study, Atha-Weldon (2000) reported more evidence for the utility of the Thought Team strategy as an aid to increasing the coherence and organization of information, and as a means of helping individuals begin and continue writing. Participants using the Thought Team reported significantly more creativity, depth, ease, and insight to their problem solving solutions than did participants who wrote without the aid of a Thought Team. Furthermore, the Thought Team strategy led to self-reports of greater long-term benefits such as insight and perceived ability to solve or manage the problem.

Learning Team

It would appear that any strategy that aids in the generation of ideas, the organization of information, and encourages creativity could have positive implications for those trying to learn information. Mooreland (1998) investigated if the success of the Thought Team could be transferred to the educational arena. Drawing from previous research on the benefits of employing experimenter-directed perspectives (Anderson, 1977; Anderson & Pitchert, 1978; Pitchert & Anderson, 1977), the Learning Team was designed to provide students with a tool to guide them in generating multiple perspectives for subsequent use while studying descriptive information. The rationale for this approach was: if a learner assembles an imaginary set of individuals about whom the learner's knowledge is rich, then the perspectives of these individuals may be more relevant to a wider variety of stimulus topics than would be stimulus–specific, experimenter-directed perspectives (e.g. such as those employed by Pitchert and Anderson,1977).

Mooreland (1998), using the guidelines of the Thought Team strategy, gave participants using the Learning Team brief training instructions that informed learners about

implementation and potential benefits of using different people's perspectives. It was explained that one problem learners face is that they often see things from a limited perspective and that it can be difficult to shift to a new perspective and view the world or information differently. Sometimes this limited perspective can hamper our creativity and our ability to learn information. To deal with this problem many organizations (business, government, classrooms) make use of diversity among their members by assembling them to collectively address and creatively solve a common topic or problem. The Learning Team concept is that it might be possible to capture some of the power of these teams by forming our own "imaginary" group of people that we can call upon to help us shift perspectives and arrive at new ideas. The instructions explained to learners that the intention of the Learning Team was to provide learners with a type of "mobile" focus group- that is, learners were guided to assemble a list of people that they believed had a unique perspective of the world and could help them to learn new material. After participants were given limited experience adopting the perspectives of their learning team members, they were provided with textbook material, which they studied for 20 minutes. After the initial study period, they were instructed to review the material while adopting the perspective of their first Learning Team member, and then to review again using the second team member.

Results indicated that participants who studied information while using the Learning Team strategy recalled more information than did participants in the typical review strategy condition. This benefit for enhancing free recall was seen for both main ideas and details. The advantages observed for the Learning Team strategy supported the expectation that the use of learner-generated perspectives during studying positively impacted free recall performance. This study also supported previous research on perspective taking, such as

during skill acquisition, attitude change, and the test expectancy effect (Lisper & Rautalinko, 1996; Ishiyama, 1994; Meyer, 1934). In addition, the findings extended previous research by showing that, to be beneficial to the learner, a perspective need not be experimenter-directed or stimulus specific, such as those perspectives used by Pitchert and Anderson (1977).

Dependent Measures and Perspective Taking

Test Performance: Recall and Recognition

The Learning Team strategy may have several benefits for its users. First, Mooreland's study (1998) suggests that it may aid participants in test performance. In order to replicate this finding, the present study gave all participants a delayed free recall examination to compare those who use the Learning Team / Retrieval Team and Retrieval Team only strategies with those who study using their own typical methods. The present study extended Mooreland's study by also administering a multiple-choice examination to determine whether there are differences in recognition.

Pitchert and Anderson (1977) demonstrated that task-specific perspective taking at the retrieval of information aids in recall. The present study tested whether person specific perspective taking also aids in recall. This question of whether adopting perspectives, that are not directly relevant to the task, can aid in memory/performance has not been previously examined. In order to provide an answer, participants in one of the experimental conditions were trained on the Learning Team strategy after their study session, but prior to the free recall session (Retrieval Team only). They were then instructed to use a Retrieval Team during recall and multiple-choice completion.

Study Session Evaluation

The present study examined not only the effectiveness of the learning team strategy in regards to recall and recognition, but measured student's reactions to their study session and their experimental study experience. The Session Evaluation Questionnaire (SEQ, Stiles et al., 1994) measured students' ratings of the study session and the overall experimental experience (e.g., depth and smoothness). All participants also completed a subjective affect graphing measure. The subjective graphing procedure and format used to collect affect and thought process ratings is based on the methods described by Hall and O'Donnell (1996). After studying the stimulus information, all participants were asked to recall their motivation, concentration, effectiveness, and anxiety across the study period. They then graphed each dimension, indicating its level at the beginning, middle, and end of the study session.

Attitudes and Intentions

An attitude is "a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor" (Eagly & Chaiken, 1993, p. 1). According to the three-component theory, a person's attitude is a combination of thoughts, feelings, and behaviors (Breckler, 1984; Eagly & Chaiken, 1993; Insko & Schopler, 1967). Decades of research have been devoted to determining how attitudes are formed, used, and changed. In this study, attitudes and intentions were examined with respect to the use of the Learning Team and or Retrieval Team strategies and with respect to Mental Health and Meditation, with the later being the topic of the study material.

Attitudes about the Learning Team Strategy

The present study examined the attractiveness of the Learning/Retrieval Teams strategies for student use. It is hypothesized that if these Learning/Retrieval Team strategies

are viewed as an effective and engaging and fairly simple strategy to use, then students will be more likely to use these tools in the future. This might also help students who are not motivated to use the current study strategies traditionally available by giving them another weapon in their arsenal. The present study asked students to report their thoughts about the effectiveness, ease of use, and their motivation to use the Learning Team strategy. Students also reported whether they used their Learning Team between sessions, as well as whether they intended to use their Learning Team in the future.

Study Topic: Mental Health and Meditation

The study material selected for this experiment is representative of college textbook material, but also has potential personal relevance to college students. Mental Health and Meditation techniques might be of importance to many students dealing with the stress and demands of college. As a consequence, if the Learning Team/Retrieval strategies increases attitudes and intentions relevant to Mental Health and Meditation techniques over other study strategies, this would be beneficial in its own right and could expand to other helpful behaviors. Much research in the area of attitude formation and change has been devoted to understanding how attitudes and behavioral intentions are changed by persuasion (e.g. elaboration likelihood model, Petty & Cacioppo, 1981a, 1986a, 1986b; heuristic-systematic model, Chaiken & Eagly, 1983; Chaiken et al., 1989). Can perspective taking change or influence one's attitudes and behaviors about the material under study? Two areas of research that support this possibility are: research on the elaboration likelihood model of persuasion and research about the influence of subjective norms on attitudes and behavior.

One of the most important variables that influence a person's motivation to think about presented information is the perceived personal relevance or importance of the

communication (see Johnson & Eagly, 1989; Petty & Cacioppo, 1979b, 1990). When people determine that a message is highly relevant to them, they are more likely to elaborate and use deep processing while thinking about the material. Thinking about how someone else (i.e., a member of the Learning Team) would deal with material or information could cause people to feel that the topic or issue *should* be relevant to them, and thus cause them to think more deeply about the topic/issue. Consequently, this new perspective of personal relevance and importance may cause one's attitude toward the material to change, and might even encourage learners to engage in some of the behaviors that the material encouraged.

This leads to the question: Can adopting another's perspectives lead to changing one's own attitudes and behavioral intentions? Fishbein and Ajzen (1975, 1980) argued that part of the difficulty in being able to predict behavior from attitudes was that an important determinant of behavior and behavioral intentions, subjective norms, had to be combined with attitude valence. A subjective norm is "the person's perception that most people who are important to him think he should or should not perform the behavior in question" (Fishbein & Ajzen, 1975, p. 302). When people are faced with a choice, they think about their attitude, consider the referents' attitude whose opinions matter the most to them, describe the referents' expectations for their behavior, and then decide the extent that they are willing to comply with those expectations if they are different from their own. For example, in predicting the likelihood that people will use condoms, it is necessary to measure not only how strongly they believe in the necessity of using condoms, but also their perceptions of their friends' and families' expectations regarding condom use, and the extent to which they want to comply with these expectations. When studying material about one's health with a

learning team, subjective norms would likely be considered and could strengthen behavioral intentions.

The present study looked at differences in participants' attitudes and behavioral intentions regarding mental health and meditation practices, and this occurred after they studied a non-persuasive (fact-based), passage about mental health and meditation. A questionnaire measured attitudes toward mental health and meditation, and intentions to change health related behaviors suggested in the article in the near future.

Individual Differences and Perspective Taking

Although a Learning/Retrieval Team strategy may be generally effective, it may be differentially useful for certain subgroups of students. The Multiple Perspectives Inventory (MPI; Gorenflo & Crano, 1988) was developed to measure the capacity of people to adopt more than a single point of view and to employ multiple perspectives in evaluating objects, seeking solutions, managing interpersonal relationships, and making judgments. The MPI was used as a premeasure to reveal individual differences in perspective taking ability. Verbal ability (Deigan, 1973) and gender were also examined in terms of their impact on the dependent measures.

Present Study

The present study attempted to replicate and extend Moreland's (1998) study by addressing the following questions.

- Does the use of learner-generated perspectives during study influence test performance? Based on Mooreland's (1998) experiment, use of the Learning Team is expected to result in greater recall of stimulus information.

- What happens if the Learning Team is used just at the retrieval stage of learning? Will allowing new perspectives to be taken during the recall activity increase recall? Such research would help locate the influence of taking perspectives at either information acquisition or retrieval. Based on Anderson and Pitchert's (1977) results, it would be expected that the Learning Team could be an effective as a retrieval strategy.
- Will learners consider the Learning Team strategy a valuable, worthwhile strategy that they will use in addition to their typical methods? Based on the Atha-Weldon (2000, 2006) studies on personal problem solving, it is expected this will be answered affirmatively.
- Is the Learning Team a strategy that learners will continue to use in their everyday studies? Will they generalize this approach to other uses? For example solving personal problems? Again Atha-Weldon's (2000, 2006) findings would suggest yes.
- Will the use of the Learning Team cause participants' attitudes about Mental Health and Meditation to be more positive than participants who used their typical study methods? Will participants report greater intentions to engage in some of the behaviors suggested in the article?
- Does test performance and rating of depth predict and actually report engaging in behaviors discussed in the material that is being studied?
- Will identifiable subgroups of participants benefit differentially from the various conditions?

To address the previous questions, the present study implemented a one factor between - subjects design with multiple dependent measures. Participants were randomly assigned to one of three conditions: Learning Team/Retrieval Team (LT/RT), Retrieval Team only (RTO), and Control (students using their typical study methods).

Method

Participants

One hundred and fifty-two undergraduates from psychology courses at Texas Christian University received experimental credit for their participation in the present study. They were randomly assigned to one of three conditions (LT/RT = 52, RTO = 50, & Control = 50). A power analysis conducted prior to running suggested that moderate to large effects could be detected with this sample size.

Training Materials (Appendix C)

Participants assigned to one of the conditions using Learning or Retrieval Teams (LT/RT, RTO) received training materials that introduced the Learning/Retrieval Team concepts and methods necessary to compose a team consisting of four unique members: three "imaginary" communicants plus the individual. Participants read instructions explaining how to select their own crew of team members from individuals in their lives who would have an interesting range of knowledge in certain topics, unique ways at learning ideas, and that would be helpful to them in remembering the information they would be learning and/or recalling.

There were some questions as to how to teach participants to use the Learning Team. A small pilot study (N=10) was conducted to determine when the Learning Team should be

used while studying, as well as if the type of team members selected affected participants' progress. It was quickly discovered that having the students start studying using their Learning Team was overwhelming for them. It appeared that it created too much of a cognitive load and left students feeling frustrated. Most of the students (N=5) reported at first trying to learn new material with their Learning Team members, but soon dropped them, and started studying as they normally did, then went back over the material with their Learning Team. From this feedback, we then had the remaining students first study the material as they normally would, and then go back over the material using their Learning Team. These individuals (N=5) reported that they thought the procedure was easy to use and did not have problems understanding how to use their Team. Based on these results the training in this study focused on instructing participants to use their Learning Team as a review tool when studying.

One new comment that kept coming up in the pilot study's evaluations was that participants believed that Learning Team members that they knew well were most helpful for them to use. Previous studies with Thought Team (Atha-Weldon, 2000) and Learning Team (Moreland, 1996) encouraged participants to select team members using famous, fictional, or historical figures that they thought would form a "winning team." These people worked well in the Thought Team when dealing with personal problem solving, but it appears that when using a Learning Team, the stronger the schema one has for the individual, the better that person serves the participant in helping focus attention, providing personal examples, and making elaborations. Because of these observations, participants will be prompted to select more "personal" members when creating their Learning Team.

After selecting three Team members, participants were asked to complete a personal profile for each team member, and during this process they reflected on each person's areas of expertise, their interests and hobbies, as well as the personality characteristics of that member. Lastly, to provide an idea as how to use their newly devised team, participants were asked to think about a psychology class they have or are currently taking and to write down some of the topics discussed in that course that each of their learning team members might find interesting. Each participant was instructed as they reviewed the material they studied to try to remember each of their team members' unique ways of remembering material, as well as the thoughts, ideas, and items that each team member would be interested in remembering.

Participants in the Learning Team/Retrieval Team group (LT/RT) received all their training material prior to studying any passages. Participants in the Retrieval Team only group (RTO) received their training packet explaining the Retrieval Team concept during Session 3, prior to recall testing, and were instructed to create a Retrieval Team that they would use to aid them on the Free Recall and Multiple-Choice examination. Participants in both the LT/RT and the RTO groups received a training sheet prior to any examination explaining that they should first try to remember everything they could during the free recall session, and then should think about each Team member to see if they could remember any additional information.

Dependent Measures (Appendix A)

Delayed Free Recall Exam. Participants were presented with 3 blank 8.5 X 11 inch sheets of paper for the free recall task. During the 40 minute free recall period, participants were instructed to write down as much of the information from the Mental Health & Meditation article they had previously studied as they could remember.

Multiple-Choice Examination. A 50 item multiple choice exam was created that tested participants' recognition of main concepts and details they could have acquired after studying the article on Meditation and Mental Health.

Subjective Graphing. In order to measure the influence of study strategy on learner affect and thought processes during the study sessions; after studying stimulus information, all participants were asked to recall their level of motivation concentration, effectiveness, and anxiety across the study period. They then graphed each affect, indicating its level at the beginning, middle, and end of the study session. Identical subjective graphs were completed after each study session and were used as multiple dependent measures. This procedure and format was used to collect affective ratings based on the method of subjective graphing described by Hall and O'Donnell (1996).

Session Evaluation Questionnaire (SEQ; Stiles, 1980). The purpose of this questionnaire was to measure participant's ratings for the depth and smoothness of their study sessions, as well as the depth and smoothness of the experiment in general. The SEQ was filled out after the study session, and one was completed after the entire experiment had been conducted evaluating the experiment itself.

Attitudes and Intentions about Studying Questionnaire (Labansat & Dansereau, 2007).

A sixteen item Likert scale (1-7) questionnaire was developed to assess participants' expectant attitudes (more or less enjoyable; more or less effective) and intentions about their future studying (willingness to try new techniques, strategies). The Attitudes and Intentions Studying Questionnaire was given during Session 3 and its factors served as dependent measures.

Attitudes about Mental Health and Meditation Questionnaire (Labansat & Dansereau, 2007). A thirty-six item Likert scale (1-7) questionnaire was developed to assess participants' attitudes regarding mental health, medical treatments, and what may be considered alternative treatments (i.e. meditation, yoga) of mental health issues. The Attitudes about Mental Health and Meditation Questionnaire was completed near the end of session 3 and its factor served as a dependent measure.

Intentions Regarding Mental Health and Meditation Questionnaire (Labansat & Dansereau, 2007). A twenty-five item Likert scale (1-7) questionnaire was developed to assess participant's future intentions to engage in learning or participating in mental health or meditation/yoga activities. The Intentions of Mental Health and Meditation Questionnaire was completed near the end of session 3 and factors from this questionnaire served as dependent measures.

Behavior Measure (Labansat, 2007). A 6 item questionnaire was developed asking participants to indicate, by checking each line, behaviors they had engaged in between session 2 and session 3 (Thursday – Tuesday). They were then asked to write the total number of times they engaged in each checked behavior (i.e., thought about the meditation article; tried to meditate; spoke to someone about meditation; sat up straight, relaxed, breathed) and write it on the line provided. This questionnaire was completed near the end of session 3 and served as a dependent measure.

Individual Difference Measures (Appendix B)

Delta Reading Vocabulary Test (Delta; Deignan, 1973). The Delta is a 4-item multiple-choice vocabulary test of verbal ability. Four options are given for a person to choose the

most appropriate synonym for a target word. Correlations (r = .60) have been found between the Delta and more extensive verbal ability tests (e.g., SAT) by Dansereau (1978).

