THE EFFECTS OF TEACHING STRATEGY AND COGNITIVE STYLE ON STUDENT INTERPRETATIONS OF EDITORIAL CARTOONS

by

John Mark Hunter

Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

in

Curriculum and Instruction

APPROVED:

[Signatures]

David M. Moore (Chair)

John K. Burton

James W. Garrison

J. Thomas Head

Edd H. Sewell

April, 1991
Blacksburg, Virginia
THE EFFECTS OF TEACHING STRATEGY AND COGNITIVE STYLE ON
STUDENT INTERPRETATIONS OF EDITORIAL CARTOONS

by

J. Mark Hunter

Committee Chairman: D. M. Moore
Curriculum and Instruction

(ABSTRACT)

Many people assume that editorial cartoons are easily understood by the
bulk of the population. For this reason, editorial cartoons are often used as
teaching materials in the classroom. Recent research, however, raises doubts
as to the effectiveness of this practice. Investigations by Bedient (1971) and
DeSousa & Medhurst (1982) determined that the majority of students (grade 5
through college) could not interpret editorial cartoons. These investigators
went on to suggest that a logical next step would be to determine if editorial
cartoon literacy can be taught.

The cognitive style of the participants was examined to determine if the
different teaching strategies were differentially effective vis-a-vis field
dependence and field independence.

Two presentations (treatments) were designed to model methods of
reading editorial cartoons. The Whole Cartoon Analysis presented 25
editorial cartoons along with a 100-200 word interpretation of each cartoon.
The Parse Analysis Treatment was accomplished in three steps rather than the one for the Whole method. In step one, the whole cartoon is presented with a short gloss of the meaning. In step two all of the cartoon is visually suppressed except for one visual meaning element. This element of the cartoon is discussed and then the next element of the cartoon is added, and so on until the entire cartoon is back on the screen at which point the overall meaning is discussed.

The dependent variable of the investigation was the two-part Editorial Cartoon Interpretation Task. Part A asked each participant to enumerate the symbols in the cartoon and define them as to meaning. Part B asked the participant to write a short thematic interpretation of the cartoon. A two-way Analysis of Variance on the data revealed no significant differences in either the main effects or the interaction.
Acknowledgements

A project like this is the sum of a great many people's expertise, dedication, collegiality, and compassion. The Education Microcomputer Lab and the Self Instruction Curriculum Lab, its directors, staff, and Graduate Assistants have done more to create an atmosphere that makes for a graduate program of national integrity. Norm, John, Terry, Bonnie, and Paula will all be remembered for making things happen, even when it looked like they might not. Those who are already out in the other universities, Mike, Herman, Wayne, Rob, Lawrence, and Rich have left a high standard for the rest of us to follow. Steve, Bob, Laurie, and Yvonne are as good a group as any to leave in charge while the government of Virginia goes wilding through higher education. Keep up the high standards. Cursum perficio.

My committee is one of the all time best. Mike Moore, John Burton, Edd Sewell, Jim Garrison, and Tom Head went far further than they should have had to. Well, it worked. Thank you from the bottom of my heart.

I am thankful to God and Fr. Martin Townsend, Rector of Christ Episcopal Church for giving Melissa, Julia, and me a spiritual home. My family in Clemson has been far away in distance, but they have been here in spirit all the time. May God bless them all.

My family in Blacksburg, Melissa and Julia (Julia insists on including the cubs Tristan and Grendel), has sacrificed more than we bargained for. But throughout both graduate programs, the birth of a baby, and unemployment, they have not waived. The priorities have always been family first, there they will remain.
Table of Contents

Title.................................................................................................................................i
Abstract .............................................................................................................................ii
Acknowledgements ..........................................................................................................iv
Table of Contents ..............................................................................................................v

Chapter 1 ............................................................................................................................1
  Introduction and Review of Literature .................................................................1
    Editorial Cartoons Defined .......................................................................................1
    An Example ...............................................................................................................3
    Theoretical Basis ......................................................................................................3
    The external visual...................................................................................................4
    Internal Complexity .................................................................................................6

Cognitive Style
    Field Dependence/Independence ........................................................................6
    Field Dependence/Independence and Learning .................................................9
    Field Dependence/Independence and the Design of Instruction ........................11

Visual Literacy .............................................................................................................13
    Related Studies .......................................................................................................15
    Editorial Cartoons in the Classroom ..................................................................16
    Hierarchies and taxonomies ..................................................................................16
    Visual Comprehension Studies ...........................................................................20
    Measurements of Comprehension ......................................................................22
    Research Questions ...............................................................................................27

Chapter 2 ............................................................................................................................29
  Methodology ...............................................................................................................29
    Bedient (1971) .......................................................................................................29
    Bedient's Selection of Cartoons ...........................................................................29
    Bedient's Interpretations .......................................................................................30
    Bedient's Selection of the Research Sample .......................................................31
    Bedient's Evaluation of the Interpretations ...........................................................32
    DeSousa and Medhurst (1982) ............................................................................33

  The Present Study ......................................................................................................33
    Research Hypotheses .............................................................................................34
    Participants .............................................................................................................35
    Materials ................................................................................................................35
    Selection of Editorial Cartoons ............................................................................36
    Judges' Interpretations ...........................................................................................37
    Use of the GEFT ......................................................................................................38
Chapter 1

Introduction and Review of Literature

In secondary school social-studies, history, and civics courses, many teachers often make use of newspapers to teach current events. An important element of newspapers is the editorial cartoon. It is a political weather vane that exhibits the less gentle emotions of the artist and the people who share his opinion. Editorial cartoons are useful in teaching students the nuances of politics and the significance of relatively dry news stories. However, research has shown that the effectiveness of these illustrations should not be taken for granted (Bedient, 1971; DeSousa & Medhurst, 1982). It seems that many assume that since it’s just a picture (and a cartoon at that!), readers will certainly understand it (Locher, 1974). In this matter many people confuse succinctness with simplicity. While editorial cartoons are indeed very succinct, they are in no way simple (e.g., Bedient, 1971; DeSousa & Medhurst, 1982).

Editorial Cartoons Defined

In a discussion concerning the ability of people to read editorial cartoons, it is necessary to first establish a working definition of political or editorial cartoons. Most studies involving editorial cartoons have dealt with the traditional editorial page cartoon (Bedient, 1971; DeSousa & Medhurst, 1982; Shaffer, 1930). This is the single-frame black and white, line-drawn cartoon found on the editorial page of the newspaper.
There is however some debate concerning this definition. Editorial cartoonist Kate Salley Palmer allows that an editorial cartoon could be "any illustration that makes some sort of social commentary" (Hunter, 1989, p. 4). This could completely open the field of possible editorial cartoons to include everything on the comic page in addition to the editorial page of the newspaper. While this is a possibility, it is one that many main-line editorial cartoonists disdain. When Burke Breathed, who drew the comic strip *Bloom County* received the Pulitzer Prize for editorial cartooning, Pat Oliphant, the long respected traditionalist, commented, "Today *Bloom County*, tomorrow *Garfield*" (K. S. Palmer, personal communication, April, 1989). It is his view that editorial cartoons are defined by their location on the editorial page as well as their subject.

This current study will confine itself to the traditional editorial and political cartoon, a single-frame line drawing found on the editorial page of a newspaper. There are a number of reasons for this delineation. First, as mentioned before, this is what has been used in past studies. A deviation from this format could complicate any attempt to interpret the results of this study in relation to previous studies. Second, on the editorial page, the editorial cartoon is immersed in the milieu of opinion as opposed to the comic page, a place primarily reserved for entertainment and humor. Finally, a cartoonist on the editorial page must answer to an editorial page editor who will have different criteria of judgment than the editor of a comic page. The relationship between the editorial page editor and the editorial cartoonist has been cited as being important to the type and subject of the cartoonist's work (Hunter, 1989).
An Example

In this study of editorial cartoons, it was convenient for there to be a single reference cartoon that could be used when defining various terms and processes. The cartoon that was chosen for that purpose is the 1989 National Headliners Club Award recipient, drawn by Walt Handelsman (1989) of the New Orleans Times-Picayune. For the sake of convenience, this cartoon is referred to as the "pledge" cartoon. This cartoon appears in the award winners' section of Brooks (1990). It pictures George Bush, wrapped in an American flag, taunting Michael Dukakis with, "My pledge is better than your pledge." Dukakis, infuriated, jumps up and down, stomping his feet and protesting, "Liar, Liar, Pants on fire." Dukakis holds a sign that states, "Voodoo Doodoo," and wears a button that says, "Remember Pearl Harbor". Off to the side, a young Uncle Sam says, "No wonder they're so interested in child care".

Theoretical Basis

An examination of the process of reading editorial cartoons has three aspects which require scrutiny. They are the external (to the reader) nature of the visual field, the perspective of the individual reader, and visual literacy, the interaction of the previous two. The external nature of the visual field will be discussed in terms of the composition of the elements of the visual, the milieu of the whole, and the question of complexity. The second significant aspect may be summed in the question, what particularities of the the individual affect the ability to read a visual field? The third aspect of this
examination is the interaction of the previous two. When the individual successfully interacts with the visual field, visual literacy takes place. The major thrust of this study revolves around aspects of visual literacy.

The external visual

The composition of an editorial cartoon's visual field was discussed at length by Medhurst and DeSousa (1981). Their taxonomy of graphic discourse can be used as a common language when discussing editorial cartoons. It contains three main sections: rhetorical invention, graphic discourse, and rhetorical style.

Rhetorical invention represents the creation or the discovery of the subject matter. Four common sources are political commonplaces, literary/cultural allusions, personal character traits, and situational themes. Political commonplaces represent the necessary fodder of editorial cartoons. The economy, national defense, and foreign policy are typical of this category. Literary and cultural allusions are represented by allusions to movies, literary figures, and biblical references. The third category draws upon personal character traits such as age, morality, and intelligence. Idiosyncratic and situational themes which appear and disappear from the political stage make up the fourth category. The situation in the news may be very temporal, but the editorial cartoonist seizes the moment to lampoon and satirize. The "pledge" cartoon draws on the 1988 presidential election, the pledge issue, the Pearl Harbor gaff, voodoo economics, and the child-care issue.

Graphic disposition is the second major component of the taxonomy. The major form of disposition is contrast—the contrast of competing ideologies,
wealth and poverty, or even the contrast of sameness. There are two minor forms of disposition: commentary and contradiction. Commentary is a statement of fact or a cultural truism. For instance, the portrayal of runners in a race as a metaphor to a political campaign is a commentary. It is a standard metaphor that presumably will be accepted without question. The second minor form of disposition is contradiction. "Unlike contrast which invites comparison, contradiction invites condemnation. Contradiction invites no range of choice; instead, every reader is led to respond in the same way or reject the appeal altogether" (Medhurst & DeSousa, 1981, p. 207). The "pledge" cartoon is a form of contradiction. It places the two candidates next to each other and invites the reader to consider that neither one of them is putting forth any real issues.

*Rhetorical style* includes the use of line and form to create mood; the relative size of objects (Bush's height over Dukakis); the exaggeration or amplification of physical features which is the traditional stuff of caricature (Bush's glasses, Dukakis's brow and nose); placement within the frame (the child being left off to the side); the relation of text to visual imagery (the musical notes, dialogue boxes, and the child's comments being lower than everyone else); and rhythmic montage, which is the interaction of all of the elements of the frame (Medhurst & DeSousa, 1981). This is the synthesis of elements in communication via editorial cartoons.

This taxonomy, in effect, establishes a set of common terms to use when discussing editorial cartoons. It may be of particular importance when attempting to teach someone to critically view editorial cartoons.
Internal Complexity

Complexity has had different meanings for different researchers when applied to visual media. Dwyer (1978) looked at complexity as the level of realism in a visual field. The closer the visual is to being a photograph, the higher the complexity. A line drawing, on the other hand, would be less complex. Similarly, Davis and Klausmeier (1970) saw complexity as the amount of irrelevant information. This is in agreement with Dwyer in that a "realistic" visual will contain more information. However, as in the issue of expertise (Fitts & Posner, 1967), whether or not information is irrelevant is probably more of a matter of the expertise of the individual viewing the visual, than the amount of information in the visual itself.

Canelos, Taylor, and Gates (1980) looked at complexity vis-a-vis field dependence/independence. Using the Dwyer heart model (Dwyer, 1978), they exposed students to either a line drawing, a color illustration, or a photograph, after which they were required to draw the human heart. Complexity—as defined here—proved to be a non-significant variable. Reardon (1987) commented, "One might question whether there are real differences in organization or structure between a line drawing and a photograph of the same subject, even when there is more detail in the photograph" (Reardon, 1987, p. 19).

