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ABSTRACT

While there has been much debate about defining and teaching critical thinking, little discussion has occurred regarding the connection between critical thinking and creative thinking, especially in relationship to teaching speech communication. While it was once thought that creativity is something that some are born with and some are not, recent research has found that creativity can be fostered like any other thinking skill. Findings have revealed that mastering any kind of knowledge requires both creativity and critical skills, while early stages of learning require simple memorization of rules. Both the "soft" thinking behaviors of creative thinking (such as dreams and fantasies) and the "hard" behaviors of critical thinking (such as reason and reality) are needed to solve complex problems. Thus, to encourage creative as well as critical thinking in speech classes, educators must take care to create classroom environments conducive to both kinds of thought. A nonthreatening atmosphere, emphasis on communication, and liberal doses of humor all support higher level thinking skills. A system of motivating rewards (for instance, showing how learning a skill connects with the students' lives) is also beneficial. Positive teacher attitudes, a belief that students can foster their own learning, and encouragement of classroom communication are other ways to help speech communication students develop creative and critical thinking skills. (SKC)

CRITICAL THINKING THROUGH CREATIVE THINKING

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Critical Thinking Through Creative Thinking

In the aftermath of a strong call for American education to move "Back to the Basics," there appears to be an equally growing concern for an educational system which produces not merely literate, but thinking adults. In fact, the most recent report of the National Assessment of Education, funded by the U.S. Department of Education, points out that while nearly all young people can understand what they read and express ideas on a surface level, "far too many of our young people appear to lack effective thinking skills" (Educational Testing Service, 1986, p. 3).

Many experts claim the educational system is not designed to produce students who think. Gruner (1987) described our educational system as one which primarily "attempts to create a younger generation that is as much like the older generation as possible" (p. 155). It is a system which stresses and tests for right answers. Gruner continues:

> We hand our children school-board approved books, ask them to read and report on the 'facts' therein (many of which are myths and lies), and then find out through multiple-choice exams if they have learned. We don't teach them to think . . . (p. 155).

A discipline such as ours, which requires world knowledge, discourse knowledge, and the application of both in a wide variety of contexts, is ideally suited to developing students' higher order thinking skills. In addition, the values and skills we teach, freedom of speech and persuasion for example, require that we equip students with the thinking skills necessary for ethical success.

As one might expect, there are as many approaches to defining and teaching critical thinking as there are advocates of its importance. What is not often discussed is the role of creative thinking and its connection to critical thinking. The purpose of this paper is to explore the relationship between creative and critical thinking. Part I describes the theoretical connection; Part II details teaching strategies and activities which encourage both types of thinking.

Part I - CREATIVE AND CRITICAL THINKING: THE CONNECTION

The nature of creativity has led to the notion that some people are creative and others are not. More recently, reseachers are finding indications that creativity is more directly related to results and more easily manipulated than previously thought. Isen (Russo, 1987) concluded that:

> Creativity is often thought of as a stable, albeit somewhat mysterious, quality that only certain people possess, but our research has shown that it can be fostered in just about everyone . . . (p. 21).

Amabile (Kohn, 1987), a noted creativity expert, writes, "Creativity is not a quality of a person, i is a quality of ideas, of behaviors, of products" (p. 54). She further contends that there are three basic ingredients of all creative work: expertise in a relevant field, a set of skills having to do with creativity itself such as concentration and persistence, and motivation.

While the majority of those writing on critical thinking focus primarily on the logical/rational mode of thought, the connection to creativity is sometimes noted. Chaffee (1986) cites Robert Swartz, Co-Director of the University of Massachusetts' Master's Degree Program in Critical and Creative Thinking, who maintains that we should:

> Look holistically at good thinking . . . Taking a broader perspective means that these lists (e.g., critical thinking, creative thinking,

problem solving, decision making) should be viewed as complementing each other . . . (p. 2).

An interesting line of research is being pursued by Stuart and Hubert Dreyfus who studied people who have mastered such diverse fields as playing chess, driving, nursing, and learning a second language (Marinucci, 1986). They discoverd five stages of learning which lead up to the level of expert (Figure 1). If it is safe to infer that those who have mastered these fields are skilled in both creative and critical thinking, the five stages then offer insight into the connection between the two.

Figure 1 - Dreyfus Five Stages of Learning

Stage 1:	Novice	Learning of skills by following facts and rules which are so clearly defined that a beginner recognizes them no matter what the situation or context.
Stage 2:	Advanced Beginner	Learning through experience and using intuition.
Stage 3:	Competent Learner	Learning to discard rules that don't help and focus on rules which will help reach goal. Feeling more emotionally involved and responsible for failure.
Stage 4:	Proficient Learner	Using memory or previous experience to trigger correct actions. Using intuition but often slipping into thinking analytically about task.
Stage 5:	Expert	Knowing what to do based on mature and practical understanding. Skill becomes a part of learner.

Notice how creativity becomes more important as the learner moves from novice to expert. There is little room for creativity in Stage 1 where facts and rules are dominant. In contrast, intuition, which implies creative thinking (guessing, trying out, making sense of experience) is central to Stage 2.