Multiple Perspectives Inventory (MPI) (Gorenflo & Crano, 1998). The Multiple Perspectives Inventory is designed to measure the capacity of people to adopt more than a single point of view and to employ multiple perspectives in evaluating objects, seeking solutions, managing interpersonal relationships, and making judgments. The inventory consisted of 20 items presented in a 5-point Likert scale format.

Procedure

This experiment was conducted in three sessions that occurred in a 7 day period. *Day One.* Upon entering the room all participants randomly received a colored folder assigning them to one of three conditions. Each participant read and signed an experimental consent form. Next all participants completed a battery of individual difference measures in the following order: The Delta Vocabulary Test, and The Multiple Perspective Taking Inventory. Following this, participants in the RTO and Control conditions completed a filler activity consisting of Suduku and word search puzzles for 20 minutes. During this time participants in the LT/RT condition received the Learning Team training packet where they read information about the Learning team method and constructed their learning team. Next all participants had 30 minutes to study a short passage of material on how intuition affects cognition. Participants in the RTO and Control conditions first read instructions explaining that they would be studying some material about intuition and thinking for 30 minutes, and they would have 7 minutes to decide what study strategy they would use for this task. Participants in the LT/RT condition were informed that they would be studying material on intuition and thinking for 30 minutes using their Learning Team as a tool for reviewing. After

studying for 30 minutes, all participants graphed their concentration, motivation, effectiveness, and anxiety during the beginning, middle, and end of their study session. All participants then completed the Session Evaluation Questionnaire regarding their study session. Lastly, participants were thanked, reminded to return for Session 2, and dismissed.

Day Two. Upon entering the room participants picked up the colored folder they used in Session 1 which contained the materials for Session 2. The RTO and Control conditions were informed that they were about to study a passage on Mental Health & Meditation for 45 minutes and over which they would be thoroughly tested. They were then given 7 minutes to consider which study strategies they would use for this task. Participants in the LT/RT condition were informed that they would be using their Learning Team as a review tool to study a passage on Mental Health & Meditation for 45 minutes over which they would be thoroughly tested. They were then given 7 minutes to review their Learning Team training packets. Next all participants studied the material on Mental Health & Meditation according to their previous instructions for 45 minutes. Upon finishing the 45 minute study session all participants graphed their concentration, motivation, effectiveness, and anxiety during the beginning, middle, and end of their study session. Lastly, participants completed the Session Evaluation Questionnaire, and were then thanked, reminded to return to Session 3 and dismissed.

Day Three. Upon entering the room participants picked up their colored folder they used in the previous sessions, which contained the materials for Session 3. Participants in the Control condition had 20 minutes to work on filler activities consisting of Suduku puzzles and word searches. Participants in the LT/RT condition received a sheet explaining how to use their learning Team as a Retrieval Team on their Free Recall examination. They used the

20 minutes to review their Learning Team training materials. Participants in the RTO condition received a Retrieval Team training packet that explained the Learning/Retrieval Team concept and also instructed them how to construct their personal Retrieval Team to be used on the Free Recall examination. Next all participants had 20 minutes to complete a free recall examination over the material on Mental Health & Meditation they had studied during the previous session. After 20 minutes expired, all free recall examinations were collected and the multiple-choice exams were handed out to all participants and they were given 40 minutes to answer the 50 m/c questions. Next all participants completed the Attitudes and Intention Questionnaire about Studying and the Attitudes and Intentions Questionnaires regarding Mental Health and Meditation. Lastly they completed the Session Evaluation Questionnaire regarding the overall experiment. Participants were then thoroughly debriefed, thanked, and excused.

Results

Preliminary Analyses

The following section will discuss the criteria and results of principal components analyses conducted on several questionnaires, explain how free recall and multiple-choice scores were determined, as well as describe the results from the examination of correlation matrices to determine possible covariates and split factors to be used in the primary analyses.

Factor Analyses

The items of the Session Evaluation Questionnaire were 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 factor had an eigenvalue of 1.0 or greater; see Table 1 for factors and loadings. In

forming composite scores, criteria for item inclusion on a factor was that the highest loading occurred on that factor and the loading was .60 or greater (loadings ranged from .65 to .84). The inter-term reliability based on Cronbach's alpha were .88 and .80 respectively. Composite scores were calculated by averaging the relevant items using unit weights. Two composites meeting this criterion emerged and were named *depth* and *smoothness*.

Table 1

Factor Loadings of Items from Session Evaluation Questionnaire.

Factor	Alpha	Item	Loading
Depth	.88	Powerful	.84
		Full	.81
		Deep	.77
		Special	.77
		Valuable	.76
Smoothness	.80	Relaxed	.75
		Comfortable	.72
		Smooth	.69
		Easy	.65

The items of the Attitudes and Intentions about Studying Questionnaire were 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 factor had an eigenvalue of 1.0 or greater; see Table 2 for factors and loadings. In forming composite scores, criteria for item inclusion on a factor was that the item's highest loading occurred on that factor and that the loading was .60 or greater (loadings ranged from .66 to .88). Three composites meeting this criterion emerged and were named (a) *attitudes toward future studying*, (b) *openness to new strategies* and *(c) attitudes*

toward LT & RT strategies used in the experiment (LT/RT & RTO groups) The Cronbach's alpha scores were .87, .90, and .91 respectively. Composite scores were calculated by averaging the relevant items using unit weights.

Table 2

Factor Loadings of Items from the Attitudes & Intentions about Studying Questionnaire

Factor	Alpha	Item	Loading
		My studying in the future…	
Attitudes Toward Future Studying	.87	Will be more enjoyable	.84
		I will be more motivated	.77
		I will be more effective	.76
		I will have better concentration	.69
		I will be more positive	.69
Openness to New Strategies	.90	I will try new techniques	.87
		I will try on incorporate other's ideas	.80
		I will learn new study strategies in future	.77
		I will use what I learned	.70
		I have learned something in the experiment I can use to help me study in future	.67
Attitude toward LT & RT Strategies	.91	I will tell others about the "Team"	.86
		I will use the "team" I developed	.80
		I will apply the LT/RT ideas to help me make decisions	.80
		I will use my "team" to help me solve personal problems	.79

The items of the Attitudes about Mental Health & Meditation Questionnaire were also subjected to a PCA with varimax rotation for the purpose of forming composite scores. Again a quota of at least three items per factor was set for the formation of the composites and each factor had an eigenvalue of 1.0 or greater; see Table 3 for factors and loadings. For

forming factor scores, criteria for item inclusion on a factor again was that the item's highest loading occurred on that factor and that the loading was .60 or greater (loadings ranged from .75 to .87). One factor meeting these criteria emerged *attitudes toward meditation*. The inter-term reliability based on Cronbach's alpha = .91. Composite sores were calculated by averaging the relevant items using unit weights.

Table 3

Factor Loadings of Items from Attitudes about Mental Health & Meditation Questionnaire.

Factor	Alpha	Item	Loading
Attitudes toward Meditation & Yoga	.91		
		Recommend Meditation to a Friend/Family	.91
		Meditation can Reduce Stress	.88
		Meditation is Worth the Time	.88
		Meditation can Help w/ Depression	.83
		Feelings toward People who meditate	
		Meditation Techniques	.81
		Meditation can Help w/ Concentration	.81

The Intentions Regarding Mental Health/Meditation Questionnaire was also subjected to a PCA with varimax rotation to form composite scores. Again a quota of at least three items per factor was set for the formation of the composites and each factor had an eigenvalue of 1.0 or greater; see Table 4 for factors and loadings. One factor meeting these criteria emerged (a) *Intentions to try meditation and breathing techniques.* The inert-term reliability based on Cronbach's alpha was .96. Composite scores were calculated by averaging the relevant items using unit weights.

Table 4

Factor Loadings of Items from Intentions Mental Health & Meditation Questionnaire

Factor	Alpha	Item	Loading
Intentions to try Meditation Techniques	.96	Try Meditating to Help Concentration	.90
		Try Meditation to Help Relax	.87
		Practice Meditation at Home	.84
		Try Meditating when Anxious	.84
		Learn more about Meditation	.81
		Learning relaxation breathing techniques	.76
		Start sitting still & breathing daily	.75
		Start study time with some meditation	.74
		Learn more about meditation & health	.72
		Consider Eastern views of Mental Health	.63
		Talk to family member about meditation	.62
		Share information about meditation	.61

Recall: Mentions & Accuracy Scores.

Experimental free recall tests were scored according to the number (mentions) and quality of propositions and ideas (accuracy) recalled from the stimulus material. For each participant, a rater blind to experimental condition assigned a score for each statement recalled. The terms were scored according to a 4-point scale, from 0 (not present) to 3 (accurate and complete). Mentions scores were simply calculated by assigning 1 point for each item that participants recalled that received a score of 1 or higher. These were then summed for an overall mention score.

Accuracy scores were then calculated by summing all the points for each statement recalled and dividing the total by the number of mentions. Again each statement was scored according to a 4-pointscale, from 0 (not present) to 3 (accurate and complete).

Inter-rater reliability was determined by correlating overall mention and accuracy scores with those provided by an independent rater for thirty randomly selected participants (10 per condition 5 male, 5 female), yielding r = .96 for mentions, and r = .84 for accuracy.

Individual Differences.

Scoring.

The Delta Reading Vocabulary Test and The Multiple Perspective Taking Inventory were both scored according to accepted research methods previously published (Deignan, 1973; Gorenflo & Crano, 1998; Stiles, 1980, respectively).

Correlations between these individual difference measures and the dependent measures within each condition were examined to determine which measures might serve as covariates or median split variables. Examination of these correlations indicated that neither of the above two individual difference measures would be useful as either covariates or median split factors. However, an examination of correlations between gender and the dependent measures suggested potential interactions and consequently gender was included as a factor in the primary analyses.

Primary Analyses

The analyses examining the effects of multiple perspective taking were subdivided into effects of learning strategy on: exam performance; participants' reports of their study session and experimental experiences; participants' attitudes and intentions toward future studying; and participant's attitudes, intentions, and behaviors regarding meditation.

Test Performance over Material Studied

In order to examine the effects of perspective taking on exam performance, a 3 (Strategy: LT/RT, RTO, Control) X 2 (Gender: Female, Male) between-subjects MANOVA

was conducted on the following dependent variables: Multiple Choice (MC), accuracy, and mentions. Results did not indicate significant main effects, but did indicate a significant interaction effect for Condition * Gender $\underline{F}$ (6, 152) = 2.42, $\underline{p} < .027$. The univariate analysis indicated a significant interaction effect for Condition * Gender with *multiple-choice*, $\underline{F}$ (2, 152) = 3.22, $\underline{p} < .043$, and *accuracy*, $\underline{F}$ (2, 152) = 4.45, $\underline{p} < .013$, but not for mentions.

Post hocs on *multiple-choice* indicated no significant differences among males but a significant difference among females. Females in the control group using their own study strategy ($\underline{M}$ = 27.78) had significantly higher scores on the multiple-choice exam, than did females using the LT/RT ($\underline{M}$ = 23.54) strategy. Post hocs on *accuracy* indicated a significant difference between females, where females in the control group using their own study strategy ($\underline{M}$ = 2.26) significantly recalled more accurate statements than did females using the LT/RT ($\underline{M}$ =2.02) and RTO strategies (M = 2.08).

There were also significant differences on *accuracy* among the males, indicating that males in the RTO strategy ($\underline{M}$ = 2.28) made significantly more accurate statements than did males in the control group (M = 1.74), no other differences among males were significant. Means and standard deviation are presented in Table 5.

Table 5

Means and Standard Deviations for Strategy and Test Performance Factors.

Factor	Group	Gender	N	M	SD
Multiple-Choice	LT/RT	Female	33	23.54	6.03
		Male	19	24.97	8.23
		Total	52	24.05	6.87
	RTO	Female	37	26.32	5.36
		Male	13	25.76	6.22
		Total	50	26.18	5.54
	Control	Female	32	27.78	6.54
		Male	18	22.61	6.80
		Total	50	25.92	7.03
Accuracy	LT/RT	Female	33	2.02	.678
		Male	19	2.04	.725
		Total	52	2.03	.689
	RTO	Female	37	2.08	.422
		Male	13	2.28	.397
		Total	50	2.13	.420
	Control	Female	32	2.26	.376
		Male	18	1.74	.869
		Total	50	2.08	.644
Mentions	LT/RT	Female	33	7.03	4.77
		Male	19	8.78	6.75
		Total	52	7.67	5.57
	RTO	Female	37	7.59	3.98
		Male	13	7.00	5.00
		Total	50	7.44	4.22
	Control	Female	32	7.53	4.06
		Male	18	6.22	5.17
		Total	50	7.06	4.48

Participants' Study Session and Experimental Experiences.

A 3 (Strategy: LT/RT, RTO, Control) X 2 (Gender: Female, Male) between subjects MANOVA was conducted on the two SEQ composite factors regarding the study session (i.e. *depth* and *smoothness*). The analyses revealed a significant multivariate effect for condition, F (4, 152) = 3.29, p < .012. The univariate analyses indicated an effect for *smoothness*, F (2, 152) = 3.48, p < .033. Post hocs indicated that participants using the LT/RT (M = 18.84) and RTO (M = 18.85) strategies differed significantly from participants in the Control group (M = 20.72). No other differences were significant. It appears that participants using their typical study strategies reported their study session as going more smoothly (e.g. easier, pleasant) than did treatment participants. Means and standard deviations are presented in Table 6.

Table 6

Means and Standard Deviations for Study Session SEQ Factor Smoothness.

Factor	Group	Gender	N	M	SD
SEQ Factor 2 *Smoothness*	LT/RT	Female	33	19.48	4.19
		Male	18	17.66	3.74
		Total	51	18.84	4.09
	RTO	Female	36	19.13	5.58
		Male	13	18.07	3.47
		Total	49	18.85	5.09
	Control	Female	32	20.50	4.73
		Male	18	21.11	4.18
		Total	50	20.72	4.50

A 3 (Strategy: LT/RT, RTO, Control) X 2 (Gender: Female, Male) MANOVA was conducted on the two SEQ composites (i.e., *depth* and *smoothness*) regarding the overall experiment with strategy as the between-subjects factor. The analysis revealed a significant multivariate effect for condition, F (4, 152) = 2.81, p < .026. The interaction of Condition * Gender was nonsignificant, F (2, 152) = 2.67, p = .072. The univariate analysis indicated an effect for *depth*, F (2, 152) = 3.08, p <.049. Post hocs were used to compare the d*epth* factor and condition means and indicated that participants using the LT/RT (M = 23.69) and RTO (M = 23.70) strategies differed significantly from participants in the Control group (M = 21.18) but not from each other. Means and standard deviations are presented in Table 7.

Table 7

Means and Standard Deviations for Strategy and SEQ Experiment Factors.

Factor	Group	Gender	N	M	SD
SEQ Factor1 *Depth*	LT/RT	Female	33	22.78	5.09
		Male	19	25.26	5.21
		Total	52	23.69	5.23
	RTO	Female	37	24.48	5.43
		Male	13	21.46	4.13
		Total	50	23.70	5.26
	Control	Female	32	21.15	6.50
		Male	18	21.22	6.26
		Total	50	21.18	6.35

Participants were also asked to graph their concentration, motivation, effectiveness and anxiety at the completion of their study session. Examination of the data from this subjective graphing activity suggested that some of the participants were confused as to how

to complete this scale. As a result of this problem, subsequent analyses were not conducted on this dependent measure.

Participants' Attitudes and Intentions toward Future Studying.

A 3 (Strategy: LT/RT, RTO, Control) X 2 (Gender: Female, Male) between-subjects MANOVA was conducted on the three factors from the Attitudes & Intentions about Studying Questionnaire (i.e., *attitudes toward future studying*, and *openness to new strategies*). The analysis results failed to indicate any significant differences.

A 2 (Strategy: LT/RT, RTO) X 2 (Gender: Female, Male) between-subjects ANOVA was conducted on the factor *attitudes toward LT & RT strategies used in the experiment* from the Attitudes and Intentions about Studying Questionnaire. The analysis failed to indicate any significant differences.

Participants' Attitudes, Intentions & Behaviors: Meditation.

A 3 (Strategy: LT/RT, RTO, Control) X 2 (Gender: Female, Male) between –subjects MANOVA was conducted on the factors from the Attitudes and Intentions Regarding Mental Health & Mental Health Questionnaires and the Behavior Measure. Three composites of *attitudes regarding meditation*, *intentions to practice meditation*, and *behavior* served as the dependent variables. The analysis revealed a significant interaction for Condition * Gender, F (2, 151) = 2.82, p = .041. Univariate analyses indicated a significant interaction effect for Condition * Gender with *behavior*, F (2,151) = 3.35, p < .038; and a marginally significant interaction effect for Condition * Gender with *intentions to practice meditation*, F (2, 151) = 2.96, p < .055, but not for *attitudes regarding meditation*.