The issue of complexity will be shown to be a factor when considered in the presence of field dependence/independence.
Cognitive Style: Field Dependence/Independence

In a study of the literature concerning cognitive style and individual differences, field dependence/independence stands out as having received the lion's share of attention. In 1942, Witkin and his associates (Witkin & Asch, 1948; Witkin, Lewis, Hertzman, Machover, Meissner, & Wapner, 1954; Witkin, Dyk, Faterson, Goodenough, & Karp, 1962) began research into individual differences in perception. He was primarily interested in the perception of the upright in space (Witkin et al., 1954). Witkin noted that while some individuals relied heavily on the field or outside environment for visual cues, others could easily separate outside information from the surrounding field. Witkin and his associates established a continuum with those low on it labeled field dependent and those at the distal end labeled field independent.

There have been a number of tests developed to ascertain individuals' field dependence/independence. Following, is a synopsis of some of those tests.

1. The Rod and Frame Test (RFT) (Goldstein & Blackman, 1978) - In a darkened room, a seated person is shown an illuminated frame within which appears a rod. The illuminated rod and frame are tilted on their axes. The task of the student is to instruct the examiner how to move the rod to make it vertical. The more accurately the student makes the rod vertical, the greater the field independence.

2. The Body Adjustment Test (BAT) (Goldstein & Blackman, 1978) - In this examination, the student and the room are both tilted on their axes. On the first trials they are tilted in the same
direction, and later in opposite directions. The task of the student is to direct the movement of the chair to be upright while the room remains at an angle. Those students who can best determine the upright are considered more field independent.

3. The Embedded Figures Test (EFT) (Goldstein & Blackman, 1978) – Based on the Gottschadt Hidden Figures Test, this is a two dimensional exercise. The user's task is to recognize a simple geometric figure that is embedded within a more complex geometric figure or the field. The EFT is highly correlated with the RFT and the BAT. The ability to disembed the simple figure is taken to indicate field independence.

At first, success on the EFT was taken to reflect solely upon perception as a matter of field dependence/independence. However, performance on the EFT was discovered to have a greater implication, revealing a relationship with non-perceptual intellectual tasks (Goldstein & Blackman, 1978). This was called the "global-articulated dimension".

Witkin described the field independent or articulated individual as able to separate items from their background, impose organization on an unorganized field, and develop a new organization for an unorganized one (Witkin et al., 1962, p. 14). The underlying dimension of differentiation was postulated to describe the relationship between performance on the EFT and other non-perceptual intellectual tasks. The more differentiated the individual, the more field independent, and the greater the ability to differentiate gradations of a stimulus dimension. "The more differentiated person perceives the field as more discrete and structured, has a more definite sense of body boundary, a sense of individuality, internalized standards, and
is less likely to use primitive, indiscriminate defenses, such as massive repression and primitive denial" (Goldstein & Blackman, 1978, p. 175).

Field Dependence/Independence and Learning

Goodenough (1976) and Witkin et al. (1977a) offered reviews of the literature surrounding field dependence/independence and learning. They drew several conclusions. Among them was the generality that field dependent and independent individuals learn in different ways.

Field independents are more analytical in their approach to a stimulus field. They can actively engage the stimulus, parsing the complex field, and imposing structure on the field without structure. Field dependents, on the other hand, are less discriminating in their attending to a stimulus field. With a passive approach to the stimulus, they will attend whatever cues are most salient, regardless of their relevance. When the salient cues are also relevant, and there is low complexity, the performance between the field dependents and the field independents is negligible. Conversely, if the salient cues are not relevant, the field dependent's performance will diminish. The field independent who samples more fully from the available salient and non-salient cues, performs more successfully (Goodenough, 1976).

Witkin et al. (1977b) suggests that the strategies which arise from the cognitive style orientation may be somewhat more malleable than the styles themselves. For example, a field dependent will adopt a hypothesis-testing approach when the instructional situation is set up to elicit such a response, although a more intuitive route to concept attainment is normally employed.
Both Witkin et al. (1977a) and Goodenough (1976), indicated that neither cognitive style has a superiority over the other for learning. However, there is evidence that in the aspect of memory at least, field independents have an advantage over field dependents. Davis and Frank (1979) suggest that field independent learners possess the ability to perform combinatorial analyses, defined as the ability to "systematically generate all possible combinations and permutation of a set of elements" (Flavell, cited in Davis & Frank, 1979).

In support of the contention that field dependents are less able to focus their attention on various aspects of a field, Berger and Goldberger (1979) obtained results that gave an indication of the relationship between short-term memory and field dependence/independence. Their results indicate that field dependents register amounts of information similar to field independents, but the difference arises when they need to attend it. The implication is that field independents are better than their counterparts at focusing their attention on the relevant aspects of a field.

There is a positive relationship between intelligence as it relates to certain measures and field dependence/independence. Goodenough and Karp (1961) and Karp (1963) found that performance on measures of field dependence/independence is related to sub-tests of the Wechsler Intelligence Scale for Children (WISC). Those sub-tests involved block design, picture completion, and object assembly. This was interpreted to mean that these intellectual tests share with the measures of field dependence/independence, the requirement of overcoming an embedding context.

In their analyses of 20 studies, Goldstein and Blackman (1978) found consistently that various measures of field dependence/independence are
positively related to various measures of both verbal and performance intelligence. Their correlations between field dependence/independence and intelligence are mostly in the .40 to .60 range.

Given the above cited studies, it may be seen that field independent readers of editorial cartoons will generally fair better than their field dependent counterparts in successfully viewing a visual field. However, field dependent viewers may be able to acquire the strategies they need to make viewing more successful.

Field Dependence/Independence and the Design of Instruction

It is theorized that field independent learners will perform more satisfactorily than their field dependence counterparts on tasks that have a high degree of complexity (Fleming, 1984). When there is a low information load, or when the complexity is low there should be little difference in performance between the two groups.

Wachtel (1968) studied extreme field dependence/independence among undergraduate males. The men were required to identify and label complex visual designs from memory. While both groups were similarly able to accomplish the task with the complete figure, the field dependents showed a marked lack of ability in attaching the correct labels to parts of the figure that had been extracted from the whole.

The reduction of the amount of information (Dickie, 1970), manipulation of the size of step (Jennings & Dwyer, 1985; Schwen, 1970) and external manipulation (Fleming, Knowlton, Blair, Levie, & Elarian, 1968; Grieve &
Davis, 1971; Saloman, 1979; Satterly & Telfer, 1979) in a learning task have been used to give students greater or faster retention of information.

Dickie (1970) used compression to suppress or remove the background of a visual field in order to reduce the amount of irrelevant information. Dickie developed a slide set to teach the procedure for threading a 16mm film projector. Screening out the backgrounds on one slide set helped all of the users of the material to accomplish their learning tasks more quickly. Dickie did not find a link between the compression of visuals and field dependence/independence.

Schwen (1970) and Jennings and Dwyer (1985) have performed experiments in which sequencing and size of step have proved to be a factors in retention of information. Schwen used a small-step programmed learning task versus a large-step task with field dependents and independents. He found that the students performed with no significant differences when using the small step task. However when retention was measured after the large-step learning task, the field independents out performed the field dependents. This was in keeping with the idea that when information is low, the two groups perform similarly, whereas with high information load, field independents outperform field dependents.

Jennings and Dwyer (1985) used size of step as a variable in student achievement. The number of visuals in a presentation were increased from 37 to 47 in order to decrease the amount of information on each one. The results showed a significant improvement on overall learning (drawing task) during immediate recall. Field dependence and independence was not considered in this investigation.
There have also been studies that looked at field dependence/independence and the presence of external organization of information. Satterly and Telfer (1979) provided evidence that external organization and structure applied to a learning task is helpful to field dependent learners. In their study, Satterly and Telfer found that the use of advance organizers that added a structure to an English lesson was differentially successful for field dependents and field independents. Holding with the theory that advance organizers add structure, they hypothesized that the treatment would improve the retention scores of the field dependents. Their hypothesis was born out. In groups using the advance organizers, the scores of the field dependents approached those of the field independents. Field dependents scored considerably lower in the treatment without the advance organizers.

**Visual Literacy**

The discussion so far has dealt with editorial cartoons, their uses, and people's ability to comprehend them. To be able to understand an editorial cartoon, the reader (viewer) must have some degree of visual literacy. Greenlaw (1978) described a visually literate person as one who views not only the surface patterns of an illustration, "but during visualizing the person brings meaning to the image and reacts to the image in a critical manner" (p. 276). Sinatra (1986) said, "visual literacy itself is defined as the active reconstruction of past visual experience with incoming visual information to obtain meaning" (p. 127). Sinatra is correct as far as he goes, but he stops short of a full definition in that he neglects to mention prerequisite nonvisual knowledge. In the interpretation of editorial cartoons in particular, there is a
great deal of outside contextual information that must be considered. For our purposes, we need to emend Sinatra's definition and say that visual literacy is the active reconstruction of past visual and non-visual experience as it interacts with incoming visual and verbal information to obtain meaning. Many editorial cartoons have a verbal element to them, often in the form of balloons or captions. The addition of the verbal information in the emended definition of visual literacy takes into account the verbal information that the reader will have to decipher in order to fully understand the cartoon.

On the reading of visuals McLuhan (1964) said, "...the reader is required to fill in meanings from his own perceptions. The experience is highly participatory" (p. 112). Medhurst and DeSousa (1981) said, "Cartoons work to the extent that readers share in the communal consciousness, the available means of cultural symbology, and are able to recognize that shared locus of meaning as expressed by the caricature" (p. 219-220).

Clearly, there are a number of elements of understanding that the reader must possess in order to successfully comprehend editorial cartoons. He must have the "past visual experiences" as stated by Sinatra (1986) as well as the shared communal consciousness, symbology, and the shared locus of meaning (Medhurst & DeSousa, 1981). In other words, the artist and the reader must speak the same language, both verbally and visually.

Similar to the results of the studies that found the differences between people's semantic and syntactic knowledge of verbal language, there are also syntactic and semantic differences in visuals. Syntax is the knowledge of the language of visuals. This involves those visual tools that the artist uses to
bring about structure and meaning. Medhurst and DeSousa (1981) described this as rhetorical style. On what we are calling the syntax of visuals, Wendt (1956) said, "a picture definitely has structure. It is a configuration of symbols which make it possible for us to interpret the picture, provided that we have enough experience with those symbols to read the picture" (p. 289). What Wendt has described is the syntax of pictures.

Semantics is the knowledge of what that structure expresses. In the successful viewing of an editorial cartoon, the viewer correctly interprets the syntactic structure (lines, shading, and other elements of what Medhurst and DeSousa [1981] call "rhetorical style" [p. 219].) Emerging from that syntax is semantic meaning. Medhurst and DeSousa call it "rhythmic montage" (p. 220). This is analogous to the cinematic term *mise en scène* which, according to the critic Bernard Dick (1978) "...blends all of the elements of film making, from acting and make-up to the composition of the shots into a whole to give as close an approximation of reality as he or she can" (p. 158).

The individual elements of editorial cartoons are composed of basic symbols formed at a syntactic level or more complex images at a semantic level. At the syntactic level, one finds the basic lines, shading, words, and other artistic techniques that when combined will form meaningful images.

**Related Studies**

Past research has dealt primarily with the analysis of the ability of people to interpret editorial cartoons (Bedient, 1971; DeSousa & Medhurst, 1982; Shaffer, 1930). In the latter two investigations, comprehension and interpretation of editorial cartoons was found to be low relative to what the
investigators had hypothesized. In both studies the investigators suggested that the next step should be to try to find out if people can be taught to interpret editorial cartoons.

*Editorial Cartoons in the Classroom*

The use of editorial cartoons is widespread in the classroom. Diedrich and Maskovsky (1970) reported that the American Newspaper Publishers Association's *Newspaper in Education* program involved 322 newspapers, 17,600 schools, and 48,000 teachers. It had reached over 3 million students with almost 68 million copies of newspapers. This, coupled with research (Waldrop, 1955) that reported that the editorial cartoon held the highest reader interest of anything on the editorial page (among adult readers), indicates that there is a strong likelihood that there are many students at least viewing editorial cartoons in the classroom.

There have been a number of journal articles in which the authors, who are social studies and civics teachers, have suggested ways of incorporating the editorial cartoon into the classroom. Entin (1958) used editorial cartoons to promote classroom discussion. Eulie (1969) cited the positive use of editorial cartoons to facilitate interest and a deeper understanding in social studies students, provided that teachers are careful in their choice of cartoons. Mattos (1972) suggested the use of editorial cartoons to spark students' interest in government. His idea that the teacher should build a case study of a political event through cartoons seems to be of particular merit. These articles indicate that there are teachers and students who are, at some level, using editorial cartoons in the classroom. All of this points to the fact that
editorial cartoons are present in the classroom. The next question to be addressed is, can they be used effectively?

