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THE EFFECT OF ALTERNATE INSTRUCTIONAL SEQUENCES ON STUDENT  
IMITATION OF MODEL ESSAY SUBJECTS

*University of Hawaii*

Ed.D. 1986

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THE EFFECT OF ALTERNATE INSTRUCTIONAL SEQUENCES  
ON STUDENT IMITATION OF MODEL ESSAY SUBJECTS

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE  
UNIVERSITY OF HAWAII IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF EDUCATION

IN CURRICULUM AND INSTRUCTION

DECEMBER 1986

By

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## ABSTRACT

The study focused on two types of imitation associated with the use of model essays in the teaching of freshman composition: the imitation of form (structural transfer) and the imitation of subject-matter (content reproduction). The theoretical framework for the investigation was the writing process, more specifically, planning in the pre-writing phase (pre-planning). The purpose of the study was to test the following hypothesis: (1) the presence of model-reading and (2) the order of model-reading and topic selection in the pre-writing phase will result in significantly different frequencies of content reproduction in the translation phase (in the actual writing of the essay) of the writing process.

The 143 subjects were community college students enrolled in six freshman composition classes. The classes were divided into three treatment groups: TopicFirst: (A) read directions for the assignment, (B) completed a Topic Selection Form, (C) read a model essay, (D) wrote an essay, and (E) turned in the essay. ModelFirst: steps B and C were reversed. NoModel: step C was omitted. The dependent variable was the presence of specific subject-matter from the model in the student's essay.

The among-groups chi-square was significant ( $p < .05$ ). The major contributor to the outcome was the difference between the ModelFirst and NoModel groups. Differences between the TopicFirst and ModelFirst groups and between the TopicFirst and NoModel groups were not significant. The results led to the conclusion that the most effective

way to avert content reproduction is to eliminate model-reading from the instructional sequence.

Chi-square test results of between-groups interactions, when viewed apart from the among-groups interaction, were sometimes contradictory. These extra-context results suggest that incorporating model-reading into the instructional sequence will not result in content reproduction if students select their essay topics before reading a model. Further studies focusing on specific two-group interactions need to be conducted, however, to determine the validity of this suggestion.

## CONTENTS

Abstract . . . . .	iii
List of Tables . . . . .	vii
List of Figures . . . . .	ix
List of Abbreviations and Labels . . . . .	x
I. Introduction . . . . .	1
A. Background of the Problem . . . . .	1
B. The Problem . . . . .	7
C. Purpose of the Study . . . . .	9
D. Overview of Methods and Procedures . . . . .	10
II. Review of Literature . . . . .	13
A. The Writing Process (WP) . . . . .	13
B. Imitation . . . . .	38
C. Studies on Structural Transfer. . . . .	45
D. Studies on Sequencing of WP Tasks . . . . .	51
III. Methods and Procedures . . . . .	53
A. Independent Variables . . . . .	53
B. Dependent Variable . . . . .	54
C. Hypotheses . . . . .	55
D. Subjects . . . . .	59
E. Experimental Tasks . . . . .	62
F. Data Analysis . . . . .	69
IV. Presentation and Analysis of Data . . . . .	80
V. Summary, Conclusions, and Implications . . . . .	102

Appendices . . . . . 108  
Works Cited . . . . . 149

## LIST OF TABLES

1	Three Groups by Six Classes . . . . .	75
2	Breakdown of Males and Females . . . . .	76
3	Chi-Square Scores for Male/Female Data . . . . .	76
4	Year Graduated from High School . . . . .	76
5	Chi-Square Scores for Year of Graduation . . . . .	77
6	High School from Which Student Graduated . . . . .	77
7	Chi-Square Scores for High School from Which the Student Graduated . . . . .	77
8	Students' First Language . . . . .	78
9	Chi-Square Scores for First Language . . . . .	78
10	Two-by-Three Matrix for Standard Chi-Square . . . . .	78
11	Two-by-Two Matrix for z-Calculation and Chi-Square with Yates' Correction . . . . .	79
12	Twelve Categories for SecondParty Choices in Student Essays . . . . .	79
13	ParentChoice by All Three Groups in Phase III: Essay Writing . . . . .	96
14	ParentChoice by ModelFirst and NoModel Groups in Phase III: Essay-Writing . . . . .	96
15	ParentChoice by ModelFirst and TopicFirst Groups in Phase III: Essay-Writing . . . . .	96
16	From the TSF: TopicFirst and ModelFirst ParentChoice/OtherChoice in Phase II . . . . .	97
17	ParentChoice by TopicFirst and NoModel Groups in Phase III: Essay-Writing . . . . .	97
18	Twelve Categories and Their Frequencies of Selection in Phase III: Essay Writing . . . . .	97
19	Chi-Square for Twelve Categories by Three Groups . . . . .	98
20	Use of Quoted Dialogue in Phase III: Essay Writing . . . . .	98

21	Use of Quoted Dialogue in ModelFirst and NoModel Groups . . . . .	99
22	Use of Quoted Dialogue in TopicFirst and NoModel Groups . . . . .	99
23	Use of Quoted Dialogue in ModelFirst and TopicFirst Groups . . . . .	99
24	All Three Groups: Difficulty Selecting Essay Subject? . . . . .	100
25	TopicFirst and ModelFirst: Difficulty Selecting Essay Subject? . . . . .	100
26	Model First and NoModel: Difficulty Selecting Essay Subject? . . . . .	100
27	TopicFirst and NoModel: Difficulty Selecting Essay Subject? . . . . .	101
28	All Three Groups: Experience Writing Similar Essay? . . . . .	101
29	TopicFirst and ModelFirst Groups: Model Essay Helpful? . . . . .	101

## LIST OF FIGURES

1	The Writing Process . . . . .	12
2	Problem Representations in Two Writing Stages . . . .	52
3	Imitation As Three Levels of Cognitive Activity . . .	52
4	TopicFirst Instructional Sequence . . . . .	74
5	ModelFirst Instructional Sequence . . . . .	74
6	NoModel Instructional Sequence . . . . .	74
7	Phases and Tasks for Each Group . . . . .	75
8	Group Variations in the 3 Phases . . . . .	75

## LIST OF ABBREVIATIONS AND LABELS

Acq	acquaintance
BoyGirlFriend	SecondParty choice of boyfriend or girlfriend; also BOY/GIRLFRIEND and boy-girl in appendix I
Closure1	first closure; coincides with discovery of SPR
Closure2	second closure; coincides with discovery of INPR
df	degrees of freedom
Dlg	in appendix G: QuoteDialogue: y = yes (present), n = no (not present)
Essay/TSF	in appendix G: SecondParty choice in essay (p = ParentChoice; see table 12)
Exp?	in appendix G: Experience writing similar essay? y = yes, n = no
EXPR	external problem representation
Gp	group: in appendix G, the groups are: m = ModelFirst, t = TopicFirst, n = NoModel
Grad	in appendix G: year of graduation from HS
HS	in appendix G: high school: u = United States, o = other
INPR	internal problem representation
Ins	instructor: j, r, l
Lang	in appendix G: student's first language: e = English, o = other
MJ	ModelFirst Group, instructor "J"
Mod?	in appendix G: Was model helpful? y = yes, n = no
ModelFirst	independent variable; model-reading before topic selection
MR	ModelFirst Group, instructor "R"
N	total number of students in study



n	a subset of N
NJ	NoModel Group, instructor "J"
NL	NoModel Group, instructor "L"
No.	in appendix G: last 4 digits of student's SS#
NoModel	independent variable; no model-reading in instructional sequence
ns	not statistically significant
OtherChoice	subject choice other than ParentChoice
Other11	grouped SecondParty choices
ParentChoice	selected subject is a parent
QuoteDialogue	passage(s) of quoted dialogue in essay
SecondParty	dependent variable; other person in dialogue
Sel?	in appendix G: Difficulty selecting topic? d = difficult, e = easy
SPR	stored problem representation
SS#	social security number
TJ	TopicFirst Group, instructor "J"
TopicFirst	independent variable; topic selection before model-reading
TR	TopicFirst Group, instructor "R"
TSF	topic selection form; in appendix G: SecondParty choice in TSF
workrel	work relationship
WP	writing process
2ndParty	SecondParty

## I. INTRODUCTION

### A. Background of the Problem

The current emphasis in the teaching of freshman composition is on means rather than ends. Instruction in expository writing no longer centers on the essay as a finished product. Instead, the focus is on the behavior, or process, that produces the essay. The term that has come to signify this change in perspective is the writing process (WP). Programs and strategies that take this new perspective are referred to as process-oriented. There is no single standard of the WP, and perhaps there is no place for such an absolute in the field of writing instruction, which one writer describes as "muddied by relativism" (Scardamalia and Bereiter 1979, 118). However, the Flower and Hayes conception of the WP has emerged as somewhat of a standard, and this is the version that has been adapted for use in this study. The WP is a complex system. It consists of not one, but three distinct, interdependent cognitive functions: planning, translating, and reviewing (see figure 1; Humes 1983).