Stage 3 requires thinking about and judging rules and also introduces emotional involvement and reponsibility. This reflects Piaget's argument that, "We must agree that at no level, at no stage, even in the adult, can we find a behavior or state which is purely cognitive without affect nor a purely affective state without a cognitive element involved" (1962, p. 130). It is here that there is the potential for manipulation by the interaction of the environment (participants, setting, rewards) and personal qualities and values. Stage 4 combines the creative/intuitive mode with the analytical, leading to the expert stage of ingrained behavior. Even the need to react to a unique set of circumstances triggers a creative response which is a natural behavior.

The stages can be related to the teaching of speech by using the example of a novice student in a public speaking class who is taught to, "Look at the audience." After the Novice learns the rule, the Advanced Beginner practices applying the principle in front of an audience and begins to get a feel for when to look at the audience and when to look away. The Competent Learner realizes that you don't always look at the audience. A particular phrase may be more powerful if delivered with eyes aimed heavenward or while glaring at one audience member. Some rules which don't work for the individual may be discarded, thus a unique style may evolve. The Proficient Learner is beginning to automatically look at the audience; the desirable behaviors are becoming ingrained. There is still, however, an occasional conscious, "Am I looking at both sides of the room?" Finally, the Expert speaks with innate skill; it's made to look easy.

When learning a skill it appears that both critical and creative thinking are required to arrive at mastery. What types of thinking are characterized as critical and creative? An interesting perspective is offered by von Oech (1983). He refers to "soft" and "hard" thinking (Figure 2). Neither type is

uni-dimensional nor preferred. Both are essential to problem solving and to each other. The image portrayed by the soft and hard labels may not be without a value orientation. Certainly, both hard and soft things are of value in our lives. However, "soft in the head" remains a figure of speech used, not to describe a creative thinker, but someone who exhibits poor thinking skills.

Figure 2 - von Oech's Soft and Hard Thinking Behaviors

Soft	Hard
Metaphor	Logic
Dream	Reason
Humor	Precision
Ambiguity	Consistency
Play	Work
Approximate	Exact
Fantasy	Reality
Paradox	Direct
Diffuse	Focused
Hunch	Analysis
Generalization	Specifics
Child	Adult

What is important to note is the variety of forms of thinking and the potential value of all the various forms. Ambiguity, for example, is rarely thought of as a positive thinking value. Yet, when in the creative mode of thinking, attempts at specificity could be counter-productive. Von Oech encourages the reader to add to the list, certainly a task consistent with the high value he places on creative problem solving.

Part II - TEACHING STRATEGIES TO ENCOURAGE CREATIVE AND CRITICAL THINKING

If we agree that creative and critical thinking are interdependant and equally valuable, it is important that we as speech educators use teaching strategies which foster the development of both types of thinking in our students. Neve (1986) offers seven principles for creating a classroom which

is "brain-compatible" and "far removed from the standard teacher-talking-at-passive-group model" (p. 146).

1. Create a nonthreatening climate.
2. Provide a huge amount of input.
3. Emphasize genuine communication.
4. Provide for much manipulation.
5. Emphasize reality.
6. Address learning activities to actual, productive uses.
7. Respect natural thinking (p. 146).

More specifically, teachers can encourage student creativity by considering three factors: environment, attitude, and teaching behaviors. One aspect of classroom environment often overlooked is humor. Humor can be used to create a valuable learning environment. Student learners in a positive frame of mind produce more creative work. Isen (Russo, 1986) found that student subjects put into a cheerful mood were more creative and more successful at problem solving. She concluded that:

> positive models influence creativity by changing the way cognitive material is organized . . . (B)eing happy may cue you into a large and richer cognitive content, and that could significantly affect your creativity (p. 21).

The compatibility of humor and higher order thinking is noted by Whitmer (1986):

> Humor motivates, develops insight, expands thinking, and requires reactive critical reading. In the pleasurable, risk-free environments in which learning best takes place, humor provides opportunities to play with ideas (p. 534).

Teachers can make humor a part of the classroom environment by highlighting cartoons found in student reading and by using humorous quotes, cartoons, or stories as part of lectures, as student discussion starters, or as bulletin board materials.

A second environmental factor directly related to creativity is the reward system. Amabile (Kohn, 1987) has developed a Motivation Principle of Creativity:

> People will be most creative when they feel motivated primarily by the interest, enjoyment, satisfaction and challenge of the work itself--and not by external pressures (p. 55).

This esoteric view may not fit easily into an academic setting in which grades serve as the primary source of motivation. How can a speech teacher encourage intrinsic motivation? Most students come to us aware of the importance of communication. Making certain all are aware of the role of communication in their personal, academic, and professional lives is the first step. The second, and more difficult step, is also making certain that the connection between your course and the students' lives is equally clear. If the role of the course in general, and course components (assignments, readings, attendance) in particular, are related to students in meaningful ways, students will develop their own intrinsic motivation.