Hierarchies and taxonomies

The ability to understand cartoons falls along a continuum. Readers may have some idea of what is happening in the cartoon without fully understanding the entire message intended by the artist. There are two salient studies that have defined hierarchies or taxonomies of editorial cartoons (Bedient, 1971; Fleming, 1988).

Bedient (1971) described a hierarchy of interpretation that a reader might achieve when viewing an editorial cartoon:

Abstract Correct interpretations correctly identify the symbols found in a cartoon and are essentially in agreement with the intended editorial message of the cartoon as determined by a panel of judges. In the "pledge" cartoon, this would be a recognition that the cartoon was about the lack of a focus on the important issues in the 1988 presidential election. Instead, the candidates childishly pursued silly issues involving the Pledge of Allegiance to the Flag, gaffs, and name calling.

Abstract Incorrect interpretations erroneously identify symbols within the cartoon and focuses upon major concepts which were not the intended message of the cartoon. An example of such a mistake in interpreting the "pledge" cartoon might be the conclusion that Dukakis's Pearl Harbor button was a reference to the nation's water pollution problem.

Concrete Correct interpretations focus on the figures in a cartoon rather than on the condition or group than a symbol represents. A concrete correct
interpretation did not recognize the editorial message of a cartoon but did consider the real persons, things, and events found in a cartoon. The concrete interpretation of the "pledge" cartoon would look at the elements of the cartoon such as Bush, Dukakis, an Uncle Sam child, and Bush and Dukakis taunting each other, but not recognize that this was a commentary on the election in general.

Concrete Incorrect interpretations also focus on the figures in a cartoon rather than on the condition or group that a symbol represents. This interpretation does not recognize the correct relationships among the elements of a cartoon. A "pledge" cartoon concrete incorrect interpretation would be that Bush and Dukakis were break-dancing.

Descriptive interpretations enumerate items found in a cartoon, repeat outlines or words from a cartoon, or relate what the characters in a cartoon are doing. In the "pledge" cartoon, a descriptive response might be that there are two men and a boy in the cartoon. The descriptive response would not recognize the caricatures as representations of Bush, Dukakis, and a young Uncle Sam. The final category that Bedient used was no response.

In Bedient's (1971) study, the students' task was to view each cartoon from a set of twenty-four, and then write down their interpretations of it. Prior to the administration of the test, a panel of judges had viewed the cartoons and written their interpretations; each judge wrote abstract correct, concrete correct, and descriptive interpretations. The responses were read by a reviewer and then put into one of the above categories. These categories were used to classify students' interpretations of a series of editorial cartoons.
The distinction between an abstract interpretation and a concrete interpretation is a most important one. More so than any other elements of the hierarchy of understanding of editorial cartoons, this gives the investigator the ability to not only determine whether or not a student can understand a cartoon, but to some extent, the degree of comprehension that the student possesses.

The other taxonomy/hierarchy is Fleming's (1988) Social Studies Cognitive Levels, adapted from Bloom's taxonomy to form a method of interpreting and using editorial cartoons. His levels of understanding could be an important tool in teaching the comprehension of editorial cartoons. Fleming's taxonomy with sample comments are listed below.

Knowledge. At the knowledge level the student is asked to perform simple recall. For instance, "What does the flag represent in this cartoon?"

Comprehension. The student is asked to put information in another form. "What message is the cartoonist trying to convey in his cartoon? Describe it in your own words."

Application. The student is asked to select facts, principles, and/or generalizations and apply these to a particular problem. "Using the format of this cartoon, draw a cartoon on the role of the Exxon corporation in Alaska."

Analysis. Students identify and comprehend the elements or parts of a process, communication, or series of events. "What are the most relevant points to be found in this cartoon?"

Synthesis. The students are encouraged to engage in original creative thinking. "Based on the five cartoons you have examined, write an essay on the problems facing the United States in foreign policy."
Evaluation. Students are asked to determine how closely a concept or idea is consistent with standards or values. "How effectively does the cartoonist convey his message in this cartoon?"

Fleming's hierarchy is interesting in that all of the components could be put to good use in an extended social studies exercise. However, it could be that the application element of the taxonomy is too close to the beginning of the list. While following Bloom, it may very well be that application is one of the more difficult tasks that could be assigned. There could be a good argument that to have the students produce their own cartoons would be an excellent culminating task in a unit on the comprehension of editorial cartoons.

These taxonomies and hierarchies present a method for the discussion of editorial cartoons. The Bedient (1971) hierarchy defines a way to interpret students' responses to cartoons while the latter taxonomy could be put to use in teaching students to comprehend editorial cartoons. This research will focus on both of these tasks; assessing students' ability to interpret editorial cartoons and assessing the effectiveness of a unit of instruction designed to improve their capabilities regarding the interpretation of editorial cartoons.

Visual Comprehension Studies

Editorial cartoons are, if nothing else, largely visual. Shepard's (1967) study showed that people's memory for pictures is good. After viewing 612 pictures, students were able to correctly recognize 87 percent of them after seven days. This extraordinary finding would bode well for the recognition of the visual elements of an editorial cartoon. However, most students do not
seem to be able to comprehend editorial cartoons at a level approaching 87 percent. Standing (1973) found that students could remember (recognize) 73 percent of 10,000 pictures. Given that they had had some previous exposure to them, this would indicate that readers of editorial cartoons would have little trouble in recognizing the caricatures and symbolic representations in the cartoons. However, this does not seem to be true. A number of studies (Bedient, 1971; DeSousa & Medhurst, 1982; Shaffer, 1930), have indicated that the ability of readers to interpret cartoons is nowhere near the 87 percent of Shepard or the 73 percent of Standing. Of significance may be the fact that in the recognition studies, the participants were not required to bring meaning to the pictures; in other words the recognition was syntactic not semantic. They merely had to signify whether or not they had seen that particular image before. In the viewing of editorial cartoons, on the other hand, recognition was but a part of the process of useful interpretation. As Greenlaw (1978) said, a person must "...bring meaning to an image and react with it in a critical manner" (p. 276).

Further studies indicate that it is not the exact visual details of an image that people were likely to remember (Bower, Karlin, & Dueck, 1975; Mandler & Ritchey, 1977; Wiseman & Neisser, 1974). Rather, they remembered some representation of the picture's meaning. This correlates with verbal studies (Anderson, 1978; Wanner, 1968) that have shown that people do not remember the exact wording of a statement or statements, but they do remember the meaning of the statements. In the view of these authors, people have a better semantic memory than a syntactic memory.
A number of studies have borne this out. Wiseman and Neisser's (1974) experiment had people look at a picture which at first glance appears to be a random set of ink spots. If the participants knew that the picture was actually a high contrast photograph of a dog, they were much more likely to remember it later when they were asked to reproduce it. In other words, when they looked at only the surface of the photograph, without a meaning structure, students could not understand what it was. However when they could bring meaning to it (when they knew it was a picture of a dog) the students were much more likely to be able to reproduce it.

Another study by Bower, Karlin, and Dueck (1975) makes a similar point. Participants studied pictures, called droodles, and were then asked to reproduce them. Participants who had been given the verbal clues as to the meaning of the content scored better on the recall than those who were not given the verbal clues. Again, when the participants were able to bring some sort of meaning to the visualization, they could correctly interpret the material.

There is abundant implication in these studies for editorial cartoons. When people do not understand the referent, they cannot begin to understand the cartoon. This works on the syntactic, or elemental, level (within the discrete visual parts of the cartoon). In the same manner, when viewing an editorial cartoon, if you did not understand an essential visual element then you would misinterpret the cartoon. For instance, Bedient (1971) found that many students did not know that the two over-laid triangles on a soldier's cap were the Star of David and that they represented the state of Israel. They missed the point that it was a cartoon about Israel. As to
comprehending any subtle irony or humor on the part of the artist of our imaginary cartoon, the viewer would, most likely, be altogether incapable.

\textit{Measurements of Comprehension Among Readers of Editorial Cartoons}

While there are suggestions to use editorial cartoons in the classroom (Entin, 1958; Mattos, 1972), there has been little work done to find out if students can, in fact, understand them. It seems that many assume that, because an idea is being conveyed through a cartoon, students will automatically understand it (Long, 1962). Shaffer's (1930) study involved school-age children in interpreting editorial cartoons. In his study, 2,751 students in grades 4–12 wrote interpretations of ten editorial cartoons. His results indicated that most of the school-age children (in the eighth grade or above) in his study could understand cartoons. This came into conflict forty years later when Bedient (1971) found contrary results. In his study, the vast majority (75 per cent) of high-school juniors could not abstractly interpret an editorial cartoon. Similarly, Carl (1968) compared editorial cartoonists' intended meanings of their cartoons with those meanings interpreted by adults. He found that over 70 percent of those interviewed did not interpret the cartoons in a manner in which the artists had intended.

The two studies that offer the most promise in determining the ability of discrete groups of readers to comprehend editorial cartoons are Bedient (1971) and DeSousa and Medhurst (1982). These two studies sought to determine whether students could interpret editorial cartoons. Bedient did this by exposing students to a cartoon and then asking them write down what the
then respond to a list of subjects or meaning elements, checking those that they recognized as being in the cartoon.

Bedient (1971) found that, contrary to Shaffer, the vast majority of groups of fifth, eighth, and eleventh grade students could not interpret editorial cartoons in a manner which could be called abstract and correct. The study attempted to determine the types of interpretations that students applied to a set of 24 editorial cartoons. According to Bedient (1971), Shaffer had indicated that the ability to abstractly interpret develops from grade six or seven through grade nine. However, Bedient found that the fifth graders gave abstract interpretations more often than one of the eighth-grade groups and an eleventh-grade group. The interpretations, while being abstract, were nevertheless more often incorrect than correct.

When he surveyed children across grades four through twelve, Shaffer (1930) found that the "best" interpretations were given by the oldest children with the interpretations becoming less and less accurate as he looked at the younger grades. Shaffer concluded that the ability to give correct abstract interpretations of cartoons "...was found to be appreciably associated with grade and intelligence and more with the former than the latter" (Shaffer, 1930, p. 69). Bedient on the other hand, found that a higher intelligence, eighth-grade group (mean I.Q. = 127) gave the highest number of abstract interpretations as well as the highest number of correct abstract interpretations. Less than four percent of the fifth-grade interpretations were classified as abstractly correct. The eighth-grade group with an average I.Q. (mean 105) made fewer correct abstract interpretations than any other type of interpretation. The higher I.Q. eighth-grade group interpreted more cartoons
in an abstractly correct manner than any other group–27 per cent. The eleventh-grade group interpreted 11 of the cartoons abstractly correct. Bedient and Moore (1985), in their analysis of this study, reasoned that "for an illustration to have educative value it must be presented in terms of the past experience of the intended audience. Probably the students in this study had not had extensive experience in interpreting political cartoons" (p. 35).

DeSousa and Medhurst (1982) similarly found that, "editorial cartoons are not reliably interpreted by their readership" (p. 53). In their study, DeSousa and Medhurst exhibited cartoons to students and then had the students respond to a list of "meaning elements". The task involved recognizing salient semantic elements of the cartoon. For instance, if a cartoon used Reagan's face looking wrinkled and old, then the student should check off the box on a supplied answer sheet that said "wrinkles".

This method of investigation has the advantage of not requiring the students to face an empty page onto which they are supposed to pour their interpretations; perhaps a daunting task for some individuals. By asking them to merely recognize "meaning elements", this investigator would suppose that DeSousa and Medhurst (1982) would more nearly approximate the results of Standing (1973) or Shepard (1967) who asked their students to only recognize pictures and found that they could do so at a rate of over 70 percent. Instead they found "that student respondents were surprisingly inaccurate in determining the correct meaning elements of the cartoons" (DeSousa & Medhurst, 1982, p. 56). They continued later that, "...it may be time for a reexamination of the popular belief that the editorial cartoon is composed of clear and simple imagery and functions as a uniquely successful
form of graphic editorializing" (DeSousa & Medhurst, 1982, p. 59). Their qualification that it only "may be time" is explained in part by their call for more studies: "Limited empirical research...does not support any easy generalizations..." (DeSousa & Medhurst, 1982, p. 59).

