Increase in new solutions emerged in group discussion
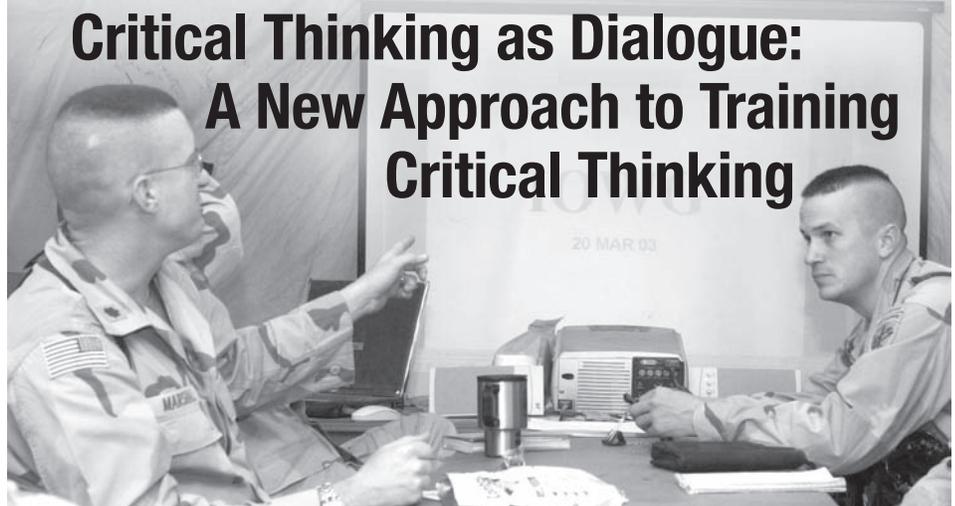
Critical Thinking as Dialogue: A New Approach to Training Critical Thinking

Why Train Critical Thinking?

Our world is becoming increasingly complex with change arriving at a faster and faster rate. Our military troops are facing situations which they haven't encountered before and for which they haven't been trained. As Lieutenant General William Wallace noted immediately after the invasion of Iraq in 2003, this was a different enemy than the one we had wargamed. The ability to critically think through new problems and unexpected situations is not only desirable, it's essential. This means the acquisition of critical thinking skills is too important to leave to chance; these skills should be systematically and deliberately trained and developed.

A New Approach to Training Critical Thinking

Critical thinking has traditionally been conceptualized as taking place within the consciousness of a single individual, who rationally evaluates the reasons for beliefs and choices by means of universal (e.g. logical) standards.

Richard Paul, in his book *Critical Thinking*, defined critical thinking as "A unique kind of purposeful thinking in which the thinker systematically and habitually imposes criteria and intellectual standards on thinking." Traditionally, training for critical thinking has focused on the use of tools, such as logic and probability, to evaluate the reasons for beliefs and choices.

But questions arise about the usefulness of training such skills for use in real world domains like the Army tactical battlefield: Will critical thinking take too much time, undermine the will to fight, supplant experience and even expertise, stifle innovation, or disrupt team *esprit de corps*?

Based on an analysis of current approaches to critical thinking and research in both cognition and communication, a new framework emerged that answers these challenges and is more likely to deliver the thinking skills required in real world contexts. The theory conceptualizes critical

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thinking as a dialogue. In general, a dialogue is any type of communicative exchange (verbal or non-verbal) between two or more people, such as a negotiation, deliberation, or expert interview, that has a characteristic structure of roles, constraints, and objectives. Critical thinking is a special type of dialogue whose purpose is to determine the acceptability of a belief or action, which proceeds by means of questions and answers about alternative possibilities, and which can be conducted both among different individuals and among different perspectives in a single person's head. One person (the opponent) or perspective asks questions in order to cast doubt on the belief or action, while another (the proponent) provides answers in order to defend or improve it. A third (the referee) keeps an eye on the external situation, decides which type of dialogue (if any) is appropriate, keeps the discussion on track, and determines when it must stop. In some circumstances, especially where time is very limited, intuitive or recognitional processes may be more reliable than conscious deliberation. Dialogue rules, roles, and purposes are not necessarily universal, but may be adapted to specific circumstances, such as the stakes, available time, the domain, or level of expertise of the participants. Logic and probability are means rather than ends, and may or may not be useful in challenging or defending a position and creatively generating alternatives. Ultimately the value of a dialogue is determined by its success in achieving real world goals under the relevant conditions.

