with it. The chance to write what she was thinking was necessary for her to determine how she felt and what she knew. Murray (1980) summarizes this point with his reflection of his own experience:

I would not write--would not need to write--if I knew what I was going to say before I said it... In the writing process, the teacher and student face the task of making meaning together. (10)

This is not to imply that one's voice or one's own knowledge can replace more traditional, 'logical' knowing, any more than holistic thinking should replace analytic modes of thought. Instead, the two should be encouraged concurrently to maximize each other's power. Teachers can let their expertise interact with students' feelings, experiences, and expertise (Baxter Magolda, 1992). This interaction will ensure that teachers are not sacrificing material and students are still working for this knowledge. While I cannot account for the specific educational experiences of the best writers of Ranieri's and my case studies, because they demonstrate the ability to use the analytic and holistic styles of writing, I suspect they were encouraged as young writers to consider their own thoughts worthy of being expressed, as they learned to support the specific facts of their experiences. In essence, the development of voice can enhance a more holistic, complex way of thinking.
Chapter IV

IMPLICATIONS AND IDEAS FOR REFORM

Such modes of thinking are studied with the hope of discovering what methods of teaching and learning benefit students the most. With so many possibilities for reform, theories might be more helpful if broken into actual steps for teachers to implement. Although research on gender and cognition has gained acceptance, it is of little use unless utilized in our classrooms.

Katz and Henry (1988), Belenky et al. (1986), and others suggest models of teaching that aid the emergence of students' voices. Such ideas center around involving students in all processes of school, and thus, in the construction of knowledge. As the AAUW report (1992) claims, the curriculum creates an image of self and the world for students by imparting to them what is important.

Specifically, this report suggests teachers videotape themselves to guard against such common gender-biased actions as rewarding male students but not females for the same behaviors, using only token examples of famous women, and contributing to students' low self-esteem by not involving their knowledge in the learning process. The report also says an important goal for teachers is to stop presenting information as a dichotomy of feelings versus logic, or of personal versus academic information, providing instead places to discuss the relevance of what students are learning
about themselves and the world. Creative writing journals would be one useful educational strategy here.

On a similar note, Cooper et al. (1977) provides some general rules when teaching writing (which can serve as rules for helping students construct knowledge in any content area), four of which are directly relevant to the goals of this paper:

1. Writing development is not an isolated process; it needs all pathways of communication to be open (comparable to developing all aspects of one's voice).

2. Students should be given individual feedback to help them recognize the importance of their voice, which will lead to more authentic, and then, more mature writing.

3. Student-centered activities like peer- and self-evaluation and setting goals breaks the dependence on the teacher as an omnipotent authority, further contributing to students' voices.

4. The development of self-reliance, independence, autonomy, and creativity necessitate students' voices and contribute to the construction of knowledge.

As suggested earlier, the development of students' voices need not and should not be limited to writing. Some suggestions for involving students in constructing knowledge, or at least for not keeping them from doing so, in other subjects include, for example, keeping math classes more relaxed by eliminating 'races' and preventing students from
yelling out answers. The female voice is also discouraged when teachers avoid discussions of issues important to both men and women, often mistakenly labeling such topics "women's" (AAUW 1992). Issues such as sexuality, violence, and abuse could be introduced or even discussed in depth in a range of secondary classes, including health, psychology, sociology, government, and history.

Katz and Henry (1988) also address how to involve students in constructing knowledge through seven principles, all of which can be applied to any subject and four of which directly apply to the research and problems discussed here:

1. the transformation of student activity into active learning,
2. individualization, or knowing students' frames of reference,
3. inquiry, or knowing how knowledge develops,
4. support, for both students and teachers.

I feel that this thesis has led to the first point. The understanding of students' development and focus on problems of our schools aids the active learning of students. Students become active when they feel part of the learning process, which can be encouraged through modes of expression designed to develop ideas free from criticism (Baxter Magolda, 1992). Also, letting students argue and answer questions intelligently will foster understanding of the material and a sense of voice. Teaching students to question
theories and published "facts" provides them an opportunity to examine their ideas in relation to those "facts" and realize their own experiences can serve as a valuable knowledge resource on which to draw and build (Baxter Magolda, 1992).

Ideally, when students feel part of the school and start to develop a working voice, they will be allowed the freedom of getting to know and choosing teachers and counselors they feel will benefit them the most. Hart (1983) suggests that once measures such as these are implemented and students start to exercise mature voices, the next step is to implement mastery learning, where achievement, not pushing students through in a certain amount of time, is the goal; learning, not scraping by for credentials, occurs. With the mastery approach, developed by Benjamin Bloom (1984), students progress from one level to the next when they have mastered, or proven they know, a certain percent of the material (80% is a common criteria).

A major benefit of this approach is that the kind and quality of instruction and the amount of time available for learning are made appropriate to the characteristics and needs of each student. Bloom's basic message is that while differences in intelligence and aptitude exist in every classroom, teachers can adjust the quality of instruction and the time allowed for each student so that each student can succeed. This philosophy clearly coincides with the stress
researchers such as Belenky et al. (1986) put on recognition of individual modes of thought.

Mastery learning allows students to move at their own pace, thus eliminating the stigma of "elitist" advanced placement or "slow" remedial classes. With mastery learning, all are expected to achieve because it allows for individual risk and self-challenging. With a lower threat of exams, which can be retaken as often as necessary to pass and advance to the next level, students, not teachers, decide when they are ready to progress.

Active student learning can also be fostered by a variety of approaches in presenting the material, because in allowing students to choose which method is best for them, (ie, lecture, tutoring, group work, etc.) students are achieving metacognition as well as content knowledge. Beyond this goal of helping students become active in education lies the larger need of keeping students active in discovering their own process of learning, necessary for them to combine both the holistic and analytic modes of thought, and thus, for projecting a "full" voice.