As has been shown, in both the Bedient (1971) and DeSousa and Medhurst (1982) studies, their participants could not effectively interpret editorial cartoons. Both studies suggested that the next logical step would be to determine if people could be taught to interpret cartoons. Bedient's primary recommendation is as follows: "One major area which should be investigated is to determine if students can be taught to interpret political cartoons" (Bedient, 1971, p. 73). DeSousa and Medhurst (1982) asked not only if visual training would work, but, "what sort of visual training leads to more accurate meaning construction?" (p. 59).

Bedient's (1971) study has much to offer anyone who would attempt to study editorial cartoons and readers' understanding of them. Of particular merit is his method of classifying students' interpretations of the cartoons (as discussed earlier). However, his study is descriptive and not experimental. The data that he gathered were expressed in percentages without an attempt to determine statistical differences between the groups of subjects. Bedient himself suggested in his recommendations that in the comparison of different groups of editorial cartoon interpretations, the research questions, "should be studied under controlled conditions to determine if differences are statistically significant" (p. 73). What he has provided, is a foundation from which to investigate the recommendations referred to in the previous paragraph.
While there have been a limited number of empirical studies concerning readers' comprehension of editorial cartoons, there have nevertheless been some contrary results. Shaffer (1930) found that school-age children, especially in the upper grades, could correctly and abstractly interpret editorial cartoons. However, Carl (1968) found that generally, adults did not correctly interpret cartoons. Bedient (1971) found similar results among fifth, eighth, and eleventh graders, as did DeSousa and Medhurst (1982) with college students.

Both the Bedient (1971) and the DeSousa and Medhurst (1982) studies recommended that more research should be done to determine: (1) if students can comprehend editorial cartoons, (2) if they can be taught to understand them, and (3) what variables might influence a pedagogical endeavor.

In keeping with the recommendations of Bedient (1971) and DeSousa and Medhurst (1982), an investigation of whether or not editorial cartoons can be taught will be undertaken. This will be accomplished by a partial replication of and extension of Bedient's (1971) study, and DeSousa and Medhurst's (1982) study. The extension of these studies will involve the use of an instructional units designed to teach students to interpret cartoons.

The proposed study, therefore, sought to answer the following research questions that arose from the review of the literature.
Research Questions

Research Question #1: Do students classified as field dependent or independent differ in performance on an editorial cartoon interpretation task?

Research Question #2: Does teaching methods of editorial cartoon interpretation (whole and parsed) enhance students' performance on an editorial cartoon interpretation task?

Research Question #3: Is there an interaction between the effect of teaching strategy (parsed method vs. whole cartoon method) and cognitive style (field dependent vs. field independent) on an interpretation task?
Chapter 2

Methodology

In part, this study is designed to determine students' ability to comprehend editorial cartoons. A variation of the methods designed by Bedient (1971) and DeSousa and Medhurst (1982) will be employed to accomplish this task. This being so, a closer look at their methodologies is called for.

Bedient (1971)

Bedient's preparation involved four stages: (1) selection of cartoons, (2) development of a series of interpretations, (3) selection of a research sample, and (4) evaluation of the interpretations.

Bedient's Selection of Cartoons

The cartoons were drawn from various newspapers and magazines. The cartoons included in the study were from recent publications so that an historical knowledge would not be required to interpret them. The years chosen were 1969, 1970, and 1971.

The cartoons were selected to fit into one of four subject areas: Southeast Asia, economics, domestic politics, or the Middle East. Additionally, cartoons were selected that lent themselves to three levels of interpretation: abstract, concrete, and descriptive.

After they were selected, the cartoons were reproduced to an approximately uniform size of 4.25" x 6". However, this was not always
possible. The cartoons were mounted at the top of an 8.5" x 11" piece of paper with six ruled lines below to guide the placement of the written interpretations. The cartoons were assembled into booklets. They were ordered so that one domestic politics cartoon was followed by a Southeast Asia cartoon, then an economics cartoon, and finally a Middle East cartoon. Furthermore, they were arranged so that no one artist followed himself. There was no attempt made to determine if students in the research sample had encountered the cartoons prior to the testing date.

**Bedient's Interpretations**

As the cartoons were selected for the study, the researcher formulated interpretations which he deemed to be appropriate. A panel of judges was also chosen to interpret the cartoons, and to predict how different age groups would interpret the cartoons. The panel of judges was composed of three faculty members and two graduate students from the researcher's academic department, the Instructional Materials Department at Southern Illinois University.

The judges were asked to give interpretations for each of 24 cartoons. Each was given instructions which defined an abstract, a concrete, and a descriptive interpretation. That description follows:

An abstract interpretation considers the symbolic nature of the cartoon and the general concepts found in the cartoon. A concrete interpretation is one which considers the concrete persons, things, and events of a cartoon. A descriptive interpretation is one which lists characters or objects found in the cartoon, or simply relates what characters are doing in the cartoon...
As you consider each cartoon, please give an abstract, a concrete, and a descriptive interpretation...If you feel that there is more than one possible interpretation for a cartoon, give as many interpretations as you want (Bedient, 1971, p. 80).

The judges were not asked to give incorrect interpretations. They worked independently without consultation with each other.

A pilot group was utilized to develop the interpretations as well as to determine problems in the administration of the instrument. The interpretations were categorized as abstract, descriptive, and no response. The pilot group was a fifth grade class in a local elementary school.

The pilot group's interpretations were combined with the judges' interpretations. The pilot group provided both correct and incorrect responses, while the judges provided what were considered to be correct responses. The researcher reserved the right to classify a judge's interpretation as incorrect. This was done in one instance. Bedient's chapter on methodology included a summary of correct abstract, concrete, and descriptive interpretations for each of the 24 cartoons.

**Bedient's Selection of the Research Sample**

The research group was composed of 36 fifth graders, 58 eighth graders, and 37 eleventh graders. The grades were selected to represent a spectrum of elementary, junior high, and high schoolers. The researcher determined that it was not feasible to include each grade level in the project because it would have been too disruptive to the school.
There was one class each of fifth and eleventh-graders. There were two classes of eighth-graders. The group designated eight-one had a mean I.Q. of 127, and the eight-two group had a mean I.Q. of 105.

Bedient gave no leading directions in his instructions to interpret the cartoons. The gist of Bedient's instructions to his students was, "Decide what it means to you and then write the answer" (p. 81). This topic was not discussed in the methodology of the study, but was reported in an appendix that contained the cartoons and the interpretive task.

While he had intended to put no time limit on the interpretation task, there was a default limit of 55 minutes because of the class period length. This proved to be inconsequential in the upper grades, however, there were a few individuals in the fifth-grade who appeared to be frustrated and did not finish the task.

**Bedient's Evaluation of the Interpretations**

The interpretations were evaluated by comparing the responses of the student groups with the judges, the pilot group, and the researcher's interpretations.

When an interpretation was found which was not initially anticipated, the interpretation was analyzed to determine if it related in some manner to those which were anticipated. If the interpretation then appeared to be unique, it was categorized according to definition.

After the interpretations were categorized, the number of interpretations in each category was compiled. The number of interpretations in each category was reported as a percentage for grade level and issue area of the
cartoon. All of this information was reported in four tables which reflected the scores of the individual grades and a summary table which compiled all of the data.

*DeSousa and Medhurst (1982)*

In the fall of 1980, 130 undergraduate communication students were administered a two part survey instrument designed to test their abilities as visual interpreters. Part one requested basic demographic information.

Part two presented the students with three editorial cartoons from the ongoing presidential race. Each cartoon featured one of the three contenders: Ronald Reagan, John Anderson, or Jimmy Carter. After exposure to each of the cartoons, the students responded to a page of meaning elements which consisted of both correct and incorrect variables as determined by a panel of expert judges. The Students ticked off the meaning elements that they thought were contained in the cartoon in question. By comparing how many of the correct ones they chose and the incorrect meaning elements that they did not choose, the investigators determined whether or not students could understand the cartoons. The data was reported as frequency distributions.

*The Present Study*

While the present study basically followed the lead of Bedient (1971) and DeSousa and Medhurst (1982) in the development of the measurement variable, there were some differences necessitated by time and space and some stylistic differences.
On the stylistic end, the present study used a statistical analysis to determine whether or not the differences between the treatment groups were significant. This was something that Bedient (1971) did not do in his study, but did suggest in his recommendations section.

The analysis of student interpretations follows the lead of DeSousa and Medhurst (1982). While the interpretations were written, in accord with Bedient (1971), they were scored against a list of key meaning elements and thematic interpretations supplied by a panel of judges. Further differences in the studies were necessitated simply by time and space. The cartoons, in order to remain current, were different and new. The judges were chosen from among professors from appropriate content areas.

This study was designed to explore the effects of two teaching units (parsed and whole cartoons) and cognitive style (field dependent and field independent) on students' ability to understand editorial cartoons. The Group Embedded Figures Test (GEFT) (Witkin, et al., 1971) was used to assess the cognitive style of the students. Student understanding of editorial cartoons was assessed by an editorial cartoon interpretation task.

Research Hypotheses

The following hypotheses were tested in response to the research questions listed in the previous chapter.

Hypothesis #1: Field independent students perform better than field dependent students on an editorial cartoon interpretation task.

Hypothesis #2: Student performance on editorial cartoon interpretation tasks improve if they are taught interpretation strategies.
Hypothesis #3: There is interaction with field independent students performing equally well under the parsed method of instruction as under the whole cartoon method of instruction, while field dependent students perform better under the parsed method of instruction than under the whole cartoon method of instruction.

Participants

Participants were enrolled undergraduate classes of Curriculum and Instruction and Communication Studies at Virginia Polytechnic Institute and State University (VPI&SU). These classes were chosen for convenience and accessibility.

There were 102 (71%) females and 42 (29%) males who participated in the study. Of the participants, 135 (93%) were between the ages of 18 and 24. Each participant signed a consent form (see Appendix A), and then filled-out a survey (see Appendix B).

Materials

The following is a list of the materials used and the order in which they were administered.

Materials included were:

1 - Consent form (see Appendix A).

2 - GEFT test booklet for each student.

3 - One survey recording demographic information and media usage of the respondent (see Appendix B).
4 - One 18:25 minute video tape presenting the whole cartoon treatment (see Appendix D), or one 19:03 minute video tape presenting the parsed cartoon method (see Appendix E).

5 - An editorial cartoon comprehension test booklet for each student (see Appendix C).

Selection of Editorial Cartoons

All of the cartoons in the present study were selected from the 1990 edition of Charles Brooks' (1990) Best Editorial Cartoons of the Year. By using this resource, two purposes were served. First, the cartoons included in this book are generally accepted as being exemplary in the field. Brooks' method of soliciting the cartoons ensures this; he requests that cartoonists send him their three best editorial cartoons from that year. Secondly, Brooks organizes the cartoons into subject categories that can be used in the presentation of the instructional unit and the in the interpretation task.

The following criteria were adhered to in the selection of the cartoons for the editorial cartoon interpretation task (the dependent measure).

- The cartoon was current – this was satisfied by inclusion in the Editorial Cartoons of the Year, 1990 Edition, by Charles Brooks.


- In general, at least half of the information in the cartoon was visual as opposed to verbal, i.e, the cartoon was primarily visual, as opposed to carrying an abundance of labels and captions.
• The cartoon was legible when reproduced. All text and symbols were clearly readable.

• The cartoon did not contain any racially or sexually denigrating language.

• There were no more than two cartoons from any one category. The categories are those as defined by Charles Brooks in the Best Editorial Cartoons of the Year, 1990 Edition.

• There were no two cartoons by the same cartoonist.

• There were at least two symbols in the cartoon.

• The cartoon appeared in a North American publication available to the general public, i.e., newspaper or magazine. (As opposed to a journal with a highly specialized audience.)

Judges' Interpretations

After the selection of the cartoons, using the above procedure, a panel of judges was selected. The judges were professors of Instructional Technology, Secondary Education (Social Studies), and Communication Studies. The judges were given the cartoons and asked to interpret them. Each judge received a test packet (in isolation) that contained the "Instructions to Interpret" and the seven cartoons used in the study (see Appendix C). After the judges returned their finished responses, they were compiled into lists (see Appendix F). The answers of the judges were considered to be useable, therefore, any given symbol or element in a cartoon could have had more than one possible correct answer.
Use of the GEFT

Field dependence or independence was determined by the student's score on the Group Embedded Figures Test (GEFT). The GEFT, a measure of cognitive style, is based on the EFT. Goldstein and Blackman (1978) in their review of 16 studies showed that the correlations between the EFT and the GEFT fell from .30 to .60.