The WP instructional theory is based on two assumptions: (1) the process is composed of three interrelated, interdependent functions: planning, translating, and reviewing; and (2) learning how to write means learning how to use all three functions to create a written composition. These assumptions have implications for the writing instructor, and perhaps the most important is the need to integrate all three functions into sequential classroom learning activities. For process-oriented instruction to be successful, the instructor must see to it that the student's essay is the end result of the three functions.

The student must use all three. The absence of any one would mean that the student is learning something other than the process of writing. For example, a student who skips planning and moves directly into translating and reviewing is writing, but he is not learning how to use the WP.

Presently, the problem for the instructor is a scarcity of effective means to implement the WP in the classroom. Although the theory is not new, development of ways to apply the theory has lagged (Burhans 1983, 639-56). Instructors using the WP with their students are learning that the most difficult function to teach is planning, or what rhetoric has traditionally referred to as invention. To fill the methodological void, instructors are turning to more traditional approaches. One of these standbys is the reading and imitation of model essays. Models have been found to be both effective and ineffective in the teaching of writing principles. The issue of relative effectiveness, however, is not the focus of this study. Instead, the focus is on the types of imitation that result from model-reading. More specifically, this study concentrated on content reproduction, or the copying of subject-matter from a model.

Content reproduction is an especially critical form of imitation since it undermines the planning function in the WP. This study addresses the problem of content reproduction from the perspective of the student writer and the process-oriented classroom instructor. It examines the relationship between (A) the use of model-reading to facilitate planning and (B) content reproduction, a form of imitation that allows the student to bypass planning.

Three levels of imitation were defined: (1) structural and content duplication, (2) content reproduction, and (3) structural transfer. Of the three, transfer requires the greatest amount of planning. It does not, however, require as much as approaches that are independent of models. In strictly discovery oriented approaches, the student generates subject-matter as well as form. In approaches employing structural imitation, the student invents only subject-matter. Although the approach based solely on discovery requires a higher level of cognitive processing, it is not necessarily the best suited to the classroom. The problem is the difficulty inherent in teaching complex procedures without the aid of concrete examples. Tamplin captures the essence of the difficulty in his discussion of levels of invention:

Most of us would call it [writing] a process of creation . . . . There are two types of creation . . . creation from nothing, conceived of by Jews and Christians as proper to god; and creation from something, which is probably nearer to the thing we expect from the writer. (1976, 808)

Writing is more often based on structural imitation ("creation from something") than on pure invention ("creation from nothing"). Tamplin's point is that the process of discovering both form and content is much more difficult (a task "proper to god") than the modified process of discovering only content.

Even with instruction in invention procedures, discovery represents a formidable task for the student writer. Rubin found that the invention of structure was especially difficult for his students. They were able to come up with original ideas, but they had difficulty discovering effective structures to express those ideas. Without

concrete examples of effective patterns of composition, he found that "students just repeat the problem [of poor structure]. They seem to have no specific plan of attack, no strategies they remember using before that would be helpful in their present situation" (1983, 377).

To provide students with a "specific plan of attack" and "strategies," instructors have turned to structural imitation as an approach, to model essays as a resource. Flower and Hayes believe that literature furnishes a writer with options for planning the framework of his/her essay: "a well-read person simply has a much larger and richer set of images of what a text can look like" (1980, 28).

Singly or as selections in anthologies, model essays are widely used by instructors of freshman composition. Models are usually the products of professional authors, but they are sometimes written by teachers and students. Whatever the source, though, they share a common role: they serve as examples of writing principles or structures (1) to be read and analyzed and (2) to be imitated. Their purpose, in short, is to bring about structural imitation, or transfer. Typically, in an expository writing assignment that involves the reading of a model as a lead-in exercise, the student is asked to analyze an author's use of certain techniques and to apply them to his own composition. The analysis takes any number of forms: class or peer-group discussions, brief paper-and-pencil responses to a set of questions, or guide questions to ponder during silent reading. Following the reading and analysis, the student writes an essay. In his own composition, he is asked to imitate, or apply, the techniques he has learned in the model.

Instructors who use models to achieve structural transfer believe that there is a positive relationship between reading and writing, that skills acquired in one will transfer to the other. This belief is based on either of two assumptions: (1) that reading and writing are similar cognitive activities, or (2) that reading and writing are different, but complementary, cognitive activities. In either case, the expected effect of reading on writing is structural transfer. That is, the principle studied in the model will be carried over and applied to the student's own essay.

Prior to 1970, this transfer assumption was seldom tested. The belief in the effectiveness of model-reading to teach principles of expository writing through structural imitation rested on informal observations and intuition. Stewart, in 1969, questioned the assumption. He raised two questions that he regarded as "crucial but unresearched." The questions are similar, but their emphases are different: the first focuses on reading, and the second, on writing. The question on writing is:

"How is writing affected by extensive study and imitation or parody of models?" (42)

Today, the question is no longer unresearched. A number of studies have been conducted. The results of these studies, however, have been inconclusive. The effect of model-reading on writing remains a crucial question.

To find answers, Stewart surveyed freshman composition programs around the country. He examined data provided by directors of programs.

The data included course descriptions and reviews of anthologies: titles, length of use, and directors' "conceptions of these anthologies' principal functions"; they also included statistical figures from the publishers of anthologies (43). Stewart apparently reasoned that a first step toward answering the questions was to learn more about the purposes behind anthologies and their use.

What Stewart discovered was hardly surprising. The rationale most frequently given was: (1) "anthologies offer prose models for imitation. Usually, the models illustrate rhetorical modes, methods of development, etc.," and (2) anthologies "can be used to teach critical reading and thinking which will enable a student to write critically and well." (Scott, reporting on a study conducted a decade later, mentions these as well as other uses, for example, as "stimulus" to provoke "the student's own response" and as "readings" that "can provide the writer's subject matter" [6-7].) The basic assumption is that skill in the analysis of exemplary essays is somehow directly related to writing ability. That is, "analysis and imitation of prose models is the way students learn to write" (47-49).

In the decade and a half since Stewart's survey, a handful (Stotsky 1983, 627) of studies have tested the assumption that the analysis and imitation of model essays will improve writing skills. The results of these studies, on the whole, have been split: while some researchers have observed successful transfer of structure from models to student essays, others have not. Despite the lack of agreement, the results indicate that models can be used to teach specific writing

skills. Under certain conditions, the reading/analysis of model essays does lead to structural transfer.

#### B. The Problem

These studies, however, provide only partial answers to Stewart's question. They report on the success or failure of structural transfer, but they ignore other levels of imitation that could result from model-reading. More specifically, they fail to address the critical question of content reproduction.

Studies on the relationship between model-reading and writing must consider more than just structural imitation; they must also consider what Langer refers to as "topic knowledge" (1984, 28). Models are a source of information about content as well as form. Stade observes that models "are not examples of form without content" (1969, 145). When an instructor asks a student to imitate the structural principles in a model, he is also creating an opportunity for the student to reproduce the subject-matter in the model. This opportunity presents a problem: when a student reads a model, there is the possibility that he will, either consciously or subconsciously, copy the ideas in the model (Paul 1974, 205-6; Corbett 1971b, 249; Scott, 6). Stade observed that

A student who has been stimulated (I may exaggerate here) by Bacon on dissimulation, or by Milton on censorship, or by De Quincey on murder, or by Mary McCarthy on Vassar, wants to talk about dissimulation, censorship, murder, or Vassar, not about Bacon's false antithesis, Milton's inspired use of the non sequitor [SIC], DeQuincey's polytropics, or McCarthy's epitropes. (145)



In the student's essay, there is the chance that substance as well as form will be echoed. In using models to teach a specific WP skill, Paull and Kligerman found that "in many imperceptible ways, they [students] were allowing interpretations of experience embedded in the language of others to order their own experience" (1972, 652). When the "interpretations of experiences . . . of others" find their way into the student's essay, the result is content reproduction.

Studies on the effect of model-reading on student writing provide only partial answers to the question raised by Stewart: "'How is writing affected by extensive study and imitation or parody of models?'" They examine specific approaches to achieving structural imitation, reporting on whether or not transfer of form has been successful, but they fail to examine the possibility of content reproduction, which involves the imitation of subject-matter as well as form. The question remains: When model-reading is used to teach a student specific structural principles, will he imitate the form, the content, or both the content and the form? If he imitates the form only, then the approach succeeds; if he imitates the content or both the content and the form, then the approach fails.