Reservations about this approach tied to attempts in the past are understandable, but Hart (1983) states that these previous attempts, as with most first tries, were overdone and allowed too open of a structure. She feels students need discipline and structure, but within their own time. The mastery approach is one possible way to transform student
activity into active learning.

Another understandable reservation to the relinquishing of control the mastery approach requires is one addressed before, that of student discipline. I refer to students' voices as "working" and "mature" to specify that a voice is not a student yelling out unfounded opinions or taking advantage of the teachers' willingness to share the power of learning. The teacher always has discipline and control, but of the situation, not so much of the learning. With mastery learning, discipline is transferred to the student who decides when to seek help, learn, be tested, and basically, set his or her own pace of moving through school.

As they become active learners, students' frames of reference need to be examined, which is Katz and Henrys' second step. This idea is similar to one expressed before of accepting a student's opinions, feelings, and experiences as ingredients in the construction of knowledge. As Noddings (1984) pointed out, this need not mean establishing a "long-lasting, time-consuming, personal relationship" with each student, but simply being available to each student as he or she addresses the teacher. Despite the cliche, there is truth in saying the quality, not the quantity, of time a teacher and student share is important; a moment when we seek knowledge and want to learn is more effective than having it forced upon us when we're either not ready or already beyond it.
Similarly, Katz and Henrys' third point emphasizes the importance of recognizing how knowledge is constructed. I have identified Piaget's, Perry's, and Belenky's models of knowledge, and the evidence for these steps and differences between the genders in Ranieri's and my research. When educators understand these steps of construction, students should also be encouraged to recognize, evaluate, and if necessary, modify their learning.

After teachers and students begin to understand the construction of knowledge, the final requirement of Katz and Henrys' model is also crucial. Support for teachers and students is inherent in the strategies fulfilling the first three criteria—the teacher's interest in students is clear and students' respect and appreciation for the teacher's concern is inevitable. However, support from parents and administration may be slower in developing, which is why this type of research is necessary. Opening minds to new ways of thinking and a willingness to integrate methods that lead to responsive, complete students is vital for any educational progress and the development of anyone's voice.
Chapter V
CONCLUSION

Enabling students to construct knowledge and use their experiences in that construction are emerging as major goals of secondary education in the United States. This thesis is a step toward identifying some of the differences in what makes education relevant to students and some of the barriers to equal and effective education. Expanding on recent literature that notes how teachers and schools discriminate against different ways of constructing knowledge, which is often the feminine, holistic approach, I studied the different ways male and female students approach composing tasks and make meaning from these tasks.

In replicating Ranieri's (1988) case study I had hoped to find similarly significant results, showing that females tend to be holistic composers whose cognitive skills are on par with their writing skills, resulting in their ability to integrate many of their cognitive functions into a stronger written work. Males, on the other hand, were expected to follow a more linear, analytic approach, and thus read, write, and analyze pieces of a work and then look for the connections or themes. The second half of my hypothesis was that I expected no differences between the British and American subjects.
Neither of my main expectations were supported by the empirical data. First, when all subjects were compared, there was a significant correlation between writing and the PLOT. However, as separate groups, females had no correlations between writing and cognition while the males' writing was significantly correlated to the IPDT. Second, there was a significant negative correlation between nationality and the holistic measure. When compared by nationality, the British subjects did replicate the Americans' performances with the female having higher congruence between her cognitive and composing ability than the male. Explanations considered for this incongruity include the different educational experiences of the American and British subjects and the small sample size.

A more positive result of the statistical analyses was the replication of a trend in Ranieri's original study: females' cognitive scores were more highly correlated with the PLOT, verbal I.Q. test and males' scores were more correlated with the IPDT, picture I.Q. test. Also, stronger composing was positively correlated with performance on the PLOT but negatively correlated with performance on the IPDT for all subjects.

Analyzing the case studies also revealed some interesting points masked by the empirical data. The female British subject wrote in a holistic fashion much like the American college female and was successful at the second and
third writing tasks. The British male experienced many of the difficulties of the American high school male and was much less successful at all the writing tasks. As expected, the British female showed signs of developing both analytic and holistic abilities while the British male showed a much stronger analytic side.

Adapting this research for use in the classroom, the focus of the second half of this thesis, revolves around building student participation in the construction of knowledge. Students bring with them to any learning situation a background of valuable ideas, thoughts, and feelings that can be expanded upon and used to make what they are learning more relevant. Most importantly, recognizing differences in how males and females approach and construct knowledge and encouraging these approaches by providing many possible means of expression and schedules for learning should contribute to every student playing a role in constructing knowledge and in developing his or her own voice.
Works Cited


Appendix A

I. English Subjects' Test

Session I Essay

Recently, much has been written both in the United States and Great Britain about the lack of skills shown by both secondary school and university graduates. One suggestion has been that in order for all various members of a democracy to live together constructively, all citizens must share a common base of ideas and concepts (from such fields as law, politics, science, literature, ethics, religion, philosophy, history, psychology, and business). This base is then the foundation for all the communication by active members of a society. Reformers of education have thus suggested that a group of experts construct a list of ideas/terms/concepts to serve as the content for a national exam that students must pass before they can graduate either from secondary school or university.

Since this group of experts will be established by national law, your MP, Colin Whitehurst, a 50 year-old, three-term veteran member of Parliament, is interested in your opinion. Write him a letter either supporting or rejecting the idea. Publicly, he has stated that he is undecided about his position on any bill that might establish this test.

Sample of Terms/Concepts/Ideas for this National Exam

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II. American Subjects' Test

[-] = material added
--- = wording changed
or
example changed

Session I Essay

Recently, much has been written [] about the lack of skills shown by both high school and college graduates. One suggestion by University professor E.D. Hirsch is that in order for all the various members of a democracy to live together constructively, all citizens must share a common base of ideas and concepts (from such fields as law, politics, science, literature, ethics, religion, philosophy, history, psychology, and business). This base is then the foundation for all the communication by active members of our society. Experts like Hirsch and William Bennett, U.S. Secretary of Education, have [ ] suggested that a group of experts construct a list of these ideas/terms/concepts to serve as the content for a national exam that students must pass before they can graduate either from high school or college.

