

## CRITICAL THINKING PEDAGOGY: A POSSIBLE SOLUTION TO THE "TRANSFER-PROBLEM"

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There is still tremendous interest today in how to teach for critical thinking in a wide variety of different disciplines.<sup>1</sup> Professors in such diverse fields as nursing, education, library science, philosophy, English composition, and speech are exploring methods for teaching critical thinking skills. However, pedagogical problems still remain. In general, "[l]ittle progress has been made regarding the most effective materials and methods to teach critical thinking."<sup>2</sup> The thesis of this paper is that the use of a model argumentative essay on the practical applications of informal logic is an effective way to teach critical thinking skills and attitudes. I say "attitudes" because Harvey Siegel has taught us that the critical thinker is not only able but willing to "be appropriately moved by reasons."<sup>3</sup> Among these skills are the abilities to evaluate definitions and arguments, and among these attitudes are open-mindedness, inquisitiveness, and self-confidence. The argumentative essay I require must include a clearly defined thesis, three arguments in support of it, and at least one objection and response. Before examining some of the historical and contemporary empirical evidence for my thesis, let us turn to the specific pedagogical problem at issue.

### The "Transfer-Problem"

The issue concerning effective teaching methods has been dubbed the "transfer-problem" by the pioneer in critical thinking research, Robert Ennis. Can skills learned in an informal logic, or critical thinking, course be transferred to other fields? While Ennis answers yes, John E. McPeck, one of Ennis' strongest critics, answers no.<sup>4</sup> McPeck argues that, because "there is no set of general thinking skills," inasmuch as all critical thinking is subject-specific, a course in critical thinking *per se* is useless. Ennis, on the other hand, argues that, even though much critical thinking is subject-dependent, there are still some general thinking skills that are used in all fields, such as not contradicting oneself and not believing everything one reads, that can be taught in a critical thinking course.<sup>5</sup> Furthermore, for Ennis, some "transfer-inducing instruction" should be given to enable the student to apply these general thinking skills to other areas of inquiry. The nature of that instruction is the heart of the issue before us.

Professor Ludwig F. Schlecht of Muhlenberry College agrees with McPeck to a point, for ". . . it must be recognized that the rational assessment of claims does require substantive knowledge and often depends upon subject specific expertise."<sup>6</sup> Clearly, the soundness of some arguments must be determined on the basis of factual content, which, of course, is beyond the scope of mere logical reasoning. However, because a *modus ponens* and an inductive generalization are the same in physics and history, criteria for the validity of arguments in diverse fields can be taught in a critical thinking course.<sup>7</sup> Schlecht, though, wisely notes that one of the values of a critical thinking course is the cultivation of the attitude to suspend judgment when one lacks the factual knowledge to determine the soundness of an argument.

I have found that a model argumentative essay on the practical applications of logic is an effective way to help provide some "transfer-inducing instruction." On or near the first day of class I pass out a four page argumentative essay of mine on the practical value of logic.<sup>8</sup> I require them to write a three to five page argumentative essay on whether or not informal logic is useful in their chosen careers. This is a possible way to solve the "transfer-problem," since the students are given time during the course to transfer critical thinking skills and attitudes to a field that interests them when too often this kind of application is left to them after the course is completed, and they never do it. Second, they are required not only to explain how the skills and attitudes of critical thinking are used in their majors, but they are encouraged to use the deductive and inductive argument forms they have learned in the course in support of their thesis. This enables them both to understand how general thinking skills are used in their majors and to transfer a knowledge of argument forms to a real context in which they will use their knowledge of logic.

A composition professor objects that this classic "thesis-controlled" essay produces a dull essay. Thomas Newkirk argues in "Critical Thinking and Writing: Reclaiming the Essay,"<sup>9</sup> that the traditional argumentative essay that has its thesis in the first paragraph gives too much away too soon, which takes away from the enjoyment of the reader who wants some exploratory intrigue. This is an unwarranted objection because the foremost purpose of the argumentative essay is not enjoyment but clarity. Stating the thesis in the first paragraph instead of at the end of the "journey" facilitates clarity, for the reader knows exactly what is at issue. Furthermore, the thesis-controlled essay does not take away from the exploratory intrigue of reading, for the reader still has the critical task of determining whether the author has

succeeded in proving her case, and for anyone interested in critical reading, this is an exciting activity. Let us turn to some historical evidence in support of my thesis.