For the student who imitates content as well as form when only structural transfer is desired, decisions on what to write and how to write it are nearly simultaneous. Planning is unnecessary since he has no need to discover content and form. He simply adopts the content of the model. Furthermore, since imitation of the structure of the model has been built into the writing assignment, the task of discovering a suitable framework for his essay is also minimized. The student has

little or no need to plan since the integration of content and form has already been accomplished in the model. Freedom from the need to plan, in essence, obviates the need for the WP. The student, thus, from the standpoint of process-oriented instructional theory, does not learn how to write. He fails to achieve the purpose of writing instruction, which is to learn how to process his ideas via planning, translation, and review.

### C. Purpose of the Study

The goal of this study was to learn more about the relationship between the instructional use of model-reading and a form of imitation that is referred to as reproduction. The question that guided the research was: When model-reading is used in process-oriented writing instruction (ostensibly to attain structural transfer), is the sequence of learning tasks that make up the WP related to the frequency of content reproduction?

More specifically, the purposes of this study were (1) to test three alternate instructional sequences of model-reading and topic selection, (2) to compare the frequencies of a specific topic choice that emerged from the different sequences, (3) to analyze the results of these comparisons to determine whether or not content reproduction had occurred, and (4) to determine how that content reproduction was related to the alternate instructional sequences.

#### D. Overview of Methods and Procedures

The general topic for the in-class expository writing assignment was a dialogue that the student, the principal party in the dialogue, found particularly meaningful. The dependent variable was the other party, or SecondParty, in the dialogue that the student described in his essay. The SecondParty in the model essay was the writer's father. The study tested the assumption that sequence of instructional activities will affect the frequency at which students imitate the SecondParty in the model. The independent variables consisted of three instructional sequences: (1) ModelFirst, in which the student read a model before completing a Topic Selection Form (TSF) and writing an essay; (2) TopicFirst, in which the student completed a TSF before reading a model and writing an essay; and (3) NoModel, in which the student completed a TSF and wrote an essay without reading a model.

SecondParty choices in the students' essays were categorized as either ParentChoices or OtherChoices. The three groups were then compared on the basis of these two categories via two chi-square techniques. A standard chi-square was used to assess overall, or among-groups, significance. A significant overall chi-square was an indication that content reproduction and instructional sequence were related. If the among-groups difference proved to be significant, then a second chi-square that incorporated a z-calculation was used to assess between-groups significance. The between-groups chi-square measured the contribution of each treatment variable to the overall significance. In the between-groups comparisons, the ParentChoices in the NoModel group served as a baseline for the frequency that could be expected when

models were not part of the task environment. When the number of ParentChoices in the two model-assisted groups, ModelFirst and TopicFirst, differed significantly from the baseline, the ParentChoices were interpreted as probable instances of content reproduction.

The experimental methods and procedures were designed to test both primary and secondary hypotheses. The primary hypotheses were: (1) the three WP sequences will result in significantly different frequencies of ParentChoice in the written essays, and (2) the difference will be attributable to the alternate sequences of model-reading and topic selection. The other primary hypotheses were: (3) there will be no significant difference in frequency of ParentChoice between the TopicFirst and NoModel groups, and (4) there will be a significant difference between the ModelFirst and NoModel groups in frequency of ParentChoice.

The secondary hypotheses were designed to test the experimental controls and to provide relevant, additional information: (5) the among-groups chi-square for the three groups across all twelve SecondParty categories will not be significantly different; (6) the among-groups chi-square for frequency of QuoteDialogue, a measure of structural transfer, will be significantly different; and (7) the difference will be attributable to the presence or absence of model-reading in the WP.



## II. REVIEW OF LITERATURE

### A. The Writing Process (WP)

#### The Writer and the Task Environment

Together, the three functions of the writing process (WP)—planning, translating, reviewing—offer the student a single, dynamic problem-solving system. To fulfill its purpose, however, the system first requires that the writer have a problem to solve. For Hayes and Flower, a problem is represented by a task environment. The state or the condition of the task environment, as it is perceived by the writer, is of vital importance. For the WP to be effective, the writer must assimilate the problem. A successful assimilation is characterized by a tension, or "'cognitive strain,'" in the writer (1980, 13; Flower and Hayes 1980, 21-22; Clifford 1983, 100). This tension is further described as "'felt difficulties'" and as a "sense of conflict" (Newkirk 1982, 86). The tension within the writer is caused by a gap between what the writer knows (or what he retrieves from long-term memory) and what the task environment requires. The wider the gap, the greater the tension. The WP provides the writer with a means to close the gap. Through planning, translating, and reviewing, he closes the gap and reduces the tension.

The major factors in the WP are the writer and the task environment. At the outset, the task environment is external to the writer. He is presented with a situation that calls for problem-solving behavior—in this case, writing. Larson defines "problem-solving" as "the process by which one moves from identifying the need to accomplish a particular task (and discovery that the task is difficult), to finding

a satisfactory means for accomplishing that task" (1972, 629). In the classroom setting, the task environment is traditionally thought of as a writing assignment: a statement of what the student is to accomplish with an essay, report, etc. The task environment is, though, much more; it includes all the sources of input that affect the writer's perception of what his essay has to do. "Writing," says Hairston, "cannot be separated from its context" (1982, 84; Rose 1981, 65). Hilgers refers to the context, or task environment, as the "'writing stimulus,'" and he defines it as "the particular configuration of words, sounds, pictures—whatever, including directives—to which the subject in an experiment [i.e., the writer] responds in performing the writing task" (1982, 382).

The student's first act in the WP is to interpret and to assimilate the writing task as a problem. Moore calls this the "problem-formulation stage" (1985, 23). It is not enough that he discovers a problem; he must, as Larson says, "discover . . . a problem that matters to him" (1968a, 130). Gere locates the *raison d'être* for the WP in the writer. A writer must have what she calls a "communication intention" (1980, 45; Sommers 1979, 48). The intention springs from the writer; it is the impulse, the primary motivation for putting words on paper; it is the message or perception that is personally and deeply relevant to the writer (Sternglass 1985, 10; McCarthy et al 1985, 465); it is "an arrangement that will fit his subject to him and him to his subject" (Rohman 1965, 107). The connection between the writer and the task environment (Flower and Hayes 1980, 22-25), or what Rohman calls the "personal context" and the "subject context," is vital. Planning, which is the heart of the WP,

involves the joining of the two; it is the "stage in the writing process when a person assimilates his 'subject' to himself" (106, 108).

The assimilated task environment can take two possible forms for the writer: it either is a problem, or it is not a problem. Problem has a special meaning within the context of the WP. It refers to the state of the task as it resides in the writer. Flower and Hayes say that writers will "only solve the problems they give themselves." For example, "even though a teacher gives 20 students the same assignment, the writers themselves create the problem they solve" (1980, 23). In other words, the task environment is not a problem until it is interpreted as such by the student. If he does not consider it a problem, he will have no reason to solve it.

The problem, using the student as a point of reference, takes three possible forms (see figure 2). In the pre-writing stage, which lasts from the time he encounters the task environment to the moment he actually begins writing, the problem resides in memory. In this state, it is either (1) a stored problem representation (SPR) or (2) an internal problem representation (INPR). The main distinction between the two is that the SPR marks the start while the INPR signals the end of planning in the pre-writing phase. The two are further distinguished by memory location: the INPR is in short-term memory while the SPR is in long-term memory. "The first [short-term] holds actual phonetic, lexical, and syntactic forms; the second [long-term] stores meaning" (Doherty 1982, 187). Once the INPR is translated into written symbols, it becomes (3) an external problem representation (EXPR).



Scardamalia and Bereiter view planning and the outcomes of planning in a slightly different light. They distinguish between "macroplanning" and "microplanning." The purpose of macroplanning is to produce "outlines and guiding concepts"; it is similar to the planning function that results in an INPR. The purpose of microplanning is to produce such things as "well-formed clauses"; it is comparable to the translation function in the WP. Scardamalia and Bereiter's counterpart to recursion in the WP are the "'integrative, middle-range techniques.'" These are the cognitive activities that synthesize thinking (macroplanning) and writing (microplanning) (118-19).

Memory Search: Stored Problem Representation (SPR)

In response to a given task environment, the writer immediately searches his memory for an appropriate SPR. The notion of SPRs and their retrieval from long-term memory is not new to rhetoric. For Plato and St. Augustine, SPRs were simply ideas in memory, and invention was the writer's search of his memory for those ideas. In discussing St. Augustine's rhetoric, Rosenfield describes "memory as . . . space, an information retrieval system replete with . . . loci" (1971, 69-70).

The actual memory search is not accessible to direct observation. Descriptions of what occurs in the writer's mind are therefore inexact. Perl, for example, offers a figurative interpretation of the search:

When writers are given a topic, the topic itself evokes a felt sense in them. This topic calls forth images, words, ideas, and vague fuzzy feelings . . . . (1980, 364-5)

In place of direct measures, researchers monitor a number of observable behaviors that appear to be associated with memory search. These outward manifestations provide indirect measures of the hidden, inner action.