One qualifier Amabile (Kohn, 1987) includes will be of help to communication instructors. She points out that:

> Not all stages of the creative process require instrinsic motivation. The early period of preparation -- gathering information and learning techniques -- can benefit from conventional rewards. So can the later process of trying to validate and communicate one's idea (p. 55).

The implication that much of what we teach is teachable by using extrinsic motivation, however, should not be seen as freeing us from the unleashing effect and heightened productivity that result from instrinsic motivation.

Clearly related to the class environment is the teacher's attitude. Three attitudes deserve comment as ones which encourage student thinking. First, the teacher must genuinely want students to think critically. There is risk involved. Sternberg (1987) points out the "hard questions" we must ask ourselves: "Do we really want students to think? Do we want them to become more critical and more questioning and less likely to accept things at face value?" (p. 465).

Critic l thinkers should offer a challenge and an excitement which inspire high quality teaching and stimulate student learning.

A second attitude necessary to the nuturing of critical and creative thinking is based on the belief that there are few "right" answers. Inherent in this belief is a recognition of the role of perspective, context, and language. Sternberg (1987) claims, "very often in critical-thinking problems there are no right answers. And even when there are, it is the thought process that counts" (p. 458). Speech teachers can implement this attitude by focusing on speaking as process rather than exclusively on speech products.

A final essential attitude reflects a belief in the ability of students to self-learn. A belief described by Sternberg (1987) as realizing that students "must teach themselves, and all we can do is provide every possible means to enable this self-instruction to take place" (p. 459). Teaching as facilitating is a teaching style well suited to many speech classes. An interactive class will allow students to try out ideas and behaviors as well as expose them to the views of other students. Encouraging student independent decision-making and problem-solving should enhance student thinking skills as well as class quality.

The third means of encouraging creativity is by teacher behaviors. Two will be discussed here: using class discussion and responding appropriately to students. Class discussion is theoretically consistent with the view of contemporary psychologists that to a great extent learning occurs through talking. Sternberg (1987) describes current theory as a belief that "thought emerges as a social process and is intellectualized only after it has been socially expressed" (p. 458).

Because talking is a way of learning, the use of class discussion becomes more than a teaching strategy or a means to an end. Rather, Sternberg (1987) claims "the processess of thought and their expression in class discussion are

legitimate and important in their own right" (p. 458). Speech teachers have long recognized the role of class discussion in teaching and in addition, have thought it a technique which is worthy of class instruction. The Speech Communication Association published Instruction in and about Small Group Discussion (Galvin and Book, 1975) to assist those concerned with small group communication. Beyond using class discussion in order to increase motivation, participation, and as a means of developing discussion skills, it should be seen as "more than just a peripheral part of a thinking-skills program. Discussion is essential" (Sternberg, 1987, p. 459).

A second teacher behavior which can encourage student creativity is responding to students. Much has been written about the value of teacher questioning skills; less has been written about how teachers respond to the answers. Schaffer (1987) points out that "teachers do not get much training in understanding what makes a good question or in how to use questions effectively in class" (p. 8).

Assuming that teachers can promote thinking by asking questions that challenge students' ideas, it becomes essential to teachers to respond in ways which encourage risk-taking inherent in student esponses. Let's examine a sample student's comment and various teacher responses. (Based on a scenario in Wasserman, 1987).

Student: I think teachers don't listen to students. Kids should be allowed to state their views in class.

Teacher A: Obviously, Chris, you don't know about all teachers; you're overgeneralizing.

Teacher B: Good thinking, Chris.

Teacher C: You might want to reconsider your statement. Can you think of teachers who do encourage students to talk about ideas?

Teacher D: You think teachers should talk less and students more.

Teacher E: You are saying that most teachers don't encourage and use student input. Kids have good ideas and should be allowed to speak up about those ideas.

Teacher F: Because students have valuable ideas they should be allowed to share them. How do you think a teacher could do this?

The responses of Teacher A through Teacher F show a movement toward the encouragement of student thinking. Teacher A puts down Chris' idea and thus shuts off discussion and thinking. Teacher B praises the student, but also cuts off further interaction. Teacher C allows more thinking time, but limits the student by focusing the thinking toward a specific issue. Teacher D asks the student to do some reflection. Teacher E asks the student to reflect in light of the assumption implicit in the original statement. Teacher F asks the student to examine the idea and encourage further thought by asking a challenging question.

The variety of teacher responses outlined above indicates the various levels of teacher encouragement of creative thinking from stifling to enriching. Speech teachers who, perhaps, depend on class participation more than other teachers and who offer their students the classroom as a safe place to practice their oral skills, should be especially adept at making appropriate responses to students.

In summary, teachers need to realize the nature of the connection between critical and creative thinking. Once aware of the symbiotic nature of the two, teachers, especially speech teachers, are in an ideal situation to encourage both critical and creative thought in their students. Creating a "brain-compatible" classroom with concern to the environment, teacher attitudes, and teacher behaviors should provide the impetus needed to encourage creative student thought.

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