Post hocs on *behavior* indicated significant differences among males, in which males in the LT/RT strategy ($\underline{M}$ = 5.52) reported performing significantly more behaviors than did males in the RTO ($\underline{M}$ = 2.69) and control group ($\underline{M}$ = 2.05) strategies.

Post hocs on *intentions to practice meditation* indicated significant differences among males, in which males in the LT/RT strategy (M = 53.15) reported having greater intentions to practice meditation than did males in the RTO (M = 38.53) and control group (M = 39.61) strategies. Means and standard deviations are presented in Table 8.

Table 8
Means and Standard Deviations for Attitudes, Intentions and Behavior: Meditation

Factor	Group	Gender	N	M	SD
Attitudes Regarding Meditation	LT/RT	Female	33	26.12	8.28
		Male	19	25.68	9.02
		Total	52	25.96	8.47
	RTO	Female	37	26.24	7.20
		Male	13	19.15	9.75
		Total	50	24.40	8.44
	Control	Female	32	26.81	8.55
		Male	18	22.72	7.94
		Total	50	25.34	8.49
Intentions to Practice Meditation	LT/RT	Female	33	50.12	17.32
		Male	19	53.15	21.12
		Total	52	51.23	18.65
	RTO	Female	37	53.75	18.71
		Male	13	38.53	15.56
		Total	50	49.80	19.02
	Control	Female	32	49.87	19.54
		Male	18	39.61	15.38
		Total	50	46.18	18.67
Behavior Practiced	LT/RT	Female	33	4.03	3.42
		Male	19	5.52	5.26
		Total	52	4.57	4.20
	RTO	Female	37	4.86	4.42
		Male	13	2.69	2.05
		Total	50	4.30	4.04
	Control	Female	32	4.21	4.25
		Male	18	2.05	1.79
		Total	50	3.44	3.69

Regression Analyses

Simple linear regressions were conducted for each gender using *behavior* as the criterion and total memory *performance* and *depth* as predictors. For females, the SEQ factor *depth* significantly predicted *behavior*, $R^2 = .12$, F (2, 100) = 6.89, $p = .003$. For males, the *performance* factor significantly predicted *behavior*, $R^2 = .21$, F (2, 49) = 6.14, $p = .009$.

Simple linear regressions were also conducted for each gender using the *intentions to practice meditation* as the criterion and total memory *performance* and SEQ *depth* as predictors. Results indicated that for females, SEQ *depth* significantly predicted *intentions to practice meditation*, $R^2 = .20$, F (2, 100) = 12.09, $p = .000$. For males, SEQ *depth* also significantly predicted *intentions to practice meditation*, $R^2 = .23$, F (2, 49) = 7.12, $p = .022$, and *performance* marginally predicted intentions to practice meditation, $R^2 = .23$, F (2, 49) = 7.12, $p = .053$.

Discussion

How does using multiple perspectives while studying effect subsequent test performance? Based on Mooreland's (1998) results that reported a significant Learning team advantage on participants' test performance scores, the present study was expected to reveal the same test performance advantage for participants using the LT/RT and RTO strategies. However, this was not found. The results for test performance indicated that women actually seemed to be hindered by the strategies. Males using the LT/RT or RTO strategies did not appear to be hindered, and at least in the case of the RTO strategy, statements generated during recall were more accurate. Although males using the RTO strategy demonstrated an accuracy advantage which slightly supports Anderson and Pitchert's (1976) findings that perspective taking at retrieval can help one retrieve information, the results for overall test

performance do not provide significant support for the LT/RT or RTO strategies as effective learning strategies for improving recall and recognition.

The differences between males and females were a surprise, and because Mooreland (1998) did not report gender effects, it is unknown if these effects also occurred in his data. Regardless, strategy use did impact males and females differently in this study. Why does using either the LT/RT or RTO strategy apparently hinder test performance for women? One explanation is that women may already use some form of these strategies when studying personally relevant information. Having them overtly use a perspective taking strategy may have actually interfered with their typical approaches. Although the literature on perspective taking has not directly reported women using perspective taking while they study, research in the field suggested that females have better perspective taking ability (Ittyerah, 1990), and may engage in perspective taking more often (Redivo,1995). Females might naturally refer to people they know while learning, and providing a concrete systematic strategy may have increased their cognitive load by focusing them on "how" to do it correctly.

Males did not show a negative effect from using the LT/RT /RTO strategies. While mostly nonsignificant, the findings from the males show the same trend across dependent measures of higher means for males using the LT/RT and the RTO strategies. Males using the RTO strategy at retrieval did significantly recall more accurate statements than the other males using their own study strategy, but surprisingly males using the LT/RT strategy did not show this advantage at retrieval. It might be that the simple RTO strategy may be something that could help males improve their retrieval results. Future studies should employ a larger sample of males to see if this pattern could be replicated and perhaps better understood.

Another explanation for gender differences is that they might be the result of changes from Mooreland's study in regards to stimulus material and the topic that was studied. Mooreland used a fairly short (2 pages) factual topic, whereas the present study used a personally relevant topic (meditation and mental health) that was considerably longer than Mooreland's stimulus material. Having participants simultaneously trying to learn a large amount of new information and implementing a new, somewhat complex, strategy might have been too taxing. It might have been difficult for participants in the strategy conditions to continue to use these new ideas for the duration of the material. With the time restraints, they were not free to read and implement the strategy at their leisure. Perhaps a shorter passage might have been easier for participants to digest and thus provided the latitude to think about other's perspectives more thoroughly.

This explanation is partially supported by looking at participants' evaluations of their study session and experimental experience. Participants in the control group, using their own strategies, reported their study session as significantly smoother (e.g., easy, relaxed) than did participants using the LT/RT and RTO strategies. It appears that using a new strategy at first is difficult and can take some time getting used to before one feels comfortable integrating the strategy into a normal study routine.

Although participant's using the LT/RT and RTO strategies viewed their study session as less smooth, they appeared to see the value of having such a tool in their arsenal. Participants using the LT/RT and RTO strategies reported the experiment as having significantly more depth (value) than did participants who were using their typical study methods. So although using a new strategy may be difficult at first, and it may not feel as

easy as using routine method, after using it during both learning and retrieval, participants did see the apparent value of trying a new procedure.

Given the results with experimental depth, it is surprising that that the attitudes and intentions toward studying measures were nonsignificant. It appears that these results might have been due to the nature of the questionnaire itself. When reexamining the items it is clear that there could have been some confusion as a result of the way questions were worded. Participants' may have answered questions such as… "I learned something in this session, I could use in my future study sessions," based on the meditation article and its suggestions instead of the study strategy. This vagueness could have lead to not finding differences between participants using "team" strategies and their own methods. For future studies, a new measure should be constructed correcting this potential lack of clarity.

Although, the value of using the LT/RT and RTO strategy could not be observed in test performance nor did its perceived value transfer into reported future use, there was an impact of using the LT/RT strategy on male participants' intentions, and behavior in regards to the topic they studied: meditation. Males using the LT/RT strategy reported greater intentions to practice meditation than did males in the RTO and control groups. It appears that taking perspectives influenced males' incorporation of the information studied into their personal lives. The first indicator of behavioral change may be stating an intention to engage or participate in a particular behavior (Ajzen & Fishbein, 1980). It seems as if thinking about how people important to you would think about the materials being studied may influence your willingness to incorporate the suggested ideas into your personal experience. Males using the LT/RT study strategy also reported performing more behaviors related to meditation during the time between sessions than did participants who were using their own

study strategies (RTO & Control groups). It appears that perspective taking during studying can influence not only males' intentions but also their behavior.

Females' attitudes regarding meditation and their intentions or behaviors did not seem to be impacted from the use of the LT/RT or RTO strategies. This might have been because females were more familiar with meditation practices and might have already had positive attitudes and intentions regarding meditation for the strategies to have an impact. Such a hypothesis is supported by the findings from the Attitudes Regarding Meditation Questionnaire which seem to suggest this as females overall means regarding meditation were generally higher than males regardless of experimental condition. Although males' attitudes regarding meditation were not significant, again the same pattern among the means existed, indicating that males in the LT/RT strategy reported more positive attitudes regarding meditation than did males in the RTO and control conditions.

These findings regarding behavior and intentions could have important implications for research in the area of attitude change and education. Perhaps for males thinking about how the important people in their lives view the material they are studying, makes the material more personally relevant to them. When individuals determine a message is highly relevant to them, they are more likely to elaborate and use deep processing when thinking about the material (Petty & Cacioppo, 1990; Johnson & Eagly, 1989). Gaining a deeper sense of relevance and elaborating on the material may have motivated males to engage in the meditation behaviors discussed in their studying. Perspective taking might be an effective way to encourage males to engage a in beneficial but not initially appealing behavior.

Another explanation may be found in the subjective norm literature that suggests that when determining whether or not to engage in a behavior people are likely to think about the

important people in their lives opinions on the behaviors and decide if they want to comply (Fishbein & Ajzen, 1975). It appears that for males using the perspectives of important people in their lives while studying encouraged them to try some of the suggested behaviors.

Educators may want to think about these findings with respect to how they assess learning. Although males using the LT/RT strategy did not perform better on free recall and multiple-choice exams than did males using the RTO or their own study strategies, males using the LT/RT strategy did report that they incorporated the information they learned into their daily lives. It leads one to examine how do educators access learning? Educators wanting to be able to monitor students' understanding of the material being taught, may have a higher goal of seeing students apply the knowledge they acquire. It is clear from the regression analyses that these two outcomes can be partially linked. For both males and females, elements related to test performance predicted engagement in meditation. Unfortunately, one of the problems with current study strategies available for students today is that those strategies focus on helping students perform better on tests rather than making the material personally relevant. This may limit the generality of learning. The use of perspective taking may help remedy this shortcoming.

In summary, the use of multiple perspective taking in studying seems to have an important impact on males' test performance as well as their incorporation of knowledge. It is also seen as valuable by all "team" using participants. The findings regarding behavior and intentions could have important implications for research in the area of attitude change and education. Further research on perspective taking while studying may provide researchers with another tool to help facilitate attitude change, and may provide educators with

suggestions for students who are looking to integrate the information they study into their everyday lives.

References

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.

Anderson, R. C. (1970). Control of student mediating processes during verbal learning instruction. *Review of Educational Research*, *40* (3), 349-369.

Anderson, R. C. (1977). The notion of schemata and the educational enterprise: General discussion of the conference. In R. C. Anderson, R. J. Spiro, & W. E. Montague (Eds.), *Schooling and the acquisition of knowledge* (pp.415-431). Hillsdale, N J: Lawrence Erlbaum Associates, Publishers.

Anderson, R. C., (1984). Some reflections on the acquisition of knowledge. *Educational Researcher*, *13* (9), 5-10.

Anderson, R. C., & Pitchert, J. W. (1978). Recall of previously unrecallable information following a shift in perspective. *Journal of Learning and Verbal Behavior, 17,* 1-12.

Anderson, R. C., Pichert, J.W., & Shirey, L. L. (1983). Effects of the reader's schema at different points in time. *Journal of Educational Psychology*, *75* (2), 271-279.

Anderson, R. C., Reynolds, R. E., Schallert, D. L., & Goetz, E.T. (1977). Frameworks for comprehending discourse. *American Educational Research Journal*, *14 (4),* 367-381.

Arenson, K. W. (2004). Study of college readiness finds no progress in decade. *New York Times*, p.A26.

Atha-Weldon, C. (2000). *Use of Thought Team to enhance problem- based writing: Impact of number of team members.* Unpublished master's thesis, Texas Christian University, Fort Worth, Texas, United States of America.

Atha-Weldon, C., & Dansereau, D. F. (2006). *Thought Team: Perspective taking to enhance problem-based writing*. Manuscript submitted to the *Journal of College Counseling*.

Batson, C. D., Early, S., & Salvarani, G. (1995). Immorality from empathy-induced altruism: When compassion and justice conflict. *Journal of Personality and Social Psychology*, *68 (6)*, 1042-1054.

Bond, C. F., Jr. & Van Leeuwen, M. D. (1991). Can a part be greater than the whole? On the relationship between primary and meta-analytic evidence. *Basic and Applied Social Psychology*, *12*, 33-40.

Booth, J. H., Krockover, G. H., and Woods, P. R. (1982). *Creative museum methods and educational techniques.* Springfield, IL: Charles C. Thomas Publisher.

Boulard, G. (2004). Two-year schools overworked, undervalued, report says. *Black Issues in Higher Education*, *21 (15)*, 16.

Breckler, S. J. (1984). Empirical validation of affect, behavior, and cognition as distinct components of attitude. *Journal of Personality and Social Psychology*, *47*, 1191-1205.

Bretzing, B. B. and R.W. Kulhavy. 1981. Note taking and passage style. *Journal of Educational Psychology*, *73*, 242-250.

Chaiken, S., & Eagly, A. H. (1983). Communication modality as a determinate of persuasion: The role of communicator salience. *Journal of Personality and Social Psychology*, *45*, 241-256.

Chaiken, S., Lieberman, A., & Eagly, A. H. (1989). Heuristic and systematic information processing: Within and beyond the persuasion context. In J. S. Uleman & J. A. Bargh (Eds.), Unintended thought: Limits of awareness, intention, and control (pp.212-252). New York: Guilford.

Czuchry, M., & Sia, T. L. (1998). *Mentally invoking the perspectives of others to facilitate problem solving.* In D. F. Dansereau, & S. M. Dees (Eds.). *TCU Cognitive skills series.* Fort Worth, TX: Institute of Behavioral Research, Texas Christian University.

Deigan, G. M. (1973). The delta reading vocabulary test. Lowry Air Force Base, CO: Air Force Human Resources Laboratory.

Deutsch, M. (1993). Educating for a Peaceful World. *American Psychologist*, *48 (5)*, 510-517.

Diehl, M., & Stroebe, W. (1987). Productivity loss in brainstorming groups: Toward the solution of a riddle. *Journal of Personality and Social Psychology*, *53*, 497-509.

Diehl, M., & Stroebe, W. (1991). Productivity loss in idea-generating groups: Tracking down the blocking effect. *Journal of Personality and Social Psychology*, *61*, 392-403.

Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. New York: Harcourt, Brace, Jovanovich.

Ellis, J. F. (1995). Learning from museum exhibits: The influence of sequence, verbal ability, field dependence, and perspective-taking instructions. *Dissertation Abstracts International, 55 (10-A)*, 3149.

Falk, J. J., Koran, J. J., & Dierking, L. D. (1986). The things of science: Assessing the learning potential of science museums. *Science Education*, *760 (5)*, 503-508.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior.* Reading, MA: Addison-Wesley.

Foster, S. J. (2001). Historical Empathy in Theory and Practice: Some final thoughts. In Davis, O. L., Yeager, E. A., and Foster, S. J. (eds.), *Historical Empathy and Perspective Taking n the Social Studies*, Rowman & Littlefield, Lanham, MD, pp.167-181.

Galinsky, A. D., and Moskowitz, G. B. (2000). Perspective Taking: Decreasing stereotype expression, stereotype accessibility, and in-group favoritism. *Journal of Personality and Social Psychology*, *78 (4)*, 708-724.

Gehlbach, H. (2004). A New Perspective on Perspective Taking: A Multidimensional Approach to Conceptualizing an Aptitude. *Educational Psychology Review*, *16 (3)*, 207-234.

Gorenflo, D. W., & Crano, W. D. (1998). The multiple perspectives inventory: A measure of perspective- taking. *Swiss Journal of Psychology, 57 (3),* 163-177.

Hall, R. H. & O'Donnell, A. M. (1996). Cognitive and affective outcomes of learning from knowledge maps. *Contemporary Educational Psychology*, *21*, 94-101

Hoffman, M. L. (2000). *Empathy and Moral Development: Implications for Caring and Justice*, Cambridge University Press, New York.

Herrmann, D., Raybeck, D., Gruneberg, M. (2002). *Improving Memory and Study Skills*. Toronto: Hogrefe & Huber Publishers.

Insko, C. A., & Schopler, J. (1967). Triadic consistency: A statement of affective-cognitive-conative consistency. *Psychological Review*, *74*, 361-376.

Ishiyama, F.I. (1994). Language dysfluency exercise: Understanding migrants' experience of communicative frustration and social invalidation. *Simulation and Gaming*, *25*, 113-120.

Ittyerah, Miriam. (1990). Moral development and its relationship to perspective taking ability. *Psychology and Developing Societies*, *2 (2)*, 203-216.