One of these observable indicators is an uttered or scribbled word (or words). Hayes and Flower describe the search as generative and the outcome as "a note." The purpose of the search is "to retrieve information relevant to the writing task from long-term memory." They say,

We assume that this process derives its first memory probe from information about the topic and the audience presented in the task environment . . . . When an item is retrieved, the GENERATING process may produce a note. Characteristically, these notes are single words or sentence fragments, although they may sometimes be complete sentences. (1980, 13-14)

The concept of a mental note is found in other accounts of the memory search. Perl calls it a "key word or item" (364-5). Elbow distinguishes between words that have profound associative powers for a writer and words that are just words:

Everyone does have a "word hoard": a collection of words that are connected to his strong and primary experiences in the world—as opposed to words which . . . are only connected to other words. (1968, 120)

For Hirsch, these key words are "'semantic tags,'" or labels for concepts or propositions (qtd. in Scardamalia and Bereiter, 116).

SPRs are not always a word or words. For Flower and Hayes, they are often a "rich body of inarticulate information" (1980, 25). Perl

describes these as "what is already there [in memory], inchoately"

(367). Gendlin calls it "felt sense," and he describes it as

"the soft underbelly of thought . . . a kind of bodily awareness that . . . can be used as a tool . . . a bodily awareness that encompasses everything you feel and know about a given subject at a given time. . . . It is felt in the body, yet it has meanings. It is body and mind before they are split apart." (qtd. in Perl, 365)

Peterson suggests that SPRs are often metaphors, and that in the pre-writing stages of the WP invention may be a function of "the generative possibilities of metaphor" (1985, 429). Hayes and Flower say,

We assume that material in memory is stored as propositions but not necessarily as language. By a proposition, we understand a structure . . . where concepts, relationships, and attributes are memory structures, perhaps complex networks or images, for which the writer may or may not have names. (1980, 15)

Flower and Hayes think that "much of the information people have about rhetorical problems exists in the form of" SPRs. In their most complete state, SPRs are a "spectrum . . . [, a] network of ideas already formed." In this state, an SPR is the equivalent of an INPR. As such, Flower and Hayes observed that the SPR can serve as a "pocket of stored plans . . . . once he [the student] set up this familiar format as a goal, he saw what to do with a whole body of previously unorganized ideas" (1980, 25, 28-29). It is an instant solution to the problem posed in the task environment. All that is left for the student to do is translation and review; little or no planning is necessary.

Planning: The New Invention

The discovery of an SPR signals the end of the memory search. At this point, the writer is ready to move in either of two directions:

(1) toward planning (INPR) and the rest of the WP

OR

(2) toward translating (EXPR), bypassing much of the WP, especially planning.

The direction depends on the state of the SPR. The less complete, the more planning is necessary; the more complete, the less planning is necessary. In the case of an SPR that is fully formed, translation can begin immediately with minimal or no planning (De Beaugrande 1979, 267).

In the case of an SPR that is only partially formed, planning is necessary. Planning is the forming of "an internal representation of the knowledge that will be used in writing." This internal problem representation, or INPR, is "abstract." It consists of "two major units": the "rhetorical situation . . . [and] the set of goals the writer himself creates" (Flower and Hayes 1980, 24-5). Again, the focus is on the writer. Hayes and Flower view planning as a synthesizing of (A) the writer's memory data with (B) the evaluation criteria for the written essay set forth in the task environment. The synthesis is complete when the writer "identifies [with] and stores . . . [the] criteria for later use in" reviewing the written essay (1980, 15). The set of criteria, stored as a new whole in memory, becomes the writer's INPR, and it is this problem representation that guides the translation function.

Instruction in the WP focuses on planning skills; learning how to use the WP effectively means, for the most part, learning how to discover both subject matter (Howell 1975, 151) and form. Within the context of planning, the term discovery is used to refer to the dynamic mental activity that helps a writer decide what to say and how best to say it. Planning and discovery are nearly synonymous and are often used interchangeably.

Planning, or discovery, is to the WP what invention is to rhetoric (Hughes 1965, 157). "A process orientation to composition," says Whately,

emphasizing the acts a writer must perform, rather than merely analyzing and evaluating the results of those acts, must acknowledge the writer's need to invent, to discover what to write about. (1984, 3)

In his discussion of Aristotle's rhetoric, Larson says that "the first step in teaching rhetoric was to make the student aware of possible techniques for invention" (1968b, 6). He says, however, that the meaning of invention has changed over the years:

. . . for the classical rhetoricians "invention" is one step in what Aristotle called "finding the available means of persuasion in a given case," while for present-day writers of textbooks invention is finding something--anything--to say about any chosen subject. (1968a, 126)

To distinguish the current from the classical and, at the same time, to invest the current meaning of invention with a measure of the dynamic qualities of the classical, Larson uses the words "explore" and "discover" in place of "invent," and he suggests that

What is needed for the teaching of invention today . . . is a plan that will help the student explore his experiences to discover when it is important to speak out, and that will help him speak out effectively on those occasions. (1968a, 127)

Others also use the term discovery in place of invention. Flower and Hayes refer to discovery as the "writer's creative process," and they say it has a "broad meaning," ranging from "classical invention to modern heuristics" (1980, 21-22). Discovery is similar to invention, and its role in the WP is as dominant as the role of invention in rhetoric (Gere, 44; Flower and Hayes 1981, 386). McKeon describes rhetoric as a "productive architectonic art." Its purpose is to invent both content and form: it "produces subject-matters and organizes them in relation to each other and to the problems to be solved" (1971, 48). "Central to the composing process," says Winterowd, "is what rhetoric traditionally has called 'invention,' the means whereby the writer discovers subject matter" (1973, 702).

Discovery and invention are dynamic cognitive activities. Flower and Hayes view discovery as a "problem-solving . . . process," and the "most crucial part" of the process is the "act of finding or defining the problem to be 'solved'" (1980, 21-22). Rohman equates invention with "thinking," and he says that it

brings forth and develops ideas, plans, designs, not merely the entrance of an idea into one's mind . . . [it is the act of] conceiving [,] . . . essentially the imposition of pattern upon experience. (106)

Invention generates "experience" as well as "pattern," content as well as form (Howell 1975, 151; Corbett 1971a, 171). In discussing

invention, Winterowd refers to "topics." Topics are heuristic procedures, or "devices for problem-solving." They are, in a very fundamental sense, general, internalized discovery procedures that are systematic and somewhat automatic (707-8). Topics differ from planning in that, in their use, a sharp distinction is not made between the SPR, or what is already in memory, and the INPR, which is the invented plan. The purpose of topics is "to discover things to say about . . . [a] subject." Winterowd, however, makes a distinction between "form-oriented" and "content-oriented" topics (702-3). This distinction is critical in that it recognizes the dual purpose of invention: (A) to discover content, or subject-matter, and (B) to discover organizational structure, or form.

The other two functions in the WP are translation and review. Since the focus of this study is on planning, explanations and treatments of these two functions are brief. (Humes [1983] provides a compact, comprehensive overview of the WP and its major functions.) Translation is the forming of an external problem representation, or EXPR. Its purpose is "to take material from memory under the guidance of the writing plan and to transform it into acceptable written English sentences" (Hayes and Flower 1980, 15). It is "the process of putting ideas into visible language." Reviewing, the final function, is actually composed of two subfunctions: editing and reviewing. Hayes and Flower consider them "two distinct modes of behavior": editing "is triggered automatically" whereas reviewing is a more "systematic examination and improvement of the text" (1980, 18). For the purposes of this study, however, both subfunctions are subsumed under reviewing.

The reviewing function acts as the change agent in the WP. Planning as well as translating are open to review: "written as well as unwritten thoughts or statements" are subject to evaluation and revision (Flower and Hayes 1981, 369-75).

### Closure1 and Closure2: Critical Junctures

Before the start of translation, closure occurs twice. Once (Closure1) after location of the SPR, and a second time (Closure2) after completion of the INPR (see figure 1). Each time, the writer makes important decisions about what he will write and/or how he will write it. Closure1 occurs at the end of the memory search in the pre-writing stage. It means that either of two SPRs have been located in memory:

(1) a complete SPR that satisfies the criteria in the task environment,

OR

(2) a partial SPR that "feels right" to the writer.

Moore distinguishes between "discovered problem" and "presented problem" (242). The former is similar to an incomplete SPR and the latter, to a complete SPR; that is, the "presented problem" can be "solved by recall or mechanical thinking" and does not require invention or discovery skills. The planning that results from each of the two types of SPR differs critically. For the first, planning is, for all practical purposes, unnecessary and can be bypassed; for the second, planning is crucial since it is only out of effective planning that a satisfactory INPR will emerge.