## Historical Precedents

There are ample historical precedents for the use of writing models in ancient Greece and Rome. First of all, several scholars, who are interested in ancient rhetoric and philosophy, have noted the extensive use of writing models for instruction in Greek oratory and philosophy.<sup>10</sup> Professor Hock, in his general introduction to a book on ancient rhetoric, discusses the ubiquity of a particular kind of composition exercise called the *Chreia* study. In this exercise, the rhetor chose a short proverbial saying by an illustrious person that the students then paraphrased, elaborated, and either defended or refuted according to set rules and models. "On the one hand, various rhetors, following the lead of Aphthonius, wrote model compositions for each exercise."<sup>11</sup> Burton Mack, of Claremont Graduate School, writes that Hellenistic teachers of rhetoric and wisdom lifted passages from Homer through Plato to be "used as models to practice a variety of compositional skills."<sup>12</sup> He and his former student John Kloppenborg even explain that the Gospel of Mark was a product of this ancient technique of literary composition and wisdom instruction.

Second, the greatest authors on rhetoric in ancient Rome—Quintilian, in his *The Institutio Oratoria*, and Cicero, in his *On the Orator*—discussed the value of writing examples in compositional instruction.<sup>13</sup> Quintilian urged the use of writing examples inasmuch as all art is learned through imitation and writing is an art. Both Quintilian and Cicero took it for granted that writing examples were useful in teaching rhetoric and wisdom, so the pressing issues were what and who to imitate. They concluded that only clear writers with good characters should be imitated, the assumption being that extensive familiarity with a writer will reproduce that writer's mental and moral traits in the student. An objection I heard from one of my students was that they (the students) only learned to write for me, but an answer to this objection can be culled from Quintilian.<sup>14</sup> He held that good writing and thinking cannot be completely reduced to imitation and rules, since talent, invention, and facility are beyond artifice. However, because intellectual skills can be cultivated, imitation of good writing and thinking should be able to give guidance for beginning writers and thinkers.

Someone may object that there is no methodological similarity between teaching writing and critical thinking because they are differ-

ent activities. However, good writing is like critical thinking in that they both involve the ability to organize, synthesize, analyze, and evaluate subject matter. Thus, because writing teachers have successfully used samples of good writing to teach writing skills, it follows that critical thinking teachers should be able to successfully use samples of good thinking to teach thinking skills. Moreover, Peter Elbow, Director of the Writing Program at SUNY in Stonybrook, discusses the writing process that begins in free-writing exercises that utilize creative thinking abilities and ends in the activity of revision that uses critical thinking abilities. He asserts that "[t]here is an obvious link between the writing process and these two kinds of thinking."<sup>15</sup> Good writing and critical thinking are, indeed, by definition, abilities to organize, synthesize, analyze, and evaluate subject matter, for these activities cannot occur without these abilities. So, based on Professor Elbow's authority and the analysis of these two processes, we can conclude that good writing is like critical thinking. It also follows that critical writing teachers should be able to successfully teach their students how to think well by using examples of good thinking, because the methods of rhetoric in the ancient world produced numerous great thinkers and writers, such as Quintilian and Cicero.<sup>16</sup> Let us now turn to some contemporary empirical evidence that also supports the position of this essay.

### **Contemporary Empirical Evidence**

Kathleen Craver notes that there is little empirical research on the impact of writing on critical thinking skills: "[t]he assertion that writing itself can influence critical thinking, however, lacks a firm, empirical research base."<sup>17</sup> But some empirical evidence is available in the teaching experience of several contemporary philosophers who have used writing exercises to teach thinking skills. For example, Stephen Fishman uses different kinds of writing exercises in his Introduction to Philosophy courses.<sup>18</sup> He has students brainstorm ideas on particular subjects; then map or relate to each other; then do some free-writing for ten minutes. He reports that this has proven to be an effective method for developing creative and critical thinking abilities.