A Theory of Critical Thinking As Dialogue

According to the dialogue approach, critical thinking is a process of asking and answering questions about alternative possibilities for situation understanding or action in order to achieve some objective. A critical thinking dialogue presupposes three different roles (but not necessarily three different persons): a proponent who defends a hypothesis or action, an opponent who challenges it, and a referee who regulates the dialogue so that it achieves the participants' objectives within the available time.

Figure 1 shows the dialogue model in terms of three levels. The first represents a dynamically evolving set of mental models of the situation or plan. These are the alternative possibilities that are under consideration by the proponent and opponent at any given time. Their contents include hypotheses about the situation and plan and assertions about the significance of evidence and goals. The number of alternative possible models and the ways in which they vary represent uncertainty. At the second level, these mental models are embedded in the give and take of a critical
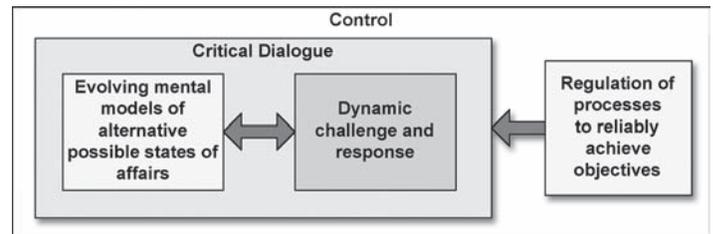

Figure 1. Overview of the theory of critical thinking as dialogue

thinking dialogue, in which the opponent tries to expand the number of possibilities and the proponent tries to reduce them. As questions are asked and answered, the critical dialogue continually increases the detail and depth with which the models are understood. The third level represents an external control process corresponding to the role of the referee. He monitors the relevance of the moves by each player to the goals of the dialogue as well as the contribution of the dialogue as a whole to achieving the larger task or purpose within the available time.

A critical dialogue should improve the participants' understanding of the situation and plan, help them learn more about one another's beliefs, assumptions, and interests, and generate more successful decisions.

Training Critical Thinking Through Dialogue

Based on these ideas, the training package, *Critical Thinking Through Dialogue,* was developed. Training takes trainees through four phases of a critical dialogue: (1) identifying a disagreement, (2) deciding how to resolve it, (3) challenging and defending positions, and (4) resolution. In recent tests, training classes consisted of groups of 2-4 participants with instruction presented via slides and handouts by an instructor. Training begins with a discussion of the concept of critical thinking with the instructor describing the three roles (proponent, opponent, and referee) and the associated rules.

The four phases of critical thinking dialogue are then described (See Table 1 on next page). The presentation of each phase is accompanied by a discussion of the tasks and principles associated with each phase, guided dialogue practice using tactical decision games, and feedback from the instructor. Participants are taught specific rules as well as more general principles for critical dialogue, common ways in which a rule tends to be violated ("fouls"), and examples of each kind of violation. Two of these rules are shown in Table 2 (next page). The high-level objectives of the training include leading participants to surface and make effective use of information not previously shared and to seek creative solutions rather than settle for premature compromises.

Critical Thinking as Dialogue (continued)

Preliminary evaluation results

Fifty-four active duty Army officers from four Army installations participated in the evaluation. Initial data analyses suggest that dialogue training leads to improved performance in real world tasks and improved collaborative problem solving. Results showed that trained groups were more likely than untrained groups to recognize and set aside areas of agreement and to focus on areas of disagreement. They were also more likely to ask for and give reasons and less likely to prevent one another from expressing their views by interrupting. In addition to these process improvements, dia-

Table 1. Phases of a critical discussion and associated tasks

Stage	Tasks
1: Confronting opinions	a. Individuals think about problem separately. (Group is more effective after members have thought about issues independently, even for a short time.) b. Express own views. c. Learn what others' positions are and why. Ask for clarification if not clear. d. Recognize and expand areas of agreement (e.g., settling minor differences). e. Recognize and understand significant disagreements.