Like the EFT, the GEFT requires students to find a simple geometric figure hidden within a complex geometric figure. Divided into three sections of seven figures, nine figures, and nine figures each, the GEFT is a timed test. The time limits for the respective sections are two, five, and five minutes. The first section is for practice only and is not scored. The students look at the simple geometric figure and then try to trace that figure in the complex geometric figure. With the simple figures displayed on the back cover of the test booklet, they cannot see both the simple and the complex figures at the same time.

All of the participants were administered the GEFT as a measure of field dependence and independence. Participants were put into categories of Field Dependent, Field Neutral, or Field Independent based on their scores. A single standard deviation (4.13) around the mean GEFT score (12.79) served as the Field Neutral group (12<FN>14). Those who scored above half a standard deviation over the mean were classified as field independent (FI≥15), and those who scored half a standard deviation below the mean were classified as field dependent (FD≤11).
Teaching Treatments

Participants were randomly assigned by groups to one of three treatment groups: whole cartoon analysis, parsed cartoon analysis, or a control group. The control group received no instruction and proceeded directly to the interpretation task. The whole cartoon group was shown 25 cartoons accompanied by their interpretations via an 18:25 minute video. See Appendix D for the script of this treatment. The parse group was also shown a video taped program of seven editorial cartoons and their interpretations (19:03 minutes). (See Appendix E for the script of this treatment.) However, the cartoons were visually parsed. The parsing process was accomplished in three steps:

Step 1: The whole cartoon was presented. The name and news service of the artist was given along with an introduction to the interpretation.

Step 2: All of the visual information was suppressed except for one visual element. An explanation of that element was given. Then another visual element was added to the screen. That element and its interaction with the first one was explained. This process continued until all of the cartoon was once again on the screen.

Step 3: A final interpretation and summary of the cartoon was given.

All of the cartoons in the parse treatment were also in the whole treatment. See Appendix G for a list of the cartoons used in the study.

Both the treatments were written and produced by the investigator and developed at the VPI&SU Learning Resources Center Studios. All of the treatments were delivered at the College of Education Self Instruction Curriculum Lab (SICL) via projection video.
Description of the Dependent Measure

The treatment delivery and data gathering process was accomplished in seven sessions. Each session was assigned a different treatment. There were two instances when part of a group was asked to wait outside the room (as the control group) while the treatment was delivered. See Appendix D for a complete list of the judges' interpretations.

The participants were then asked to complete a seven item editorial cartoon interpretation task. Each student was given a test booklet that contained a cover sheet, instructions, and seven cartoons that the student was asked to interpret. Each cartoon was reproduced to an approximately uniform size of 4.25" x 6". Each cartoon was mounted at the top of an 8.5" x 11" piece of paper with two columns of bullets below the illustrations to guide the placement of the interpretations (see Appendix C). The various cartoons were drawn from different political subject areas. Preceding the cartoons was a page of instructions (see appendix C).

What follows is a hypothetical student interpretation of Der's Panda cartoon. See Appendix C for a sample blank answer sheet. Part A is a series of identifying and defining tasks. The reader must identify a symbol in the cartoon and then tell its meaning.

Part A

<table>
<thead>
<tr>
<th>symbol</th>
<th>meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>• panda = Russia</td>
<td>China</td>
</tr>
<tr>
<td>• trap = tienanmen square massacre</td>
<td></td>
</tr>
</tbody>
</table>
democracy = chinese movement
chain = ?

6

This is the raw score of the student's symbol identification section. This score was converted to a percentage of the total possible symbols and their meanings. This percentage was then converted to a score by making it 5% of the total. The total was the number of symbols and one possible interpretation for each. There were five symbols in the cartoon and five interpretations for a possible total of ten. Thus, this score was 60% the 10 possible correct symbols and answers; the refined score was 3.

The following section required the respondent write a global thematic interpretation. The instructions were follows:

Part B What is the point, or meaning, of this cartoon?

This is a cartoon about the put-down of democracy in Russia.

2 partial score on a 0-5 scale of overall comprehension total score 5

The cartoons were ordered randomly between the packets, except for the first cartoon in each packet. This cartoon, "The Burning of the Rain Forests" by Jim Borgman was used as a practice item for the participants, and was not scored. One cartoon, "Peter Pan" by Mark Cullum of the Birmingham News was used in both teaching treatments, as well as on the editorial cartoon interpretation task. This cartoon was not scored.

The maximum score on each part of the Interpretation Task was five. The score for Part A was computed by using the following formula: number
correct divided by Total number multiplied by five = score for Part A. Part B was scored on a range from 0 to 5. The two scores were then added. The maximum possible score for each cartoon was ten. While each student responded to seven cartoons, only five of them were counted in the study, therefore the highest cumulative score for any given participant was 50.

Excepting an extremely simple cartoon with few elements, the students were not expected to find and identify as many syntactic or semantic meaning elements as have been identified by the panel of judges. Instead of the students receiving a score that indicated their acumen vis-a-vis the judges and their collective expertise, the individual scores were used as a measure against which to compare the student with other students in this investigation.

Summary of Procedures

The administration of all treatments and data gathering occurred in Room 220 of War Memorial Hall (Self Instructional Curriculum Lab), VPI&SU. A summary of the procedures of administration of all treatments and the approximate times for each follows:

1 - Participants signed consent forms (2:00).

2 - Participants filled out surveys (5:00).

3 - GEFT was administered (17:00).

4 - Teaching treatment (one of three) was administered (25:00).

5 - Editorial Cartoon Interpretation Task administered (20:00).

The total time of each session was approximately 1:05:00. Times varied with the treatment given and the size of the group.
Analysis

A two-way analysis of variance was used to analyze the data. Main effects were considered for cognitive style (field dependent, field neutral, and field independent), and for teaching strategy (control, whole cartoon method, and parsed cartoon method). Interactions among cognitive style and teaching strategy were also of interest. Secondary analyses were to be conducted if main effects or interaction were found.
Results of the Study

One hundred, forty-four students from Virginia Polytechnic Institute & State University (VPI&SU) participated in an investigation to determine the effect of two teaching strategies related to editorial cartoon interpretation. They volunteered to participate in the project for credit in undergraduate classes offered through the Department of Communication Studies and the College of Education's Division of Curriculum and Instruction. The cognitive style (field dependence and independence) of the participants was examined to determine if that had an effect on their ability to interpret editorial cartoons. The research was designed to examine the main effects and any evident interaction.

A two-way Analysis of Variance (ANOVA) (see Table 1) was employed to determine significant differences of the main effects (alpha = .05) in research questions 1, 2, and 3. See Table 2 for means and standard deviations.

Research Question #1: Do students classified as field dependent or independent differ in performance on an editorial cartoon interpretation task? (Hypothesis #1: Field independent students perform better than field dependent students on an editorial cartoon interpretation task.)

From the results of the two-way ANOVA summarized in Table 1, it is concluded that there is no significance difference in the main effects for the teaching treatments $F(2, 135) = 2.81, p > .05$, therefore, the hypothesis was rejected.
Table 1

Summary ANOVA Table of Teaching Treatment and Field Dependence.

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-test</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>field dependence (A)</td>
<td>2</td>
<td>229.42</td>
<td>114.71</td>
<td>2.81</td>
<td>.06</td>
</tr>
<tr>
<td>treatment (B)</td>
<td>2</td>
<td>56.89</td>
<td>28.44</td>
<td>.70</td>
<td>.5</td>
</tr>
<tr>
<td>AxB</td>
<td>4</td>
<td>152.05</td>
<td>38.01</td>
<td>.93</td>
<td>.49</td>
</tr>
<tr>
<td>Error</td>
<td>135</td>
<td>5511.67</td>
<td>40.83</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2

Table of Means and Standard Deviations by Main Effects

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>46</td>
<td>26.22</td>
<td>5.71</td>
</tr>
<tr>
<td>Whole Method</td>
<td>52</td>
<td>26.42</td>
<td>6.47</td>
</tr>
<tr>
<td>Parse Method</td>
<td>46</td>
<td>27.41</td>
<td>7.16</td>
</tr>
<tr>
<td>Field Independent</td>
<td>59</td>
<td>28.09</td>
<td>6.65</td>
</tr>
<tr>
<td>Field Neutral</td>
<td>36</td>
<td>26.5</td>
<td>4.86</td>
</tr>
<tr>
<td>Field Dependent</td>
<td>49</td>
<td>25.10</td>
<td>6.94</td>
</tr>
</tbody>
</table>

Note. Maximum possible score is 50. N = 144; \( \bar{x} = 26.67 \)
Research Question #2: Does teaching methods of editorial cartoon interpretation (whole and parsed) enhance students' performance on an editorial cartoon interpretation task? (Hypothesis #2: Student performance on editorial cartoon interpretation tasks improve if they are taught interpretation strategies.)

From the results of the two-way ANOVA summarized in Table 1, it is concluded that there is no significance difference in the main effects for the teaching treatments $F(2, 135) = .70, p > .05$, therefore, the hypothesis was rejected.

Research Question #3: Is there an interaction between the effect of teaching strategy (parsed method vs. whole cartoon method) on an interpretation task and cognitive style (field dependent vs. field independent)? (Hypothesis #3: There is interaction with field independent students performing equally well under the parsed method of instruction as under the whole cartoon method of instruction, while field dependent students perform better under the parsed method of instruction than under the whole cartoon method of instruction.)

From the summary of the two-way ANOVA (see Table 1) it is concluded that there was no interaction between field dependence/independence and method of teaching, $F(4,135) = .93, p > .05$, therefore, the hypothesis was rejected.

These are results of the study investigating the effects of the cognitive style (field dependence/independence) and teaching strategies (whole and parsed
methods) on readers of editorial cartoons. The following indications were inferred from the data:

1. Field independent students are no more effective interpreters of editorial cartoons than field dependent students.

2. The teaching strategies employed by the researcher were not successful in improving students' scores on an editorial cartoon interpretation task.

3. There is no particular advantage of one method of instruction over the other (whole vs. parsed) for people of differing levels of field dependence/independence.

Discussion

When looking at the literature concerning editorial cartoons (Entin, 1958; Eulie, 1969; Hunter, 1989; Locher, 1974; Long, 1962; Mattos, 1972; Medhurst & DeSousa, 1981) and their interpretation (Bedient, 1971; Bedient & Moore, 1985; DeSousa & Medhurst, 1982; Shaffer, 1930), two things are clear: much of the population cannot successfully interpret them, and researchers, while they may speculate, do not know why. In the course of this investigation, two aspects of this matter were discussed: prior knowledge and cognitive style.

One of the major features of an individual's ability to interpret editorial cartoons is that person's informational background, i.e., their prior knowledge (Anderson, 1978; Bower, Karlin, & Dueck, 1975; Greenlaw, 1978; Mandler & Ritchey, 1977; Wanner, 1968; Wiseman & Neisser, 1974). In other words, the individual must have the knowledge base (both visually and otherwise) to be able to interpret the cartoon.
Cognitive Style

The second aspect of editorial cartoon interpretation was that cognitive style and individual perception may have a bearing on an individual's ability to interpret editorial cartoons. This became one of the main effects of the research design. The argument that a state of field dependence would negatively effect someone's ability to interpret editorial cartoons was built around several points that were discussed in the review of literature. In short, they are: (a) it takes field dependents longer to solve certain perceptual tasks (Witkin, et al., 1977a; Witkin, et al., 1971), (b) a high degree of complexity will cause differential performance between field dependents and field independents on a perceptual task (Wachtel, 1968), (c) the reduction of the amount and pace of the presented information in a learning task has brought about faster retention of information (Dickie, 1970; Fleming, et al., 1968; Grieve & Davis, 1971; Jennings & Dwyer, 1985; Schwen, 1970), and (d) different interpretation strategies can be adopted by field dependents (Witkin, et al., 1977a). Nevertheless, the hypothesis that field independent individuals would outscore field dependents on the editorial cartoon interpretation task, did not prove be true in this investigation.

Working from the evidence of this investigation, two possible reasons for the failure of field independents to out score field dependents on the editorial cartoon interpretation task are discussed: saliency and complexity.

The concept of saliency, as discussed by Goodenough (1976) held that field dependent individuals, when engaging a visual field, would attend to the cues that were most salient, or noticeable. Those salient cues may or may not be useful to the successful engagement of the visual field. This interferes
with their effective viewing of the field because their attention to cues was indiscriminate. They did not attend to the most important cues, the ones that would assist their successful interpretation of the field, but rather, the most noticeable, or salient, ones.

