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ABSTRACT

This document describes a practicum that was designed to incorporate student mastery of eight critical thinking skills, their definitions and nature of applicability, with the regular class material, and within the normal scope and sequence of ninth grade world history by introducing each skill concurrent with subject matter, thereby improving students' academic rowess by enabling each to function at more advanced levels of Bloo s "Taxonomy of Educational Objectives." An analysis of the results of the "Cornell Critical Thinking Test, Level X" and a teacher made questionnaire clearly indicate that students spend more time engaged in the memorization of course content than in analyzing, synthesizing, or evaluating it. During the course of implementation, students in the ninth grade world history course were sequentially presented with eight different historical themes, each accompanied by the rules for mastering, then applying a different, specific critical thinking skill. The skills were: (1) identifying frame of reference; (2) locating crucial elements inherent in an issue; (3) distinguishing between evidential and speculative basis for conclusions; (4) identifying main concepts; (5) identifying assumptions; (6) identifying implications and consequences; (7) distinguishing between faulty and justified inferences; and (8) synthesizing material. During the course of fulfilling the specific exercises attached to each theme, students applied each specific critical thinking skill. Working in small groups on some occasions and independently in others, periodic measurement was accomplished by both written and oral presentations. Analysis of post-test data indicates that students progressed from intellectually functioning at the more basic levels of Bloom's taxonomy to the more advanced levels. (DK)

Improving The Critical Thinking Skills of Ninth Grade World History Students By Integrating Critical Thinking Skills And Course Content.

by

Henry Milton

Cluster 38

A Practicum II Report Presented to the Ed.D. Program in Child and Youth Studies in Partial Fulfillment of the Requirements for the Degree of Doctor of Education

NOVA UNIVERSITY

1993

PRACTICUM APPROVAL SHEET

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Approved:

May 17, 1993
Date of Final Approval
of Report

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ABSTRACT

Improving The Critical Thinking Skills Of Ninth Grade World History Students By Integrating Critical Thinking Skills And Course Content. Milton, Henry. 1993: Practicum II Report, Nova University, Ed.D. Program in Child and Youth Studies. Descriptors: Classification; Comprehension; Creative Thinking; Critical Thinking; Curriculum Development; Decision Making; Deduction; Educational Research; Evaluative Thinking; History Instruction; Problem Solving; Secondary Education; Student Development; Teaching Methods; Social Studies

This Practicum was designed to incorporate student mastery of eight critical thinking skills, their definitions and nature of applicability, with the regular class material, and within the normal scope and sequence of ninth grade World History by introducing each skill concurrent with subject matter, thereby improving students' academic prowess by enabling each to function at the more advanced levels of Bloom's Taxonomy of Educational Objectives. An analysis of the results of the Cornell Critical Thinking Test, Level X and a teacher-made questionnaire clearly indicate that students spend more time engaged in the memorization of course content than in analyzing, synthesizing or evaluating it.

During the course of implementation, students in the writer's ninth grade World History course were sequentially presented with eight different historical themes, each accompanied by the rules for mastering, then applying a different, specific critical thinking skill. During the course of fulfilling the specific exercises attached to each theme, students applied each specific critical thinking skill. Working in small groups on some occasions and independently in others, periodic measurement was accomplished by both written and oral presentations.

Analysis of post-test data indicate that students progressed from intellectually functioning at the more basic levels of Bloom's Taxonomy of Educational Objectives to the more advanced levels.

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Henry B. Milton
Henry B. Milton

CHAPTER I

INTRODUCTION

Description of Community

The initial classroom setting around which this report revolves existed within a large public secondary school, grades 9 through 12, with a total student population of 2,154 located on the periphery of the inner city of a large culturally diverse metropolis, located in the southeast portion of the United States. The physical plant was 19 years old and in need of exterior cosmetic attention. The interior condition was in good repair. Within the total student population, 17% were white, 13% were Hispanic and 70% were people of color. While there were not specific figures available, it was known that the larger community consisted essentially of lower-middle to middle class, blue collar working families, many of whom were headed by a single parent. Again, while specific figures were not available, it was known that most households headed by a single parent were dependent to some degree upon public assistance to meet day-to-day living expenses.

The immediate neighborhood in which the school was located was residential, consisting essentially of single story, multiple family public housing apartment complexes,

most of which appeared to be in need of at least cosmetic repair. They were separated by asphalt covered space which was used for parking lots.

Within 3/4 of a mile of the school were located seven large shopping malls, consisting primarily of budget and discount oriented stores, two rather large supermarkets and four used car dealerships. The population of the immediate community was estimated to be 16,000 while the total population of the greater community was estimated to be close to 250,000.

Writer's Work Setting and Role

The actual class who were the focus of this report consisted of 75 ninth grade World History students. World History was mandatory for all those in the ninth grade and was not an elective. Of the 75 students, the average age was 14 years. The male students numbered 28 and the female 47. Forty-four students were people of color, 11 were Hispanic, 6 were Oriental and 14 were Caucasian. English was not the native language for 12 of these students.

The writer was the World History teacher for these 75 students. The writer also taught philosophy to 2 sections of seniors and was the assistant varsity swim coach. The writer was subject to the immediate authority of the Social Studies Department chair and, in turn, was under the administrative

jurisdiction of one Vice Principal and, ultimately, the Principal.

The writer is a native of California, having attended and graduated from public schools in Oakland. He received his Bachelor of Arts from San Francisco State University with a major in history and holds a Master of Science in Education from the University of Southern Maine.

Within the classroom the writer was bound by, but not limited to, the instructional mandates as contained within the official Curriculum Framework. The basic textbook was prescribed, but each instructor was allowed, indeed encouraged, to provide additional materials and experiences which would enhance learning beyond minimal expectations. To that end, primary and secondary source material, overhead projections and films were provided by the School; the extent of their use was left to the discretion of each instructor.

CHAPTER II

STUDY OF THE PROBLEM

Problem Description

Students needed to improve their critical thinking skills in order to learn beyond the more basic skills level of Bloom's Taxonomy of Educational Objectives and toward the more advanced level of skills. More specifically, students needed to be taught how to conceptualize, analyze, synthesize and evaluate historical material.

Problem Documentation

Evidence that students needed to improve their critical thinking skills was apparent when the results of the Cornell Critical Thinking Test, Level X were presented in "Percentile Rank For Students On The Cornell Critical Thinking Test, Level X "(see Table 1:) and the survey questionnaire "Survey of Critical Thinking Skills In The Curriculum" (see Table 2) were examined. The Cornell Critical Thinking Test, Level X is a multiple-choice test designed to evaluate and appraise the critical thinking ability of a group. Only 22 of the 75 students in the

writer's ninth grade world history classes ranked in the 50th percentile, getting only 38 out of a possible 76 answers correct; less than one-half of the students got barely one-half of the answers correct. The aspects of critical thinking incorporated in the test include 1) locating the crucial elements inherent in an issue; 2) identifying frame of reference; 3) distinguishing between conclusions based on evidence and conclusions based on speculation; 4) identifying assumptions; and 5) identifying implications and consequences. The results revealed that students were functioning intellectually more at the basic levels of Bloom's Taxonomy of Educational Objectives, and less at the more advanced levels.

More specifically, the average student in the writer's world history classes demonstrated some proficiency in the skills necessary to 1) memorize specific facts for recall purposes; 2) comprehend material without necessarily being able to relate it to other material; and 3) translate material; that is, to put verbal mathematical material into symbolic statements, for example, but somewhat lacking in the skills necessary to 1) interpret and integrate material; grasping things as a whole and compare/contrast them with other material; 2) extrapolate material and predict the continuation of trends; 3) apply abstractions to concrete situations; 4) analyze material, breaking it down into its several elements and locate any distinguishing patterns; and 5) synthesize material, putting together various elements so

as to form a whole in order to locate patterns or structures previously unclear.