Lenore Langsdorf, of Southern Illinois University at Carbondale, used an NEH grant to integrate English composition and informal logic into a required sequence of three freshman liberal arts courses.<sup>19</sup> After combining grammatical, logical, and rhetorical studies, she found that classic philosophical texts (and the critical thinking abilities and attitudes we are trying to teach through them) became relevant to the students. By writing about the structure of ideas in a text, the evaluation

of their logical force, and their creative contributions to civilization, the students were better able to appropriate the meaning of philosophical texts. It is this kind of blending of logic and rhetoric that contributes to an empirical basis for the assertion that writing can influence critical thinking skills and attitudes.

Further evidence comes from a group of professors of philosophy at BYU, who have also found that this interdisciplinary approach to the teaching of critical thinking skills and attitudes is very effective.<sup>20</sup> These professors maintain that in order to avoid possible problems generated by teaching writing in a writing course and thinking in a thinking course, for example, of developing a good writing style with poor arguments or good arguments with a poor writing style, it is best to teach writing style and reasoning skills in the same course. They argue that writing and thinking skills involve the same kind of intellectual skills, and they emphasize the use of imitation in teaching writing and reasoning skills. "Imitation requires careful attention, and we believe it is that which brings about improvements in student's writing and thinking."<sup>21</sup> Interestingly enough, they even conclude that philosophy teachers should teach composition classes because good writing is so dependent on good thinking, which philosophers should be especially adept at doing.

Finally, there is quite a bit of evidence from my classes that students transfer their knowledge of critical thinking principles and dispositions to other areas. First of all, after teaching the students some basic principles of classification and definition, I also have them brainstorm, map, and free-write on the topic of "Logic and My Major." Then, after teaching them some basic deductive and inductive argument forms, such as hypothetical syllogisms and inductive generalizations, they construct three arguments in explicit argument forms in support of the thesis that a course in logic is useful in their major field of study. They are encouraged to not only look for how these basic principles and argument forms are used in their major fields of study, but they are encouraged to use them in writing an argumentative essay about them. Transfer takes place if and only if students can find these skills in their majors. Virtually everyone of my students has been able to find the use of hypothetical syllogisms or inductive generalizations in their major fields of study.

Here are some examples of student papers that demonstrate "transfer" has taken place. Student One:

"When an environmental engineer writes a report, he/she wants it to contain good organization, be clear and precise and have adequately defined terms. More importantly, all statements must be true, there must be no contradictions or logical fallacies, all alternatives must be considered and all implications must be acceptable. This includes every statement he/she makes about the facility's compliance with all applicable environmental laws and permits. The agencies hold the facility responsible for the validity of such statements, and the penalty for fallacious reporting or incorrect information, regardless of intent, is heavy fines or even imprisonment. As one can see, the responsibility of reporting to an agency has very serious implications. This is why it is so important for an environmental engineer to follow all Standards of Reasoning."

This student is referring to Professor Richard Paul's standards of reasoning, which I include in my critical thinking courses.<sup>22</sup> Even if the transfer is not perfect, clearly Student One does an adequate job of applying several principles of critical thinking to the area of environmental engineering.

Student Two's First Draft of first paragraph:

"Philosophy—a search for understanding, wisdom and knowledge; impacts virtually every aspect of our lives, starting from birth. We begin life searching for explanations and understanding of everything around us. Our parents pass on to us their beliefs, the church passes on its beliefs, and schools pass on past philosophies that have now become accepted practices; such as; mathematics and science. More importantly, teachers help us apply philosophy to all areas of our lives. They teach us how to think analytically, or reason. A definition of teaching given in *The Place of Reason in Teaching* by Bertram Bandman, is: "(a) indoctrinating or inducting the young in the sense of socializing them; (b) citing facts, definitions, explanations, and formulas; and (c) questioning, doubting, examining, and criticizing prevailing beliefs, attitudes, and facts."