Because that which is salient is often not most important, this type of viewing may be generally ineffective. However, it may be quite effective for the engagement of an editorial cartoon or other caricature. In the style of the caricaturist, that which is most important to the message of the cartoon, is that which the cartoonist makes salient by the exaggeration of features, the use of line and shading, and other overt cues. In editorial cartoons, the artist goes out of his way to make the cues overwhelmingly salient. In retrospect, because the most salient is the most important for interpretation, and because field dependents attend primarily to the salient, it is in keeping for field dependent viewers to be effective interpreters of editorial cartoons.

Another possible reason that field dependent viewers of editorial cartoons would be as effective as their field independent counterparts is that editorial cartoons may not be so complex as to be misinterpreted. The premise taken in the study was that editorial cartoons are so complex that it would interfere with interpretation. Fleming (1984) was earlier cited to support the theory that field independent learners will perform more satisfactorily than their field dependent counterparts on tasks that have a high degree of visual complexity. Given the evidence of the data, it may be time to re-examine the notion of visual complexity vis-a-vis editorial cartoons.

Editorial cartoons are difficult to interpret. This has been shown empirically (Bedient, 1971; Carl, 1968; DeSousa & Medhurst, 1982), as well as
through less formal discussion (Sewell, 1987; Hunter, 1989). The assumption was that editorial cartoons are complex visually, which, in keeping with Fleming (1984), would mean that field dependents would have a more difficult time with interpretation. This is an assumption that may have a bearing in certain cartoons such as the “Pledge” cartoon (Brooks, 1990), where the frame is packed with visual information. However, the “Panda” cartoon by Lambert Der of the Greenville News (see appendix C) is arguably very simple in design and execution. The “Panda” cartoon has only four or five symbols or elements, nevertheless, the participants scored lowest on these two cartoons (“Panda” and “Pledge”) in the study. While the “Panda” cartoon is simple visually it is not simple intellectually.

The proposition that the complexity of editorial cartoons lies not in the visual elements but rather in the artist’s of the cartoon would go far in explaining why there was little difference between field dependents and field independents. An earlier argument in this paper stated that there was a positive relationship between high field independence and intelligence only insofar as the measures of intelligence were also measures of perception (Goodenough & Karp, 1961; Karp, 1963). That proposition, coupled with an assumption of low visual complexity in editorial cartoons, leads to the view that there may well be no differences between field dependent and field independent interpreters of editorial cartoons. The conclusion is that the visual complexity necessary for interference with field dependents was not reached in the editorial cartoons used in this study.
Teaching Strategies

The second main effect in the research design was teaching strategy. The hypothesis was that of the two teaching strategies, the parsing method would be best for field dependent individuals. This did not emerge from the data. There were no statistically significant differences between the teaching strategies. In fact, there were no statistically significant differences between the effect of either treatment and the control group. There are two possible reasons for this occurrence (or lack of one). The two factors are time and the masking effect of a possible lack of prior knowledge of current events and experience in interpreting editorial cartoons.

The teaching treatments were of a duration of under twenty minutes. This simply may not have been enough time for any kind of strategy to be effective. Burton and Magliaro (1988), in a review of research about problem solving concluded that no transfer can be expected to take place within the first 150 hours of learning a new process. "There are no short cuts" (Burton & Magliaro, 1988, p. 84).

The second possibility brings the discussion back to the beginning of the chapter; the individual readers of editorial cartoons must bring a great deal of information to the interpretation process to be effective. This has been discussed in terms of picture recognition (Shepard, 1967; Standing, 1973) and the necessity of prior knowledge, whether it is verbal (Anderson, 1978; Wanner, 1968) or visual (Bower, Karlin, & Dueck, 1975; Greenlaw, 1978; Mandler & Ritchey, 1977; Wiseman & Neisser, 1974) The students in the sample may have simply not had the knowledge base for any type of an effect to occur.
Recommendations

The possibility that strategies of interpretation and cognitive style make no difference in this population cannot be ignored. *Modus tollens*. Under this assumption, given any amount of time for a treatment, there would be no differences between the treatment groups. At this point it is necessary to simply conclude that there were none in the present study, and a strict replication would not be constructive.
References


Appendix A

Consent Form
Appendix A

Consent Form

Consent Form

This project involves:

1. Taking the Group Embedded Figures Test (GEFT), Consulting Psychologists Press.

2. Filling out a survey primarily dealing with media usage.

3. Viewing various editorial cartoons via video tape, and then interpreting several editorial cartoons.

Completing these three parts will take from 50-60 minutes.

From this project we hope to learn if various types of teaching strategies differentially affect the ability of learners to interpret editorial cartoons and if the cognitive style of the learner interacts with those different strategies.

Withdrawal may be accomplished by stating to the proctor that you do not wish to continue with the project. As with all such studies, you are free to withdraw from this project at any time without penalty or prejudice.

This project has been approved by the Human Subjects Committee (HSC) and the Institutional Review Board. If you have questions you may call or visit Thomas M. Sherman (5121, 307 War Memorial Hall).

I hereby agree to voluntarily participate in the research project described above and under the conditions described above.

__________________________________________  ________________________
Signature                                       ID Number

Thank you for participating.
Appendix B
Participant Survey
Appendix B

Participant Survey

Survey
Please fill out now.

Please fill out the following information.

1. Age  ____

2. Sex
   ____ female
   ____ male

3. Major  ________________

4. What is your QCA?
   ____ 3.7-4.0
   ____ 3.4-3.6
   ____ 3.0-3.3
   ____ 2.7-2.9
   ____ 2.3-2.6
   ____ 2.0-2.2
   ____ 1.7-1.9
   ____ 0.0-1.6

5. How would you describe your political leanings?
   ____ very liberal
   ____ liberal
   ____ somewhat liberal
   ____ somewhat conservative
   ____ conservative
   ____ very conservative
6. Where do you get your news? (check as many as apply)
   ___ radio
   ___ newspapers
   ___ news magazines
   ___ television
   ___ friends

7. How often do you watch the local television news (except in times of crisis such as the Gulf War)?
   ___ every day
   ___ three to six days a week
   ___ one or two days a week
   ___ less than once a week
   ___ never

8. How often do you watch the national news (except in times of crisis such as the Gulf War)?
   ___ every day
   ___ three to six days a week
   ___ one or two days a week
   ___ less than once a week
   ___ never

9. How often do you read a newspaper (except in times of crisis such as Gulf War)?
   ___ every day
   ___ three to six days a week
   ___ one or two days a week
   ___ less than once a week
   ___ never
10. What newspaper do you read? ______________

11. How often do you read editorial/political cartoons?
   ____ every day
   ____ three to six days a week
   ____ one or two days a week
   ____ less than once a week
   ____ never

12. Primarily where do you see editorial cartoons? ______________

13. How often do you listen to the news on the radio (except in times of crisis such as the Gulf War)?
   ____ every day
   ____ three to six days a week
   ____ one or two days a week
   ____ less than once a week
   ____ never

14. How often do you read a newsmagazine such as Time, Newsweek, or U.S. News & World Report (except in times of crisis such as the Gulf War)?
   ____ every week
   ____ one or two times a month
   ____ less than once a month
   ____ never

STOP. Please wait for further instructions.
Appendix C

Instructions and Test Form
Appendix C

Instructions and Test Form

Instructions to interpret cartoons:
For the next several minutes, you should do your best to interpret the editorial cartoons in the booklet before you.
Read the cartoon for thirty seconds. The proctor will let you know when that time period is up.
Next, go to Part A and make a list of the elements or symbols that you see in the cartoon. The dots, or bullets, below the cartoons are place-holders and are in no way indicative of how many of these you should list. List one per bullet and then, next to it, write down what that symbol means. Make a list of only those things that you actually see in the cartoon. You should put down as many as you can for each cartoon. Be as detailed as possible. You will have one minute to do Part A.
Below the column of bullets, you will see ruled lines. Use this space to write down a short thematic interpretation of the cartoon. In other words, answer the question, "what is the point of this cartoon?" Below that there is the statement, "What is the point of view of the cartoonist?" You may check one of the following responses: conservative, middle of the road, liberal, or don't know. You will have one minute to do Part B as well.
To re-cap, you will have approximately two and a half minutes to respond to each cartoon. You will have the first 30 seconds to study the cartoon without writing. After the proctor gives the signal, you will have one minute to do Part A. At the next signal, go to Part B and work on that for one minute.
Do not start on the next cartoon until told to do so. Do not go back to previous cartoons.

Participation in this study will in no way affect your standing in your department, college, or the university. All results are confidential and cannot be traced back to you.
Identify the symbols and their meanings pictured in this cartoon.

<table>
<thead>
<tr>
<th>symbol</th>
<th>meaning</th>
</tr>
</thead>
</table>

Part A

- __________ = ________________
- __________ = ________________
- __________ = ________________
- __________ = ________________
- __________ = ________________
- __________ = ________________
- __________ = ________________
- __________ = ________________
- __________ = ________________

What is the point, or meaning, of this cartoon?

Part B

- __________________________________________________________________________
- __________________________________________________________________________
- __________________________________________________________________________
- __________________________________________________________________________
- __________________________________________________________________________

What is the point of view of this cartoonist? Please check one box below.

☐ conservative ☐ middle of the road ☐ liberal ☐ don't know

STOP! Wait for instructions to continue.
Appendix D

Script of Whole Cartoon Analysis Treatment
Appendix D

Script of Whole Cartoon Analysis Treatment

In this first cartoon by Mark Cullen of the Birmingham News, we see Lech Walesa as Peter Pan, leading the Polish people to the never-never land of freedom. Well below them is the soviet bear — but like a dog chained to his kennel, he can't do anything to stop what is happening above. Like the story of Peter Pan, this cartoon is set in London. We can see Big Ben the clock on the skyline.

This cartoon by Tom Englehardt of the St. Louis Post-Dispatch, shows the Berlin Wall as symbolic of European Communism. As the wall comes apart in this cartoon, so does the hammer and sickle of communism.

The next cartoon by Jack Higgins of the Chicago Sun-Times, again uses the Berlin Wall. This time it portrays the people of Eastern Europe as thieves in the night, coming to chip away at the wall — taking it down piece by piece. Instead of the pieces being stones or bricks, they are the countries of Eastern Europe and the Baltics, being freed from communism.

This cartoon by George Fisher of the Arkansas Gazette, portrays the ghost of Karl Marx — the father of communism — ready to start anew after his plans failed in Europe. However, when he goes back to the drawing board, he finds that the President of the Soviet Union, Mikhail Gorbachev, is already there, redrawing, recreating and redesigning. The implication is that communism in the future will be different from the way it was before.

This cartoon by Joel Pett of the Lexington Herald-Leader invites a comparison between the two major forces of communism in the world: the Soviet Union and The People's Republic of China. We see the hammer and sickle, the symbol of communism, but it is in two parts. The hammer, being held by Chinese leader Deng Chou Peng is a force of repression. It is dripping with blood from the violent crushing of the student demonstrations in Tienamin Square. On the other hand, the handle of the sickle is a flash light. With it, Soviet Union leader Gorbachev shines the light of openness and
reform. This is all a metaphor for the Soviet Union becoming more free, while China becomes more repressive.

This cartoon by Rob Rogers of the *Pittsburgh Press* uses humor and a pun to make a point about the downfall of European Communism. In a typical scene, a father takes his son to the mall. However, this is the Berlin Mall, which was once the Berlin Wall. Not only is there a play on the words "wall" and "mall", but there is the implication that Soviet communism is being replaced by Western capitalism — here represented by the mall.

This cartoon by Jim Borgman of the *Cincinnati Enquirer*, portrays Mikhail Gorbachev as a car mechanic, working for Perestroika Motors. In Russian the word "perestroika" means restructuring. It is the term Gorbachev uses for his reform movement. In this scene, we see the Soviet economy up on the lift. Gorbachev the mechanic has taken it apart, and realizes that it will be very difficult to get it back together in working order.

This cartoon by David Horsey of the *Seattle Post-Intelligencer*, contains a coffin and two mourners. Who has died? According to the label on the coffin, East German Communism lies dead and ready to be buried. The two mourners represent communist leaders. One of them comments that East German Communism was killed when a wall collapsed on him. The implication is that he died when the Berlin Wall collapsed on him.

This humorous cartoon by Mark Cullum of the *Birmingham News*, shows an American at work in his yard, on the shores of America and capitalism. The people with the flag remind us of Christopher Columbus and his men. However, the flag says Eastern Europe instead of Spain. The point the artist is making is that North America achieved capitalistic freedom almost 500 years ago — something that is just happening for the Eastern Europeans.