Johnson, D. W. (1975). Cooperativeness and social perspective taking. *Journal of Personality and Social Psychology*, *3*, 241-244.

Johnson, B.T., & Eagly, A. H. (1989). Effects of involvement on persuasion: A meta-analysis. *Psychological Bulletin*, 106, 290-314.

Johnson, D., & Johnson, R. T. (1989). *Cooperation and competition: Theory and research*. Edina, MN: Interaction Book Company.

Kiewra, K. A. (1989). A review of note taking: The encoding-storage paradigm and beyond. *Educational Psychology Review*, *1*, 147-172.

Kiewra, K. A., & Fletcher, H. J. (1984). The relationship between levels of note taking and achievement. *Human Learning*, *3*, 273-280.

King, A. (1992). Comparison of self-questioning, summarizing, and notetaking-review as strategies for learning from lectures. *American Educational Research Journal, 27*, 664-687.

King, A. (1999). Discourse patterns for mediating peer learning. In A. M. O'Donnell & A. King (Eds.), *Cognitive perspectives on peer learning* (pp. 87-115). Mahwah, NJ: Erlbaum.

Kohlberg, L., (1976). Moral stages and motivation. In Likona, T., (Ed.), *Moral development and behavior*. Holt, Rinehart, & Winston, New York.

Larson, C. O., Dansereau, D. F., O'Donnell, A. M., Hythecker, V I., Lambiotte, J. G., & Rocklin, T. R. (1985). Effects of a metacognitive and elaborative activity on cooperative learning and transfer. *Contemporary Educational Psychology*, *10*, 342-348.

Lisper, H. –O., & Rautalinko, E. (1996). Effects of a six-hour training of active listening. *Scandinavian Journal of Behaviour Therapy*, *25*, 117-125.

McGlynn, R. P., Tubbs, D. D., & Holzhausen, K. G. (1995). Hypothesis generation in groups constrained by evidence. *Journal of Experimental Social Psychology*, *31*, 64-81.

Meyer, G. (1934). An experimental study of old and new types of examination: I. The effects of examination set on memory. *Journal of Experimental Psychology*, *25*, 641-661.

Moreland, J. L. (1998). *Taking perspectives while studying descriptive information.* Unpublished dissertation, Texas Christian University, Fort Worth, Texas, United States of America.

Mullen, B., Johnson, C., & Salas, E. (1991). Productivity loss in brainstorming groups: A meta-analytic integration. *Basic and Applied Social Psychology*, *12*, 2-23.

O'Donnell, A. M., Dansereau, D. F., Rocklin, T. R., Lambiotte, J. G., Larson, C. O., & Young, M. D. (1985). Effects on elaboration frequency on cooperative learning. *Journal of Educational Psychology*, *77*, 572-580.

O'Donnell, A. M., & Dansereau, D. F. (1992). Scripted cooperation in student dyads: A method for analyzing and enhancing academic learning and performance. In N. Miller & R. Hertz-Lazarowitz (Eds.), *Interaction in cooperative groups: The theoretical anatomy of group learning* (pp.121-140). New York: Cambridge University Press.

Osborn, A. F. (1957). *Applied Imagination*. New York: Scribner.

Paulus, P. B., Dzindolet, M. T., Poletes, G. & Camacho, L. M. (1993). Perception of performance in group brainstorming: The illusion of group productivity. *Personality and Social Psychology Bulletin, 19*, 79-89.

Pepper, R. J., & Mayer, R. E. (1986). Generative effects of note-taking during science lectures. *Journal of Educational Psychology*, *78*, 34-38.

Petty, R. E., Cacioppo, J. T. (1979b). Issue-involvement can increase or decrease persuasion by enhancing message-relevant cognitive responses. *Journal of Personality and Social Psychology*, *37*, 1915-1926.

Petty, R. E., & Cacioppo, J. T. (1986a). *Communication and persuasion: Central and peripheral routes to attitude change*. New York: Springer-Verlag.

Petty, R. E., & Cacioppo, J. T. (1986b). The Elaboration Likelihood Model of persuasion. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 19 pp.123-205). New York: Academic Press.

Petty, R. E., & Cacioppo, J. T. (1990). Involvement and persuasion: Tradition versus integration. *Psychological Bullet in*, *107*, 367-374.

Piaget, J. (1932). *The moral judgment of the child*. London: Routledge & Kegan Paul.

Pichert, J. W., & Anderson, R. C. (1977). Taking different perspectives on a story. *Journal of Educational Psychology*, *69 (4)*, 309-315.

Pintrich, P. R., Smith, D. A. F., Garcia, T., & McKeachie, W. J. (1991). A Manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ). Ann Arbor, MI: National Center for Research to Improve Postsecondary Teaching and Learning, University of Michigan.

Redivo, Michael. (1995). Dyadic perspective-taking and similarity: Predictors of relationship satisfaction. *Dissertation Abstracts International: Section B: The Science & Engineering*, *55 (11B)* pp.5084.

Rokeach, M. (1960). *The Open and Closed Mind: Investigations Into the Nature of Belief Systems and Personality Systems*, New York: Basic Books Publishing.

Slavin, R. E. (1983). When does cooperative learning increase student achievement? *Psychological Bulletin*, *94*, 429-444.

Stiles, W. B., Reynolds, S., Hardy, G. E., Rees, A., Barkham, M., & Shapiro, D. A. (1994). Evaluation of description of psychotherapy sessions by clients using the Session Evaluation Questionnaire and the Session Impacts Scale. *Journal of Counseling Psychology*, *41*, 175-185.

Stroebe, W., Diehl, M., & Abakoumkin, G. (1992). The illusion of group effectivity. *Personality and Social Psychology Bulletin*, *18*, 645-650.

Stroebe, W., & Diehl, M. (1994). Why groups are less effective than their members: On productivity losses in idea-generating groups. In W. Stroebe & M. Hewstone (Eds.) *European Review of Social Psychology*, Vol. 5. New York: Wiley.

Weyl, C. F. (1993). Empathy, perspective taking, and role taking. A review of the use of the constructs and an attempt at redefinition. *Dissertation- Abstracts- International*, *54* (2-B*),* 1117.

Wittrock, M. C. (1990). Generative processes of comprehension. *Educational Psychologist*, *24*, 345-376.

Appendix A

Dependent Measures

The following measures appear in the order they were completed.

1. Free Recall Exam
2. Multiple Choice Exam
3. Subjective Graphing
    a. Motivation
    b. Concentration
    c. Effectiveness
    d. Anxiety
4. Session Evaluation Questionnaire (SEQ)
5. Attitudes and Intentions toward Study Strategies
6. Attitudes and Intentions toward Mental Health & Meditation
7. Behavior Measure

Folder # _____

Free Recall Test Instructions

On the sheets provided, please write down as much information you can remember from the Mental Health & Meditation article that you studied last session.

Mental Health & Meditation Multiple Choice Test

Please answer all questions according to what was said in the Mental Health / Meditation Article…

1. Who said: "A person mediating on compassion for others becomes the first beneficiary."
    a. Kabit-Zion
    b. Ghandi
    c. Dalai Lama
    d. Tibetan lama

2. The following are considered signs of mental health EXCEPT:
    a. maintaining satisfying relationships
    b. able to handle normal levels of stress
    c. leading an independent life
    d. feeling in control of one's emotions

3. According to the article, Freud's humble goal was to _____.
    a. transform hysterical misery into common unhappiness.
    b. Help people uncover their hidden motives
    c. Release people from their mental/emotional bondage
    d. Make people aware of the unconscious thoughts that burden them

4. According to the article which of the following does NOT affect how mental health is defined.
    a. professional theories
    b. personality traits
    c. cultural differences
    d. subjective assessments

5. Some _____ Americans say they practice some form of meditation.
    a. 5 million
    b. 1 million
    c. 100,000 thousand
    d. 10 million
    e. 100 million

6. Being able to recognize the spark before the flame refers to….
    a. how neuron patterns change after firing
    b. how anger can cause serious damage
    c. breaking the reactive component of emotions
    d. understanding how to ignite positive thinking

7. Compassion for others begins _____.
    a. at birth
    b. to develop with mediation practice.
    c. with thoughts
    d. at home

8. According to the article, basic meditation techniques can help you do all of the following EXCEPT:
    a. increase your concentration
    b. release oneself from the constraints one places on their own happiness
    c. understand the feelings of others
    d. make you resistant to grief

9. The article referred to the limbic system as the
    a. dashboard
    b. engine
    c. prefrontal cortex
    d. stabilizer of the neural network

10. When improving yourself and your monitoring skills, you are not _____ as much as you are _____ your thoughts.
    a. tuning up; tuning out
    b. focusing in; projecting out
    c. tuning out; tuning up
    d. projecting out; focusing in

11. _____ means both cultivating nonjudgmental awareness of a specific object and seeing deeply into things.
    a. mindfulness
    b. shamatha
    c. altruism
    d. bhavana

12. One study found that 40 minutes of daily meditation:
    a. thickened parts of the cerebral cortex
    b. engorged the cerebellum
    c. calmed activity in the amygdala
    d. lengthened neurons

13. The word mediation has the same connotation as when we say we:
    a. “let’s be spontaneous”
    b. “focus on the breath”
    c. “tune up an engine”
    d. “cultivate a garden”

14. Metacognition means
    a. more like sky than storm
    b. awareness trumps thoughts
    c. awareness of awareness
    d. focusing on one object

15. Neurobiologically we seem wired for
    a. relaxation
    b. empathy
    c. compassion
    d. stress

16. Compassion can help people manage their own suffering because it's a reminder that others are in pain.
    a. true
    b. false

17. Scientists have spent decades mapping the brain regions related to positive emotions.
    a. true
    b. false

18. Meditation can dampen affective arousal from a limbic system kicked into alarm mode by fear or anger.
    a. true
    b. false

19. Research shows that a brief meditation session can be more effective than a nap in improving performance on tests that require concentration.
    a. true
    b. false

20. Western scientists are primarily orientated toward:
    a. discovering methods to create happiness in people
    b. defining mental disorders
    c. healing the mentally ill
    d. curing physical diseases

21. The article promoted the idea that the modern conveniences of life (cell phones, computers, etc) are so complex it is impossible for individuals to choose what to pay attention to:
    a. true
    b. false

22. The core teachings of meditation encourages those who practice to:
    a. Relax a little every day
    b. Shake off suffering and discover happiness
    c. Tune out distractions in thoughts
    d. Join eastern religions such as Buddhism

23. When getting started in meditation one should NOT
    a. always have your back straight
    b. be at ease
    c. get upset by distractions
    d. focus on breaths

24. Today counselors help patients relieve emotional distress by doing the following EXCEPT:
    a. changing the content of their thoughts
    b. testing new possibilities
    c. focus on what is causing the distress
    d. challenging their beliefs

25. The World Health Organization has created a universal working definition of mental health.
    a. true
    b. false

26. It is a common belief in the west that concentration, kindness and happiness can be developed with practice.
    a. true
    b. false

27. Who believes that "we should be spontaneous; and that passions are the beauty of life".
    a. American philosophers
    b. Dalai Lama
    c. French intellectuals
    d. Aristotle and Socrates

28. What provided researchers with evidence that emotions like love and compassion are skills that can be trained?
    a. PET scans conducted on depressed patients
    b. Parenting workshops
    c. school teacher's moods
    d. brain scans of monks

29. It is recommended that beginners starting meditation practice _____.
    a. 10 minutes a day
    b. 24 minutes a day
    c. 40 minutes a day
    d. 15 minutes a day

30. In looking at some of the differences between Western and Eastern thoughts- Westerners tend to believe:
    a. we need to train ourselves to get rid of bad mental habits
    b. problems can be solved by learning to quiet the mind
    c. that each person has a genetically determined set point for well-being
    d. that you have to pursue happiness and love.

31. Which of the following universities was NOT mentioned in the article?
    a. University of Wisconsin
    b. UCLA
    c. University of Toronto
    d. University of Santa Barbara

32. You are considered to have good mental health if you do not have a recognized mental disorder.
    a. true
    b. false

33. Bhavana translated as meditation means _____.
    a. “oneness”
    b. “cultivation”
    c. “peaceful”
    d. “empty”

34. Which of the following statements about emotions are FALSE? Emotions _____
    a. can keep us from seeing and responding clearly
    b. can diminish our capacity to live our lives
    c. are based on reality
    d. can be very distressing

35. What area in the brain did researchers report is associated with happiness?
    a. Parietal love
    b. Corpus Callosum
    c. Left prefrontal cortex
    d. Occipital lobe

36. Compassion is like:
    a. Taming a lion
    b. Riding a horse
    c. Training a dog
    d. Pummeling a pigeon

37. Who wrote the book "Attention Revolution?"
    a. Dalai Lama
    b. Clifford Saron
    c. Allen Wallace
    d. Crusty the Clown

38. Meditating on compassion shows a striking increase in _____ waves.
    a. Gamma
    b. Beta
    c. Alpha
    d. Delta

39. The lag time between provocation, impulse and action is shorter than _____.
    a. An eye blink
    b. One deep breath
    c. A snap of a finger
    d. A heartbeat

40. Research has shown that overtime extra helpings of mental suffering can damage the parts of the brain involved in _____.
    a. Social functioning
    b. Learning & memory
    c. Metacognition
    d. Emotional functioning

41. In the book, The Attention Revolution: Unlocking the Power of the Focused Mind, the author describes a _____ Stage program to achieve quiescence.
    a. Nine
    b. Ten
    c. Six
    d. Eight

42. Our emotional experience consists mainly of _____.
    a. Spurts of feelings
    b. Gusts of negative feelings blowing through the mind
    c. Negative thoughts running through the mind
    d. A rush of all of our feeling at once.

43. Neuroscience has evidence that the brain is _____.
    a. Malleable
    b. Unchangeable
    c. Plastic
    d. Rigid

44. One Tibetan lama told a researcher that after many years of meditation practice his mind was more like _____.
    a. A deer roaming undisturbed through the forest
    b. A bird soaring high above the clouds
    c. A fish swimming freely through a great reef
    d. A monkey swinging freely from vine to vine

45. We can transcend our problems by learning to :
    a. Quiet the mind
    b. Relax and cope with stress
    c. Change our world
    d. Change our mind

46. Western science believes which of the following:
    a. Happiness is learned
    b. We have to actively seek out love
    c. Companionship is key to mental health
    d. Each of us has an inner well-being set point

47. Research found that when school teachers were trained in meditation and then meditated 30 minutes a day; their _____ improved as much as if they had taken _____.
    a. Well-being; antidepressants
    b. Moods ; antidepressants
    c. Happiness ; a vacation
    d. Moods ; a vacation

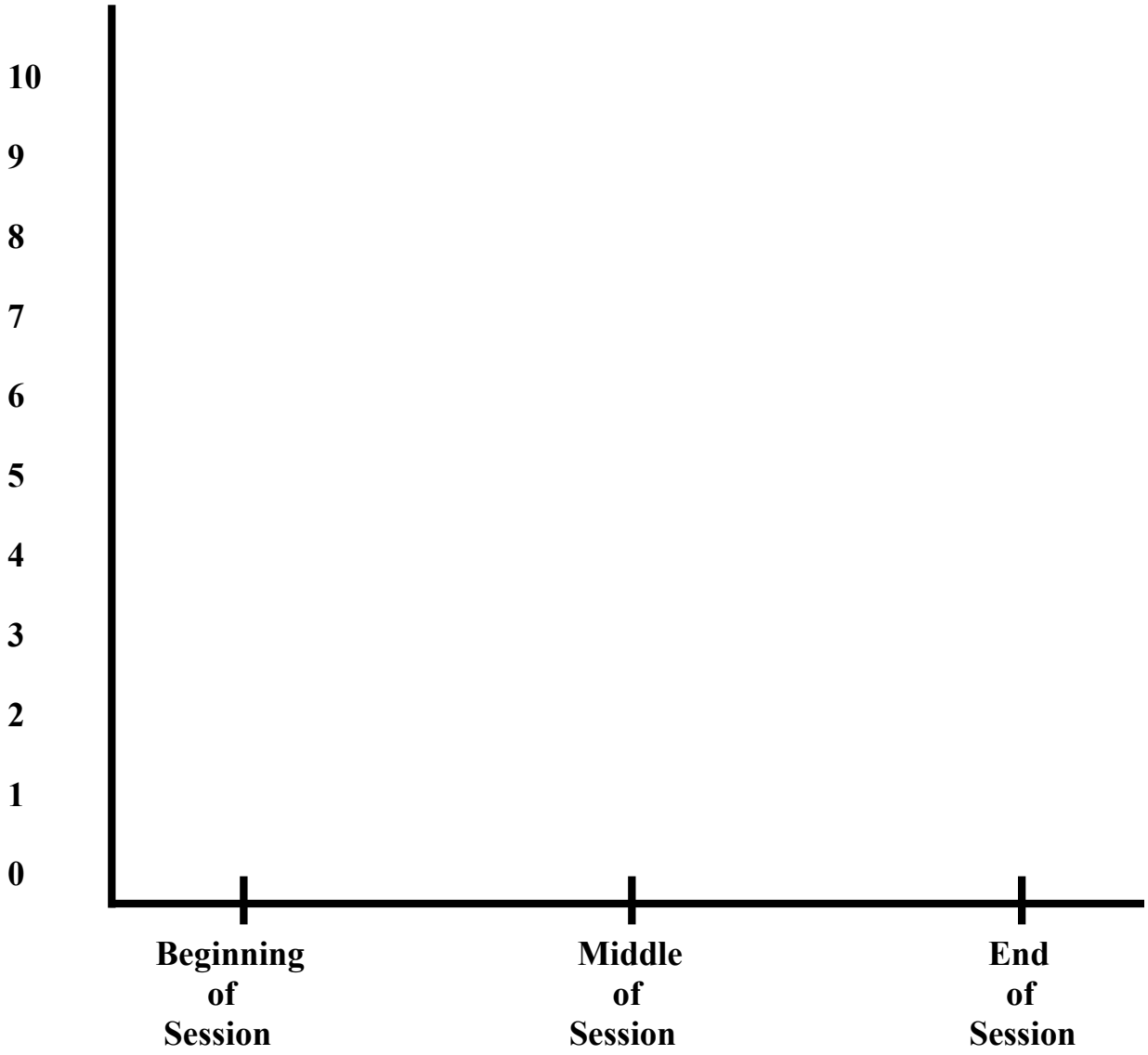
48. The insights gained through meditation practice may make it easier to feel _____ toward others.
    a. Happiness
    b. Kindness
    c. Good thoughts
    d. Frustration