Closure2 coincides with the completion of the INPR. It occurs at the point where the writer is ready to transfer his plan to paper. After Closure2, the writer's major task is translation, and his primary concern is creation of the EXPR.

Flower and Hayes, citing the example of "successful artists," found that good writers are able to put off both types of closure, to prolong the memory search and the planning, suspending the need to reduce the tension caused by the task environment. They are better able than average or poor writers to postpone a decision or a selection. They are able to explore, in "breadth and depth," and to "delay . . . reaching closure on the finished product" (1980, 31-2). Writers who plan effectively seem to know when to close. Murray says that they "'wait for signals' which tell them it is time to write, which 'give a sense of closure, a way of handling a diffuse and overwhelming subject'" (qtd. in Flower and Hayes 1980, 31-2).

During planning in the pre-writing stage, the writer often experiences tentative closure. Flower and Hayes see "working goals" as forms of "tentative closure." They are "the creative bridge between his [the writer's] exploration and the prose he will write" (1981, 383).

The completeness of the located SPR is crucial in that it will determine the amount of planning required to solve the writing problem. Following are two scenarios to illustrate the different amounts of planning required by incomplete and complete SPRs.

SCENARIO I: John receives an in-class expository writing assignment from his freshman composition instructor. He is asked to describe a meaningful dialogue that he has had with another person. The

general topic is new to him in the sense that he cannot recall writing a similar essay. He has a pen in hand and a blank sheet of paper before him, but he does not immediately begin writing the essay. Instead, he spends a couple of minutes searching his memory for specific dialogue experiences that he has had. For each recollection, he scribbles a word in the margin of the blank piece of paper: "Mom," "Frank," "Mary," "counselor." He quickly evaluates each potential essay subject, using his interpretation of "meaningful dialogue" as the criteria. He crosses out the words one at a time, until only one remains. The word without a line through it is "Mary"; Mary is his girlfriend. He decides to write about a talk they had had a few days earlier. He feels that the talk was meaningful because they were able to resolve a conflict that had come between them over the past weekend. With pen poised over the first line of the sheet of paper—he has not yet begun to write the essay—he decides to summarize the conflict in the first part of the essay and to present the actual dialogue in the second part. The quoted lines, he feels, will vividly illustrate what he considers to be a meaningful dialogue. He begins putting words down on paper. He stops intermittently to reread what he has written, to make sure that the written words are consistent with his earlier plans. After each quick review, he either (1) picks up where he left off and extends the length of the essay, (2) deletes words that stray from his original intentions and begins again, or (3) he adjusts his original plans to fall in line with the changes in ideas that his latest words represent. After a final review to appraise the synthesis of the thoughts he wanted to

express and the words he had actually written, he hands the completed essay in to the instructor.

SCENARIO 2: Mary receives the same assignment. The general topic is not new to her. In fact, she immediately recalls a nearly identical essay that she had written the day before in her communications class. The general topic for that assignment was a conflict resolution. Her essay had been about a talk she had had with her boyfriend, John. The essay, the words she had used and the way she had organized them on paper, is still fresh in her mind. She begins writing immediately. The words flow from the "essay" in her memory, through the pen, and onto the sheet of paper in front of her. She writes continuously; she has no need to stop and review what she has written. After she is done, she reviews the essay to be sure that it matches the essay she had written the day before. She then turns the essay in to the instructor.

For the two writers, the initial search for SPRs is very different, and that difference has an impact on the entire WP. If the SPR is quite complete and readily fills the gap created by the writing problem, as in Mary's case, then the amount of tension and the need to plan are minimal. Closure1 and Closure2 occur simultaneously. The writer skips planning and moves directly into putting words on paper.

The scenario is very different for the student who finds that his SPR is only a very small part of the larger solution he needs to satisfy the criteria in a task environment. For the writer, such as John, whose SPR is incomplete, say Flower and Hayes, the ability to form an effective plan "will be a critical skill" (1981, 382). He cannot launch directly into translation following Closure1. Instead, he needs to

develop an INPR; he must discover what he is going to say and how he is going to say it. At the end of planning, when Closure<sup>2</sup> occurs and the writer has decided upon the content and form of his essay, tension is further reduced and he is ready to begin translation.

For process-oriented writing instruction, the discovery of a complete SPR during the memory search is counterproductive. For example, if a particular task environment is very familiar to the writer, then critical steps, such as planning, can be bypassed (Berlin 1980, 14). Flower and Hayes say that "if a writer has a stored representation that is fully adequate for the current situation, we wouldn't expect him to spend time building a new one" (1980, 25). If the SPR is fully formed, then the writer is freed from much of the effort that goes into discovering a subject and inventing a way to express it in writing. The writer has a ready-made INPR. He can automatically begin translating, committing to paper what is already "written" in his memory. In essence, the writer imitates a pre-existing composition. By skirting planning, he defeats the purpose of process-oriented instruction, which is to learn how to integrate and apply the three functions to solve a writing problem. Without planning, the student is not fully involved in the WP, and, consequently, he is not learning how to write.

#### WP As Both Linear and Recursive

In earlier conceptions, the WP was thought to be linear (Newkirk, 5). It was described as a lockstep progression through three separate stages: pre-writing, writing, and rewriting (Rohman, 106; Beeker 1985,

4). The writer moved chronologically from one stage to the next, and each stage was considered independent of the others. No provisions were made for backward, or recursive, movements to earlier stages in the WP.

Researchers, such as Flower and Hayes, found that recursion is a very real part of the WP. (See figure 1; the asterisk lines represent recursion paths.) The writer does not progress from one stage, or function, to the next in strict linear fashion (Newkirk, 5). Instead, he simultaneously reviews and translates his working plan. On the one hand, if the words on paper (EXPR) stray from the criteria developed in the plan (INPR), the words may be changed. On the other hand, if the written prose takes a new but promising turn, then the plan is altered. This recursive movement, or feedback cycle, is an ongoing, formative evaluation process.

Despite the recursive interaction among the three functions, however, the movement of the WP taken as a whole is linear. "It is probably true," says Sommers, "that any observable behavior such as composing must unfold linearly over time . . . ." She describes "the composing process" as "both linear and recursive." It is made up of both a "linear series of stages" and a "hierarchical set of sub-processes." The writer moves, in non-linear fashion, "from one sub-process to another" (47), creating interaction among what Perl refers to as "substrands" and "subroutines." Perl refers to this vertical-horizontal movement as a "cycle." While the cycle is recurring, the essay is simultaneously moving linearly toward completion. She elaborates on the relationship between "recursiveness" and linearity, describing it as "a forward-moving action that exists by virtue of a

backward-moving action" (364, 369). Flower and Hayes describe the seemingly contradictory backward-forward progression as a dynamic interaction between goals and idea generation, synthesis, new goals, and more ideas (1981, 386).

Once writing begins, the recursion among the separate functions, for example, between translation and planning, cannot be directly observed. What is observable is the act of translating, or writing; the cognitive activity guiding the writing is internal and therefore hidden. Cooper and Holzman explain that "while actions resulting from cognitive processes can be observed . . . , the processes themselves simply cannot be" (1983, 285; Gorrell 1983, 274). Tuckman refers to these hidden operations as intervening or conceptual variables (1972, 45-7).

Because they cannot be observed, investigators have had difficulty pinpointing exactly "where one stage of the [writing] process begins and the other ends . . . ." (Sommers, 47). Researchers, such as Hayes and Flower, have relied on indirect means, on oral protocols, to "infer . . . a model of the underlying psychological processes" (1980, 9); that is, to identify the hidden functions and to trace the recursive movements that accompany translation. (Other indicators of shifts in cognitive modes during translation have been tested, for example, eye movement and pauses.) The protocols substantiate the theory of recursion. All three functions--planning, translating, and reviewing--occur during translation.

### Pre-Planning and Planning: A Necessary Distinction

The WP is, in essence, a systems adaptation of traditional rhetoric. It is an attempt to identify and explain the operations and interactions that culminate in an essay. It departs from classical rhetoric and other more recent theories of the WP in at least two significant ways: it is based on behavior observed during composition, and it is an attempt to explain the complex, non-linear interactions among the functions. Although this methodology ensures objectivity, it also precludes generalizations based on data that were not readily observable. Because of this limitation, planning is usually described in relation to the act of translating—the physical act of placing words on paper being a highly visible event. The problem is, as Rohman points out, that much of the planning that precedes translation cannot be observed. He says that it is "within the mind and consequently hidden . . ." (107; De Beaugrande, 267). Planning as a pre-writing activity, because it is invisible, is barely touched upon in descriptions of the WP, and when it is, much of it is presented as conjecture.