Table 2 "Results Of The Survey of Critical Thinking Skills In The Curriculum" represents the results of a survey questionnaire given to nine social studies teachers at the writer's school (see Appendix A). The results indicate that 8 out of 9 of the social studies teachers polled at the writer's school were of the opinion that 1) the teaching of critical thinking skills is inadequate; 2) textbooks do not encourage critical thinking; 3) the curriculum is oriented more toward information gathering than developing critical thinking skills; and 4) students need to have critical thinking as an inherent part of course content.

Table 1

Percentile Rank For Students On The Cornell Critical Thinking Test, Level X

Percentile Rank	Number of Students	Correct Answers Out Of 76 Possible
99	1	54
95	1	51
85	4	47
75	6	44
65	12	41
50	22	38
35	14	36
25	8	32
15	5	28
5	2	24
1	1	21

Table 2

Results of Survey of Critical Thinking Skills in the Curriculum

Question	Adequate	Inadequate
1.	0	9
	Yes	No
2.	0	9
	Yes	No
3.	1	8
	More Information/ Less Skills	Less Information/ More Skills
4.	8	1
	Yes	No
5.	9	0

Note. Total number of participants = 9.

Causative Analysis

There was an abundance of evidence that made it quite clear that the conventional approach to public education places the premium on the quantity of specific facts a student can commit to memory. While memorization has its place in education, giving it inordinate attention to the extent that it becomes the ultimate goal of classroom activities and for which the highest academic accolades are given makes its importance disproportionate to any other academic endeavor; learning becomes more product oriented and less process oriented.

The Performance Standards contained in the official school district Ninth Grade World History Curriculum Framework indicate that the focus is to be upon the amount of material covered. It is a rich description of the quantity of information to which students must be exposed and about which they must be tested. The emphasis is clearly upon volume of information. What is noticeably lacking is any mention of the quality with which this information is to be learned. Furthermore, the Performance Standards lack any mention of critical analysis. Again, the emphasis is upon the quantity of content to which a student is exposed, not the quality with which it is learned.

An examination of the district-adopted textbook used in ninth grade World History reveals contents that present a

wealth of descriptions, but very little or no analysis of them. At the same time, the review questions within the text and the publisher's tests that accompany and are companions to the text, concentrate upon asking the student for recitation of fact and not for any sort of reflective criticism.

Students, then, did not adequately develop their critical thinking skills because conventional public education does not encourage them to do so. The emphasis is more upon memorizing as much facts and details as possible, then reciting those same facts and details on a test, all with very little critical analysis or reflective evaluation.

Relationship of the Problem to the Literature

While there may be several explanations as to the reasons why the development of critical thinking skills does not receive adequate attention in the curriculum, all of them seem to revolve around a common theme with two central elements to it. The first element suggests that education is test driven. In other words, educators evaluate a student and the quality of education he or she may have received by means of subjective tests. Because of this, the curriculum gears itself toward what is necessary for one to do well on a

test. The vast majority of these tests measure how much information, that is, fact and detail, a student has committed to memory. Seeing that the content of most tests deals with fact and detail, the over-all curriculum follows suit and seeks to expose students to as much specific information as will enable them to perform well on tests. The result is an educational system that is test driven, for, in truth, it measures only the quantity of information a student has memorized.

The second element suggests that the textbooks used in public schools are essentially bland, and filled with descriptions of events while offering no analysis nor inviting the reader to do the same. The publisher's tests that accompany the texts magnify this condition by asking the respondent for what facts and details he or she has memorized.

The common theme, then, is that education is really not much more than memorization. Indeed, students are actually not much more than mere functionaries who mechanically fulfill assignments that have to do with the quantity of information committed to memory almost exclusively in order to perform well on subjective tests.

Studies by Tomlinson (1987) and Romanish (1986) conclude that tests really only measure a student's ability to memorize, and that, ultimately, the mission of the school is to fill an individual's mind with facts and details, rather than open it.

That education is test driven was addressed in works by McPeck (1981) and later, by Beyer (1984). Both suggest that the preoccupation with establishing acceptable testing standards and then creating the formula for getting the correct answers to meet those standards, poses an impediment to the development of critical thinking skills in the curriculum. In addition to the findings of McPeck (1981) and Beyer (1984), studies by Collins (1989) suggests that

> [teaching to tests] has intensified the competitive environment in schools and has caused a change in educational priorities; good education is equated with how effectively administrators can provide extended periods of time for teachers to drill students on material they are expected to know for tests.(Collins, 1989, p. 391).

Mumford (1991) concludes that in schools the emphasis is really on stuffing more and more data into a student's head. He is echoed by Hesse (1989), whose work suggests that by placing the premium upon the quantity of information that can be memorized, students are learning to be curiously uncritical. Earlier work by Wales, Nardi, and Stager (1986) complements the findings of Mumford (1991) and Hesse (1989) by indicating that "schools emphasize factual knowledge and facts alone do not build critical thinking [skills]" (Wales, Nardi and Stager, 1986, p. 37). Perhaps the work of Evans (1989) sums it best when he declares that stressing quantity over quality in schools creates an approach to learning that

gives short term goals the appearance of long term goals, making memorization and the quantity thereof an end unto itself.

Research by LeCounte (1987) indicates that public education does not concern itself with the development of critical thinking skills because it is more concerned with "teaching the skills of reading, writing and computing" (LeCounte, 1987, p. 250). In and of itself, focusing upon the development of skills like reading, writing and computing does not seem bad, but when it is the chief focus, or perhaps the only focus, the results, according to studies by Grice and Jones (1989) are that students "develop very few skills for examining the nature of the ideas that they take away from reading" (Grice and Jones, 1989, p. 337).

The literature, then, seems to support the contention that there is a common theme as to the reasons why the development of critical thinking skills is not a central feature in schools. Simply put, this theme suggests that students do not improve their critical thinking skills because they are not expected to do so. The premium in education is misplaced; it is upon how much information can be memorized in order to perform well on tests; not upon analyzing it. The result of this approach to education is memorization and students are the operatives with the emphasis upon reciting facts not upon why they are facts or what one might do with those facts.

CHAPTER III

ANTICIPATED OUTCOMES AND EVALUATION INSTRUMENTS

Goals and Expectations

The ultimate goal of this practicum was for every student in the writer's ninth grade world history classes to improve his or her critical thinking skills in order to progress beyond the memorization of historical data, that is, the more basic levels of Bloom's Taxonomy of Educational Objectives, and be able to conceptualize, analyze, synthesize and evaluate historical information, that is, the more advanced levels of Bloom's Taxonomy of Educational Objectives.

Behavioral Objectives

The first behavioral objective concerned itself with the process of acquiring an understanding of specific critical thinking skills. Specifically, the objective was for students to 1) know the definition of each critical thinking skill to be acquired; 2) know how to apply that skill to appropriate course content; and 3) be able to reflect on how they used that skill. The goal was for students to achieve a

total average of 280 points out of a possible 400 points on the Evaluation Criteria for Acquiring Critical Thinking Skills (see Appendix B).

The second behavioral objective concerned itself with each student demonstrating his or her understanding of 8 basic critical thinking skills. Specifically, the objective was for each student to be able to 1) identify frame of reference; 2) locate the crucial elements inherent in an issue; 3) distinguish between evidential and speculative basis for conclusions; 4) identify main concepts; 5) identify assumptions; 6) identify implications and consequences; 7) distinguish between faulty and justified inferences; 8) synthesize material. Like the first behavioral objective, the goal was for students to achieve a total average of 280 points on the Evaluation Criteria for Open-Ended Critical Thinking Written Essays and Oral Presentations (see Appendix C).