This cartoon by Rob Rogers of the *Pittsburgh Press* shows a street scene at Christmas. The person on the street with the beard is sad because he says that no one believes in him anymore. The little boy, who thinks the man is Santa Claus, says that he still believes. However, his friend stops him and says that it is not Santa Claus, but Karl Marx instead. This visual pun between the similarities of Santa and Marx make the point that fewer and fewer people believe in the teachings of the father of Communism.
This cartoon by Bruce Beattie of the *Daytona Beach News-Journal* has five instead of the typical one panel. First we see a baker who has run out of bread, then a butcher out of meat, a shoe seller out of shoes, then a vegetable seller who is out of vegetables. Finally, we see the stern faced Communist leaders who say: "We're out of Power." The implication is that because communism in Eastern Europe could not sustain its economy, the people revolted. The sobering point is made in that, even though the communists are out of power, the people still are in a desperate condition.

This cartoon by Gene Basset of the *Atlanta Journal* shows a giant holding a smaller man in the palm of his hand. The scene is reminiscent of Swift's *Gulliver's Travels*. In that story, there were encounters between giants and small people. This cartoon is very similar to certain illustrations of that story. The giant is the united East and West Germany. The small man, who represents Europe is being told that he has nothing to fear from the powerful united Germany. He is being told, in effect, that this is a friendly giant. The implication is that, in fact, the rest of Europe does indeed have much to fear from a country that is so economically and militarily powerful, and that has twice in this century tried to conquer the whole of Europe.

This cartoon by Marshall Ramsey of the *LIT Daily Beacon* draws a pun on the term crack. In the United States, the crack problem has to do with crack cocaine addiction. In the Soviet Union, the crack problem is that the nation is cracking-up, or splitting apart. We see, Soviet President Gorbachev rushing in with a tube of glue to fix the problem. The map of the Soviet Union shows the republics of Estonia, Lithuania, Latvia, the Ukraine, and Georgia as breaking away from the USSR. All of these Soviet Republics have on-going separatist movements in them. Movements that President Gorbachev would like to stop.

This cartoon by Spyder Webb of *Associated Features* shows stamps with Lenin and Marx - the originators and founders of Communism and the Soviet Union. While this might be expected in the Soviet Union, here they are called dinosaur stamps. The US Post Office had just issued a set of highly popular dinosaur stamps with real pictures of dinosaurs on them. The cartoonist is saying that the ideas of Lenin and Marx are just as extinct as the dinosaurs.
This cartoon by Steve Lindstrom of the *Duluth News-Tribune* shows what might be a typical scene—two grandfathers pushing their grandchildren in the park. We can see by the looks on their faces, the grandfathers are not happy. The grandfathers in the cartoon are Mao Tse Tung and Josef Stalin. Mao was the Communist leader of China and Stalin the communist leader of the Soviet Union. Both countries were undergoing democratic uprisings at the time of the publication of the cartoon, something that neither Mao nor Stalin would have liked.

This cartoon by Lazaro Fresquet of the *El Nuevo Herald* shows Soviet leader Gorbachev as the captain of the ship Glastnost. Glastnost is the Russian word for openness. It is a major part of Gorbachev's reform movement in the USSR. Fidel Castro, the long-time communist dictator of Cuba does not want to go along with Gorbachev's reforms. Consequently, the artist shows him and his country being cast away in a dinghy. This is a metaphor for the threatened economic cut off of Cuba by the Soviet Union.

This cartoon by Lambert Der of *The Greenville News* uses a map of central Europe. Even though it is a map, we can see the people in at least two of the countries. When the Berlin Wall came down and the borders were opened between East and West Germany, many many people fled into West Germany. Krentz, the leader of East Germany was interested in reunifying East and West Germany. In the ironic comment, we see a man standing next to him saying since everyone has left East Germany, you've already got reunification even if the borders haven't changed.

Charles Werner of the *Indianapolis Star* created this cartoon that shows people leaving a sinking ship. From the labels we see that the ship is communism and the people who are leaving are the Eastern Europeans: the Poles, Germans, and those from the Baltic States. The caption above the scene says that this is a case where it is not the rats who are leaving the ship. This is a reference to the notion that right before a ship sinks, all of the rats will leave it, often swarming down any ropes that overhang the ship. The suggestion here is that the people are leaving the sinking ship while the rats stay on board. The owl in the lower left corner confirms this. This is all a reference to the fact that many Eastern European countries are moving away from communist rule. The artist is in effect, calling the communist leaders rats.
This cartoon was created by Jim Lange of the *Daily Oklahoman*. The cut line above the picture gives us a clue as to the point that the artist is trying to make. The two visual elements in the drawing are the "golden arches" of Mcdonald's rising above the onion-domed Kremlin, the capital of the Soviet Union. The artist's point is that Soviet communism is being superseded by American capitalism. Note that the "golden arches" are in fact two sets of hammers and sickles, the symbol of the Soviet Union. Another humorous Russification of the Moscow Mcdonald's is the off-view customer asking for a McBorsch—borsch is a Russian beet dish that is not really offered at Mcdonald's.

This cartoon by Jack McLeod of the *Army Times* contains statues of communism's founder Karl Marx and the Soviet Revolution leader Lenin. However, they seem to be reduced to their underwear. Marx comments to Lenin that they seem to becoming unraveled. This comment can have two possible meanings. The first and more probable, is that the Soviet Empire is coming apart at the seams, in other words, the countries of Eastern Europe and the Soviet Union are trying to leave. The second possible meaning is that this is a reference to the story of the emperors new clothes. Like the fabled emperor, Lenin and Marx have lost the illusion that Communism is a viable economic or governmental style.

This cartoon by Jeff Koteba of the *Omaha World Herald* is rather simple and elegant. There is merely a dead dinosaur lying on its side with its tail disappearing into the background. We know that the dinosaur represents communism because of the hammer and sickle emblem on its side. Its tail forms the Berlin Wall. The indication is that the Berlin Wall was nothing more than part of an extinct organism; something who's time has long passed.

In this cartoon by Jack Jurden of the *News-Journal Company of Delaware*, we see that Solidarity, in the form of a surgeon, is going to try to fix the ills of Poland. The biggest problem as portrayed in the cartoon is that the patient's feet are on backwards. The indication is that the communist system has been taking Poland backwards. This cartoon reflects the doubts that many people had as to whether Solidarity could fix the problems of the Polish economy, problems ascribed to the communist system.

This cartoon by Art Herrikson of the *Des Plaines Daily Herald* recounts the nursery rhyme tragedy of Humpty Dumpty, who, once he had
fallen, could not be put back together again by all the king's horses and all the king's men. In this instance though, fragile Humpty represents the Communist police state. The artist's indication is that once communism falls, it will never again be put back together.

This cartoon by Charles Daniel of the Knoxville Journal recalls to mind the adage that a leopard cannot change his spots, which means that one cannot change his essential character. However, we see here that a leopard is doing just that, or at least he is taking off his spots by using "Dr. Gorby's Spot Remover". The spots that are being removed are communist hammers and sickles. The indication is that Gorbachev is attempting the improbable through his reform movement, and is having some success.

This last cartoon is by Douglas Regalia of the Contra Costa Sun. simply states that Democracy is triumphing over communism. Communism, represented by the Berlin Wall, is about to be demolished by Democracy in the form of a steam shovel. This was drawn at a time when the Berlin Wall was being torn down by citizens in the street.
Appendix E

Script of Parse Analysis Treatment
Appendix E

Script of Parse Analysis Treatment

Lech Walesa as Peter Pan by Mark Cullum

Full Cartoon
In the story of Peter Pan, a magical boy who never grew-up came and took children on an adventure to Never-never land. It was an English children’s story that has been made into popular stage productions, television movies and cinematic films. This cartoon by Mark Cullum of the Birmingham News retains the English setting.

Let’s start our examination of this cartoon by breaking it up into some component parts. We’ll start by looking at Peter.

Peter/Walesa
In this cartoon, Peter represents Lech Walesa. Walesa is the leader of the Solidarity trade union that rose in opposition to the then-communist government of Poland. There is a humorous aspect of drawing Walesa as Peter Pan—Peter was always a very slight boy, whereas Walesa is a rather plump, mustachioed, middle-aged man—not exactly the Peter Pan type. We see Walesa in much the same pose as Peter, his arm thrust forward, wearing a tunic and tights, with a knife stuck in his belt.

P/W/Children
The children appear much as they did in the animated version of the movie—only from the label we can see that they represent the Polish people. In the story of Peter Pan, the children had to first really believe in Peter and then think of something wonderful before they could fly. As we see, they are flying.

Full Cartoon
With the addition of the background, we can see that the children and Peter are flying out of an upper window of a house; a house much the same as the one in the story. Because of the skyline in the background, we can see that the setting is London. The clock tower is Big Ben, a major London landmark. Far below them we can see the Soviet bear. The bear is the symbol of Russia and the Soviet Union, much the same as the eagle is the symbol of the United States. However, the bear is chained to his kennel like a dog. He is powerless to stop what is happening far above him.
Explanation
For many in the East and West, the ability of Lech Walesa and the Solidarity movement to pull Poland away from communism was much like a fairy tale—something wonderful but, nevertheless hard to believe that it could really happen, *even as it was happening*. The bear at the bottom of the picture reflects the Soviet lack of ability or interest in doing anything about the disintegration of its empire.
Tearing down the wall, by Jack Higgins

Full Cartoon
This cartoon by Jack Higgins of the Chicago Sun-Times, reflects the images that were shown on television of people chipping away at the Berlin Wall with hammers and chisels. Let’s look at a few of the elements of this cartoon in isolation.

Wall
The Berlin Wall has long been a symbol for the iron curtain. It is the high wall which physically divided East or communist Berlin from the Western democratic part of Berlin. In 1989, it fell. To be more precise, it was knocked down by East and West Berliners. At the time, the media were full of photographs of people tearing down this symbol of communism.

Wall/Countries
As it is portrayed here, the wall represents more than just bricks and mortar, it represents all of those East European countries who want to be free from communism—countries such as East Germany, Poland, Czechoslovakia, Hungary, and Rumania, and the Baltic republics of Lithuania, Latvia, and Estonia.

Full Cartoon
With the addition of the people and the background, we can see just what is happening to the wall. It is being torn down, country by country. At this point, when we see it is countries that are coming down, we can realize that it is the entire communist empire that is coming apart. Note that the first two countries that are being chipped away, East Germany and Poland, are the two countries that experienced the first and strongest freedom movements among these states.

Note in this cartoon that it is very dark out and the people look almost like thieves. This can have a couple of possible meanings. First, when all of this wall demolition started, it was at night, and the pictures Americans saw showed the Berliners against the night sky, much as they appear here. Secondly, some might argue, like thieves in the night, freedom is going to sneak into the Soviet Empire and take away its possessions. The very dark and heavy lines and the shading used by the artist indicate the gravity of what is happening in the cartoon.
The Communist Superpowers by Joel Pett

Full Cartoon
This cartoon is by Joel Pett of the Lexington Herald-Leader. The artist uses three main elements to make a comparison between the two communist superpowers: they are the hammer and sickle, the symbol of soviet communism, and the leaders of the USSR and the People's Republic of China. Let's start our analysis by looking at just one of the two leaders.

Gorbachev
This is the President of the Soviet Union, Mikhail Gorbachev. The way we tell it is Gorbachev is through his receding hairline and by the birth-mark on his forehead. The birth-mark is a discoloration of skin that editorial cartoonists often use to identify Gorbachev.

Gorby/Deng
This is Deng Chou Peng, the leader of the People's Republic of China—also known as Red China. We can see be the general shape of his face that it is Deng. While there could be other distinguishing characteristic employed to identify Deng, such as his ever present cigarette or his short stature they weren't used here. However, When the next element of the cartoon is added in, we can see that it must be Deng.

G/D/sickle
The two leaders are holding separate parts of the hammer and sickle. Deng, on the right, is holding the hammer which is inscribed with the word "repression". It is also dripping with blood. This is a comment on what had just happened in China. When a large number of students and others started protesting for democracy out on the main square of the capitol city, Deng and his men sent in armed troops who massacred them. Pett is condemning this here.

On the left, Gorbachev is holding the sickle which has a flashlight in the handle. It is inscribed with the word openness. The word for openness in Russian is "Glastnost". This is the name of part of Gorbachev's reform movement in the Soviet Union. In the cartoon, Pett shows light coming from the flashlight. Light is often used as a symbol for freedom and truth. The artist is saying that what Gorbachev is doing is good.

Full Cartoon
So, in this cartoon, we have a comparison between the two major communist countries. On the one hand, Pett says that what is happening in the Soviet
Union is good, but what is happening in the People's Republic of China is bad.
What took you so long? by Mark Cullum

Full Cartoon
This cartoon by Birmingham News cartoonist Mark Cullum uses humor to make his point about the recent overthrow of communism in Eastern Europe. Let's look at some of the separate parts of the cartoon.