Third Draft of first paragraph:

"The topic of this essay is critical thinking in elementary school teaching. At issue is how to teach critical thinking to elementary students. Critical thinking is conscious and skilled reasoning in making sound decisions or drawing valid inferences. Bertram Bandman defines teaching as, "(a) indoctrinating or inducting the young in the sense of socializing them; (b) citing facts, definitions, explanations, and formulas; and (c) questioning, doubting, examining, and criticizing prevailing beliefs, attitudes, and facts." My thesis is that teachers should use methods that encourage

critical thinking by students, in order for them to become self-sufficient. A self-sufficient child is one who has extreme confidence in his or her own ability to solve problems. I defend my thesis by discussing three principles of reasoning: to always give reasons, to cite several examples, and to discuss any counter-examples that might apply. Accompanied by an active question-answer classroom format, these principles allow the students to develop the habit of looking critically at all information they may encounter in every aspect of their lives."

I did not quote the second draft because it was similar to the third draft, except for some stylistic changes. The change from draft one to draft three demonstrates growth in understanding how to apply principles of critical thinking to elementary school teaching, for the student is aware of some of her educational goals, content, and pedagogy. Last, the student reported that work with my model essay (which again can be found in the following appendix) helped to clearly and precisely formulate this understanding.

Third Student:

"In the clinical setting, psychologists use critical thinking to make diagnoses. For instance, an individual exhibits abnormal behavior and we want to determine if there is a psychological basis for this behavior. Is there a reason for the behavior, has this person been drinking alcohol? Consider counter-examples. When does he not behave like this? Refer to authorities. Have relatives and friends noticed this behavior for a long time or is this a recent development? Justify causal connections. Has labwork been done to see if there is a chemical imbalance? Syllogisms are then used to diagnose the disorder. If he exhibits these particular symptoms, then he has this disorder. He does exhibit these symptoms. It then follows that he has this disorder."

Student Three clearly needs to be more specific about the abnormal behavior and symptoms in question and uses the concept of counter-example in a novel, if not a bit confused, fashion. However, he also demonstrates an adequate transfer of knowledge gained in a critical thinking course to another area of study.

At this point an objection may be raised that these students are merely "saying" that they know how to apply principles of critical thinking when what we need to establish transfer is a scientific study that follows them after they take a course in critical thinking to see if they actually apply them. Indeed, a rigorous scientific study like this would provide a much firmer basis than the somewhat anecdotal empirical evidence presented here. However, because the necessary control factors for such a study are so complex, it is not clear that we can do

better than anecdotal evidence in this case. For example, consider how difficult it would be to find members of the control group and the experimental group of the same level of intelligence, interest, and educational background. Even if that were possible, the exams to test their application would have to be designed by specialists in their fields rather than a philosopher, which presents problems of collaboration. However, even if exams could be created, the specialists and the philosopher would have to agree on the same theory of critical thinking taught in the critical thinking course, which presents philosophical problems. Finally, the exam would have to be a practical exam in the field in order to avoid the possibility of the students simply "saying the right thing," which would again raise the problems of collaboration and philosophical conception of critical thinking. Because of these difficulties, this kind of anecdotal empirical evidence is all that is possible in this case.

Thus, there is sufficient conceptual, historical, and contemporary empirical evidence to recommend the pedagogical strategy of using a model argumentative essay that focuses on the practical applications of informal logic as a possible solution to the "transfer-problem." It requires the student not only to think about how logic is used in other areas, but also to demonstrate an ability to construct arguments of her own in the forms she has been studying. Moreover, the ancient practice of using writing models to teach writing and thinking skills and the analogy between writing and thinking, lends historical and conceptual support for this approach. Finally, the anecdotal evidence from several contemporary professor's classroom experiences should be convincing evidence that the imitation of writing models is an effective method for teaching critical thinking skills and attitudes.