49. The link between compassion for others and oneself may explain why recent research connects altruism to _____.
    a. Health & happiness
    b. Happiness & well-being
    c. Wealth & happiness
    d. Hatred & guilt

50. Matthieu Ricard developed an exercise to help people cope with all of the following except _____.
    a. Obsessive desire
    b. Envy
    c. Fear
    d. Anger

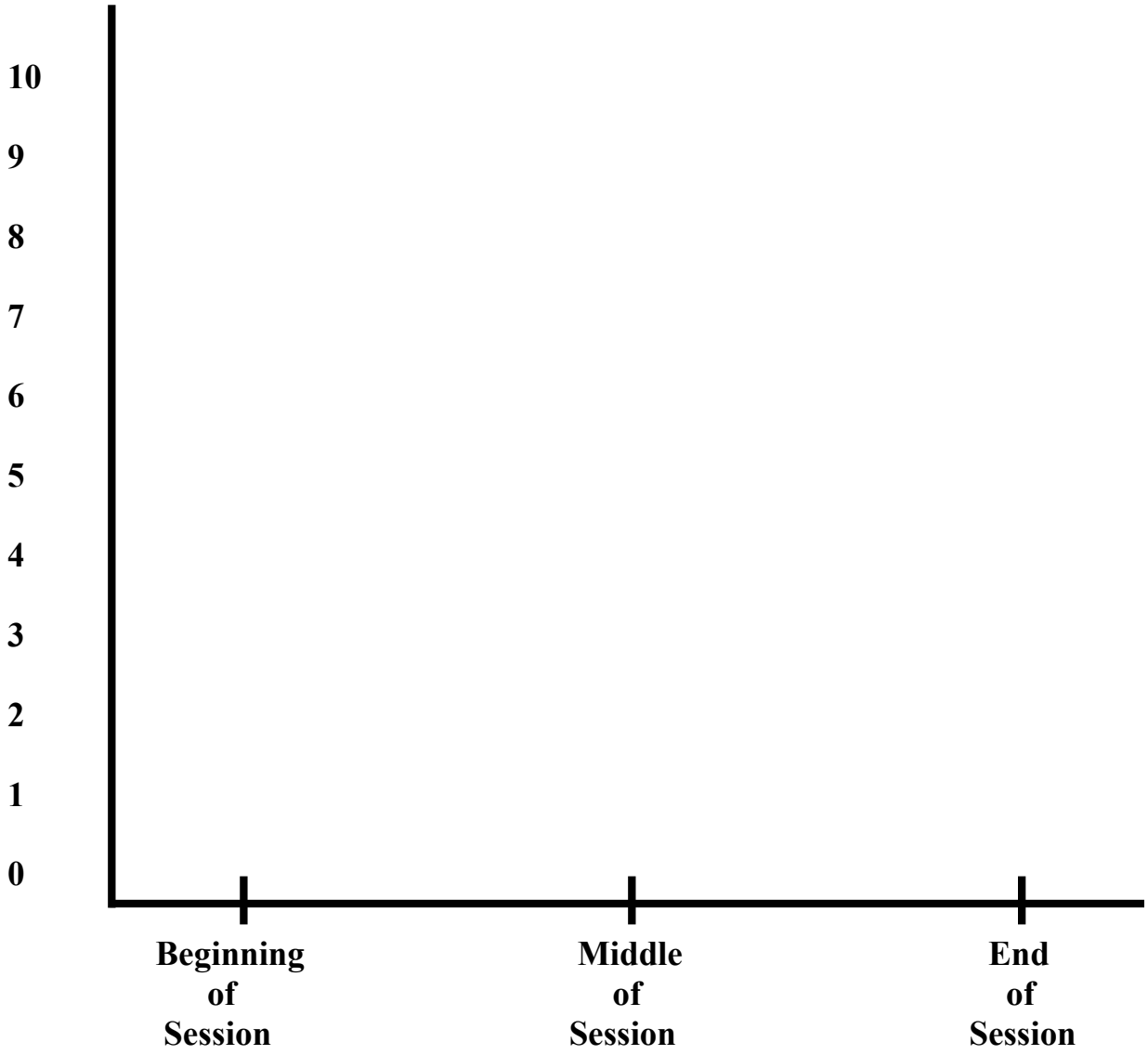
Motivation

For each point in time, indicate your level of motivation while studying during this session from 0 – 10.



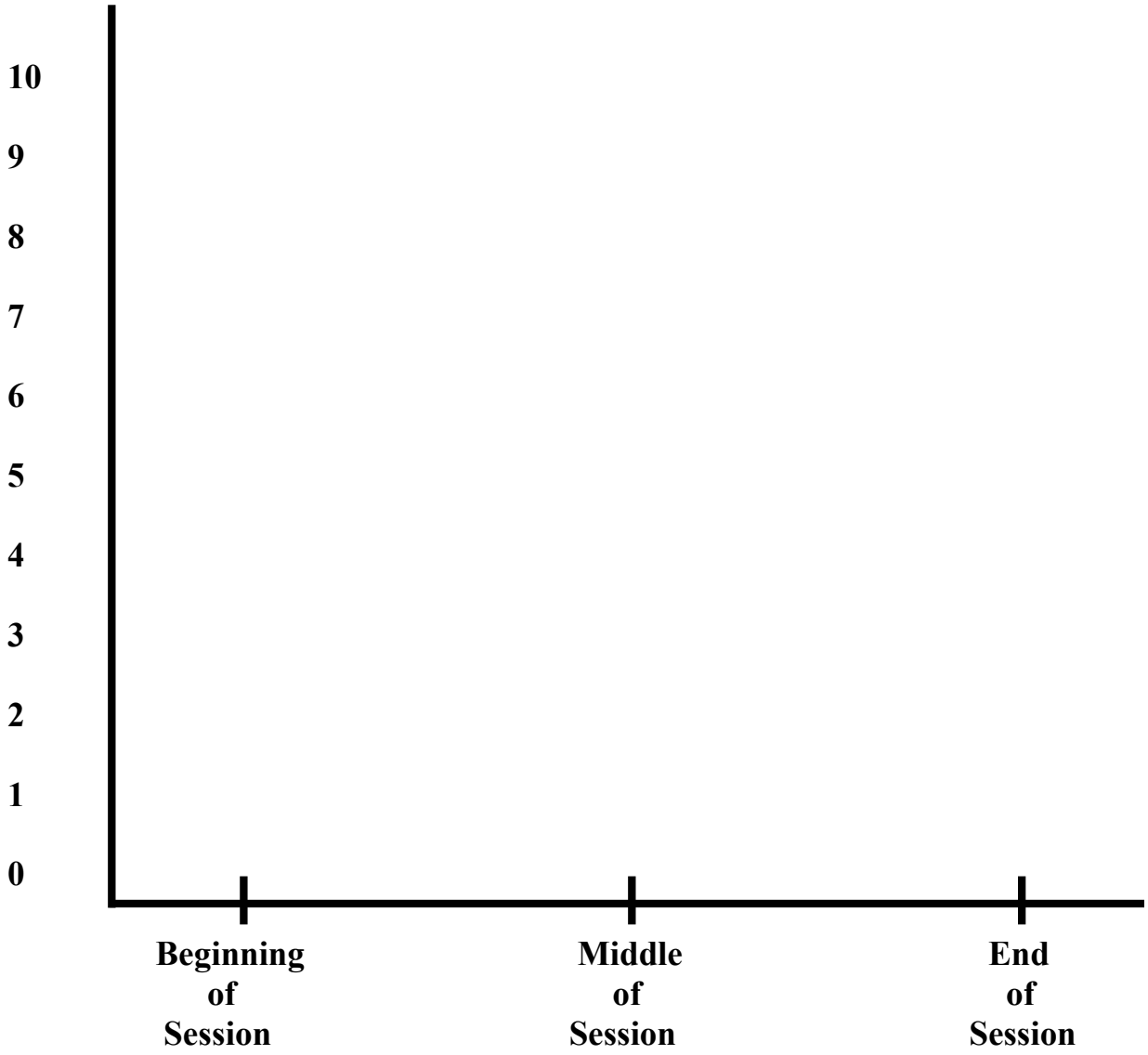
Concentration

For each point in time, indicate your level of concentration for studying during this session from 0 – 10.



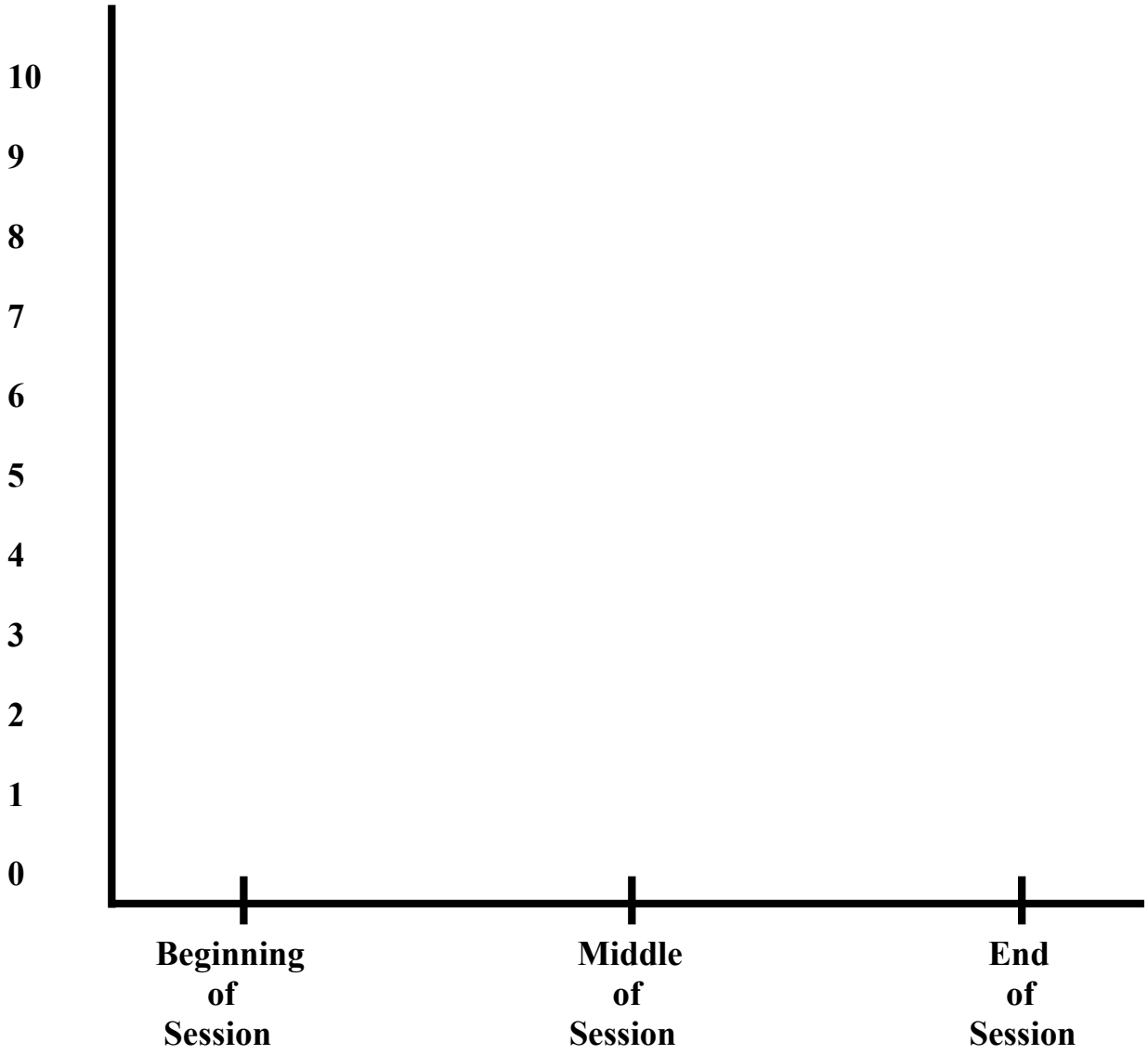
Effectiveness

For each point in time, indicate the effectiveness of your studying during this session from 0 – 10.



Anxiety

For each point in time, indicate your level of anxiety during this study session from 0 – 10.



TCU Session Evaluation

Directions: Please place an "x" on each line to show how you feel about this session.

This session was:

1. Bad	___ : ___ : ___ : ___ : ___ : ___ : ___	Good
2. Safe	___ : ___ : ___ : ___ : ___ : ___ : ___	Dangerous
3. Difficult	___ : ___ : ___ : ___ : ___ : ___ : ___	Easy
4. Valuable	___ : ___ : ___ : ___ : ___ : ___ : ___	Worthless
5. Shallow	___ : ___ : ___ : ___ : ___ : ___ : ___	Deep
6. Relaxed	___ : ___ : ___ : ___ : ___ : ___ : ___	Tense
7. Unpleasant	___ : ___ : ___ : ___ : ___ : ___ : ___	Pleasant
8. Full	___ : ___ : ___ : ___ : ___ : ___ : ___	Empty
9. Weak	___ : ___ : ___ : ___ : ___ : ___ : ___	Powerful
10. Special	___ : ___ : ___ : ___ : ___ : ___ : ___	Ordinary
11. Rough	___ : ___ : ___ : ___ : ___ : ___ : ___	Smooth
12. Comfortable	___ : ___ : ___ : ___ : ___ : ___ : ___	Uncomfortable

Right now I feel:

13. Happy	___ : ___ : ___ : ___ : ___ : ___ : ___	Sad
14. Angry	___ : ___ : ___ : ___ : ___ : ___ : ___	Pleased
15. Moving	___ : ___ : ___ : ___ : ___ : ___ : ___	Still
16. Uncertain	___ : ___ : ___ : ___ : ___ : ___ : ___	Definite
17. Calm	___ : ___ : ___ : ___ : ___ : ___ : ___	Excited
18. Confident	___ : ___ : ___ : ___ : ___ : ___ : ___	Afraid
19. Wakeful	___ : ___ : ___ : ___ : ___ : ___ : ___	Sleepy
20. Friendly	___ : ___ : ___ : ___ : ___ : ___ : ___	Unfriendly
21. Slow	___ : ___ : ___ : ___ : ___ : ___ : ___	Fast
22. Energetic	___ : ___ : ___ : ___ : ___ : ___ : ___	Peaceful
23. Involved	___ : ___ : ___ : ___ : ___ : ___ : ___	Detached
24. Quiet	___ : ___ : ___ : ___ : ___ : ___ : ___	Aroused

Attitudes and Intentions about Studying Questionnaire

Compared to my studying in the recent past, I think my studying in the near future will be…

_1_____2_____3_____4_____5_____6_____7
less the more
effective same effective

Compared to my studying in the recent past, I think my studying in the near future will be ….