Measurement of Objectives

The measurement of the first objective was designed to be an integral part of the normal scope and sequence of the course and was to occur at selected intervals as the course progressed. After the definition of the specific critical thinking skill had been established, students were to work independently and read a particular excerpt from an

appropriate historical document, either a primary or secondary source. During the course of reading the excerpt, students were to identify those passages that could be used to exemplify and/or illustrate the definition of the critical thinking skill just defined. Students were then assigned to a group, 5 groups of 5 students each, to share information. In addition to comparing/contrasting information regarding which passages best exemplify and/or illustrate the specific critical thinking skill just defined, while in the group, students were to reflect and review, then describe the *procedure* each used to reach the conclusions each did and *why* that particular procedure was chosen. Each group then submitted a paper explaining its decisions. The writer evaluated each paper following the procedure described in the Evaluation Criteria For Acquiring Critical Thinking Skills (see Appendix B) and shared his findings with each class as a whole.

This measurement was significant in that it acquainted students with the specifics that serve to make up the term "critical thinking skills". In previous academic experiences, students had heard the term used frequently, but this measurement gave exact definition to it and the elements that make it up. This measurement was also significant in that it enabled students to understand that the emphasis of critical thinking is upon process rather than product; that the objective is not to necessarily arrive at the "right

answer", but to understand the formative steps one took to arrive at the conclusions one did.

The measurement of the second objective was designed to be linked to the first and, like the measurement of the first objective, was to take place as an integral part of the normal scope and sequence of the course, and to occur at selected intervals as the course progressed. Students were to take the concepts mastered during the course of implementing the first behavioral objective and apply them to the actual content of the course by means of addressing specific historical themes. Students were to submit three papers, two written independently, and one cooperatively constructed as a result of working in an assigned group composed of 5 students. Students were also to cooperatively construct, an oral presentation to be made by a teacher-selected spokesperson, also, the result of working in an assigned group composed of 5 students. All evaluations made by the writer followed the procedure described in the Criteria For Open-Ended Critical Thinking Written Essays and Oral Presentations (see Appendix C).

This particular measurement is significant because it enabled each student to understand that critical thinking skills ought to be *applied*, and the process for how that application should occur for each specific critical thinking skill. It also allowed each student to understand that critical thinking skills are not a compartmentalized, separate body of knowledge meant to be memorized for a test.

Likewise, it also enabled each student to understand that learning goes beyond the mere memorization of historical facts and details.

This measurement further allowed for a form of cooperative learning. Operating as part of a group, each student had the opportunity to make a singular and unique contribution to the whole, thus enabling him or her to use his or her own singular intellectual abilities to some degree and actually "own" the results, making what was learned more personal and thus furthering the chances for the information to be internalized as opposed to just memorized.

In addition, perhaps more importantly, both measurements combined, as the result of adequate critical analysis, allowed each student to analyze and appraise historical events and the figures connected with them from points of view other than what is conventionally accepted. It allowed students to invoke their imagination, again tempered, with proper critical analysis, to escape the confines of rote memorization of historical facts and details, and explore possibilities other than what is commonly accepted as fact; in short: to consider the all the implications of "other".

CHAPTER IV

SOLUTION STRATEGY

Discussion and Evaluation of Solutions

Sifting through and appraising the large body of information from where ultimately emerged the solution necessitates keeping the mind's eye sharply focused on the nature of the problem; namely, that the writer's ninth grade World History classes needed to improve their critical thinking skills.

While there seems to be what appears as a somewhat minor flap among experts as to whether the teaching of critical thinking skills ought to be taught as a separate curriculum or not, the vast majority of experts clearly indicate that the teaching of critical thinking skills ought to be a part of the regular curriculum, not a separate entity unto itself. Romanish (1986), Norris (1985), and McPeck (1981) argue that the application of critical thinking skills ought to be an integral part of any class in which any student is enrolled, because the principles of critical thinking involve a competence that is beyond mere knowledge of the subject matter and eventually those principles will need to be transferred to real world problems. The development of

critical thinking skills, then, should be nurtured throughout a person's education rather than something that occurs after one has built a stable knowledge base. Perhaps Glaser (1984) as cited in Presseisen (1988) sums up the matter best when he suggests that "[critical thinking] skills should be taught during the teaching of particular subject matter, as they are part of the acquisition of the specific knowledge" (Presseisen, 1988, p. 8). He is echoed by Joyce (1985) who suggests that "the skills of reading, the study of values, the analytic tools of scholars, and the nurture of intuition are compatible, and we can and should teach them together" (Joyce, 1985, p. 6).

The focus now turns to *how* to make critical thinking skills an integral part of the curriculum and *why* it is important to do so. Reboy (1989) suggests that the ultimate goal is for every student to learn without being taught; to solve problems by himself or herself; to explore the unknown; and to make decisions in original ways. Indeed, when discussing the results of implementing a critical thinking skills component.in the curriculum Joyce (1985), Wales, Nardi and Stager (1986), and Jackson (1986) found that students became more confident, less dependent upon the teacher, more able to assess divergent and contradictory points, and more engaged in the direction their education was headed, even to the point of using critical thinking skills in classes where it was not a part of the curriculum.

It seemed, then, that making critical thinking an integral part of one's class yields some impressive results. It also seemed that a central element in doing so included asking students a great many open-ended questions; questions for which there are not necessarily any real clear-cut, obvious, or easily discovered answers. In the process of introducing critical thinking skills in classes, Costa (1985), Lehman and Hayes (1985), Knowslar (1985) and, later, Jackson (1986), discovered that while there are certainly a multitude of open-ended questions the teacher should ask to encourage a student to conceptualize, analyze and synthesize, identify bias, identify inconsistencies and identify assumptions, before that occurs, however, the teacher ought to demonstrate and model four essential steps aimed at enabling students to acquire the critical thinking skills necessary to address those cpen-ended questions. This is, perhaps, best summarized in a later work by Costa and Lowery (1989) who suggest that the above would be addressed when teachers invent imaginative and thought-provoking questions addressing these four steps:

> 1) gathering information: what are the facts; the raw data; 2) recalling information from short and long-term memory: listing things; completing statements; multiple choice; 3) processing information: cause-and-effect relationships; categorizing; comparing; summarizing; synthesizing; and 4) applying information: speculating; judging;

inferring; evaluating (Costa and Lowery, 1989, p. 73).

It appeared, then, that the most viable solutions to the problem of improving critical thinking skills centered around creating a classroom where the teacher is less the "fountain of wisdom and knowledge" and more a facilitator; where students do more than read, listen to lectures, and recite; and where there is a good deal of discussion Indeed, the teaching/learning process is less didactic and more interactive. And the focus of the interaction seemed to be upon addressing issues rather than memorizing facts and details. With specific reference to the social studies, Evans (1989), emphasizes that when a class becomes issue-oriented and students are asked to think critically, students are in a better position to understand the relationship of the past to present issues and then predict the future.

To ensure that the classroom not become didactic and that critical thinking skills are put into effect, Paul (1990) indicates there are four essential ingredients that must be present and that none of them involve formulas or mindless rules.

> 1) Rather than [just] discuss ideas found in the text, have students brainstorm; 2) Routinely ask students for their point of view; 3) give students tasks that call upon them to develop their own categories and modes of classification; and 4) give students a larger role in gathering and assembling information, in

> analyzing and synthesizing it, and in formulating and evaluating the conclusions or interpretations of others (Paul, 1990, p. 240).

If introducing critical thinking skills into the classroom requires the amount of discussion in response to the amount of open-ended questions asked, then the structure of the classroom becomes important. Costa and Lowery (1989) seem to sum up this matter best:

> when critical thinking, creativity, and problem solving are the objectives, students must be in a classroom climate where they are in the decision-making role; they decide on strategies to solve problems; and they decide on the correctness or incorrectness of an answer based upon data they produced and validated (Costa and Lowrey, 1989, p. 16).