Since this panel of experts will be established by federal law, your representative, Congresswoman Susan Branch, a 50 year-old, three-term veteran member of Congress, is interested in your opinion. Write her a letter either supporting or rejecting the idea. Publicly, she has stated that she is undecided about her position on any bill that might establish this test.

Sample of Terms/Concepts/Ideas for this National Exam

actuary
baroque
cerebellum
E=mc2
galvanize
the id
KKK
macho
ozone layer
quark
silicon chip
uterus
warranty
yellow press

Achilles heel
bas relief
disenfranchise
federalism
Homer
Jesuit
Robert E. Lee
Gamal Abdel Nasser
parabola
Jean Jacques Rousseau
Taoism
Vietnam War
X chromosome
Zionism
Session I
English Male's Letter

Dear Sir

It has come to my attention that the Government is proposing a pre-Graduation examination. At this stage it is unclear what the objectives of this test would be. Is the main theory to have a common base of ideas and concepts to limit extremist viewpoints, or is it to give everyone a basic understanding of many fields of study so society can operate economically.

The first point I would like to make is there is a dangerous intention of the Government to conform the members of society by education. Let me explain. The Government through education can shape minds, and to make a law saying before graduation you must pass this exam would firstly influence the great minds of our country and secondly limit the freewill of our people. Let me tell you, we need freewill to stop our country having communist tendencies. This in the end will lead to disaster when our young want freedom of thought and choice.

It has been argued that a conforming view is economically inefficient. If a whole nation has the same ideas a competitive market will vanish, and productivity and wealth will diminish. If the objectives are to shape our youths' minds my plea is don't introduce any new laws.

It could be argued however that the benefits of such an education system would be great. Until now our students have
followed fields of study, in one are they will be strong and others weak, this lead to a low general standard of Education. The benefits of such a system would mean greater understanding of Religion and therefore better racial understanding, this would lead to greater peace in our country, the other point is that this system would lead to a better educated work force, and more filled, trained positions.

So I conclude, this system can only work if a education on general subjects is introduced, but only on the condition that it is taught as a subject, and not as a barrier stopping a student for Graduating.
Dear Sir

I am writing to put forward some ideas about a common base of ideas and concepts that should be put forward to improve the skills of secondary school and university students.

must know about the world.

- Do they have children
Dear Sir

I am writing to you to say that I agree with the bill that is being put forward for a common or national exam for students. Although I agree with the bill I think there are some points that need to be made. Students that are at this moment starting secondary school or university are our future. They will be the ones who will be governing this country in twenty years time. For them to achieve a happy and stable community, they need to know about the problems that are occurring now. For example, the ozone layer. They need to learn what it is that destroys the ozone and what steps are being taken to ensure that more of the ozone is not destroyed. There should also be more teaching about the problems in other countries. Why is there a civil war in Angola and how is it possible to help these people return to peace? They need to learn about different religions and how to make it possible for them to live in harmony with other religions, but to keep their identity too. This exam, however, has downfalls and that is that who is going to teach every secondary school student or university student every subject that they need to know. Someone graduating a scientist is not necessarily going to know much about psychology or religion. The ideas I put forward earlier
were ideas that we need to live peacefully together, but they fall under a political banner rather than an overall banner.
Session I Analysis

Carefully watch the videotape. You have been given the control so that you are able to advance or rewind as often as you possible of what you were thinking at individual moments while writing your essay. No details are too small, and everything you remember is a useful look at how you write.

We will be audiotaping your comments as you talk so that we can follow along with you and not have to take notes as we listen. Feel free to ask us any questions as they occur to you.
Session I Interview

Possible Questions:

What was your purpose in rereading at this point?
Why did you stop writing at this point?
Draw a line under the sentence or sentences that contain the focus or thesis of your essay.
How did you decide which angle or thesis to write from?
Did you organize your thoughts before or during writing?
If you had more time, which parts or parts would you spend more time on? Why?
Did the fact that you were being taped affect what you wrote?

Impromptu Questions Asked:

What tells you something you write is "rubbish"?
The purpose of this exercise is to see how you read the
following essay by looking to see how you break it up into
related parts. For this exercise you will not be able to
read the whole essay all the way through before you have to
answer questions about it. For this exercise, you will read
a short section of the essay, and then you will be asked a
few questions about what you just read. Some of the
questions will ask you to tell us about what was read, some
will ask you to relate the last section read to the sections
before it, and some questions will ask you to predict or
speculate what the rest of the essay will discuss.

If at any time you feel confused by the directions,
don't hesitate to ask the person monitoring the exercise to
help you make better sense of them. After you are all
finished, the monitor might have a few final questions for
you.

The essay is about Thomas Edison, a prolific American
inventor, who lived from 1847 to 1931. Scholars are now
collecting and studying his notebooks, letters, and papers
which will then be published for all to see.
Session II

How Edison Thought

Insights into the creative genius of Thomas Alva Edison, one of the more prolific inventors of all time, are emerging from a 20-year, $6 million study of his vast collection of personal papers.

The new portrait of Edison is marked by his powerful ability--never fully recognized until now--to reason through analogy.

1. What ideas in this opening passage do you think will be important for the whole essay?

CM-- What his prolific inventions were?
How did the study come to find previously unrecognized abilities of Mr. Edison; to reason through analogy.

CF-- His inventiveness and his ability to reason through analogy and why this wasn't recognized until recently.

2. What other ideas do you expect the whole essay to cover?

CM-- How his reasoning through analogy could be used today.
Does this reasoning through analogy change the light of his previous interviews.
Can more studies similar to this, discover new facts about famous inventors or such like people.