Planning occurs during translation, but theorists agree that in the very early stages of the WP, it logically precedes the act of putting words on paper. For example, in most "beginning to end" descriptions of what a person does when he writes, "finding a topic" is usually mentioned first (Whitlock 1984, 1). The rationale is that before translation can begin, the writer must have a working plan (INPR), that is, some idea of what he wants to say. Rohman equates the difference between this form of pre-planning and translating with

thinking and writing. He says, "Thinking must be distinguished from writing . . . . In terms of cause and effect, thinking precedes writing" (106). Hillocks further differentiates thinking that is related to pre-writing into a number of cognitive skills. He says, "it is intuitively obvious that some processes of screening, differentiating, integrating, and organizing must take place before writing begins" (1982, 264).

Perl distinguishes between "retrospective and projective structuring," and she suggests that "words upon a page" are the point of demarcation between the two (369). In the same vein, Flower and Hayes draw a distinction between "exploration" and internal representations of the "prose" the student "will write" (1981, 383). This distinction implies two types of planning: planning that occurs before and planning that occurs after translation. Presumably, the first type ends when the actual writing begins. From that point on, the second takes over; planning then becomes interactive with translating and reviewing.

A distinction needs to be made between pre-planning and planning since their purposes are quite different. The purpose of planning before translation is to develop an INPR; during translation, to form an EXPR. They are, in a sense, subfunctions. To distinguish one from the other, the term pre-planning will refer to planning that precedes translation. This method of marking a point between two phases of the WP is not new. Stallard uses it when he defines pre-writing "as the period of time between receiving the assignment and the commencement of writing on paper. Regardless of what the writer did with the time, the elapsed time . . . [is] pre-writing" (1974, 211). Planning will refer



to planning that occurs during translation. Pre-planning begins with Closure1 and ends with Closure2; planning co-occurs with translation and review.

Research has revealed much about planning, but pre-planning has seldom been investigated (Moore, 1; Hillocks, 264) and is not clearly understood. The vagueness is due to the difficulty of determining exactly where the memory search ends (SPR/Closure1) and pre-planning begins. The only meaningful indicator, or intervening variable, as mentioned earlier, may be the scribbled word or note described by Flower and Hayes. In any case, in the cognitive theory underlying the WP, pre-planning plays a critical role. It is through pre-planning that the writer creates the INPR, working with the rudiments of subject-matter and organizational structures that he locates in memory (SPR). Once the INPR has been adequately developed, the writer is able to begin translation, forming the EXPR that will, in the end, be his essay.

#### Discovery and Imitation, Content and Form

For instructors of expository writing, discovery in the pre-planning phase of the WP is usually associated with the selection of subject matter. In rhetoric, this selection process is called the "topical function," and its purpose is to "help a writer conceive . . . main ideas on a topic" (Meyer 1982, 37). Halliday refers to the location and capture of subject matter as the "ideational function"; it is responsible for "the content of what language expresses . . ." (qtd. in Gere, 49).

While the discovery of content is viewed by instructors as an attainable, realistic course objective, the discovery of forms is not. This perspective appears to be rooted in the assumption that pre-planning operates on two distinct types of prior learning: natural learning, on the one hand, and classroom learning, on the other. According to this assumption, students enter the classroom with an accumulation of personal life experiences stored in their memories. These experiences represent raw content data (SPRs) that can be shaped through forms (principles of organization learned in the classroom) into plans (INPRs) that guide the actual paper and pencil production (translation) of an essay.

The instructor's task, within the framework of this natural-versus-classroom perspective, is twofold: (1) to design assignments that tap the reservoir of personal experiences that students bring into the classroom and (2) to teach students how to organize these experiences into effective essays. While the instructor can expect students to enter the classroom with substantial banks of life experiences, he cannot expect them to be familiar with the various structures of composition. Students neither encounter nor naturally discover forms of writing in day-to-day experiences outside of school. These have to be formally learned, and the classroom is where this learning takes place.

Forms can be learned in one of two ways: they can either be discovered or imitated. Instructors have, from the earliest days of instruction in English composition, turned to imitation simply because the observe-and-do-likewise method had and always has been a natural,

practical way of learning. Sources of imitation, usually anthologies of model essays, are tangible and readily available. (The instructor can also "model" or demonstrate the writing technique being studied by composing, live, in front of the class. Beeker [8-9], Harris [1983], and McNamara [1973, 662] describe this procedure. This literal modeling of the WP is beyond the scope of this study.) They are ideal for classroom use. Students are asked to read an essay and to analyze the writer's use of a particular principle, for example, description. The students are then asked to use or apply that principle to their own writing. This method of imparting knowledge of formal structures to students seems to work, and it is fairly easy to evaluate. The teacher can, without much effort, quickly determine whether or not a student has accurately copied a particular formal principle from a previously studied model essay.

#### Models in the Past: A Questionable Approach

The use of models in writing instruction has its roots in sixteenth- and seventeenth-century England. Howell, in Logic and Rhetoric in England, 1500-1700, states that rhetorical instruction at that time was roughly divided into two approaches: formulary and traditional. In the formulary, learning how to write meant a "conscious imitation of models"; in the traditional, or what Howell refers to as the "traditional English rhetoric of the Ciceronian and stylistic pattern," it meant "conscious attempts to produce an original piece of work according to previously studied rules" (1961, 138).

The ends of both methods, the traditional and the formulary, were the same: to teach the five rhetorical arts of invention, arrangement, style, memory, and delivery. Cicero, in De Inventione, defines each of these arts (bracketed comment by Howell):

"Invention is the discovery of valid or seemingly valid arguments to render one's cause plausible. Arrangement is the distribution of arguments thus discovered in the proper order. Expression [that is, elocutio, Cicero's term for style] is the fitting of the proper language to the invented matter. Memory is the firm mental grasp of matter and words. Delivery is the control of voice and body in a manner suitable to the dignity of the subject matter and the style." (19-21)

Although the ends were similar, the means of attaining proficiency in the two rhetorics were quite different. In the formulary, the student was expected (1) to learn the principles of rhetoric by reading and, often, by slavishly imitating models and (2) to use the principles he learned to create an original composition. In the traditional, however, the student was not exposed to models. He was expected (1) to learn the principles of rhetoric and (2) to apply them in the creation of an original composition.

In general, traditional rhetoric was held in higher esteem than formulary. This difference in prestige was due, in part, to the origins and purposes of formulary rhetoric. One of the earliest works in this genre was published in 1568, by William Fullwood, "a member not of the profession of scholars and teachers, but of the company of merchant tailors of London." Entitled The Enemie of Idlenesse,

It contains a collection of precepts on letter writing, and a collection of sample letters on all sorts of topics and

occasions, the whole being intended, not for the educated class, but for the ambitious tradesman and merchant. . . . The first of the four books into which the Enimie of Idleness is divided sets forth certain principles of letter writing, and provides many examples of those principles. (143-4)

Other formulary rhetorics followed, and among them were works by John Clarke and Thomas Horne. Horne's Manductio, like the other formulary rhetorics, included instruction in principles and provided relevant examples, but what was unique about his book, published in 1641, was the addition of "a few English models" meant "for study and imitation." Both Horne's and Clarke's books "were intended to circulate within the world of the schoolboy rather than in the world of the adult student . . . ." (338-9).

From the beginning, then, the formulary approach was accorded a lower status than the traditional. The rhetoric that relied on the imitation of examples was considered appropriate for "schoolboys" and for people who were not of "the educated class."

From a pedagogical viewpoint, the lower status of model-aided rhetorical instruction was apparently considered well deserved. John Newton, in the preface to his Introduction to the Art of Rhetorick, published in 1671, complains about the problem of copying. Howell describes Newton's difficulties:

he [Newton] remarks that he cannot but smile now at the cheats perpetrated by the boys against their masters. The boys, it would seem, went to Clarke's Formulae [Oratoriae] or Farnaby's Index Rhetoricus whenever they had to write a composition; and they proceeded to copy out an exordium from this place, a narration and confirmation from that, concealing their source in each case by some changes in phraseology.

Newton lays the blame for servile copying on the difficulty of the invention tasks presented by the teachers, a difficulty which was apparently compounded by the absence of methodology to teach students how to structure, or to frame, their ideas. Newton writes:

"I thought it hard my self, that I should be commanded to make a Theam before I had any other instructions for framing thereof than what Clark's Formulae or Farnabie's Rhetorick did afford me . . . ." (qtd. in Howell, 340)

#### Models Today: A Continuation of the Past

Methodology to teach students how to discover appropriate structures for their essays—or what Newton refers to as "instructions for framing"—has not advanced very far over the years. The invention of both content and form, without the aid of models, remains a formidable task for the student writer. Consequently, the alternative practice of reducing the learning task by asking students to imitate structures found in models, begun in sixteenth-century England, has survived to the present.