Costa and Lowrey (1989) also mention that classrooms organized for critical thinking will consist of a) individual work, where each student sorts and classifies information: b) small group work, where students compare/contrast their findings, identifying thoroughness or the lack of it; and c) total group work, where students listen to presentations from other groups, and engage in Socratic discussion with the teacher.

In a class that is discussion-oriented and the focus upon addressing open-ended questions about a specific issue with the aim of scrutinizing and analyzing it thoroughly in

itemized detail, it is conceivable that the many modes of thinking could overlap with one another, resulting in more confusion than clarity. deBono (1985) addresses this and creates a formula "to unscramble thinking so that a thinker is able to use one thinking mode at a time - instead of trying to do everything at once" (deBono, 1985, p. 199). In essence, his formula makes thinking more systematic, sort of a mapmaking exercise. deBono (1985) goes on to describe six thinking modes or styles, and each of those styles is assigned a hat with a particular color. In effect what deBono's (1985) strategy does is provide an orderly process for enabling students to move from the more basic levels of operation in Bloom's Taxonomy of Educational Objectives, referred to earlier, toward, the higher level of operation.

Description of Solution Selected

The solution ultimately selected to address the problem of improving critical thinking skills has as its central aim the creation of a practical methodology for introducing critical thinking skills directly by making those skills an integral part of the content of the ninth grade world history course. The regular adopted textbook and two other books containing primary and secondary source documents were the essential materials used.

The original proposal suggested a combination of ideas; first, to introduce and familiarize students with each specific skill and, second, to incorporate that skill into the routine scope and sequence of the course through the use of regular materials mentioned above. Not only did this require a good deal of reading, it also required a good deal of structured and directed discussion both between the teacher and students and among the students themselves.

It was the writer's belief that at the ninth grade level, it would be important first to introduce the definition and nature of each specific critical thinking skill in the manner described above by Jackson (1986), Costa (1985), Costa and Lowery (1989), and Lehman and Hayes (1985). Seeing that there were eight basic critical thinking skills addressed in the original proposal, using an appropriate historical document, the definition and nature of each skill was addressed at eight different intervals as the course progressed; namely during the 1st, 6th, 9th, 13th, 18th, 22nd, 27th and 30th week.

Once each skill was demonstrated and modeled by the writer at each interval, students were grouped in 5 groups consisting of 5 students each. Each group discussed and indicated the 1) definition of the skill; 2) procedures and rules governing the application of the skill; 3) clues necessary for locating passages relative to the process of applying the skill; 4) line-by-line/phrase-by-phrase analysis related to applying the skill; 5) reflect/review process that

revealed an understanding of the skill and the rules governing its use. Each group presented its findings in a written paper. Evaluation followed the Evaluation Criteria For Acquiring Critical Thinking Skills (see Appendix B). Once this process at each interval was complete, students were familiar with the definition, and nature, of each of the eight critical thinking skills as well as the process for the application of each skill. Students were also prepared to incorporate each skill into the routine scope and sequence of the course.

The application of each of the eight critical thinking skills also occured at selected and appropriate intervals throughout the normal scope and sequence of the course following the introductory/demonstration period mentioned above, namely the beginning of weeks 2, 7, 10, 14, 19, 23, 28, and 31. The method of incorporating/applying these eight skills followed the patterns described above by deBono (1985), Knownslar (1985), Costa and Lowery (1989), Paul (1990), and Mumford (1991). Each of the eight critical thinking skills was introduced concurrently with a particular historical theme/topic, forming eight units of instruction.

The beginning of week two saw the historical topic: what made for the Golden Age of Athens ? The critical thinking skill: identifying an author's frame of reference.

The beginning of week seven saw the historical topic: what was Alexander the Great *really* about ? The critical

thinking skill: identifying the crucial elements inherent in an issue.

The beginning of week 10 saw the historical topic: what might have happened had Julius Caesar lived ? The critical thinking skill: distinguishing between conclusions based on evidence and conclusions not based on evidence, including the nature of speculation

The beginning of week 14 saw the historical topic: who was Jesus ? The precepts of Christianity, the influence of the early Church, the Protestant Reformation and Roman Catholic Counter-reformation. The critical thinking skill: what are the main concepts and what is the nature of their relationship.

The beginning of week 19 saw the historical topic: what were the origins of the French Revolution ? The critical thinking skill: recognizing assumptions and ranking them as to their plausibility.

The beginning of week 23 saw the historical topic: what are the basic tenants of social Darwinism; is it a "Law of Nature" or justification for repression ? The critical thinking skill: recognizing implications and how they are different from assumptions.

The beginning of week 29 saw the historical topic: modern totalitarianism: does it destroy or nurture individuality ? The critical thinking skill: recognizing faulty and justified inferences.

The beginning of week 31 saw the historical topic: historically speaking: for every action, there is an equal and opposite reaction. The critical thinking skill: synthesizing; using history to recognize trends and tendencies, and predict possible future directions.

During the course of applying each of the eight critical thinking skills, more than a small amount of attention was paid to challenges aimed at prevailing points of view. Indeed, disputing the prevailing "conventional wisdom" or consensus of the moment was encouraged, for it proved to be the element that helped make critical thinking, "critical". It was expected that divergent points of view be substantiated in the same manner as prevailing ones.

Evaluation of each of the eight units of instruction occured at four selected intervals, namely at the conclusion of the eighth week, the seventeenth week, the twenty-sixth week and the thirty-second week, and in both written essay and oral presentation form, following the Evaluation Criteria For Open-Ended Critical Thinking Essays and Oral Presentations (see Appendix C). At the conclusion of the eight week period, working in 5 groups, each consisting of 5 students, each group submitted a paper demonstrating mastery of 1) identifying an author's point of view; and 2) identifying the crucial elements inherent in an issue.

At the conclusion of the 17 week period, again, working in 5 groups of 5 students each, a spokesperson from each group made an oral presentation demonstrating mastery of 1)

distinguishing between conclusions based on evidence and conclusions based on speculation; and 2) identifying the main concepts and the nature of their relationships.

At the end of the 26 week period, each student submitted an individual paper demonstrating mastery of 1) recognizing assumptions; and 2) recognizing implications and how they differ from assumptions.

At the conclusion of the 32 week period, each student submitted an individual paper demonstrating mastery of 1) the nature of inferences, distinguishing between faulty and justified; and 2) the manner in which information is synthesized.

This solution strategy made learning come alive. Each student discussed his or her own interpretation of what each read among his or her peers, each defending his or her conclusions and challenging those of others. It was the acceptance, indeed, the encouraging of formulating challenges to existing points of view that made this solution strategy unique and prevented boredom. The classroom became less a place where the teacher dispensed "the answer"; as students discovered their own. The learning process became a more interactive and less a solitary experience. Students became activists, not functionaries in the educational process. The student's education was actually his or her own.

The role of the writer, as teacher, was to keep records, direct, guide and facilitate. It was more accurate to describe the leadership role of the writer as that of

coach. As such, the writer DID NOT serve as he who imparts factual information. Students were directed and guided as to where information might be found and suggestions were made as to how it might all be organized, assimilated and synthesized, but the coach did not bestow answers.

Report of Action Taken

The over-all strategy of this practicum was aimed at improving the critical thinking skills of students by incorporating those skills directly into the regular scope and sequence of the course and its content. Seeing that there were eight specific critical thinking skills to be addressed, the plan of implementation called for eight units of instruction to cover the 32 week execution period. Very fortunately, the actual implementation was able to occur within the time alloted and all eight units were addressed as planned. The first week of each unit was devoted to the demonstration/modeling of each particular critical thinking skill, followed by students, working in small groups, and using passages from historical documents to demonstrate their understanding of the definition of the skill and how it was meant to be applied. From the second week until the end of each unit of instruction, students were involved in a series of activities aimed at incorporating the critical thinking

skill just discussed into the regular subject matter presented in thematic fashion at strategic intervals.