2: Planning discussion	a. Determine what disagreements are important enough to discuss; prioritize them. If there is no disagreement, determine most critical issues or uncertainties.
	b. For high priority issue(s):
	   Decide approximately how much time you have.
	   Decide who plays primary roles of defender and challenger. (If players have competing claims, each plays both roles.)
	   If there is no referee, appoint someone for first issue.
	   If not enough or too many people double up or share roles.

3: Point-counterpoint	a. Parties take turns. b. Proponent must respond directly to each challenge by the other side. Each response must defend position with reasons, modify the position, or concede. c. Opponent must either challenge the other position or concede. A challenge can demand a defense, question the truth of a reason, question the sufficiency or relevance of a reason, or present an alternative coherent viewpoint (e.g., a better explanation of the observations). d. Referee watches time, keeps discussion going, and makes sure rules are followed.
4: Decision	a. End discussion when parties agree, or referee declares time is up. b. Identify recommendation or decision of the group: Whatever parties agree to, or whatever the referee decides. c. Summarize strengths and weaknesses of each side, and explain why decision was made.

Table 2. Basic rules for critical dialogue

Rule	Fouls to avoid	Examples of foul
A Don't suppress disagreement, or prevent each other from defending or challenging positions.	No intimidation by use of authority or expertise Don't distort others' views (create a strawman) No personal attacks on competence or motives No appeals to sympathy of other party	If I want your views, I'll ask for them. So, you cowards just want to cut and run? Give me a break! No one ever accepts my ideas. Just go along with me this one time!
B Whoever makes a claim has to defend it if asked to do so.	Don't rely on personal guarantee that your view is right. Don't declare your conclusion to be obvious. Don't turn the tables. Don't bargain. Settle issues on the merits.	I'm the expert here. I don't have to defend my views. Everybody knows that… Well, I'd like to see you prove that I'm wrong. I'll let you have your way on the 1st platoon if you'll accept my suggestion on the tanks.

logue training led to an increase in new solutions that first emerged in the group discussion itself.

These results suggest that dialogue training improves both the efficiency and effectiveness of group discussion. By focusing on disagreements, interrupting less, and asking and offering reasons more, trained participants overcame an experimentally confirmed tendency of groups to focus on information that all members already posses at the expense of valuable information they do not share. In addition, trained groups worked together to create genuinely novel solutions rather than simply choosing among the ones already championed by members of the group.

A second phase of this research will allow a more prominent role for recognitional as distinct from deliberative processing during dialogue. It will also extend the dialogue theory to the interpersonal skills needed by team members and leaders when using critical thinking in teamwork.

Conclusion

Dialogue theory studies reasoning and decision making as they actually occur in multi-person interactions rather than as a static set of logically related premises and conclusions. It seeks to identify the different types of argumentation that are observed in conversation and the kinds of errors to which they are subject. Dialogue blends descriptive and normative concerns. It is concerned with how effective a par-

Critical Thinking as Dialogue (continued)

ticular type of dialogue is for achieving the real-world goals of the participants in the current context and how effectively participants have conducted themselves so as to achieve the goals of that type of dialogue.

Dialogue may be the way we both learn and apply critical thinking. For an individual, critical thinking is a mini-debate you carry on with yourself. In the military, however, decision making often takes place in a team context, offering an opportunity for true critical thinking dialogue. Dialogues are the interactions by which team members pool information and insights to solve problems, resolve competing goals, build up shared understanding of the situation and tasks, and construct relationships that improve team cohesiveness and trust. The fastest road to improved critical thinking in both an individual and a team may well be training for critical thinking dialogue.

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