## NOTES

1. Christine A. Tanner, "Thinking About Critical Thinking," *The Journal of Nursing Education* March/1993; Madonna R. Riesenmy, Debra Ebel, and Sybil Mitchell, "Retention and Transfer of Children's Self-Directed Critical Thinking Skills," *The Journal of Educational Research* September/1991; Robert H. Ennis, "The Extent to Which Critical thinking is Subject-Specific: Further Clarification," *Educational Leadership* (May/1990):13-17; Kathleen W. Craver, "Critical Thinking: Implications for Research" *School Library Media Quarterly* (Fall/1989):13-89; Ludwig F. Schlecht, "Critical Thinking Courses: Their Value and Limits," *Teaching Philosophy* (June/1989):131-140; Stuart Tonemah, "Teaching Critical Thinking Skills in the Basic Speaking Course: A Liberal Arts Perspective," *Communication Education* (April/1986):174-182.
2. Craver, "Critical Thinking," 16.
3. Harvey Siegel, *Educating Reason* (DeKalb, IL: Northern Illinois University Press,

- 1989), 32.
4. John McPeck, "Critical Thinking and Subject Specificity," *Education Researcher* (May/1990):12.
  5. Robert H. Ennis, "The Extent to Which Critical Thinking is Subject-Specific," 16.
  6. Ludwig F. Schlecht, "Critical Thinking Courses: Their Value and Limits," *Teaching Philosophy* (June/1989):131.
  7. See generally Karen J. Warren, "Critical Thinking and Feminism," *Informal Logic* (Winter/1988):31-44.
  8. This essay is an example of how a critical thinking course can be applied to everyday life. I also include a one page guideline on how to create, write, and criticize the results of their thinking. (See the following Appendix.)
  9. Thomas Newkirk, "Critical Thinking and Writing: Reclaiming the Essay," (Urbana, IL: National Clearinghouse of Teachers of English, 1989), 14-28, ERIC# ED305457.
  10. Ronald F. Hock and Edward M. O'Neil, *The Chreia in Ancient Rhetoric: The Progymnasmata* Atlanta, GA: Scholars Press, 1986); Burton L. Mack, *Mark and Christian Origins: A Myth of Innocence* (Philadelphia, PA: Fortress Press, 1988); John Kloppenborg, *The Formation of O: Trajectories in Ancient Wisdom Collections* (Philadelphia, PA: Fortress Press, 1987).
  11. Hock, *The Chreia in Ancient Rhetoric*, 11.
  12. Mack, *Mark and Christian Origins*, 185.
  13. Quintilian, *Institutia of Oratoria*, trans. by H. E. Butler (Cambridge, MA: Harvard University Press, 1979), Book X: Ch.2 "Imitation." Cicero, "On the Orator," *Cicero on the Good Life*, trans. by Michael Grant (London: Penguin Books, 1971), 286-29.
  14. Quintilian, *Institutia of Oratoria*, 81.
  15. Peter Elbow, "Teaching Thinking by Teaching Writing," *Change* (September/1983):38.
  16. Further examples from history could be given from the Renaissance humanists. "It was the novel contribution of the humanists to add the firm belief that in order to write and to speak well it was necessary to study and to imitate the ancients. [Emphasis is added.] Paul Oskar Kristeller, *Renaissance Thought: The Classic, Scholastic, and Humanist Strains* (New York: Harper & Bros. 1961), p. 13.
  17. Craver, "Critical Thinking: Implications for Research," 15.
  18. Stephen Fishman, "Writing and Philosophy," *Teaching Philosophy* (December/1989):361-374.
  19. Lenore Langsdorf, "Reading, Writing, Reasoning: A Model for Their Integration," *Informal Logic* (Spring/1987):110-123.
  20. James E. Faulconer, Richard N. Williams, Dennis J. Packard, "Using Critical Reasoning to Teach Writing," *Teaching Philosophy* (September/1988):229-244.
  21. *Ibid.*, 238.
  22. Richard Paul, *Critical Thinking: What Every Person Needs to Survive in a Rapidly Changing World*, Third Edition (Santa Rosa, CA: Foundation for Critical Thinking, 1993), 138.

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