CF-- His ideas and thoughts about his inventions and where these ideas came from.
What happened if they didn't work.
Why did people not recognize his ability to reason through analogy.

3. In what order do you expect the author to cover the ideas that you think will be in the rest of the essay?

CM-- Thomas Alva Edison's previous inventions.
The methods used in the study and why they are valid.
How they can conclude he reasoned through analogy.
How this can be of importance today.

CF-- Where did his ideas for his inventions come from.
What did he think about his inventions.
What did he do if they didn't work.
Why he wasn't recognised as being able to reason.
Paul Israel, an assistant editor of the Edison Papers, said another example of innovation by analogy is seen in Edison's work on the incandescent light bulb. Although his final invention was a simple bulb, the early versions had regulatory devices to limit the amount of current flowing through them. And sketches in the Edison notebooks show that the regulatory ideas were drawn from what at first glance looks far removed from electric lights-- early work on the telegraph.

Regulatory devices were needed for the lights because Edison wanted to employ parallel rather than series circuits. When one bulb in a series circuit failed, as often happened in the early days, the rest of the bulbs would go out. In parallel circuits, however, the rest would go on shining. Our 20th century system of lighting is basically an elaboration of Edison's original idea.

But there was a problem. Each added bulb reduced the total resistance of the parallel circuit. According to the laws of electricity, this meant a huge current would be needed to power a long string of lights. It was impossible. The power lines from such a central distribution system to even a modest system of parallel lighting would require more copper than was available in the whole world.

1. What do you think comes next?

   CM-- Edison when working on inventions would try out his ideas and see if they could work on a practical basis, he therefore would use a trial and error theorem for many inventions.

   CF-- How did he solve this problem?
To solve the problem, Edison increased the individual resistance of his early lamps by building current-limiting regulators. According to Dr. Israel, Edison's notebooks show that his ideas were borrowed from earlier work. "It's clear that his original idea came from telegraphy," Dr. Israel said. "Electromechanically, he used the same approach he had already perfected. With the electric light, he tried to create means of controlling the amount of current that went into the lamp by the same sort of regulators."

Eventually, as work progressed, Edison chose thin carbon filaments for his bulbs, their hallmark being very high resistance. After that insight, all the regulatory apparatus was abandoned. The end result was a simple parallel system that looked nothing like what Edison started with. It took an examination of his papers to reveal that unusual step that led to the invention.

1. What is the relationship between the last five paragraphs and what comes before them?

CM-- Appearances deceived the Historians, and the only way to find the truth about Edison's studies was to read deep into his notes. He would use obscure relationships between inventions to create a new invention, this could be seen by appearance alone.

CF-- They illustrate the point that Edison was able to reason out problems by relating to his earlier inventions and solve these problems by using things that he has proved worked.
By making Edison's personal papers available to scholars and historians around the world, the Edison Papers project aims to facilitate insights into how the inventor worked. So vast are the Edison materials that the process of publication will take 20 years. In addition to papers found at the Edison National Historic Site in West, Orange, N.J., the project is gathering materials from hundreds of other sites around the world. The main sponsors of the project at Rutgers University, the Edison National Historic Site, part of the National Park Service, the New Jersey Historical Commission, and the Smithsonian Institution.

In February R. Thomas Jeffrey, microfilm editor of the Edison Papers, released the first part of a six-part microfilm edition. It consists of 28 reels of film recording about 40,000 pages of documents and costs $1,650. The publisher is University Publications of America in Frederick, Md.

"The publication of the first set of the Edison Papers is a tremendous boost to our study of the past as well as a key to the understanding of the inventive process," said Dr. Melvin Kranzberg, Callaway Professor of the History of Technology at the Georgia Institute of Technology.

Starting in about a year, the project will publish the first of 15 to 20 hard-cover volumes that will contain a selection of the Edison papers and will include background and biographical information. It will be published by the John Hopkins University Press.

According to Dr. Jenkins, the papers have already provided other insights into Edison's inventive process in addition to his powerful ability to reason by analogy.

1. What do you think comes next in this essay?

CM-- The insights into Edison's inventive process. The next couple of paragraphs will give information of how the new insights were used, and how they were found by the researcher, I think the new insights could be trial and error.

CF-- What are these insights of Edison's inventive process?
(Continuation of last paragraph) It was perhaps this trait more than any flashes of brilliance or cries of "Eureka!" that accounted for his great inventiveness. It is now thought that this hidden ability is what transformed one successful invention into another, eventually producing the phonograph, the incandescent light bulb, systems of electric power generation and motion pictures.

Born on Feb. 11, 1847, in Milan, Ohio, Edison devoted himself to the quest for invention while still in his 20's. At his death in 1931 he left behind more than 3.5 million pages of notebooks and letters, much of it documenting his 1,093 patents. No one has ever produced more.

"These documents give you entry into the mind of one of the world's most creative people," said Dr. Reese V. Jenkins, a historian and director of the Thomas A. Edison Papers at Rutgers University in New Brunswick, N.S. "In fact," he added, "they tell a lot about the very essence of invention itself."

1. What do you expect the author to put next?

CM-- You can use reasoned analogy to sort out problems and find new answers. A study of vast papers can show the thinking of a person.

CF-- I expect the author to tell me more about Thomas Edison and how he came to be an inventor.

2. How well has the author organized the essay so far?

CM-- I thought the personal information about birth dates and patents could be used as an introduction, otherwise it is quite readable and organized.

CF-- Very well. He has told us a bit about Thomas Edison and some of his inventions and about the documents left behind that tell us about him.

3. Have you had any difficulty following the essay so far? Where exactly in the essay did you lose the train of thought?

CM-- No real difficulty in reading the essay so far, I haven't lost my train of thought yet!

CF-- No.
(Continuation of last paragraph) The first page of Edison's motion picture caveat begins: "I am experimenting upon an instrument which does for the eye what the phonograph does for the ear." A few lines later: "The invention consists in photographing continuously a series of pictures... in a continuous spiral on a cylinder or plate in the same manner as sound is recording on the phonograph."