_1_____2_____3_____4_____5_____6_____7
less the more
enjoyable same enjoyable

Compared to my studying in the recent past, I think while studying in the near future I will be…

_1_____2_____3_____4_____5_____6_____7
less the more
creative same creative

Compared to my studying in the recent past, I think while studying in the near future I will be…

_1_____2_____3_____4_____5_____6_____7
less the more
motivated same motivated

Compared to my studying in the recent past, I think while studying in the near future I will have…

_1_____2_____3_____4_____5_____6_____7
less the more
concentration same concentration

I will be willing to try new techniques for studying in the near future…

_1_____2_____3_____4_____5_____6_____7
not somewhat very
at all much so

I will try to incorporate other people's ideas in my studying in the near future…

_1_____2_____3_____4_____5_____6_____7
not somewhat very
at all much so

My attitude toward studying in the near future is generally…

_1_____2_____3_____4_____5_____6_____7
less the more
effective same effective

I have learned something from the way I studied in this experiment that I can use to help me study in the near future…

_1_____2_____3_____4_____5_____6_____7
not somewhat very
at all much so

I plan to use what I have learned from the way I studied in this experiment in my future studying…

_1_____2_____3_____4_____5_____6_____7
not somewhat very
at all much so

I will use the "team" I developed for this experiment in my future studying…

_1_____2_____3_____4_____5_____6_____7
not somewhat very
at all much so

I will tell others about the "team" technique I learned about in this experiment…

_1_____2_____3_____4_____5_____6_____7
not somewhat very
at all much so

I would recommend this experiment to a friend…

_1_____2_____3_____4_____5_____6_____7
not somewhat very
at all much so

I intend to learn more about different study strategies in the near future…

_1_____2_____3_____4_____5_____6_____7
not somewhat very
at all much so

I will apply the "team" technique I learned in this experiment to help me with making decisions in the near future…

_1_____2_____3_____4_____5_____6_____7
not somewhat very
at all much so

I will apply the "team" technique I learned in this experiment to help me solve personal problems in the near future…

_1_____2_____3_____4_____5_____6_____7
not somewhat very
at all much so

Attitudes about Mental Health / Meditation Questionnaire

What is your attitude toward using meditation techniques?

-5	-4	-3	-2	-1	0	1	2	3	4	5
very negative					neutral					very positive

What is your attitude toward taking physician prescribed medication to treat anxiety?

-5	-4	-3	-2	-1	0	1	2	3	4	5
very negative					neutral					very positive

What is your attitude toward taking physician prescribed medication to treat depression?

-5	-4	-3	-2	-1	0	1	2	3	4	5
very negative					neutral					very positive

What is your attitude about taking physician prescribed medications (e.g. Aderal, Ritalin) to help with concentration?

-5	-4	-3	-2	-1	0	1	2	3	4	5
very negative					neutral					very positive

What is your attitude toward participating in yoga?

-5	-4	-3	-2	-1	0	1	2	3	4	5
very negative					neutral					very positive

What is your attitude toward using massage therapy?

-5	-4	-3	-2	-1	0	1	2	3	4	5
very negative					neutral					very positive

What is your attitude toward exercising?

-5	-4	-3	-2	-1	0	1	2	3	4	5
very negative					neutral					very positive

What is your attitude toward alternative methods (e.g., acupuncture, meditation, massage), other than physician prescribed medication, to treat mental and physical distress?

-5	-4	-3	-2	-1	0	1	2	3	4	5
very negative					neutral					very positive

How do you feel about people who meditate?

-5 -4 -3 -2 -1 0 1 2 3 4 5

very negative — neutral — very positive

How do you feel about people who do yoga?

-5 -4 -3 -2 -1 0 1 2 3 4 5

very negative — neutral — very positive

How do you feel about people who use prescription medication for depression?

-5 -4 -3 -2 -1 0 1 2 3 4 5

very negative — neutral — very positive

How do you feel about people who use prescription medication for anxiety?

-5 -4 -3 -2 -1 0 1 2 3 4 5

very negative — neutral — very positive

How do you feel about people who use prescription medication for concentration?

-5 -4 -3 -2 -1 0 1 2 3 4 5

very negative — neutral — very positive

How important of a topic do you think stress is to college students?

1 2 3 4 5 6 7

not at all — somewhat important — extremely important

How important of a topic do you think stress is to college students?

1 2 3 4 5 6 7

not at all — somewhat important — extremely important

How important of a topic do you think stress is to college students?

1 2 3 4 5 6 7

not at all — somewhat important — extremely important

How important is it for college students to learn how to deal with their stress?

1 2 3 4 5 6 7

not at all — somewhat important — extremely important

Do you believe anxiety can be controlled by the way a person thinks?

1 2 3 4 5 6 7

not at all — somewhat — very much so

How much control do you think a person has over their depression?

1	2	3	4	5	6	7
very little control			some control			a large amount of control

How much control do you think a person has over their ability to concentrate?

1	2	3	4	5	6	7
very little control			some control			a large amount of control

How much control do you think that a person has over their emotions?

1	2	3	4	5	6	7
very little control			some control			a large amount of control

Do you believe that how you think influences how you feel?

1	2	3	4	5	6	7
not at all			somewhat			very much so

Do you believe that exercising can affect how you feel?

1	2	3	4	5	6	7
not at all			somewhat			very much so

Do you believe mediation reduces stress?

1	2	3	4	5	6	7
not at all			somewhat			very much so

Do you believe meditation can help with depression?

1	2	3	4	5	6	7
not at all			somewhat			very much so

Do you believe mediation can help with concentration?

1	2	3	4	5	6	7
not at all			somewhat			very much so

Do you believe mediation can help with anger?

1	2	3	4	5	6	7
not at all			somewhat			very much so

Do you believe mediation can help with compassion/empathy?

_1_____2_____3_____4_____5_____6_____7

not at all — somewhat — very much so

Do you believe meditation is worth the time it takes?

_1_____2_____3_____4_____5_____6_____7

not at all — somewhat — very much so

Do you believe yoga is worth the time it takes?

_1_____2_____3_____4_____5_____6_____7

not at all — somewhat — very much so

Would you recommend meditation to a friend or family member?

_1_____2_____3_____4_____5_____6_____7

not at all — somewhat — very much so

Would you recommend yoga to a friend or family member?

_1_____2_____3_____4_____5_____6_____7

not at all — somewhat — very much so

Do you believe that yoga can reduce stress?

_1_____2_____3_____4_____5_____6_____7

not at all — somewhat — very much so

Do you believe yoga can help with depression?

_1_____2_____3_____4_____5_____6_____7

not at all — somewhat — very much so

Do you believe yoga can help with concentration?

_1_____2_____3_____4_____5_____6_____7

not at all — somewhat — very much so

How important is it for college students to learn about mental health issues?

_1_____2_____3_____4_____5_____6_____7

not at all important — somewhat — extremely important

How important is it for college students to learn about meditation?

_1_____2_____3_____4_____5_____6_____7

not at all important — somewhat — extremely important

How important is it for college students to learn about yoga?

_1_____2_____3_____4_____5_____6_____7

not at all important — somewhat — extremely important

How much do you know about meditation?

_1_____2_____3_____4_____5_____6_____7

not much at all — somewhat — a large amount

How much do you know about yoga?

_1_____2_____3_____4_____5_____6_____7

not much at all — somewhat — a large amount

How much do you know about drug treatment for anxiety?

_1_____2_____3_____4_____5_____6_____7

not much at all — somewhat — a large amount

How much do you know about drug treatment for depression?

_1_____2_____3_____4_____5_____6_____7

not much at all — somewhat — a large amount

How much do you know about drug treatment for concentration?

_1_____2_____3_____4_____5_____6_____7

not much at all — somewhat — a large amount

Intentions Regarding Mental Health/Meditation

Using the scale provided below please indicate what are your intentions to….

_1_____2_____3_____4_____5_____6_____7
not at all likely — somewhat likely — extremely likely

_____ participate in a yoga class in the near future?

_____ practice yoga at home in the near future?

_____ participate in a meditation class in the near future?

_____ practice mediation at home in the near future?

_____ talk to a friend about stress reduction in the near future?

_____ learn more about stress reducing techniques in the near future?

_____ share information with friends about mental health in the near future?

_____ start learning how to breathe as a relaxation technique?

_____ learn more about the practice of meditation in the near future?

_____ start taking time to slow down and just breathe and sit still for a few minutes each day?

_____ watch a video or DVD on meditation in the near future?

_____ watch a video or DVD on yoga in the near future?

_____ learn more about alternative treatments for anxiety disorders in the near future?

_____ learn more alternative treatments for depression in the near future?

_____ learn more about how stress affects the body in the near future?

_____ learn more about how stress can affect mental health in the near future?

_____ take a friend to a yoga class in the near future?

_____ talk to a friend about meditation in the near future?

_____ take a friend to a meditation class in the near future?

Behavior Measure

Between session 2 and 3 this week, did you…

Please check all that apply and indicate in the space on the left how many times you did each behavior.

√	# of times	
__	_____	**Go online and read about meditation**
__	_____	**Think about the meditation article you read**
__	_____	**Speak to someone about meditation or mental health**
__	_____	**Try to meditate by taking deep, slow breaths or counting your breaths**
__	_____	**Ask a family member about meditation or mental health**
__	_____	**Sit up straight, relax, and just breath**

Appendix B

Individual Difference Measures

The following measures appear in the order they were completed.

1. The Delta Reading Inventory
2. Multiple Perspective Inventory

FOR ADMINISTRATIVE PURPOSES

Delta Reading Vocabulary

Today's Date: MO DAY YR **Gender:** M or F

Instructions: Fill in the circle of the word that means the same as the word underlined.
You will have ten (10) minutes to complete the 45 items. MARK ONLY ONE CHOICE for each word.

SAMPLE: **Large** means
- O *1. little*
- O *2. big*
- O *3. anger*
- O *4. dot*
- O *5. red*

1. Consecutive
- O *1. derived*
- O *2. prior*
- O *3. successive*
- O *4. conclusion*
- O *5. immediate*

2. Predict
- O *1. certain*
- O *2. forecast*
- O *3. state*
- O *4. before*
- O *5. decide*

3. Requisition
- O *1. enables*
- O *2. gives*
- O *3. demand*
- O *4. pay*
- O *5. quit*

4. Frequency
- O *1. subsequent*
- O *2. seldom*
- O *3. repetition*
- O *4. silent*
- O *5. loud*

5. Alternative
- O *1. light*
- O *2. start*
- O *3. align*
- O *4. change*
- O *5. choice*

6. Interchangeable
- O *1. substitute*
- O *2. mix*
- O *3. access*
- O *4. between*
- O *5. par*

7. Subset
- O *1. after*
- O *2. aid*
- O *3. destroy*
- O *4. intradivision*
- O *5. independent*

8. Addendum
- O *1. supplement*
- O *2. stupid*
- O *3. contents*
- O *4. precede*
- O *5. quantity*

9. Expend
- O *1. recover*
- O *2. consume*
- O *3. waste*
- O *4. lose*
- O *5. hasten*

10. Retention
- O *1. camp*
- O *2. imprison*
- O *3. remember*
- O *4. stop*
- O *5. return*

11. Consolidate
- O *1. unite*
- O *2. box*
- O *3. generate*
- O *4. mix*
- O *5. dual*

12. Remote
- O *1. dig*
- O *2. wireless*
- O *3. pay*
- O *4. distant*
- O *5. control*

13. Annotation
- O *1. bother*
- O *2. explanation*
- O *3. anoint*
- O *4. against*
- O *5. polarize*

14. Quadrant
- O *1. constant*
- O *2. fourth*
- O *3. radar*
- O *4. tangent*
- O *5. target*

15. Mantissa
- O *1. mantle*
- O *2. lady's scarf*
- O *3. fish*
- O *4. decimal log*
- O *5. fraction*

16. Fulcrum
- O *1. pivot*
- O *2. bow*
- O *3. axis*
- O *4. angle*
- O *5. weight*

17. Inductive
- O *1. channel*
- O *2. infer*
- O *3. conductor*
- O *4. denote*
- O *5. implicit*

18. Invalidate
- O *1. approve*
- O *2. correct*
- O *3. annul*
- O *4. evident*
- O *5. ancillary*

19. Syllogism
- O *1. alone*
- O *2. same*
- O *3. deductive*
- O *4. wordy*
- O *5. comparison*

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FOR ADMINISTRATIVE PURPOSES

20. Gradient
- 1. fulcrum
- 2. latitude
- 3. quadrant
- 4. ascending
- 5. score

21. Augment
- 1. prevent
- 2. cut
- 3. figure
- 4. increase
- 5. hole

22. Latent
- 1. hidden
- 2. after
- 3. language
- 4. religion
- 5. hanging

23. Ambiguous
- 1. unclear
- 2. massive
- 3. surrounding
- 4. steal
- 5. intelligible

24. Futile
- 1. unfriendly
- 2. deadly
- 3. useless
- 4. sad
- 5. dangerous

25. Redundant
- 1. precise
- 2. quick
- 3. excess
- 4. inconsistent
- 5. reliable

26. Loam
- 1. soil
- 2. dune
- 3. rock
- 4. water
- 5. geography

27. Succinct
- 1. substitute
- 2. tasty
- 3. brief
- 4. false
- 5. wordy

28. Inanimate
- 1. cartoon
- 2. dormant
- 3. lifeless
- 4. caricature
- 5. weak

29. Berate
- 1. scold
- 2. modify
- 3. evaluate
- 4. careful
- 5. measure

30. Plausible
- 1. believable
- 2. permissible
- 3. countable
- 4. statistical
- 5. mathematical

31. Technology
- 1. difficult
- 2. applied science
- 3. aerospace
- 4. computerization
- 5. automation

32. Hypothesize
- 1. water
- 2. angle
- 3. fake
- 4. insincere
- 5. assume

33. Viscous
- 1. tall
- 2. proof
- 3. thick
- 4. hold
- 5. strong

34. Abate
- 1. incite
- 2. agree
- 3. slacken
- 4. criminal
- 5. fly

35. Connote
- 1. explicit
- 2. deduce
- 3. imply
- 4. musical
- 5. short

36. Variable
- 1. quick
- 2. consistent
- 3. fluctuate
- 4. reliable
- 5. quantity

37. Affluent
- 1. adjacent
- 2. opulent
- 3. greedy
- 4. sufficient
- 5. sick

38. Criterion
- 1. standard
- 2. definition
- 3. visible
- 4. critic
- 5. explanation

39. Rescind
- 1. order
- 2. burn
- 3. revoke
- 4. perforate
- 5. shorten

40. Infinity
- 1. compute
- 2. unlimited
- 3. end
- 4. astronomical
- 5. conclusion

41. Remuneration
- 1. penalty
- 2. accounting
- 3. revenge
- 4. payment
- 5. worry

42. Impetuous
- 1. ream
- 2. rash
- 3. unexpected
- 4. dislike
- 5. inconsistent

43. Delete
- 1. aggression
- 2. forbidden
- 3. cancel
- 4. provoke
- 5. include

44. Quadratic
- 1. erratic
- 2. cosine
- 3. squared
- 4. four times
- 5. minus

45. Invincible
- 1. energetic
- 2. undefeated
- 3. conquered
- 4. concurred
- 5. elastic

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MPI **Folder #**

1. **In class, I am good at considering issues from the teacher's perspective.**

1	2	3	4	5
Not at all true				Very true

2. **I am good at solving riddles.**

1	2	3	4	5
Not at all true				Very true

3. **I have a hard time understanding where some people are "coming from."**

1	2	3	4	5
Not at all true				Very true

4. **When I have a problem, I can usually think of different ways I might solve it.**

1	2	3	4	5
Not at all true				Very true

5. **It's easy to think about political issues from perspectives different from my own.**

1	2	3	4	5
Not at all true				Very true

6. **I think about different alternatives when making decisions.**

1	2	3	4	5
Not at all true				Very true

7. **I am good at figuring out what a teacher will ask on an examination.**

1	2	3	4	5
Not at all true				Very true

8. **I am good at "crawling inside" people's heads.**

1	2	3	4	5
Not at all true				Very true

9. **During conversation, I find it easy to take the other person's point of view.**

1	2	3	4	5
Not at all true				Very true

10. **I reserve judgment until I've considered all angels.**

1	2	3	4	5
Not at all true				Very true

11. It is hard to see the world from someone else's perspective.

1	2	3	4	5
Not at all true				Very true

12. I find it difficult to "put myself in other people's shoes."

1	2	3	4	5
Not at all true				Very true

13. I usually don't think of all the things I have to do before I do them.

1	2	3	4	5
Not at all true				Very true

14. In an argument, I always consider the other person's viewpoint.

1	2	3	4	5
Not at all true				Very true

15. It is hard for me to think of more than one thing at a time.

1	2	3	4	5
Not at all true				Very true

16. I am open-minded.

1	2	3	4	5
Not at all true				Very true

17. In order to make the right decision, I consider the viewpoint that is opposite to mine.

1	2	3	4	5
Not at all true				Very true

18. I would have a difficult time being an actor because my "self" would keep intruding into the character.

1	2	3	4	5
Not at all true				Very true

19. I like considering opposing viewpoints.

1	2	3	4	5
Not at all true				Very true

20. I am not very good at thinking abstractly.

1	2	3	4	5
Not at all true				Very true

Appendix C

Experimental and Training Materials

The following measures appear in the order they were completed.