Credited with the spread of model-aided instruction in the U.S. is Richard Whately, a nineteenth-century English rhetorician. According to Berlin, Whately was "a significant force in shaping the model for teaching writing which has dominated English departments in America for the last ninety years or so." Continuing in the tradition of formulary rhetoric, Whately believed that reading models and "studying the principles which are used in criticizing the finished product is . . . valuable in learning to create the product itself" (10, 15).

Thus, from its inception in both England and the U.S., instruction in composition has meant the teaching of writing principles via the imitation of models (Scott 1980, 1-2). In the present, as in the past, the models approach to writing is not without its detractors.

## B. Imitation

### A Wide Range of Meanings

"Imitation," says Woods, "is the rationale for anthologies: 'Read, analyze, and do likewise'" (1981, 403; McNamara, 661). For Woods, imitation seems to be an either/or proposition: a writer either imitates or he does not. Rohman shares this dichotomous view; he defines "good" writing as "original" and "bad" as copied. In "'good writing,'" he says, the writer "dominates his subject with a pattern both fresh and original. 'Bad writing' . . . [is] an echo of someone else's combination . . ." (107).

Imitation is a complex cognitive activity. Rather than as a single act that either does or does not occur, it is perhaps best thought of as a range of unique operations that share a common bond. A carbon-copy of a model essay can be an outcome of one of the operations, but it is by no means the only possible outcome. Imitation, says Corbett, does not produce only "carbon copies" (1971b, 244). Highly original, creative works are also possible.

Because of its complexity, a definition of imitation must take into account a wide range of possible meanings. For the purpose of this study, imitation is defined as a range of three related but distinct

cognitive activities. In figure 3, the three are arranged in descending order, with placement determined by degree of invention required.

**STRUCTURAL AND CONTENT DUPLICATION:** The lowest level of imitation involves the copying of form and content. At this level, models are considered "finished products" (Scott, 6-7) to be emulated. The task here is strictly duplication, requiring little or no invention. The student copies, verbatim, or nearly word for word, both the subject matter and the structure of a model. For example, the model is a narrative about an argument between the writer and his father; the student's essay is also a narrative about an argument between the student and his father. If the essay departs from the model, the difference may be as slight as the addition of a mustache on the student's father. The essay, in the end, is an exact copy, or a near mirror-image with a few superficial differences, of the model. Purves and Takala categorize this form of imitation as "reproduction," and the discourse type as "Documentative." The "Dominant Intention/Purpose" is "Copying," "Taking dictation," etc. (qtd. in Squire 1984, 138).

**CONTENT REPRODUCTION:** At this level, although the contents of the student's essay and the model bear a strong resemblance, the structures are different. This difference in form could be a sign of invention. For example, the model is a narrative recounting an argument between the writer and his father; it is filled with quoted dialogue. The student reads the model and, later, writes a similar essay about a misunderstanding that he had with his mother. It departs from the model, however, in that it is not a narrative but an analysis of the



causes of the misunderstanding; furthermore, the student's essay does not contain quoted dialogue.

This inventive rendition of content imitation, however, is rare. Despite the potential for formal invention, content reproduction is often accompanied by ineffective or inappropriate structure. The student either does not know how to organize the subject matter that he borrowed from the model or he simply fails in his attempt to imitate the form of the model. In the latter case, content reproduction really amounts to a botched job of content and form duplication.

**STRUCTURAL TRANSFER:** In assessing a piece of writing, I. A. Richards makes a distinction between "originality of the thoughts and that of the expression" (1930, 206). This sort of distinction between content and form serves as the foundation for the theory of structural transfer. Transfer covers a wide range of imitation: from form-stuffing to the imitation of abstract structural principles. At the most fundamental level, the student slavishly copies the formal structure of a model but discovers his own subject matter. Some instructors are critical of this type of borrowing, which relies on "pre-existing formal patterns of organization that the writers' meaning is stuffed into." Hartwell cites, as "the stereotype of a fixed-form" essay, "the five-hundred-word theme, with introduction, three main paragraphs, and conclusion" (1979, 550).

Other instructors do not see a conflict between the copying of forms, on the one hand, and the invention of content, on the other. They feel that the integrity of invention is not necessarily lessened when combined with imitation. Brooks sums up this perspective when she

says that, although the "skeleton" is borrowed, the "flesh" belongs to the student (1973, 164). Instructors such as Brooks further believe that, when combined with imitation, the potential for invention is enhanced; that is, this particular combination of invention and imitation is actually more effective in teaching students the process of discovery than invention alone.

The rationale behind this belief is that the simultaneous cognitive demands of discovering both what to say as well as how to say it are overwhelming for the student writer. Through structural transfer, the cognitive demands of planning in the WP is reduced to the discovery of what to say. How to say it, or form, becomes a problem of imitation rather than invention. Thus, in transfer, the student is faced with the problem of (1) imitating one or more structural aspects of the model ("skeleton") and (2) discovering subject-matter ("flesh"). He imitates, but he also invents. He does not bypass planning in the WP since he must still discover content.

To reduce the cognitive burden of discovering both content and form, instructors sacrifice the invention of form. Their decision appears to be based on the assumption that students do not learn structural principles as naturally as they do subject matter. Knowledge of forms is usually acquired in classrooms, whereas content is a product of individual experience. Thus, students entering freshman composition classes will have a wealth of personal experiences to draw upon, but many will not be familiar with the variety of organizational principles available to the writer.

Students need to learn how to structure their experiences on paper. Models imitation represents one approach to teaching the forms of composition. An example of how models may be used is presented by Brooks, who asked her students to paraphrase paragraphs written by professional writers. Her students did not merely recast the writers' ideas and sentences in their own words. She asked them to infuse their own meanings, their "flesh," into the writers' forms, or "skeletons." Rather than inhibiting invention, she feels that this combination of borrowed forms and original ideas enhances invention. She says,

The structure of the paraphrase, rather than limiting student imagination, provides the crutch that makes it possible for him to give his imagination free rein, without the worry about how to finish a sentence he has once started. (164)

For Brooks, prearranged formats aid creativity by freeing the writer from the immense task of inventing both content and structure. Released from much of the responsibility of deciding how to organize his thoughts, the student is able to concentrate on what he has to say.

Paull and Kligerman argue that structural imitation does not necessarily preclude invention. To teach invention, they asked their college composition students to read John Donne's Devotions Upon Emergent Occasions. The purpose of the reading was to explore the potential of meditation as a medium for invention. One of the students, while writing about a personal experience, "imitated the structure of Donne's meditation." Paull and Kligerman view this sort of marriage between original content and copied structure as a natural learning activity, as a creative "integration of one's own personal perceptions

and structures with those of others. The cognitive process thus becomes one of continuum and nuance" (1972, 653-5), that is, an extension of a particular discourse paradigm.

Purves and Takala's "Organize/Reorganize" category is similar to transfer. The discourse type is "Constative," and the "Dominant Intention/Purpose" is to place or arrange information in standard formats.

At higher levels, structural transfer involves the imitation of abstract principles, or formal concepts. Rohman explains how this type of transfer differs from the others. At this level, imitation is "not a something . . . but of a pattern of some things." Copying involves the application of abstract principles and patterns of organization previously learned in a model. In his reading of a model, the student is asked: "Can you isolate the principle that underlies all writing?" In his ensuing essay, he is asked: "And can you then practice that principle in whatever 'subject' you may choose?" (107).

In an approach that calls for structural transfer, the student discovers his own subject-matter but copies one or more formal aspects of a model. In contrast, in an approach that does not rely on models, the student imitates neither subject-matter nor form. In a strictly discovery-oriented WP, there are no models to emulate. The student learns what Young refers to as "the creative principle of discovery itself" (qtd. in Stewart 1978, 172). He is expected to discover his own subject matter and forms. In the classroom, he is introduced to writing principles, but his understanding is not reinforced by references to concrete examples. The student's essay becomes a visible embodiment of

the principle being studied. At this level of writing, Rohman says that the instructor's task is to discover "ways for students to imitate the creative principle itself which produces finished works" (107). The related category in Purves and Takala for this purely discovery oriented WP is "Invent/generate." The discourse type is "Exploratory," and it requires the greatest amount of cognitive processing.

Structural transfer is not as demanding as invention-only approaches, but it usually goes beyond mere form-stuffing or paraphrasing. It often requires a student to transfer abstract organizational patterns, learned from models, to his own essay. The distinction between what a student chooses to write about and how he goes about writing it is crucial in structural transfer. Meyer distinguishes between content and composition plans (39-41). Plans are legitimate targets of imitation; content is not. The assumption is that structural transfer and invention are not mutually exclusive. Corbett says that emphasizing "strategies of form" instead of the ideas in a model "empowers and liberates" the writer. The "internalization of structures," he says, "unlocks our powers and sets us free to be creative, original, and ultimately effective" (1971b, 246, 249-50). D'Angelo refers to these internalized structures as "archetypal forms and ideas." He says that imitation limited to the copying of archetypal forms is just as generative as invention. He refers to this type of learning as "creative imitation" (1973, 283-84).