"If we didn't have the earliest sketches and notes," Dr. Jenkins said," we wouldn't be able to see the genesis. This is what I mean by being able to get into the creative mind, watching it work by analogy from one very successful invention to another. Edison didn't ultimately solve the problem that way. The finished kinetoscope looked very different. But you can see the creative process."

1. What do you feel still needs to be said and/or done in the essay?

CM-- How the findings on Edison can be used to further science today.

CF-- We need to know what made him decide to invent these things and where he got his ideas from to actually make his ideas real.

2. How well do you think the author has covered the major points so far? Why?

CM-- I think the author has covered the main points very well, he has used Edison's actual quotes to back up his points, he has also shown how they reached various conclusions by giving information about actual inventions and there relationship with other invention.

CF-- Not too bad. The author has told us about one of his inventions and how it developed from another, but not about how he came to be an inventor. He hasn't told us much about the person Thomas Edison either.
Edison's inventions were often much more closely related in their origins than anyone ever suspected, according to clues being gathered by Dr. Jenkins and his colleagues. For example, early drawings of his kinetoscope, a prototype motion-picture machine, reveal that it evolved from Edison's already successful phonograph.

The first commercial kinetoscope had film that wound back and forth on rollers, allowing a spectator to view moving images through a peephole in the top of the large machine. From this device it was but a short step to motion pictures as we know them today.

As Dr. Jenkins and his team of historians dug deep into the Edison Papers, they discovered that the device had not sprung to life in a flash of insight but had evolved slowly from previous inventions. The clues were found in preliminary patents, known as caveats, that were filed by Edison on the kinetoscope from 1888 to 1889.

Surprisingly, the very first caveat looked nothing like he finished machine but instead showed a cylinder covered with a spiral of images meant to be viewed through and eyepiece. The resemblance to Edison's first phonograph, made a decade earlier, was striking. Each of the two inventions had an axle and a cylinder. And each had an instrument (stylus or eyepiece) that deciphered a spiral of information (grooves for sound, images for pictures).

In an interview, Dr. Jenkins said that no historian, on the basis of the visual resemblance alone, would dare suggest that Edison had been inspired by this earlier work. However, Edison also left a written record.

1. What do you think comes next in the essay?

CM-- It is impossible to draw resemblances from past inventions to more modern ones from mere appearances alone. You have to start at the basic form of production and study every job of each piece of machinery to discover similarities between inventions. It is from this reasoned analogy that mechanical and scientific progress can be made.

CF-- Tell us what was in the record that Edison left and what it has to do with suggesting that Edison was inspired by his earlier work in the invention of the kinetoscope.
(Continuation of last paragraph) "We have this image of Edison as the lone inventor," said Dr. Jenkins. "That's not the case at all. One of his real talents and insights was that he could accomplish so much more by working with a group. He's really a pioneer of team research. That's probably one of the most important things he did."

1. What relationship does this last paragraph have to the rest of the essay?

CM-- The relationship of this last paragraph was to show that Edison was no a genius creator in the sense that he would be inspired and an invention would happen, in fact teamwork would suggest that Edison used a formative and structured plan that was essential for his inventions.

CF-- None as before the essay was talking about his ability to reason through analogy.
Edison set up laboratories first in Newark, N.J., then Menlo Park, and finally West Orange. At times, Edison would have more than 100 workers and assistants. There are more than 3,000 lab notebooks at the Edison National Historic Site. According to Dr. Jenkins, more than half of those were filled by Edison's assistants.

"This does not diminish Edison at all," said Dr. Jenkins. "There's no doubt about his genuine creativity." "Even those around him with enormous technical education in mathematics and science had great admiration for his skills and intuition," Dr. Jenkins added. "But at the same time he had many hands and many minds that he was working with. And, clearly, that gave him an advantage. That has to have been a major factor in his enormous productivity."

Indeed, it was Edison himself who characterized his laboratory as "an invention factory."

1. Is this a good way to end the essay? Why or why not?

   CM-- I don't think this was a good way to end an essay, I think the introduction should have included teamwork with his reasoned analogy, a new fact at the end of an essay is poor structure as it spoils the organisation of the essay.

   CF-- Yes because it supplies us with more information about Edison and how his inventions came about.

2. Could you change the organization of this essay to make it more effective? Where or how would you do that?

   CM-- First of all I would have a basic introduction of Edison and his inventions, then I would explain the work and intent of the researchers. I would then introduce the two findings and give examples. I would finally conclude by stating how they change the views on Edison.

   CF-- No, it gives us an idea of how he worked and how some of his inventions came about and improved from the original idea to the finished product.

3. Reread all of your answers. Are there any you would like to answer differently now that you have finished the article? Reanswer them here.

   CM-- No changes.

   CF-- No changes.
4. Underline the sentence (or sentences) you think give(s) the focus or thesis of this essay.

CM-- ...creative genius of Thomas Alva Edison...
...prolific inventors of all time...
...2-year, $6 million study of his vast collection of personal papers.
...to reason through analogy.
These documents give you entry into the mind of one of the world's most creative people.
Edison's inventions were often much more closely related in their origins than anyone ever suspected.
...on the basis of the visual resemblance alone, would dare suggest that Edison had been inspired by this earlier work.
"If we didn't have the earliest sketches and notes," Dr. Jenkins said," we wouldn't be able to see the genesis."
It took an examination of his papers to reveal the unusual steps that led to the invention.
...the Edison Papers project aims to facilitate insights into how the inventor worked.
He's a pioneer of team research. That's probably one of the most important things he did.
Indeed, it was Edison himself who characterized his laboratory as an "invention factory."