1. Human Subjects Consent Form
2. Learning Team Information Packet
3. Retrieval Team Information Packet
4. Intuition Article
5. Mental Health & Meditation Article

STATEMENT OF CONSENT – Spring 2006

I, the undersigned, do hereby give my informed consent to my participation in the

I have been informed about each of the following:

- The purpose of the study is examining different learning strategies.
- The procedures of the study include filling out questionnaires, packets, and studying a passage.
- The benefits of the study include the opportunity to be involved in psychological experiments like the ones I've learned about in class.
- The risks of the study are negligible. After the completion of the study, the experimenter will answer any questions that I may have about the procedures.
- I understand that I will receive credit for this experiment at its completion and I cannot receive credit for participation in the current experiment more than once.

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 of the details of the procedure with other participants. I understand that all of 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 consent forms, will be kept in a locked file cabinet.
3. Only the investigators will have access to my identification data.

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

Heather A. Labansat, Principal Investigator
Department of Psychology
257-6139

Dr. Donald F. Dansereau
Department of Psychology
Faculty Advisor
257-7410

Dr Christie Scollon
Chair, Dept of Psychology
Human Subjects Committee
257-7410

Dr Timothy Hubbard
TCU Committee on Safeguards
of Human Subjects—Psychology
257-7410

Participant's Name (PLEASE PRINT) _____ Date _____

Participant's Signature _____ Phone Number _____

Participant's TCU Student ID# _____ Professor _____

Ever had problems learning new information while studying? Sometimes it is hard to determine what is important and what we should pay attention to. One problem that we may face as learners is that we only see things from our limited perspective. Sometimes we have a great deal of trouble shifting to a new perspective or seeing information in the world in a new way.

This limits our creativity, our ability to solve problems, and our ability to get long with others. In business, government, and other organizations, they solve this problem by forming teams of people to work on things. These teams make use of the diversity among their members to come up with creative ideas and solutions to problems. As individuals, we can capture some of the power of these teams by forming our own imaginary group of people that we can call upon to help us shift perspective and arrive at new ideas.

What is a Learning Team?

A Learning Team is a group of 3-5 people that you can create in your imagination to help you deal with learning new information.

How to form a learning team…

To select members of your team, you should consider people who are good thinkers and who have a good, unique perspective on the world. These should be people you know rather well. Some people you might consider for your team are teachers, coaches, or counselors that you have mentored you sometime in your life. You should consider family members and friends that can make good candidates. Parents and siblings can make great team members!

Step One Make a draft list of the people that would be good members of your Learning Team (include 4-6 people). Try to include people who have unique approaches to thinking about and learning new information.

List Potential Team Members Inside of This Box

Step Two Think about each person on your list and ask yourself two questions:

1) "Would I have a good idea of how this person would react to new and different information that I am likely to face as student?"

2) "Could this person's learning style or interests help me see better ways of thinking about new information?"

Step Three Based on your answers in Step two, select three of the people from the list to be on your personal learning team. In making your selections, be sure to choose people who are likely to have different viewpoints than yours and also from one another. It may be valuable to include a rebel or renegade on your team to provide contrast and to spice things up.

1.

2.

3.

Team Member Profiles

Next To capture the strengths, interests, & learning styles of your team members, fill out the following profiles for each player.

TEAM MEMBER #1 **Name:** _____

What does this person know a lot about? (Examples: Health, Computers, Education)

What hobbies and interests does this person have? (Examples: reading, fitness, fishing)

What are their personality characteristics? (Circle)

Do they:	Focus on specific details	Focus on Big Picture		
Are they:	Extraverted	Introverted	Creative	Structured
	Risk taking	Cautious	Organized	Fly by seat of pants
	A rule player	A rebel		

TEAM MEMBER #2 **Name:**_____

What does this person know a lot about? (Examples: Health, Computers, Education)

What hobbies and interests does this person have? (Examples: reading, fitness, fishing)

What are their personality characteristics? (Circle)

Do they:	Focus on specific details		Focus on Big Picture	
Are they:	Extraverted	Introverted	Creative	Structured
	Risk taking	Cautious	Organized	Fly by seat of pants
	A rule player	A rebel		

TEAM MEMBER #3 **Name:**_____

What does this person know a lot about? (Examples: Health, Computers, Education)

What hobbies and interests does this person have? (Examples: reading, fitness, fishing)

What are their personality characteristics? (Circle)

Do they:	Focus on specific details		Focus on Big Picture	
Are they:	Extraverted	Introverted	Creative	Structured
	Risk taking	Cautious	Organized	Fly by seat of pants
	A rule player	A rebel		

Using Your Team

Congratulations! You have selected a team of individuals to help you when you are learning new information.

You are about to study some text that you will be thoroughly tested over. Please study the material carefully.

We recommend that you first read and think about the material as you normally do when you study. After you have read and thought about the text, you should go back over the text using your Learning Team to study with you.

You may use your Leaning Team however you wish. Some suggestions are to think about what each member of your team would be interested in. What information do you think they would want to remember? What would they focus on? You may also be able to remember information based on your team members' life experiences.

Some blank sheets of paper have been provided if you would like to use them.

Have you ever had problems remembering information for a test that you studied for? Sometimes it is hard to remember pieces of information that we have stored in our memory. Perhaps examining how other people we know think about the same information, what they find interesting, and what they would want to remember from the material can help us recall this information when we need it. One way we could do this is by developing a retrieval team.

What is a Retrieval Team?

A Retrieval Team is a group of 3-5 people that you can create in your imagination. You can use this retrieval team to help you remember information that you have studied and stored in your memory.

How to form a retrieval team…

To select members of your team, you should consider people who are good thinkers and who have a good, unique perspective on the world. These should be people you know well. Some people you might consider for your team are teachers, coaches, or counselors that have helped you sometime in your life. You should consider family members and friends that can make good candidates. Parents and siblings can make great team members!

Step One Make a draft list of the people that would be good members of your Retrieval Team (include 4-6 people). Try to include people who have unique approaches to thinking about and learning new information.

List Potential Team Members Inside of This Box

TEAM MEMBER #2 **Name:**_____

What does this person know a lot about? (Examples: Health, Computers, Education)

What hobbies and interests does this person have? (Examples: reading, fitness, fishing)

What are their personality characteristics? (Circle)

Do they:	Focus on specific details	Focus on Big Picture		
Are they:	Extraverted	Introverted	Creative	Structured
	Risk taking	Cautious	Organized	Fly by seat of pants
	A rule player	A rebel		

TEAM MEMBER #3 **Name:**_____

What does this person know a lot about? (Examples: Health, Computers, Education)

What hobbies and interests does this person have? (Examples: reading, fitness, fishing)

What are their personality characteristics? (Circle)

Do they:	Focus on specific details	Focus on Big Picture		
Are they:	Extraverted	Introverted	Creative	Structured
	Risk taking	Cautious	Organized	Fly by seat of pants
	A rule player	A rebel		

Using the grid provided below, list 3 things each team member would find most interesting and would be likely to remember in your current psychology class. Now take several minutes to imagine what they might say about each topic.

Team Member 1 Name:_____ — 1. 2. 3.	Team Member 2 Name:_____ 1. 2. 3.	Team Member 3 Name:_____ 1. 2. 3.

Using Your Retrieval Team

Congratulations! You have selected a team of individuals to help you remember information that you have studied.

How to use your Retrieval Team

You are about to be tested over the material that you studied last session on Mental Health & Meditation **using the members of your retrieval team.**

We recommend that *you first recall all the information you can remember from the Mental Health & Meditation article on your own and write it down.* Next, after you have written everything you can remember, think about the article with each of your retrieval team members. What kinds of information from this article might have each person liked and tried to remember about the article.

Some other suggestions are to think about what each member of your team would be interested in from the article. What information do you think they would want to remember? What parts of the article might they have focused on? You may also be able to remember information based on your team members' life experiences.

What Was I Thinking?

Kahneman Explains How Intuition Leads Us Astray

ERIC JAFFE

This is a story without an ending. And that's not the only thing wrong with it.

In fact, there were a number of flaws in Nobel Laureate Daniel Kahneman's lecture "A Perspective of Flawed Thought," in March 2004 at the National Institutes of Health. Quite purposefully, the entire talk was full of them. "I specialize in flaws," Kahneman said.

However appropriate that self-deprecating remark was to the topic, it hardly applied to the speaker's celebrated accomplishments. In addition to the 2002 Nobel Prize, which he received for his work applying psychologically realistic models to economic theory, APS fellow Kahneman, Princeton University, has received most every award possible to a psychologist, including the 1990 APS William James Fellow Award.

Part of Kahneman's intent was to show that flawed thinking plays no favorites. Sure enough, despite this vast understanding of the subject, Kahneman himself claimed to be susceptible to misleading intuition, a realization he made while looking at the latest gallop poll, in which President George W. Bush's approval rating had shifted a statistically insignificant 2 percent from the previous week.

"I was influenced by this completely irrelevant data," he said. "I could not help myself from drawing inferences like, 'What happened this week?' or 'What's the explanation?' I was working on this intuitively and contrary to my better statistical judgment."

According to Kahneman, some human intuition is good, and some is erroneous. And like the incorrigible habit of the knuckle cracker, the bad ones are very difficult to correct.

One reason flawed intuition is allowed to permeate human thinking is its accessibility. For one example, if the multiplication problem 17 times 24 is shown for only a moment before its answer, 408, is revealed, few solve it without a formal, lengthy act of computation. On the contrary, if the word "vomit" is displayed and immediately followed by the word "disgusting," it seems the accessible, almost instantaneous extension of the viewer's thinking.

"Intuitive impressions come to mind without explicit intention, and without any confrontation, and this is one of their distinctive aspects," he said.

To better understand the reasons for this accessibility, Kahneman has focused much of his research on expert intuitions. Expert intuitions are able to deal swiftly and decisively with a difficult matter-such as making a quick chess move or fighting a fire-that would seem to require extensive deliberation. Most of the time, a person with expert intuition is not really conscious of making a decision, but rather acts as though their instinctive choice is the only natural outcome of a circumstance.

"You can have a master chess player walking by a complicated chess position and, without slowing down, this player will say, 'White mates in three,' " Kahneman said. In the case of firefighters making perhaps life or death decisions, "something that is very close to the best solution came to mind, and nothing else."

APS Fellow Daniel Kahneman received the Nobel Prize in 2002 for his work applying psychologically realistic models to economic theory.

However, unless certain conditions of expertise, namely, prolonged practice and rapid, unequivocal feedback-are fulfilled, what develops is little more than the exigent knowledge of experience. This can lead to false impressions and overconfident experts, a subject explored by Kahneman and his longtime research partner, the late Amos Tversky.

"People jump to statistical conclusions on the basis of very weak evidence. We form powerful intuitions about trends and about the replicability of results on the basis of information that is truly inadequate," Kahneman said. For this reason, a person who is not an expert, even if thoroughly versed in a field of study, might make an intuitive mistake.

Kahneman leaned heavily on the closely related argument made by another, prominent psychologist, the late Paul Meehl. In the mid-1950's, Meehl gave

clinicians personality information about individuals and asked that they predict behavioral outcomes. For example, the clinician might have been asked to decide whether a released prisoner would violate parole. The predictions were then compared to statistical models based on the subset of information available to the clinician.

In a study that still holds up over 50 years later, Meehl found that when the clinician competed with the statistical formula, the formula won almost every time. This finding has served as the basis for Kahneman's theory about overconfident experts.

"What you find is a great deal of confidence in the presence of very poor accuracy," Kahneman explained. "So the confidence people have is not a good indication of how accurate they are."

Overconfidence is accentuated by the failure of people to, in general, learn from their mistakes. "When something happens that a person has not anticipated, … they remain convinced that what they had predicted, although it didn't happen, almost happened," he said. The overconfidence is then propagated while the accuracy remains the same, and the cycle begins again.

In order to trace the roots of flawed intuition, Kahneman divided all thought into a two-system model, intuition and deliberate computation, whose particular attributes are almost completely opposite. Intuition is fast, uncontrolled, and, most importantly, effortless. Computation, on the other hand, is slow, governed by strict rules, and effortful.

"Most judgments in actions are governed by [intuitive thought]," he said. "Most of our mental life is relatively effortless." This is why effortful work, such as trying to remember a phone number of five years ago, is more susceptible to interference, and therefore less accessible.

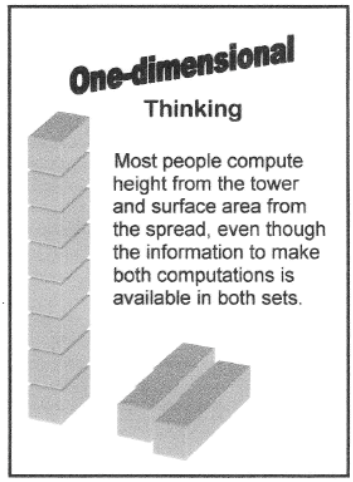
A bat and a ball together costs $1.10. The bat costs a dollar more than the ball. Now much does the ball cost?

Interference is often enabled by poor monitoring, a shortcoming that results from our normally unconditional acceptance of intuition. Not surprisingly, according to Kahneman, **50 percent of Princeton students** incorrectly answered 10 cents when given this problem. "What happens to Princeton students is they don't check," said Kahneman. It happens to MIT students too, though at a slightly lower rate," he joked (The answer for Princeton readers, is five cents.)

Interference is often enabled by poor monitoring, a shortcoming that results from our normally unconditional acceptance of intuition. In one study, Kahneman ran the following scenario past Princeton students: A bat and a ball together cost $1.10. The bat costs a dollar more than the ball. How much does the ball cost? Not surprisingly to Kahneman, 50 percent of Princeton students incorrectly answered 10 cents when given this problem in writing, because they unconditionally accepted their intuitions.

"What happens to Princeton students is they don't check," said Kahneman. "It happens to MIT students too, though at a slightly lower rate," he joked.

Take another common question eliciting intuitive flaw: When people were asked to guess how many murders there were in Michigan in a given year, and how many there were in Detroit, the median answers were 100 and 200 respectively.



"A **fully rational** agent would find it possible to answer both questions equally easily, regardless of the display," Kahneman said. "We do not use all the information that is actually available."

"This by itself is not an error, but something is going on here that is not quite right," he said, referring to the presence of intuitive flaw. Occasionally someone asked about Michigan remembered Detroit is in Michigan, and their answer tended more toward 200, a meta-analytic process that reveals to Kahneman the ability of flawed thinking to mend itself if it recognized all aspects of a situation.

"Accessibility, or the ease with which thoughts come to mind, has an influence not only on the operation of intuition-it almost defines intuition-but on the operations of computation," he said. "Our ability to avoid errors depends on what comes to mind, and whether the corrected thought comes to mind adequately."

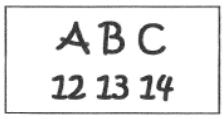
But "what comes to mind" might actually be what does *not* come to mind. When looking at two sets of an

equal number of cubes, one arranged vertically into a tower and the other spread flat, most people compute height from the tower and surface area from the spread, even though the information to make both computations is available in both sets.

"A fully rational agent would find it possible to answer both questions equally easily, regardless of the display," he said. "That's not what happens. We don't compute everything we could compute. We do not use all the information that is actually available."

For this reason, Kahneman argued that intuitive activities are very similar to perceptual activities, such as seeing and hearing. "These processes of perception are going to guide us in understanding intuition," he said. Take, for example, the following display sets, which are actually less defined than they appear.

Even though the B and the 13 are physically composed of the same elements, they are given context by association, and are rarely considered outside of this context. Though at the time this single-minded assessment doesn't seem wrong, it is in truth about as rational



as peeking through the keyhole of a glass door, and grossly limits our understanding of the world. Flawed intuition occurs with similar blinders.

"When people make decisions, they tend to suppress alternative interpretations," Kahneman said. "We become aware only of a single solution-this is a fundamental rule in perceptual processing. All the other solutions that might have been considered by the system-and sometimes we know that alternative solutions have been considered and rejected-we do not become aware of. So consciousness is at the level of a choice that has already been made."