Unit 1; Weeks 1 through 5

This unit had as its goal enabling students to develop the critical thinking skill necessary to identify an author's point of view or frame of reference, with specific attention paid to recognizing bias, narrowness and/or contradictions, should they occur, within that point of view. To facilitate this, the definition and nature of the skill was demonstrated by the teacher, using primary and secondary source historical documents that reflected a particular theme: the unique political, social, and economic conditions that allowed for the Golden Age of Athens. At the beginning of the first week, students were divided into five groups of five students each and addressed that which was demonstrated by the teacher. Using passages from the appropriate historical document, each group submitted a paper at the conclusion of the first week indicating an understanding of this critical thinking skill. Assessment followed the Evaluation Criteria For Acquiring Critical Thinking Skills (see Appendix B).

To enable students to incorporate the historical data relative to this theme and the critical thinking skill, at the beginning of the second week, each class was divided into five groups of five students each, with a different

configuration than previously arranged. Each group was assigned one of the following period characters: 1) a wealthy Citizen of Athens; 2) a member of the *intelligensia* of Athens; 3) a Citizen of Sparta; 4) a period soldier; 5) a Corinthian merchant. During the fifth week, a spokesperson from each group presented a description of his or her characters point of view relative to what allowed for the Golden Age of Athens. Viewing the four-part BBC series The Greeks at selected intervals added some measure of historical perspective, as well.

Unit 2; Weeks 5 through 8

This unit had as its goal enabling students to develop the critical thinking skill necessary to locate the crucial elements inherent in an issue with specific focus on separating central from peripheral ingredients. To facilitate this, the definition and nature of the skill was demonstrated by the teacher, using primary and secondary source historical documents that reflected a particular theme: what was Alexander the Great *really* about? At the beginning of the fifth week, students were divided into five groups of five students each to address that which was demonstrated by the teacher. Using passages from the appropriate historical document, each group submitted a paper at the conclusion of the fifth week indicating an understanding of this critical thinking skill. Assessment

followed the Evaluation Criteria For Acquiring Critical Thinking Skills (see Appendix B).

To enable students to incorporate the historical data relative to this theme and the critical thinking skill, at the beginning of the sixth week, students in each class were divided into five groups of five students each, with a different configuration than previously organized, to address this historical topic. The film Alexander and His World added historical perspective to the matter. At the end of the eighth week, each group submitted a paper describing the conclusions it reached regarding the historical theme, noting especially which crucial elements from the documents contributed to its decisions. This paper was cumulative, seeing that it is necessary to identify that which serves to make up an author's point of view in order to discover the crucial elements contained therein. This paper served as the evaluation instrument for both of the critical thinking skills introduced thus far, following the Criteria For Open-Ended Critical Thinking Essays and Oral Presentations (see Appendix C).

What seemed to both fascinate and confuse students at the same time was the possibility that two modern historians could have such different and often opposing interpretations of the same set of primary historical documents and that what one thought was a critical factor, another did not. At first the focus of students was centered on "who is right" rather than accepting the fact that different interpretations are

just the way of things. Getting students to move beyond deciding which interpretation was right and toward the notion that it was allowable for each to develop his or her own interpretation proved to be the challenge of this cumulative exercise. It was almost as if students needed the "permission" of the teacher to think independently and then express it. With gentle but firm encouragement from the teacher, and not without some degree of hesitancy, students began to gradually become comfortable and develop the attitude that it was legitimate to express an independent thought. As hesitancy gave way to comfort, more students became more engaged in the activity.

Unit 3; Weeks 9 through 12

This unit had as its goal enabling students to develop the critical thinking skill necessary to distinguish between conclusions based on evidence and conclusions that are more speculative in nature. To facilitate this, the definition and nature of the skill was demonstrated by the teacher, using primary and secondary source historical documents that reflect a particular theme: what might have happened in Republican Rome had Julius Caesar lived? At the beginning of the ninth week, students were divided into five groups of five students, with a different configuration than previously arranged, to address that which was demonstrated by the

teacher. Using passages from the appropriate historical documents, each group submitted a paper at the conclusion of the ninth week indicating an understanding of this critical thinking skill. Asessment followed the Evaluation Criteria For Acquiring Critical Thinking Skills (see Appendix B).

To enable students to incorporate the historical data relative to this theme and the critical thinking skill, at the beginning of the tenth week, each student read independently the applicable historical documents. At the beginning of the eleventh week, students in each class were placed in five groups of five students each, again, in a different configuration, to compare/contrast information. At the end of the twelfth week, each student submitted a paper detailing the specific evidence he or she used to reach the conclusions he or she did relative to how things might have been in Republican Rome had Julius Caesar lived.

This particular unit seemed to be a pivotal one in that the confidence students developed during the course of the last unit blossomed and there emerged a momentum that resulted in students dissecting and discussing issues down to their last molecule. Discussions grew heated at times, essentially because students were defending their conclusions and how they reached them. Students challenged one another as to the legitimacy of each others point of view and did not hesitate to attack another for a conclusion lacking an adequate foundation. Students were including the critical thinking skills mentioned above in their comments without

being fully aware that that was what they were doing. This was noted by the teacher, as was the notion of biasness, and distinguishing essential elements from peripheral ones. Now the issue became one of tolerance. It proved challenging for students to move to the point where each could suspend his or her strong desire to be right and simply accept different perspectives and points of view as just that: different. However, by the 17th week, students succeeded in at least acknowledging the legitimacy of divergent interpretations.

Unit 4; Weeks 13 to 17

This unit had as its goal enabling students to develop the critical thinking skill necessary to identify the main concepts used in a passage and the nature of their relationships, with specific focus upon the theories, axioms, and principles implicit in those concepts. To facilitate this, the definition and nature of the skill was demonstrated by the teacher, using primary and secondary source historical documents that reflect a particular theme: who was Jesus? Concentration upon the basic precepts of Christianity and the influence of the early Church; the Protestant Reformation and Roman Catholic Counter-Reformation. At the beginning of the thirteenth week, students were divided into five groups of five students, with a different configuration than previously arranged, to address that which was demonstrated by the teacher. Using passages from the appropriate historical documents, each group submitted a paper at the conclusion of

the thirteenth week indicating an understanding of this critical thinking skill. Assessment followed the Evaluation Criteria For Acquiring Critical Thinking Skills (see Appendix B).

To enable students to incorporate the historical data relative to this theme and the critical thinking skill, at the beginning of the fourteenth week students in each class were divided into five groups of five students each, again, a different configuration than before. At the end of the seventeenth week, a spokesperson from each group made an oral presentation describing the following: two groups, named by the teacher, defended three merits of Protestantism that would be most appealing to 16th and 17th century western Europe. Two other groups, again, appointed by the teacher, did the same for Roman Catholicism. The fifth group acted as judge, assessing the merits of each relative to the manner in which the critical thinking skills addressed in the last unit of instruction and this one were used to formulate each groups position. As it was at the end of the eighth week, the oral presentations were cumulative relative to two critical thinking skills: 1) distinguishing between conclusions based on evidence and conclusions that are speculative; and 2) identifying main concepts and the nature of their relationships. The oral presentation served as the evaluation tool for both of these critical thinking skills following the Criteria For Open-Ended Critical Thinking Essays and Oral Presentations (see Appendix C).

There was some degree of hesitancy and reservation about this exercise as some students assumed that their own personal religious beliefs were about to be called into question. Indeed, as the exercise progressed, some students had a degree of difficulty separating the contents and possible implications of some of the primary historical documents from their own personally-held religious convictions. A few students had some minor degree of difficulty acquainting themselves with a position they did not hold personally. There were moments when emotions ran high, but, by the sixteenth week, calm, orderly, critical evaluation prevailed. However, the amount of historical information proved to be overwhelming, due, essentially, to the writer's enthusiasm at previous student involvement, and it became necessary to proceed at a much slower pace than anticipated. The process involved in implementing the activities of this unit proved to be a little awkward and cumbersome for students. But they persevered and all were completed within the time allotted. By the seventeenth week, students had a much more profound appreciation for the variables inherent in the concept "tolerance".