CF-- The new portrait of Edison is marked by his powerful ability--never fully recognized until now--to reason through analogy.
Session II
Possible Interview Questions

1. I noticed you were puzzled at this part. Can you tell me what it was that puzzled you?
Appendix C

Session III Instructions

Like Session II, the purpose of this exercise is to see how you read the following essay by looking to see how you break it up into its related parts. Yet with this exercise you can read the essay all the way through first. We have provided you with a wide right margin so that if you like, you can take notes on the organization of ideas as you read.

When you have finished reading the essay, outline it, breaking it up into parts which have related ideas. If you have forgotten, a simple form of an outline is given below.

I.
   A.
   B.
      1.
      2.
         a.
         b.

II.
   A.
   B.

III.
   A.
      1.
      2.
   B.

Of course this is just a model form; it will expand and contract in order to adapt itself to whatever sequence of ideas you see in the essay.

After finishing your outline, you need to answer a few other questions that have been printed at the end of the essay. Also, the monitor might have one or two other questions for you. As with Session II, if you have any questions, ask the monitor for help.

This essay is about "soap operas," the term given in America to such shows as "Coronation Street," "East Enders," "Neighbors," and "Eldorado." American shows were originally called "soap operas" because their commercial sponsors were companies that made soap and laundry powder.
Some months ago, the sleepy, Victorian world of daytime drama made news. The news was that it had ceased to be sleepy and Victorian. In fact, said the reports, the soap operas were doing something no one could quite believe; "peddling sex."

Announced on astounded critic; "Folks squawking about cheap nighttime sex should harken to the sickly sexuality of daytime soap opera. Love of Life details frank affairs between a married woman and married man, Search for Tomorrow has a single girl in a affair with a married man, result: pregnancy; Secret Storm has another single girl expecting a married man's child."

And, under the headlines "Era of Souped-Up soapers" and "Torrid Days on TV Serial Front," Variety, the weekly newspaper of the entertainment industry, reported that there was a daytime "race to dredge up the most lurid incidents in ex-based human wretchedness," and cited "a torrid couch scene involving a housewife with a gown cleaved to the navel who was slogsed to the gills on martinis, working her wiles on a husband (not hers). The fade to detergent blurb left little doubt as to the ensuing action."

Even a superficial investigation of events in the soap-opera world confirms that these reports are true.

To understand this phenomenon, one must enter the total universe of the soap operas. And if one does, one soon discovers that the central source of drama is not what it used to be in the old days, when the brave housewife, with husband in wheel chair, struggled helplessly against adversity. The soaps have shifted drastically on their axes; the fundamental themes today is, as Roy Winsor, producer of Secret Storm, puts it; "the male-female relationship."

More specifically, the theme of nine of the ten daytime shows on the air when this study was launched is the mating-marital-reproductive cycle set against a domestic background. The outer world is certainly present-- one catches glimpse of hospitals, offices, courtrooms business establishments--but the external events tend to be foil for the more fundamental drama, which is rooted in the biological life cycle. Almost all dramatic tension and moral conflict emerge from three basic sources: mating, marriage, and babies.

The mating process is the cornerstone of this trivalue system. The act of searching for a partner goes on constantly in the world of soap opera. Vacuous teen-age girls have no thought whatever in their heads expect hunting for a man. Older women wander about, projecting their intense longing to link themselves to unattached males. Heavily made-up villainous "career women' prowl relentlessly, seeking and nabbing their prey: the married man. Sad, lonely
divorcees hunt for new mates.

This all-consuming, single-minded search for a mate is an absolute good in the soap-opera syndrome. Mortality— and dramatic conflict— emerge from how the search is conducted. Accordingly, their is sex as approached by "good" people, and sex as it is approached by villains.

"Good" people's sex is somewhat extraordinary phenomenon, which can best be described as "icky." In The Doctors, Dr. Maggie confides, coyly, to her sister: "He kissed me." Her sister asks, even more coyly, "Did you want him to kiss you?" Maggie wriggles, says, "He says I did." then archly adds: "You know? I did." Maggie has already been married; her sister has had at least one lover. Coyness, not chastity, is the sign of their virtue.

"Good" people's sex is also passive, diffident, and apologetic. In The Doctors, Sam, after an unendurably long buildup, finally takes Dr. Althea, a troubled divorcee, in his arms, and kisses her once, gently, on the lips. He then looks rueful, says, "I'm sorry," and moves to look mournfully out the window. "I'm not," murmurs Althea softly, and floats out of the room.

The "good" people act like saddened goldfish; the villains, on the other hand, are merely grotesque. One gets the impression that villains, both male and female, have read a lot of Ian Fleming, through several layers of cheesecloth.

To wit: a dinner between villainess Valerie Shaw and Dr. Matt in The Doctors in which Valerie leers, ogles and hints ("A smart woman judges a man by his mouth... Yours is strong and sensual. I'm glad I came to dinner"), announces she will be his "playmate" and boasts throatily, "I play hard and seriously— but not necessarily for keeps."

And in Love of Life a sinister chap named Ace drinks in a bar with a teen-age girl who used to be his mistress. "We used to ignite," he breathes insinuatingly. They exchange a kiss— presumably so inflaming that the camera nervously cut the picture off beneath their chins. "Not bad, baby," he gasps heavily.

This endless mating game, of course, has a purpose: It leads to marriage, the second arch-value in the soap-opera universe. And the dominant view of marriage in the soaps is also worthy of mention. According to the "good" women, it consists of two ingredients: "love," and homemaking.

"Love," in the soaps, tends to be a kind of hospitalization insurance, usually provided by females to male emotional cripples. In these plays, a woman rarely pledges herself to "honor and obey" her husband. She pledges to cure him of his alcoholism, to forgive him his criminal record, paranoia, pathological lying, premarital affairs— and, generally, to give him a shoulder to cry on.