Ship
The ship we see is an old sailing ship.

Ship/Explorers
With the addition of these people, we can tell that the ship is old indeed. The people look like Columbus and his men. We can tell by the pantaloons, the mush hats, the pike the man is carrying, and the flag. This part of the flag looks like an old European emblem, perhaps the kind that Columbus carried. However, because of the label, we can see that it really represents the Eastern Europeans.

So what are these Eastern European explorers doing?

All sans label
With the addition of the rest of the drawing, we can see that it looks as if they are discovering America very different from the one Columbus found. The scene on the left with the man, the yard and the house, looks pretty typical of any you might see in the USA today. He is a middle class home-owner.

Full cartoon
Not just America, but the land of capitalism—as we can see from the label. The humor of the cartoon comes in the juxtaposition of the two major parts: the American and the European. The comment that Cullum, the artist, is making is that the freedom the Europeans are just discovering and achieving are things that we as Americans have had for a very long time.
A case where it's not the rats... by Charles Werner

Full Cartoon
This cartoon is by Charles Werner of the Indiana Star. It is about the downfall of communism in Eastern Europe. Let's look at some of the different elements of the cartoon.

Ship
This ship is sinking. The scene is reminiscent of other ships going down. Only, this time, it is not just a ship. From the label on the stern, we can see that it represents communism. The implication is that communism is like a sinking ship, it will go under very soon. But, what else does the artist have to say?

Ship/people
It looks like some of the people on the ship are getting off before it goes all the way under. But these aren't just people. If we look at the labels, we see that they represent countries: the ones we can actually read are East Germany, Poland, and the Baltic states of Lithuania, Latvia, and Estonia. So now we have a better understanding of the cartoon—the Eastern Europeans are leaving communism before it goes down. Well, not only is he making that statement, but he also makes a humorous comment on it.

All sans owl
This caption reveals the artist's thoughts: "A case where it's not the rats leaving the ship!" To understand this, we must be familiar with some old nautical lore. There is a saying that rats will leave a ship right before it sinks. This is often the first sign of trouble on the ship. Evidently, this stems from the fact that rats on a ship live down in the bilges (at the very bottom)—presumably, they will be the first to know if the ship has sprung a leak.

If you have ever seen rats leaving a ship, they will swarm down whatever over hangs the side. Perhaps this is why Werner has the people leaving by way of a mooring cable. Not the way we usually leave a ship. But that's not the end of the cartoon.

Full cartoon
Werner, like many other editorial cartoonists, uses a small figure in the corner of the cartoon to make further comment. Often these extra little statements will reveal the artist's true intentions. The owl's comment is, "the rats can have it!" From the cartoon and the caption we can see that the people are leaving the ship of communism. Werner's owl's comment leads
us to think that those who stay with communism are rats.
McBorscht by Jim Lange

Full cartoon
This cartoon is by Jim Lange of the Daily Oklahoman. is about the opening of the first Mcdonald's in the Soviet Union. In the cartoon, Lange uses several symbols. Let's look at them one at a time.

St. Basil's
These roof-tops are the onion shaped domes of St. Basil's Cathedral at the gates of the Kremlin, the soviet capital. This is a major landmark in Moscow.

Basil/arches
Here we see the golden arches rising up above St. Basil's and the rest of Moscow. But these aren't just any Mcdonald's arches. On a second look, we can see that they are really two sets of hammers and sickles. The hammer and sickle is the symbol of Soviet communism. This juxtaposition of the two symbols, capitalism's golden arches, and communism's hammer and sickle makes an ironic comment on McDonald's in Moscow.

Basil/arch/capt
The caption reveals that this is not just a joke. By telling us that this is a news item, Lange is saying that it is really true.

Full cartoon
The addition of the comment adds humor to the cartoon. A customer asks for a McBorscht. Borscht is a Russian dish made with beets. While they really don't have a McBorscht, it might be funny to think of such a thing.
German reunification by Lambert Der

Full cartoon
This is a cartoon by Lambert Der of the Greenville News. It is about the opening of the borders between East and West Germany. Let's look at some of the separate parts of the cartoon.

Map
Der starts out by using a map of central Europe. It is pretty accurate with good deal of detail given to the borders. As you can see, the map extends from France and Belgium in the west to Poland and Czechoslovakia in the east. Dominating the center of the map is West and East Germany.

Even looking at this map a couple of years after it was first published, we can see that because Germany is separated into east and west, the cartoon was created before the reunification. In fact, Der drew this when the Berlin Wall had started to come down and East Germans first had the right to travel anywhere they wanted to. This is a right they had not had since before World War II started in 1939.

All sans words
Here we see that there are people standing around on the map. In fact, they represent the people of the two Germanies. If we look carefully, we see that there are only two people who are left in East Germany. The rest have gone to West Germany.

Full cartoon
With the addition of the balloon, we can tell exactly what is going on in the cartoon. One of the people is Prime Minister Krenz, a reform-minded East German leader. His friend says to him, "Congratulations, Krenz. You've accomplished German reunification." The implication is that all of the East Germans emigrated to West Germany. While this did not happen, sometimes when there were thousands of East Germans going to the West each day, it seemed that it might.

What this cartoon does, is just comment on the fact that if given the opportunity, most of the East Germans would like to live in a non-communist country. By exaggerating the results of the fall of the Berlin Wall, Der interjects humor into the situation.
Appendix F

List of Judges' Responses
Appendix F

List of Judges' Responses

Pledge Cartoon

- Flag  U.S. patriotism – wrapping self in flag
- Bush  Bush – presidential candidate
- Dukakis  Dukakis – presidential candidate
- Pearl Harbor pin  Bush P.H. date gaff – us/japan trade policies
- VooDoo sign  B. position on Reagan economics
- Musical notes  chant sung in derision
- little Uncle Sam  child care issue – U.S. children
- Beanie  preppie pres. – ivy league – childishness
- temper tantrum  childishness

18 Total correct

Both candidates are infantile, involved in name-calling, and ignorant of real issues.

Campaign has degenerated (assuming it had ever been generated) into childish name calling with focus on superficial issues.

While Bush & Dukakis are acting childishly and playing pseudo-patriotic games, real national issues such as child-care are being ignored.

1988 elections – childish – name calling
Panda

- trap revolts in China --> reaction by PRC Gov’t – Tienamen square
- Panda China
- Democracy China’s democratic movement
- tear sad over democracy being bashed
- chain repression/bondage

10 Total correct

Crack-down by China authorities on the democracy movement in Peking.

Chinese democracy has run into a trap and has been knocked flat on its butt. The Chinese people are unwilling captives of a destructive political system, philosophy, & leadership.

China's democratic movement has been hurt & bound (confined, brought to heel, whatever) by those who perpetrated the massacre of the students demonstrating for democracy.

Democracy in China as a movement has been halted and bound and democratic supporters are grieving.
Tearing down the wall

- Berlin Wall
- men working
- hammer & sickle
- barbed wire

Communism – iron curtain
Germans destroying wall – unnamed freedom fighters
communists
destruction – taking down the wall – freedom
captivity

Total correct

The monolithic forces of communism (the shamer and sickle) are now broken into two tools that are being used to tear down the wall (Berlin) (iron curtain) and destroyed the barbed wire barriers – being done by the people (masses).

The wall/iron curtain is coming down and the communist party is coming apart and is involved in it.

The repudiation of communism in E. Europe.
US Trade Policy

- door                   Japan trade barriers
- battering ram          US trade trying to get into Japan
- Uncle Sam – man        US economic products
- sharp point            Pain – death – the self defeating policy

8 Total correct

The US is a weakling trying to tear down Japanese trade barriers. Foolishly, even the battering ram is being used ass-backwards to our own destruction. We are just not up to the task.

The US trade policy directed at getting us into the Japanese market is hurting us more than them (or will hurt us more than them).

Present trade policy towards Japan will end up hurting us more than them.

Our efforts to combat Japanese policies may end up harming us more than Japan.
Supreme Court

- mines destruction
- figures in boat
- jungle/swamp
- boat with patch
- leader w/ glasses
- left, right, left
- dark water

abortion law choices – pro-life – pro-choice –
morass of issues – difficult issue
court is on shaky ground
C. J. Rehnquist
indecision – political poles
muddy issues

14 Total correct

The Supreme Court is not in agreement on abortion. They are making their way. Slowly through the murky jungle waters filled with potential explosions from both pro- and anti-abortion forces.

It is important to the country that a moderate abortion stance is maintained between the two extremes, either of which could be catastrophic. Justices are extreme as individuals.

Supreme Court has to of through a "mine-field" on abortion question. If they go too far left or right it could cause major problems for the court and country.

The abortion issue is a difficult one and involves great controversy from various perspectives of the left and right politically. Whatever the S.Ct. decision, it could blow-up in their faces as to public opinion.
Peter Pan

- Peter Pan  Walesa – fantasy/not growing up
- kids      Poles – gaining freedoms
- Big Ben   England – London – free Europe
- Bear/Dog  Russia – communist leaders watching this
- Lech Walesa Polish presidential candidate
- Wendy    Polish People

12 Total correct

Walesa is leading the way for freedom in Poland for communist dictatorship.

Walesa is leading the way to freedom in Poland from a Communist dictatorship.

Walesa promises to take the Poles to "Neverland". Never grew-up and faced the real problems of democratization, freemarket, & independence.
Rain Forest

- globe  our environment - earth - world
- skull  death and destruction - death
- birds  homeless wildlife
- farmer  farmers who destroy forests - peasant
- forests, vegetation  tropical rain forests
- fire  destruction

6 Total correct

Planet is being killed by man’s destruction of the rainforests.

Damage to earth and wildlife for rainforest burning.

Continued destruction of rain forest will mean whole world will eventually die.

By burning rain forests in Brazil and other tropical areas, we are destroying natural animal habitats, but we are also bringing death and destruction to planet earth.
Appendix G

List of Cartoons Used in the Teaching Treatments
Appendix G

List of Cartoons Used in the Teaching Treatments

All titles have been created by the investigator and are descriptive. The page number refers to the cartoon's page in Brooks (1990).

Basset, Gene (1989). German giant, Atlanta Journal, p. 34.
Beattie, Bruce (1989). We're out of power, Daytona Beach News-Journal, p. 34.
VITA
J. Mark Hunter
1991

Office: 300 Memorial Hall
College of Education
VPI & SU 24061-0313
(703) 231-5587

Home: 202 E. Roanoke Street
Blacksburg, VA 24060
(703) 953-0455

PROFESSIONAL OBJECTIVE: Faculty position in Instructional Technology or Media Production and Design.

EDUCATION:


M.M.A. Media Arts, (1983) University of South Carolina, Columbia, South Carolina.


EXPERIENCE:

- Institute for the Study of Exceptionalities - Evaluation and grant development
- Instructor, Instructional Technology (media & computer literacy)
- Manager of Self Instruction Curriculum Lab, Col. of Education
- Head graduate assistant (manager) of two microcomputer labs, 1988-89.
- Assisted computer users with hardware/software problems.
- Maintained computers and served as the first line of repair.
- Designed and published brochures, fliers & presentation graphics using Macintosh SE & IBM PC.
- Technical Assistant, 1989-present, Special Education Evaluation Technical Assistance Center.

- Produced multi-image & video programs for Communications Center.
- Managed production crew for multi-image and video projects.
- Organized and maintained 75,000 item slide library.

Graduate Assistant. University of South Carolina, Columbia, South Carolina. 1983.
- Manager of undergraduate photography lab
- Assistant to department head.
EXPERIENCE: continued

*State Field Director.* Workman for Governor Campaign. Columbia, S.C.
  - Arranged press conferences on a state-wide basis.
  - Coordinated headquarters volunteer staff.
  - Assisted in media development (television & press).

PROFESSIONAL ORGANIZATIONS:

Association for Educational Communications & Technology
Association for Multi-Image International
Eastern Educational Research Association
International Visual Literacy Association
Phi Delta Kappa

PROGRAMMING LANGUAGES, SYSTEMS & SOFTWARE:

- Languages: Logo, BASIC, Pilot
- Systems: IBM Mainframe, IBM PC/XT, Apple II, Macintosh

HONORS:

- CASE (Committee for Advancement and Support of Education), national Bronze Medal awarded for multi-image production *Clemson University: the second century.*

PUBLICATIONS:


PRESENTATIONS:

PRESENTATIONS: continued


CONFERENCE PARTICIPATION:


Moderator, 1989 Eastern Educational Research Association

Moderator, 1990 Eastern Educational Research Association

COMMITTEES:


[Signature]