But despite all this understanding, Kahneman steered clear of offering a direct solution to flawed thinking-after all, he remained flummoxed by the gallop poll despite his 35 years studying flawed intuition. Besides, relying on computation instead of intuition would, according to Kahneman, create a slow, laborious, difficult, and costly world. What he did advocate is paying closer attention to the onset of faulty intuition.

"The alternative to thinking intuitively is mental paralysis," he said. "Most of the time, we just have to go with our intuition, [but] we can recognize situations in which our intuition is likely to lead us astray. It's an unfinished story." He paused. "So, it's an unfinished story, so …" Kahneman hesitated for words. Something made a succinct peroration inaccessible, but the audience intuited the talk was over, and was correct-most likely.

MENTAL HEALTH AND MEDITATION

Mental Health

MENATL HEALTH is a concept that refers to a human individual's emotional and psychological well-being. Merriam-Webster defines mental health as "A state of emotional and psychological well-being in which an individual is able to use his or her cognitive and emotional capabilities, function in society, and meet the ordinary demands of everyday life."

According to the World Health Organization (WHO), there is no one "official" definition of mental health. Cultural differences, subjective assessments, and competing professional theories all affect how "mental health" is defined. In general most experts agree that "mental health" and "mental illness" are not opposites. In other words, the absence of a recognized mental disorder is not necessarily an indicator of mental health.

One way to think about mental health is by looking at how effectively and successfully a person functions. Feeling capable and competent; being able to handle normal levels of stress, maintain satisfying relationships, and lead an independent life; and being able to "bounce back," or recover from difficult situations, are all signs of mental health.

Ten Million Americans Can't All Be Wrong

SOME 10 MILLION Americans say they practice some form of meditation. Its core teachings encourage practitioners to shake off suffering and discover happiness. The very concept of self-improvement informs *bhavana,* the Sanskrit word commonly translated as "meditation," though it literally means "cultivation." "It has exactly the same connotation as when we say we 'cultivate a garden,'" says Wallace.

It remains a radical notion in the West that benevolent states of mind such as concentration, kindness and happiness can be developed with practice. Apart from a growing "positive psychology" movement, many of whose leaders are in fact strongly influenced by meditation, Western scientists are still largely oriented toward healing the mentally ill, rather than improving the lives of the functionally OK. Recollect Freud's humble goal: to transform hysterical misery into common unhappiness. Western science is content to believe that each of us has a more or less genetically determined set point for well-being-and that happiness and love happen *to* us.

Eastern thought frames things differently. We can transcend our problems by learning to quiet the mind in meditation-not merely to relax and cope with stress, but to rigorously train oneself to relinquish bad mental habits. Rather than being an end in itself, meditation becomes a tool to investigate your mind and change your worldview. You're not tuning out so much as tuning *up* your brain, improving your self- monitoring skills.

"You stop being always projected outside. You start looking in and seeing how your mind works, and you change your mind, thought by thought," explains Matthieu Ricard, a scientist and French interpreter for the Dalai Lama. "The French intellectuals don't like this. They say, 'Let's be spontaneous; passions are the beauty of life.' They think that making an effort is not nice-a silly old discipline-and that's why we're such a mess. But many

modern people understand the notion of getting fit with physical training." So the idea of developing mental skills with meditation is gaining ground.

The Nod From Neuroscience

ENCOURAGEMENT FOR THIS new way of thinking comes from an unusual ally. Neuroscience is furnishing hard evidence that the brain is plastic, endowed with a lifelong capacity to reorganize itself with each new experience. "We now know that neural firing can lead to change in neural connections, and experience leads to changes in neural firing," explains UCLA psychiatrist Daniel Siegel. Violinists' brains actually change as they refine their skill. So do the brains of London cabbies, whose livelihood depends on the sharpness of their memory. Likewise, through repeated practice in focusing attention, meditators may be strengthening the neural circuitry involved in the voluntary control of attention.

One Tibetan lama told Wallace that before training, his mind was like a stag with great antlers trying to make its way through a thick forest; the animal got snagged on branches time after time. But after many years of practice, his mind was more like a monkey in a jungle, swinging freely from vine to vine.

Such adepts are the Lance Armstrongs of meditation, says Davidson, whose pioneering brain scans of monks provide tantalizing evidence that emotions lie love and compassion are in fact skills-and can be trained to a dramatic degree. Studies also suggest that the monastic life is not a requirement; even brief, regular meditation sessions can yield substantial benefits. Nor is a belief in Buddhism necessary. "I'm convinced that you can make a huge difference in your life if you start out with even 30 minutes a day," Ricard says. "By maintaining the practice, there is a trickle of insights. Drop by drop, you fill a jar."

One recent study at Massachusetts General Hospital found that 40 minutes of daily mediation appears to thicken parts of the cerebral cortex involved in attention and sensory processing. In a pilot study at the University of California at San Francisco, researchers found that schoolteachers briefly trained in meditation techniques who mediated less than 30 minutes a day improved their moods as much as if they had taken antidepressants.

There are many types of meditation, and they can be used to develop a number of mental skills. This attitude focuses on practices that address common emotional struggles. Through basic meditation techniques, it's possible to cultivate a longer attention span, develop emotional stability, understand the feelings of others and release yourself from the constraints you place on your own happiness.

ATTENTION: Stabilize the Mind

COMPUTERS, PAGERS, VIDEO games, telemarketing calls, nonstop e-mail-all blasé our attention span to smithereens. Modern life does a swell job of distracting us. But perhaps the problem lies not in our cell phones, but in ourselves. After all, we're the ones constantly making choices about what to attend to and what to ignore.

The trouble is, most of us make these choices semiconsciously at best. We don't even attempt to control our attention, perhaps because we don't know how. Meditation maintains that the capacity can be refined through consistent practice: The mind is by nature unstable, inherently distractible, and meditation is a means of stabilizing it.

"Meditation is *about* paying attention," says Kabat-Zinn. Cultivating concentration doesn't just stabilize and clarify the mind; it can also improve creativity and productivity while enhancing relationships. Imagine if you actually paid attention 100 percent to your spouse!

The strategy that starts you on this road is *mindfulness,* which means both cultivating nonjudgmental awareness of a specific object and seeing deeply into things. A common

approach is to focus on an object or on the sensations of your own breathing, noting every inhale and exhale, and patiently returning your attention to your breathing each time it wanders.

"You practice focusing on one object," says Clifford Saron, a neuroscientist at the Center for Mind and Brain at the University of California at Davis. "You begin to observe the flux of moment-to-moment perception. With practice you can detect patterns in those fluctuations."

It's like you're flexing a muscle in the brain. University of Wisconsin's Davidson contends that the mental exercise of meditation strengthens and stabilizes neural networks in the medial prefrontal cortex-the brain's executive control center, involved in the regulation of attention. "People don't recognize that there is lots of plasticity in the circuitry," he adds. "More than previously thought."

. The effort in the exercise it to balance awareness between dullness and distraction. To do so, you use the self-monitoring process that psychologists call *metacognition:* awareness of awareness. It's what lets you know when, on the one side, you're starting to drift off and need to muster fresh interest and, on the other, you're getting distracted and need to bring your attention back. As you gradually fine-tune your concentration, you notice the habitual chaos of your thoughts and, gradually, the calm that lies behind them. "Awareness trumps thoughts," says Kabat-Zinn, "because you can be aware of your thoughts."

In his new book, *The Attention Revolution: Unlocking the Power of the Focused Mind,* Wallace describes a nine-stage program to achieve quiescence, a state called *shamatha* (pronounced *sha*-ma-ta). Attention becomes "an oil lamp unmoved by the air' wherever the awareness is directed, it is steady and sharply pointed."

Even among novices, studies show, a brief meditation session can be more effective than a nap in improving performance on tests that require concentration. But its benefits don't stop there. Meditation can radically transform emotion.

MEDITATION: GETTING STARTED

MEDITATION OFFERS A rich variety of meditation practices. The following basic exercise in focusing attention comes from B. Alan Wallace's *The Attention Revolution.*

Begin by sitting on a cushion with your legs crossed or, if that's uncomfortable, in a chair or even lying on your back, but always with our back straight and body relaxed. Your eyes may be closed, half-closed or open.

Be at ease. Be still. Be vigilant.

Take three slow, gentle, deep breaths, breathing in and out through the nostrils. Let your awareness permeate your entire body as you breathe, noting any sensations that arise. Now settle your respiration in its natural flow. Observe the entire course of each in-and out-breath, noting whether it is long or short, deep or shallow, slow or fast. Don't impose any rhythm on your breathing. Let the body breathe as if you were fast asleep, but with your mind vigilant.

Thoughts are bound to arise involuntarily, and your attention may also be pulled away by noises and other stimuli from your environment. When you note that you have become distracted, instead of tightening up and forcing your attention back to the breath, simply let go of these thoughts and distractions. Don't get upset. Just be happy that you've noticed the distraction, and gently return to the breath.

Continue the practice initially for 24 minutes a day. If necessary, beginners can use the mental training wheels of counting each inhale, up to 21. Each time the mind wanders, return to one again.

MEDITATION ALTERS WHAT WE TEND TO THINK OF AS STABLE MENTAL TRAITS –ANXIETY, FOR EXAMPLE, OR ANGER

EQUANIMITY: Recognizing the Spark Before the Flame

MUCH OF OUR emotional experience consists of gusts of negative feelings blowing through the brain. The feelings torture us without being intrinsically related to experience. "Emotions are not actually fact," explains Davidson.

The perturbations often function as our own worst enemies, clotting our minds, keeping us from seeing and responding clearly. In other words, they diminish our capacity to live our lives. Negative emotions are so distressing, studies show, that given a choice many people would rather endure great physical pain-say, high-voltage electric shocks.

Nevertheless, folks freely gorge on oversize portions of mental anguish, what Stanford neuroscientist Robert Sapolsky calls "adventitious suffering-the pain of what was, what will be, what could be or what someone else is experiencing." Sapolsky has shown that over time such extra helpings of mental suffering can damage the parts of the brain involved in learning and memory, as well as the immune system.

Decades before Sapolsky's studies, pioneering cognitive psychologist Albert Ellis put forth the then-radical idea that painful emotions spring more from people's beliefs than from reality itself: Thoughts alone could lead to anguish. Today cognitive behavioral therapists, including an aging Ellis, counsel patients to relieve emotional distress by changing the content of their thoughts-challenging their beliefs and testing new possibilities.

WESTERN SCIENCE BELIEVES THAT EACH OF US HAS A SET POINT FOR INNER WELL-BEING-AND THAT HAPPINESS AND LOVE HAPPEN TO US.

Meditation addresses the same issue a bit differently. It changes your relationship to your emotions more than the emotions themselves. It allows you to see mood fluctuations moment to moment so that you can navigate around them. "You become more like the sky than the storm," says Kabat-Zinn. You can avoid the mental "grasping" of judgmentalism or an impulsive need to act

The approach appears to be effective. In a study led by psychologist Zindel Segal at the University of Toronto, meditation successfully prevented relapse of depression in patients with a history of recurrent mood disorder.

Meditation becomes a kind of "dashboard for your emotions," Wallace says. It enables you to check the gauges and objectively decide it you're about to overhead, so you're not caught by surprise when steam begins to rise from the engine. The "engine," in this case, is what is often called the limbic system-or the emotional brain-which is connected to the prefrontal

THE END OF ENVY

THE FOLLOWING EXERCISE FROM MATTHIEU RICARD CAN HELP YOU COPE SPECIFICALLY WITH HARMFUL FEELINGS SUCH AS ANGER, OBSESSIVE DESIRE AND ENVY.

- Bring to mind a situation in which you felt very angry.
- Recollect this experience piece by piece.
- When anger arises, focus attention on the anger itself instead of on its object. Don't succumb to the anger but consider it separate from yourself.
- As you continue to observe the anger, it will gradually evaporate under your gaze.

cortex. Through its actions on the prefrontal cortex, meditation can dampen affective arousal from a limbic system kicked into alarm mode by fear or anger.

Yet this kind of clarity is difficult to achieve. For most of us, the lag time between provocation, impulse and action is shorter than a heartbeat-just a quarter of a second between the trigger event and the response of the amygdale, or fear center. In that fraction of a second, our emotions have time to swamp our judgment-and often do.

Meditation, however, promises to break this apparent chain reaction by allowing us to recognize "the spark before the flame." Through many hours of quietly observing the customary tyranny of the emotions, you may gradually familiarize yourself with the quiet of your mind-the part that one day might choose not to be tyrannized. Says Ricard, "You become familiar with the way emotions arise, how they can either overwhelm your mind or vanish without making an impact."

COMPASSION: Like Riding a Horse

MEDITATION IS A process of cultivating intimacy with one's own states of mind. "Mindfulness is a form of intrapersonal attunement," says UCLA's Seigel, which makes it the perfect tool for *inter*personal attunement-in other words, compassion. "The ability to see you own mind," Seigel notes, "allows you to see others' minds."

As every parent of a teenager knows, compassion can often be hard work. It takes effort to summon warm feelings for someone who snarls at you while asking for money. Some parents find they have to play tricks on their own minds, such as forcing themselves to remember the teen as a cuddly baby.

In meditating, you do something similar. "You simply have to do it again and again," Ricard insists. "It's not so sophisticated." Imagine someone you already love, wish for her well-being and gradually extend that feeling to others. This should include people you may think of as enemies.

The next step is to extend that feeling of compassion to all beings, letting the feeling "grow and grow and invade your mind so that every single atom of yourself is loving kindness and compassion and benevolence," Ricard says. "You let that linger and linger and become more and more part of your mindstream, and you do it again and again. Eventually it becomes easier, faster and stronger the rest of the time too, not just when you're meditating. It's like riding a horse. In the beginning you have to be very careful not to fall off, but pretty soon you even forget you're on a horse."

Neurobiologically we seem wired for empathy. Over the past few years, scientists have found that the human brain has a system of mirror neurons, activated both when we perform an action and when we observe similar action by others, including the facial expression of pain or joy. Such activation allows us not only to infer others' feelings but to actually share those feelings as well.

Scientists have only recently begun to map the brain regions related to positive emotions such as empathy. But when Davidson observed Ricard meditating on compassion while hooked up to EEG sensors, he found a striking increase in gamma waves in the left prefrontal cortex, an area correlated with reported feelings of happiness. The findings furnish scientific support for something the Dali Lama often says: A person meditating on compassion for others becomes the first beneficiary.

Compassion for others begins at home. "One who loves himself will never harm another." A faithful meditation practice demonstrates compassion for oneself, since it involves conscious dedication of time and effort to improving personal well-being. The insights gained through such practice may make it easier to feel kindness toward others; by growing aware of how often you're swayed by emotions you may be slower to blame others for similar lapses, less inclined to interpret their actions as intentional slights.

Compassion can also help people manage their own suffering, since it's a reminder that others are also in pain. "After that, our pain does not feel as oppressive," says Ricard. "We stop asking the bitter question, Why me?" The link between compassion for others and for oneself may explain why recent studies connect altruism to health and happiness.

VITA

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ABSTRACT

THINK A WHILE IN MY SHOES: PERSPECTIVE TAKING, STUDYING, AND ATTITUDES

By Heather Ann Labansat
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Perspective taking has shown to be effective in creating new ideas, fostering cooperation, and helping people learn and recall new information. Since having the perspective of another appears to be beneficial; two questions arise, "Could an imaginary team of people promote effective perspective taking" and "How might this process impact learning, attitudes and behavior in regards to information that one is learning?" The current research examined these questions by using three different learning strategies: 1)a Learning Team/ Retrieval Team, 2) a Retrieval Team Only, or 3) the Control strategy in which participants used their typical strategies to learn new information. The Learning Team and Retrieval Team strategy had participants create an "imaginary team" of people whose perspectives they would consider while learning new material. Participants studied material and their test performance, attitudes, and intentions to engage in behavior suggested in the material, were assessed. The results for test performance indicated that women seemed to be hindered by the Learning Team/Retrieval Team Strategies. Males using the LT/RT or RTO strategies did not appear to be hindered, and at least in the case of the RTO strategy, statements generated during recall were more accurate. There was an impact of using the LT/RT or RTO strategy on male participants' intentions and behavior in regards to the topic they studied: meditation. Males using the LT/RT strategy reported greater intentions to

practice meditation than did males in the RTO and control groups. It appears that taking perspectives influenced males' incorporation of the information studied into their lives. Males using the LT/RT study strategy also reported performing more behaviors related to meditation than did male participants who were using their own study strategies. Females' attitudes regarding meditation and their intentions or behaviors did not seem to be impacted from the use of the LT/RT or RTO strategies. Gender difference findings are discussed. Perspective taking while studying may provide researchers with another tool to facilitate attitude change, and provide educators with suggestions for students who are looking to integrate the information they study into their everyday lives.