An expression of love, or a marriage proposal, in the daytime shows, often sounds like a sobbing confession to a psychiatrist. In Search for Tomorrow Patti's father, a
reformed drinker, took time out from brooding over his daughter's illegitimate pregnancy to express his "love" for his wife. It consisted of a thorough—and convincing—rehash of his general worthlessness and former drinking habits. "I need you," he moaned. "That's all I want," she said.

In General Hospital Connie's neurotic helplessness proved irresistible some weeks ago; Dr. Doug declared his love. They engaged in a weird verbal competition as to who was more helpless than whom, who was more scared than whom, who "needed" whom more than whom. Doug won. Connie would be his pillar of strength.

Homemaking, the second ingredient of a "good" woman's marriage, is actually a symbolic expression of "love." There is a fantastic amount of discussion of food on these shows, and it is all strangely full of martial meaning. On The Guiding Light the audience sat through a detailed preview of the plans for roasting a turkey. The stuffing has raisins in it, which somehow would help get separated Julie and Micheal together again. On The Doctors one ham was cooked, eaten and remorsefully discussed for three days; it played a critical role in the romance of Sam and Dr. Althea.

If domesticity is marital "good," aversion to it is a serious evil. On Secret Storm, a husband's arrival from work was greeted by a violent outburst by his wife, who handed him a list of jobs he had not done around the house. His neglect of the curtain rod was a sure sign that he was in love with a temptress who works in his office. Conversely, if a wife neglects her house, the marriage is rocky.

After mating and marriage the third crucial value in the soap-opera universe is reproduction. The perpetuation of the species is the ultimate goal toward which almost all "good" people strive. And "The Baby" is the household god.

"Good" people discuss pregnancy endlessly. Young wives are either longing to be pregnant, worried because they are not pregnant, getting pregnant and fighting heroically "not to lose the baby." And at whatever stage of this process they happen to be, it justifies their being inept, irritable, hysterical and irrational.

"Good" men, needless to say, are unfailingly sympathetic to the reproductive process and are apparently fascinated by every detail of it. In The Doctors you knew one chap as a "good" husband because he referred to himself as "an expectant father" and earnestly discussed his wife's "whoopsing" with his friends.

The superlative value of "The Baby" is best revealed when he makes his appearance without benefit of a marriage license. He is usually brought into the world by a blank-faced little girl who has been taught to believe that the only valid goal in life is to mate, marry and reproduce, and who has jumped the gun. The social problem caused by this error in timing is solved in different ways. The girl has an
abortion (Patricia, Another World); she loses the baby in an accident (Patti, Search for Tomorrow); she gives the baby up for adoption (Ellen, As the World Turns); she has the baby and marries its father (Julie, Guiding Light); she has the baby and marries someone else (Amy, Secret Storm).

The attitude of baby-worshipping "good" people to this omnipresent social catastrophe is strangely mixed. The girl is viewed as a helpless victim of male villainy: "She loved the fellow too much," said Angie's father sadly in General Hospital. Of course, she has acquired the baby "the wrong way" and must-- and does-- suffer endlessly because of it. Nonetheless, she is having "The Baby." Thus she receives an enormous amount of sympathy, guidance, and help from "good" people.

It seems almost unnecessary to say that only "bad" people are anti-baby. The fastest bit of characterization ever accomplished in the history of drama was achieved on Secret Storm, when Kip's father recently arrived on the scene. He said: "I can't stand all this talk about babies." This instantly established him as a black-hearted villain.

The worst people of all, in the soaps, however, are the "career women", unnatural creatures who actually enjoy some activity other than reproducing the species. With the single exception of The Doctors, which features two "good" career women, Drs. Maggie and Althea, even the feeblest flicker of a desire for a career is a symptom of villainy in a woman who has a man to support her. Some weeks ago, we could predict that Ann Reynolds, in The Young Marrieds, was heading for dire trouble. She was miserable over her lost career, she had no babies, and she said those most evil of words: "I want a purpose in life."

It is hardly surprising to discover that even when the female characters achieve their sated ideal, they are almost invariably miserable. A man to support them, an empty house to sit in, no mentally demanding work to do and an endless vista of future pregnancies do not seem to satisfy the young soap-opera ladies. They are chronically bored and hysterical.

They also live in dread of the ever-present threat of adultery, because their husbands go outside very day and meet wicked career women. They also agonize frequently over the clash between their "needs as a woman" and their "needs as a mother."

The denizens of this universe are equally miserable for parallel reasons. They suffer quite a bit from unrequited love. They are often sick with jealousy, tortured by their wives' jealousy of their careers and outer-world existence. They, too, have a remarkable amount of trouble reconciling their "needs as men" with their "needs as fathers."

So we find, amid all the gloom in Sudsville, a lot of drinking, epidemic infidelity, and countless cases of acute neurosis, criminality, psychotic breakdowns and post-maternal
psychosis.

And this, dear reader, is the "sex" that the soap operas are peddling these days. It is a soggy, dreary spectacle of human misery, and it unworthy of all those "torrid" headlines. In fact, if one wants to be soured forever on the male-female relationship, the fastest way to achieve this state is to watch daytime drama.

The real question is not "where did all the sex come from?" but where did this depressing view of the male-female relationship come from. Hardened observers of TV's manner and mores have claimed that sex is being stressed in the soaps because it "sells." But the producers of soaps retort hotly that this has nothing to do with it. Their story lines, they insist, simply reflect social reality.

Says Frank Dodge, producer of Search for Tomorrow: "We always try to do shows that are identifiable to the public. These shows are a recognition of existing emotions and problems. It's not collusion, but a logical coincidence that adultery, illegitimate children and abortions are appearing on many shows. If you read the papers about what's going on in the suburbs--well, it's more startling than what's shown on the air."

"The moral fiber has been shattered in this nation and nothing has replaced it," says Roy Winsor, producer of Secret Storm. "There's a clammy cynicism about life in general. It deeply infects the young. It lead to a generation that sits, passively, and watches the world go by. The major interest is the male-female relationship. That's the direction daytime shows are going in. Some of the contemporary sickness has rubbed off onto TV."