Unit 5: Weeks 18 through 21

This unit had as its goal enabling students to develop the critical thinking skill necessary to recognize

assumptions and rank them according to their plausibility. As was the case with past units of instruction, to facilitate this, the definition and nature of the skill was demonstrated by the teacher, using primary and secondary source historical documents that reflect a particular theme: what were the origins of the French Revolution? At the beginning of the eighteenth week, students were divided into five groups of five students, with a different configuration than previously arranged, to address that which was demonstrated by the teacher. Using passages from the appropriate historical documents, each group submitted a paper at the conclusion of the eighteenth week indicating an understanding of this critical thinking skill.

Assessment followed the Evaluation Criteria For Acquiring Critical Thinking Skills (see Appendix B).

To enable students to incorporate the historical data relative to this theme and the critical thinking skill, at the beginning of the nineteenth week, students were divided into five groups of five each, again, with a different configuration than previously. Each group assumed the role of one of the following and submitted a paper explaining the assumptions underlying its position relative to conditions in France around 1789: 1) the monarchy; 2) the nobility; 3) the higher clergy; 4) the artisans and peasantry; 5) the *philosophes*. Still maintaining the group role, papers were then exchanged in the following fashion for comments/evaluation, before final submission to the teacher:

nobility to the peasants; *philosophes* to the monarchy; higher clergy to the artisans/peasantry; artisans/peasantry to the higher clergy; and monarchy to the nobility, and then submitted at the end of the twenty-first week. Viewing the five part BBC series The Revolution in France, at selected intervals, added perspective.

The match between the critical thinking skill to be learned and the specific historical theme proved to be a particularly appropriate one. In addition to grasping rather quickly the nature of assumptions and their plausibility, students were able to see how much of assumption making is the result of one's own narrowly defined vested interests and personal agenda. It was fortuitous that students grasped all these concepts rather quickly, for it allowed time to connect much of this with the concept of nationalism and how that, in turn, is reflected in events currently taking place in the world, particularly in what was Yugoslavia.

Unit 6, Weeks 22 through 26

This unit had as its goal enabling students to develop the critical thinking skill necessary to identify implications and distinguish between them and assumptions with specific focus upon the connection between implications and consequences. To facilitate this, the definition and nature of the skill was demonstrated by the teacher, using primary and secondary source historical documents that reflect a particular theme: is social Darwinism a Law of

Nature or an excuse for repression? At the beginning of the twenty-second week, students were divided into five groups of five students, with a different configuration than previously arranged, to address that which was demonstrated by the teacher. Using passages from the appropriate historical documents, each group submitted a paper at the conclusion of the twenty-second week indicating an understanding of this critical thinking skill.

Assessment followed the Evaluation Criteria For Acquiring Critical Thinking Skills (see Appendix B).

To enable students to incorporate the historical data relative to this theme and the critical thinking skill, at the beginning of the twenty-third week, each student read the historical documents dealing social Darwinism, noting implications and suggesting consequences. All classes also viewed six excerpts from the BBC series Connections that dealt with world cultures that, at one time, institutionalized or otherwise embraced social Darwinism in one form or another. Students also viewed the film Hate, produced by Bill Moyers, which provided added perspective on the matter.

At the beginning of the twenty-forth week, students, once again, formed five groups of five students each to compare/contrast information relative to the connections made between implications and consequences, with attention paid to distinguishing between implications and assumptions. At the end of the twenty-sixth week, each student submitted a paper

describing his or her position concerning whether social Darwinism is a Law of Nature or an excuse for repression, concentrating upon the connection between implications and consequences.

As was the case for the paper submitted at the end of the eighth week and the oral presentation made at the end of the seventeenth week, this paper was cumulative, in effect, regarding the unit of instruction that immediately precedes this unit of instruction and this unit. To truly address the notion of implications and their consequences, being certain to note the difference between implications and assumptions, one must be able to recognize assumptions and rank them as to their plausibility. With this in mind, this paper served as an evaluation instrument for both of these critical thinking skills following the Criteria For Open-Ended Critical Thinking Essays and Oral Presentations (see Appendix C)

This particular unit proved to be among the most intellectually challenging of all the units. It took more time than expected for students to grasp the nature of what makes for an implication. The challenge centered more around students having sufficient confidence to assume the risk to move beyond what was literally stated in the documents and be somewhat abstract and speculative. This was unexpected, given the tenacious attitude with which students pursued earlier units. It was necessary at this point for the writer to give students a "pep talk" about the confidence they had acquired thus far and one need only press on to continue that

success. Once this issue was addressed, students rallied and the exercise proceeded as planned.

Unit 7; Weeks 27 through 29

This unit had as its goal enabling students to develop the critical thinking skill necessary to recognize the nature of inferences with an eye toward distinguishing between faulty and justified inferences. As had been the case with previous units of instruction, to facilitate this, the definition and nature of the skill was demonstrated by the teacher, using primary and secondary source historical documents that reflect a particular theme: twentieth century totalitarianism: does it nurture or destroy individuality? At the beginning of the twenty-seventh week, students were divided into five groups of five students, with a different configuration than previously arranged, to address that which was demonstrated by the teacher. Using passages from the appropriate historical documents, each group submitted a paper at the conclusion of the twenty-seventh week indicating an understanding of this critical thinking skill. Assessment followed the Evaluation Criteria For Acquiring Critical Thinking Skills (see Appendix B).

To enable students to incorporate the historical data relative to this theme and the critical thinking skill, at the beginning of the twenty-eighth week, students, again, were divided into five groups of five each, using a different configuration than before. Each group was assigned to become

an authority on one of the following relative to the historical theme: 1) Nazi Germany; 2) fascist Italy; 3) the Soviet Union under Stalin; 4) Spain under Franco; 5) China under Mao. At the end of the twenty-ninth week, a spokesperson from each group made a presentation addressing the manner in which inferences, faulty and justified, were a part.of the decision-making process as each reached its conclusions.

Students connected this Unit with the preceding one far better than Unit 6 with Unit 5. They saw this Unit and Unit 6 as being more closely linked. Perhaps because the historical figures involved are generally regarded as proponents of social Darwinism and, as such, instituted policies of segregation and suppression, students had very little difficulty seeing how the inferences in the position of each was unjustified. Some "spice" to this unit when the teacher asked each student group to refer back to Unit 6 and describe the parallels regarding the assumptions each historical "character" used to formulate his position and justify his policies during that period of time and the period of time with which this unit is concerned. It should be noted that there did not seem to be an abundance of adequate information about Franco. It should also be noted that the same energy which appeared during the implementation of Units 3 and 4 reappeared, much to the delight of the writer.

Unit 8; Weeks 30 through 32

This unit had as its goal enabling students to develop the critical thinking skill necessary to understand the manner in which information is synthesized, then use that which forms the synthesis to predict possible outcomes in the future. As had been the case with previous units of instruction, to facilitate this, the definition and nature of the skill was demonstrated by the teacher, using primary and secondary source historical documents that reflect a particular theme: "For every action, there is an equal and opposite reaction"; predict what the possible future relationships might be among the following nations in the year 2050: 1) the United States; 2) Russia; 3) Israel; 4) Iraq; 5) Nigeria; and 6) Japan. At the beginning of the thirtieth week, students were divided into five groups of five students, with a different configuration than previously arranged, to address the critical thinking skill that was demonstrated by the teacher. Using passages from the appropriate historical documents, each group submitted a paper at the conclusion of the thirtieth week indicating an understanding of this critical thinking skill. Assessment followed the Evaluation Criteria For Acquiring Critical Thinking Skills (see Appendix B).