A consultation with some authorities on feminine and family psychology seems to support these gentlemens' contentions about the soap operas. "They're realistic," says Dr. Harold Greenwald, training analyst of the National Psychological Association for Psychoanalysis and supervising psychologist of the community Guidance Service in New York. "I think they're more realistic than many of the evening shows. They're reflecting the changes taking place in our society. There are fewer taboos. The age of sexual activity in the middle classes has dropped and it has increased in frequency. There is more infidelity. These plays reflect these problems."

Dr. William Menaker, professor of clinical psychology at New York University, says: "The theater, the novel, and the film have always reflected people's concern with the sexual life; and in this sense, what's on the air reflects these realities of life. Increasing frankness in dealing with these problems isn't a symptom of moral decay but rather reflects the confused values of a transitional period of sociosexual change.

"Unfortunately, the vision of sex that seems to emerge on these shows is mechanical and adolescent, immature. The
'love' seems equally childish; it is interacting dependency, rather than a mutual relating between two autonomous adults. As for anti-intellectualism of these shows, it is actually antifeminine. It shows the resistance of both writers and audience to the development of the total feminine personality. There is no doubt that these shows are a partial reflection of some existing trends in our society; it is not a healthy picture."

Finally, Betty Friedan, author of The Feminine Mystique, says: "The image of woman that emerges in these soap operas is precisely what I've called 'The Feminine Mystique.' The women are childish and dependent; the men are degraded because they relate to women who are childish and dependent; and the view of sex that emerges is sick. These plays reflect an image built up out of the sickest, most dependent, most immature women in our society. They do not reflect all women. In reality there are many who are independent, mature, and who possess identity. The soaps are reflecting the sickest aspect of women."

On the basis of these comments, one can certainly conclude that all this "sex-based human wretchedness" is on the air because it exists in society. And the producers claim that this is dramatic "realism" appear to have some validity.

But does the fact that a phenomenon exists justify its incessant exploration by the daytime dramas? Two of the three experts consulted actively refrain from making moral judgements. Betty Friedan, however, does not hesitate to condemn the soap operas. "The fact that immature, sick, dependent women exist in our society is no justification for these plays," she says. "The soap operas are playing to this sickness. They are feeding it. They are helping to keep women in this helpless, dependent, state."
I. Introduction to Peddling Sex
   A. Moral Standards
      1. Changing moral standards—single girl affair
         married man.
      2. Affairs in marriage.
   B. Change of Emphasis
      1. It used to be about survival in hard word.
      2. Mating Marriage and Babies
      3. HUNT for relationships
   C.
      1. values of love are different
      2. why love is important—where it leads to.
      3. marriage is different
      4. male view of marriage
      5. women's role in marriage
      6. neglecting household roles is weakness in
         marriage
   D.
      1. THE pregnancy
      2. unmarried parent
      3. male are villains in unmarried pregnancy
      4. villains are anti baby
      5. career women are babies
      6. problems of having children for women
      7. men lose their way in pregnancy
   E.
      1. essay speaks against sex in drama
      2. does drama sell sex/sex reflects society
      3. sex in real society
      4. society has rubbed onto T.V.
      5. play reflects real problem
      6. deals with sociosexual change
   F.
      1. sex on T.V. adolescent, childish, anti-
         intellectualism
      2. women is wrong
      3. keep women in helpless state
Session III
English Female's Outline

I. Soaps
A) male-female relationships
   1) mating
      a) cornerstone
      b) good - coy, apologetic
      c) villains - unashamed & unabashed
   2) marriage
      a) 'love marriage' - forgive & forget
      b) homemaking - symbolic of love
   3) reproduction
      a) married wives who long for or worry about pregnancy
      b) married man who is sympathetic and proud
      c) illegitimate children
      d) 'bad' people who hate babies

II. Sex in Soaps
A) observers
   1) sex in soaps because it sells
   2) immature love
   3) antifeminine
B) producers
   1) say it reflects social reality
Session III Questions

1. Point out any parts of your outline you had problems with.

   CM-- Separating section A from B
       Separating section B from C
       Some parts of a section could be included in others-- BIII could be CI.

   CF-- Deciding which were the important categories.

2. Point out any parts of your outline you are sure of.

   CM-- All of Section D
       All of Section E

   CF-- Some of the sub-sections.

3. Underline the sentence (or sentences) you think give(s) you the focus or thesis of this essay.

4. Is the essay arranged in a logical order?

   CM-- On the whole it is arranged logically.

   CF-- Yes.

   Where doesn't it seem to be arranged logically?

5. Did the paragraph divisions help you to organize your outline? Where didn't they help?

   CM-- One small paragraph talks of drama selling sex, and then of sex reflecting society. Before lengthy time was given to one overall point, the downfall of soaps, this important point is summarized too quickly.

   CF-- Yes.

6. Where were you not able to understand this essay?

   CM-- I could understand the essay.

   CF-- No.
Session III
Outline Key

I. Peddling Sex
   A. Not old--brave housewife
   B. Male-Female relationship
      1. Mate
      2. Marry
      3. Reproduction

II.
   A. Mating
      1. Types
      2. Good in of itself. Manner is disputed.
      3. Good people sex
      4. Bad people sex
   B. Marriage
      1. Ingredients--love/homemaking
      2. Aversion to domesticity shows poor love
   C. Reproduction
      1. Good people
         a. Wives
         b. Men
      2. Violators
         a. girl
         b. good peoples' reactions
      3. Bad people
         a. career women are worst people in soaps
         b. a few good career people
         c. husbands of career women

III. Where this view comes from?
   A. To sell or portray reality
      1. Producers
      2. Experts

IV. Conclusion
   A. Exists in society
   B. Is it justified?
Session III Interview Questions

1. I noticed that you seemed puzzled at this part. Can you tell me why or what puzzled you?