To enable students to incorporate the historical data relative to this theme and the critical thinking skill, at the beginning of the thirty-first week, once again, students formed five groups of five each to discuss, compare/contrast

information relative to this theme. At the conclusion of the thirty-second week, each student submitted a paper addressing the theme with special attention to distinguishing between faulty and justified inferences as well as synthesizing material used.

As was true for the paper submitted at the end of the eighth week, the oral presentation made at the end of the seventeenth week, and the paper submitted at the conclusion of the twenty-seventh week, this paper was cumulative, regarding the unit of instruction that immediately precedes this unit of instruction and this unit. One must be familiar with the "because-of-this-therefore-that" sort of critical thinking in order to address themes like "for every action, there is an equal and opposite reaction". This paper served as the evaluation instrument for both of these critical thinking skills following the Criteria For Open-Ended Critical Thinking Essays and Oral Presentations (see Appendix C).

With this unit, the teacher had difficulty containing the students' enthusiasm and involvement! If ever there was an assignment that would demonstrate the nature of an interactive classroom, this was it. Students were quick to point out when another's conclusions were faulty and/or not thoroughly inclusive, or when one's analysis lacked sufficient ingredients to make it an accurate synthesis. It was clear by this point that analyzing historical data by applying the critical thinking skills with which students had

been acquainted was practically second nature. Very few students had to interrupt their process of analysis and consciously review the rules for applying critical thinking skills This unit also lent itself to discussions of current events, particularly the Israeli/Palestinian issue; U.S. involvement in Iraq; and, as had been the case earlier, the former Yugoslavia.

CHAPTER V

RESULTS, DISCUSSION AND RECOMMENDATIONS

Results

Overall, the results were very encouraging. As mentioned at the beginning of Chapter II, the initial problem around which the original Proposal and this Report revolve concerned itself with the need for students to move toward functioning at the higher levels of Bloom's Taxonomy of Educational Objectives; to improve their critical thinking skills and know how to analyze, conceptualize, synthesize and evaluate historical material.

As discussed in Chapter IV, the solution strategy selected to address the problem of improving critical thinking skills had as its central aim the creation of a practical methodology for introducing critical thinking skills directly by making those skills an integral part of the content of the ninth grade world history course. More specifically, the total process included 1) the definition and modeling of eight critical thinking skills by the teacher; 2) small group discussion by students, after which each group submitted a paper indicating that each member of the group had a thorough understanding of each skill and the rules governing its use; 3) using appropriate primary and

secondary historical documents, students then applied each of the eight skills in connection with an assignment utilizing eight specific historic themes, presenting their findings in sometimes oral and other times written presentations. Each skill was introduced concurrent with each theme and at selected intervals in keeping with the normal scope and sequence of the course.

The first behavioral objective, as described in Chapter III, concerned itself with acquiring an understanding of each of the eight critical thinking skills. To achieve this, students were to 1) know the definition of each critical thinking skill to be acquired; 2) know how to apply that skill to appropriate course content; and 3) be able to reflect on how they used that skill as assessed by the standards of the Evaluation Criteria for Acquiring Critical Thinking Skills (see Appendix C). The results of the Cornell Critical Thinking Test, Level X (see Table 1) indicated that only 22 of the 75 students in the writer's ninth grade World History classes ranked in the 50th percentile, getting only 38 out of a possible 76 answers correct; less than one-half of the students got barely one-half of the answers correct. The results clearly indicated that students were functioning intellectually more at the basic levels of Bloom's Taxonomy of Educational Objectives, and less at the more advanced levels. The results more specifically indicated that students had very little knowledge of what critical thinking skills are, much less the rules governing their use. When

this indication is compared with the figures in Table 3, it is clear that students did acquire the knowledge necessary to define each of the eight critical thinking skills and the rules governing their use; out of a possible 400 points, the average score was 280. Furthermore, out of a possible 50 points for each exercise designed to enable students to learn each skill, the average score was 39. These results confirm the findings of Jackson (1986), Costa and Lowery (1989), and Lehman and Hayes (1985) who, in separate studies, indicated that it is important to first introduce the definition and nature of each critical thinking skill before proceeding to the manner in which each might be applied to course content.

Table 3

Average Points the Total Number of Students Earned After Completion of Each Exercise to Acquire the Definition and Rules of Appliction for Each of the Critical Thinking Skills

Critical Thinking Skill	Total Points Possible	Average Points Earned by Total Number of Students
Frame of Reference	50	32
Crucial Elements of an Issue	50	34
Distinguish Between Evidence and Speculation	50	37
Identify Main Concepts	50	45
Identify Assumptions	50	40
Identify Implications and Consequences	50	43
Faulty and Justified Inferences	50	41
Synthesize Material	50	47

Note. Maximum Points = 400

aTotal mean average points = 319

The second behavioral objective, again, as described in Chapter III, concerned itself with each student being able to demonstrate his or her understanding of eight basic critical thinking skills. Specifically, students were to apply each of the skills, namely, to 1) identify frame of reference; 2) locate the crucial elements inherent in an issue; 3) distinguish between evidential and speculative basis for conclusions; 4) identify main concepts; 5) identify assumptions; 6) identify implications and consequences; 7) distinguish between faulty and justified inferences; 8) synthesize material, to four specific exercises, three written and one oral, which were cumulative in nature and administered at strategic intervals as the implementation period progressed and assessed by the standards of the Evaluation Criteria for Open-Ended Critical Thinking Written Essays and Oral Presentations (see Appendix C).

Referring, again, to that which is indicated in the results of the Cornell Critical Thinking Test, Level X, namely that students were functioning intellectually more at the basic levels of Bloom's Taxonomy of Educational Objectives, less at the more advanced levels, and that students were unfamiliar with specific critical thinking skills and the nature of their application, the results of Table 4 indicate that students were successful at applying each of the critical thinking skills in the four specific evaluative instruments. Out of a possible 400 points, the average score was 308. Furthermore, out of 100 points

possible for each exercise, the average score was 77. These results confirm the work of Costa and Lowery (1989), deBono (1985), Knownslar (1985), Paul (1990), and Mumford (1991) who, in separate studies, indicted that critical thinking skills are better mastered when introduced concurrently with the subject matter of an academic course and not taught separately.

Table 4

Average Points the Total Number of Students Earned After Completion of Each Assignment to Assess Ability to Apply Each of the Critical Thinking Skills

Assignment and Historical Theme	Total Points Possible	Average Points Earned by Total Number of Students
Paper: Alexander the Great	100	67
Oral Presentation: The Early Church; Reformation and Countereformation	100	80
Paper: Social Darwinism	100	73
Paper: Prediction of Future Relationships Among Selected Nations	100	88

Note. Maximum Points = 400

aTotal mean average points = 308

Discussion

As the Calendar Plan in Chapter IV indicates, the actual period of implementation was able to adhere to the original plan on an item-by-item basis. Any unforeseen contingencies that appeared did not necessitate any readjustment of the original scheme for implementation.

For this writer, implementation was exhausting, but the kind one feels because of exhilaration, as opposed to defeat. The original Proposal was an expression of the essential manner in which this writer would prefer to see a classroom operate. Implementation carried with it a hint of trepidation for fear it loomed too idealistic and that today's students, who are accustomed to simply being told what is the "right answer" by the teacher, would not respond in keeping with this writer's vision of the way things ought to be.

The principle source of exhaustion was the result of a progressively favorable response from students to the activities connected with implementation. As implementation advanced, students became increasingly more engaged, and this writer was forced to be increasingly more precise and meticulous in his explanations and critiques. Hence, a good

deal more time had to be put into planning than was originally expected. A second element that added to the exhaustion was reading students papers. No sooner had the writer finished critiquing one set of papers and it was time to read and critique the next set.

Exhilaration is the most apt term to describe the response of this writer to the results the implementation yielded. If one were using solely numbers, the objective of achieving a total mean average score of 680 on the entire exercise, as was suggested in the original Proposal, and as Table 5, following, indicates, was not achieved. This can be attributed to the setting of too high a standard by the writer, for the results, as indicated in Tables 3 and 4 more than suggest that the objectives were achieved. A more accurate indication of the objectives being met lies beyond what the numbers were able to illustrate, namely that students were actually enthused and ambitious about learning, and the confidence of each in his or her intellectual prowess was evident. This outcome was not entirely unexpected, but the degree to which it extended was surprising.

This writer would be negligent if he did not make mention of how much the learning process was, in truth, a "two way street". This writer was pointedly reacquainted with the importance of making detailed and precise plans regarding the activities connected with implementation. Beyond that, to say that watching the growth of each student's skill to address an issue with rigor and thoroughness was delightful

would be an understatement. Furthermore, to watch students analyze, synthesize, integrate, and evaluate historical information and then grow in confidence as a result is simply a dream come true.

Table 5

Total Points Earned By Each Student on the Entire Exercise

Student	Total Points Earned	Student	Total Points Earned	Student	Total Points Earned
1	625	26	700	51	670
2	600	27	650	52	685
3	580	28	600	53	610
4	620	29	640	54	650
5	590	30	650	55	575
6	710	31	710	56	560
7	600	32	630	57	620
8	640	33	575	58	655
9	660	34	620	59	630
10	630	35	710	60	660
11	650	36	680	61	625
12	710	37	600	62	705
13	600	38	705	63	575
14	650	39	600	64	680
15	675	40	650	65	620
16	620	41	670	66	500
17	670	42	700	67	655
18	610	43	640	68	630
19	635	44	670	69	635
20	550	45	700	70	550
21	660	46	645	71	700
22	600	47	620	72	650
23	645	48	600	73	585
24	700	49	640	74	540
25	570	50	655	75	700

Note. Maximum Points = 800

aTotal mean average points = 640

Recommendations

1. Reduce the number of instances of small group work. While it is true that small groups are very effective when sharing information and arriving at a consensus, students tire of it and it would be just as effective to occasionally hold a discussion with the class as a whole.

2. The format of introducing the skill first, modeling how it might be applied to subject matter and then creating an exercise that expects students to do just that proved to be an effective one.

3. The amount of time spent on Unit 5 could be reduced. There is an abundance of historical information regarding the origins of the French Revolution, and it is all pretty straight forward and does not require a great deal of interpretation. Students seemed to grasp quickly the critical thinking skills necessary to recognize assumptions. This writer hastens to add that the role playing and exchange of papers made learning both enjoyable and effective.

4. As implementation progressed concerning Unit 7, it was discovered that relative to the information regarding the other dictators and their respective agendas, there is not a great deal of information about Franco and his agenda, other than that which is expressed in terms.that students found too general. If Franco were not included in the Unit, it would not reduce the significance of the Unit.

5. It would serve a study of this nature well if a reliable instrument that measures a students self-confidence, in both preimplementation and postimplementation modes, could be utilized, for it was, perhaps, this characteristic that was most effected by the entire process.

6. At the time of each cumulative evaluation, that is at the end of the eighth, seventeenth, twenty-sixth and thirty-second week, students seemed to be more engaged in those activities surrounding the oral presentation made at the conclusion of the seventeenth week. The cumulative exercise done at the conclusion of the thirty-second week lends itself well to an oral presentation following the same pattern as at the conclusion of the seventeenth week. This would be an appropriate location for another oral presentation as it establishes an alternate pattern to the

cumulative presentations; to wit: weeks 8 and 26 are papers; weeks 17 and 32 are oral presentations.

7. Unit 4, Weeks 13 to 17 contained too much historical information to be digested in one fell swoop. It might be more beneficial to either break it up into another unit, or reduce the amount of concepts with which students must deal. Likewise, the nature of the activities were a bit too cumbersome for students. Keeping the same format but simplifying it would probably be more beneficial.

Dissemination

The results of this practicum have been shared with the building principal, the chairman of the social studies department,and one other colleague who teaches a similar world history course. All have expressed interest in this approach to incorporating critical thinking skills into the world history course, indicating that when the course structure for the next academic year is reviewed, it would be

advantageous to investigate how this practicum might become a formal part of the world history course.

Furthermore, the writer will create an article describing the nature of this practicum and submit it for publication in professional journals such as Curriculum Review, Phi Delta Kappan, and Journal of Humanistic Education. The article will concentrate not only on how critical thinking skills can be successfully integrated in the regular scope and sequence of a course, but, also, how doing so enables students to grow in self-confidence.

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APPENDIX A

SURVEY OF CRITICAL THINKING SKILLS IN THE CURRICULUM

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SURVEY OF CRITICAL THINKING SKILLS IN THE CURRICULUM

1. Do you feel that adequate attention is given to the teaching of critical thinking skills in the 9th grade (e.g.conceptualize, analyze, synthesize, evaluate)?

____ Adequate

____ Inadequate

2. Does the textbook you use adequately foster critical thinking skills?

____ Yes

____ No

3. Does the school district's Curriculum Framework provide sufficient objectives that require critical thinking skills?

____ Yes

____ No

4. Would you say that the school district's Curriculum Framework is oriented more toward information gathering and less toward developing thinking skills or oriented more toward developing thinking skills and less toward information gathering?

____ more information/less skill oriented

____ more skill/less information oriented

5. Do you feel that 9th grade students need to have critical thinking skills as an inherent part of course content?

____ Yes

____ No

APPENDIX B

EVALUATION CRITERIA FOR ACQUIRING CRITICAL THINKING SKILLS

APPENDIX B

EVALUATION CRITERIA FOR ACQUIRING CRITICAL THINKING SKILLS

Each student can earn a maximum of 10 points per item.

CRITERIA	SCORE
1. The definition of the skill is clearly understood and noted.	_____
2. Procedures and rules governing the application of the skill are clearly understood and noted.	_____
3. The clues necessary for locating passages relative to the process of applying the skill are understood and noted.	_____
4. A line-by-line/phrase-by-phrase analysis related to applying the skill is clearly indicated.	_____
5. Reflect/review written comments reveal an adequate understanding of the skill, and the rules that govern its use.	_____

APPENDIX C

EVALUATION CRITERIA FOR OPEN-ENDED CRITICAL THINKING WRITTEN ESSAYS AND ORAL PRESENTATIONS

APPENDIX C

EVALUATION CRITERIA FOR OPEN-ENDED CRITICAL THINKING WRITTEN ESSAYS AND ORAL PRESENTATIONS

Each student may earn a maximum of 20 points per item.

CRITERIA	SCORE
1. Is there a clear statement of thesis to be defended:	_____
a. Is a conclusion stated or implied?	
b. Are terms adequately defined?	
c. Is ambiguity avoided?	
2. Is the material relevant to making and defending the thesis at issue:	_____
a. Does the discussion include tangents?	

b. Does the discussion become minute?

c. Does the discussion become too general?

3. Is there proper use of evidence, sound inferences, and clear organization: _____

a. Are credible sources used?

b. Is the evidence relevant?

c. Do conclusions follow from the reasons offered?

d. Do explanations account for the facts?

e. Are value judgments based on acceptable principles?

f. Are different issues kept separate?

4. Are relevant alternative positions fairly portrayed: _____

a. Are alternative positions impartially evaluated?

b. Are counterexamples evaluated?

5. Is attentio. given to punctuation, grammar, spelling and syntax for written essays and to manner of delivery for oral presentations: _____

   a. Are imagery and example use effectively?

   b. Is the language appropriate for the audience?

   c. Are there too many pauses or "uh's" in oral delivery?

   d. How familiar is the speaker with the subject matter?