The trend in approaches to the teaching of structure through imitation in the "past so many years" has been away from form-stuffing toward the "prior analysis of particular rhetorical strategies,

structures, and techniques" found in models (Scott, 6). The change can be characterized as a movement away from the copying of concrete forms toward the imitation of abstract structural principles, or concepts. These "strategies, structures, and techniques" are variously referred to as "schemata" (Petrosky 1982, 22), "structures" (Brooks, 164; Rogers, qtd. in Parker 1979, 35; Scott, 6; Mailloux 1978, 270), "strategies of form" (Corbett 1971b, 246), analytical frames (Comprone 1978, 336-7), "shaping principles" (Gruber 1977, 492), "framework" (Harp 1978, 158), writing plans (Meyer, 38-41), and "language matrix" (Petersen 1982, 461).

### C. Studies on Structural Transfer

The literature is fundamentally split regarding the effectiveness of model-reading in the teaching of expository writing: on the one hand is the belief that learning does not transfer from models to student essays; on the other, that learning does transfer. As could be expected, there is evidence to support both claims. The issue of model-reading in the WP, however, is much more complex than transfer or no transfer. The question is not so much: Does transfer occur? Studies show that, under certain conditions, it does. Rather, the question is: Is the imitation that results from model-reading transfer, or is it really reproduction? This question is crucial since the answer has direct implications for the use of models in process-oriented writing instruction. If the result is reproduction and not transfer, then the use of models would be detrimental to the WP. The problem, at the

present, is that the transfer-or-reproduction question has not been researched.

What has been researched is the transfer-or-no-transfer question. One side of this question is the argument that knowledge gained in reading models does not transfer to writing (Goodman and Goodman 1983, 591; S. Miller 1983, 222; Warnock 1973, 692, 3). Young says that the practice of using models is guided by the

"fundamental misconception [that] . . . if we train students how to recognize an example of good prose . . . , we have given them a basis on which to build their own writing abilities. All we have done, in fact, is to give them standards to judge the goodness or badness of their finished effort. WE HAVE not really taught them how to make that effort . . . ." (qtd. in Stewart 1978, 172)

The assumption underlying the non-transfer view is that reading and writing are fundamentally different cognitive activities. Emig claims they are both "creative," but only writing "originates":

Writing is originating and creating a unique verbal construct that is graphically recorded. Reading is creating or recreating but not originating a verbal construct that is graphically recorded. (1977, 123)

Proponents of this view ARE thus unwilling to waste instructional time on models. To learn to write, they believe, students should write, not read. Coles proclaims:

the only way one learns to write is by writing, and . . . a course in Freshman Composition, therefore, ought to be a course in writing, not in something else . . . . We use no books of any sort. At no time do we invoke a text outside the one we are in the act of creating. (1967, 112; S. Miller 1982, 22)

Several studies support this non-transfer argument. Martin (1981) found that a program of models imitation made no significant difference in the syntactic maturity or quality of writing of seventh-grade subjects. Perry (1980), working with community college freshmen, found that the reading of literary models made no significant difference in writing ability. Rothstein (1970), whose study compared the effects of literary models and experiential writing on the composition of college freshmen, found no significant difference, but he did report that the experiential writing subjects developed a more positive attitude toward writing.

However, based on the assumption that reading and writing are essentially similar cognitive skills—a perspective that is gaining widespread acceptance (Petrosky, 22, 26; Mailloux, 267; Meyer, 47; Moran 1981, 29; Tierney and Pearson 1983, 568, 570; Squire 1983; Applebee and Langer 1983, 175; Horning 1978, 265; Dillon, qtd. in Purves 1983, 164-5; Salvatori 1983, 657-66)—there is substantial evidence for the counter argument that learning can be effectively transferred from reading to writing.

Petrosky considers both reading and writing to be generative. They share, he says, a "dependence on peoples' models of reality (or, schemata) and the essential 'putting together' as the act of constructing meaning from words, text, prior knowledge, and feelings" (22). He explains further:

When we read, we comprehend by putting together impressions of the text with our personal, cultural, and contextual models of reality. When we write, we compose by making meaning from available information, our personal knowledge,



and the cultural and contextual frames we happen to find ourselves in. (26)

Squire, in "Composing and Comprehending: Two Sides of the Same Basic Process," states that "in-depth" practice in reading and analyzing "selected prose paragraphs" helps British children develop skill in writing (1983, 582-3).

More specifically, students are able to learn principles (Bond 1972, 624; R. Miller 1980, 55; Gorrell, qtd. in Parker, 35; Kelly 1973, 652; Young, qtd. in Stewart 1978, 172) of arrangement and style from models and apply them to their writing. Paull and Kligerman maintain that these principles make it possible for student writers to integrate their "own personal perceptions and structures with those of others [i.e., those represented by model writers]. The cognitive process thus becomes one of continuum and nuance" (1972, 655).

This "continuum" can be seen as a kind of discourse paradigm in which "writing occurs within the context of previous writing" (Bazerman 1980, 658). Students, through the medium of models, become familiar with the principles embedded in particular types of discourse, and this familiarity becomes their key to participation in the ongoing discourses.

Writers refer to these principles in a number of different ways. For Harp, they are "framework," or windows that open up on and bring order to selected portions of a writer's life. He says, ". . . if a student is to write about his own experience and that of his society, he must first have acquired a framework [or window] within which he can see and focus these things" (158).

Gruber did not conduct a formal study, but he reports that his students were poor at descriptive writing until he began using models. He had his students read Mark Twain's Autobiography. He then "asked the students for an essay of description in imitation of Twain's writing." To be sure that students imitated the "shaping principles," or structures, of the model and not Mark Twain's ideas, Gruber reviewed his students' drafts in individual conferences. In these conferences, he clarified for students the "difference between using the techniques of a good writer and plagiarizing them." The students' essays, says Gruber,

were stunning. Suddenly, the students seemed to have achieved personalities in writing; they all had different pasts, they all had rich storehouses of vivid memories which they managed to convey in evocative prose without cliché.

According to Gruber, imitating the shaping principles in the model helped the students "achieve individual freedom." Their essays were not carbon copies; to the contrary, "In many instances," they were "moving and intensely personal." Reading the model and imitating the structure did not necessarily lock the students into Mark Twain's subject matter. The students were able to learn and apply the shaping principle without also imitating the content of the model. "Once students have isolated the shaping principles of an essay," says Gruber, "they are usually eager to experiment with those principles in their own work" (491-3).

Studies conducted at the elementary level support the argument that transfer of learning does occur from models to student writing. Eckhoff claims that the writing of second-grade students who were exposed to models "contained features of their reading texts" (1983,

615). Mills (1968) found that fifth-grade students who read literary models wrote significantly better essays. In a later study, she reports that fourth-grade students who read or listened to children's literature scored significantly higher in freewriting tests (qtd. in Stotsky, 634-5). Stefl (1981) found that using better descriptive paragraphs as models for rewriting poorer paragraphs helped to improve the composition of third-grade students.

Studies conducted at the high school and college levels focus more directly on the transfer of principles. Schiff (1977) found that ninth-grade students who reorganized, manipulated, and analyzed stripped model essays performed significantly better in applying comparison-contrast strategies than students who were restricted to reading model essays. Andreach (1976) reports that high school students taught to imitate organizational techniques found in models wrote significantly better than students in a control group. Couture (1981), who worked with college freshmen, found that the analytic reading of models helped her students develop "text-structuring options." Bond used the Christensen rhetorical program with his experimental group of freshman students. Part of the treatment consisted of the reading and analyzing of principles used by professional writers. The students in the treatment group wrote significantly better essays than the students in the control group (624).

The studies mentioned in this part of the review address the problem of transfer, and they tend to support the conclusion that structural transfer can occur under the right conditions. As pointed out earlier, however, they do not address the problem of content

reproduction. They provide no answers to the question: Does transfer occur alone, or does it co-occur with reproduction?

#### D. Studies on Sequencing of WP Tasks

There is little in the literature on the variable sequencing of instructional activities and the effect of such variations on the WP. There is a study in which the relative position of models in the WP was manipulated. Sponsler (1971) switched the sequence of literary models and rough drafts in two treatment groups. The dependent variable was a holistic measure, the overall quality of writing. Transfer was not a variable. The subjects were tenth graders, and the experimental task consisted of writing descriptive essays. Three separate samples of writing were collected from the two experimental and one control group.

Sponsler found that the subjects in the experimental groups wrote significantly better essays in the first sample only; there were no significant differences in the second and third. The sequence of models and rough drafts made no significant difference in quality of writing. However, from the design of this study, there was no way to determine whether or not the model-first or rough-draft first arrangement resulted in content reproduction.

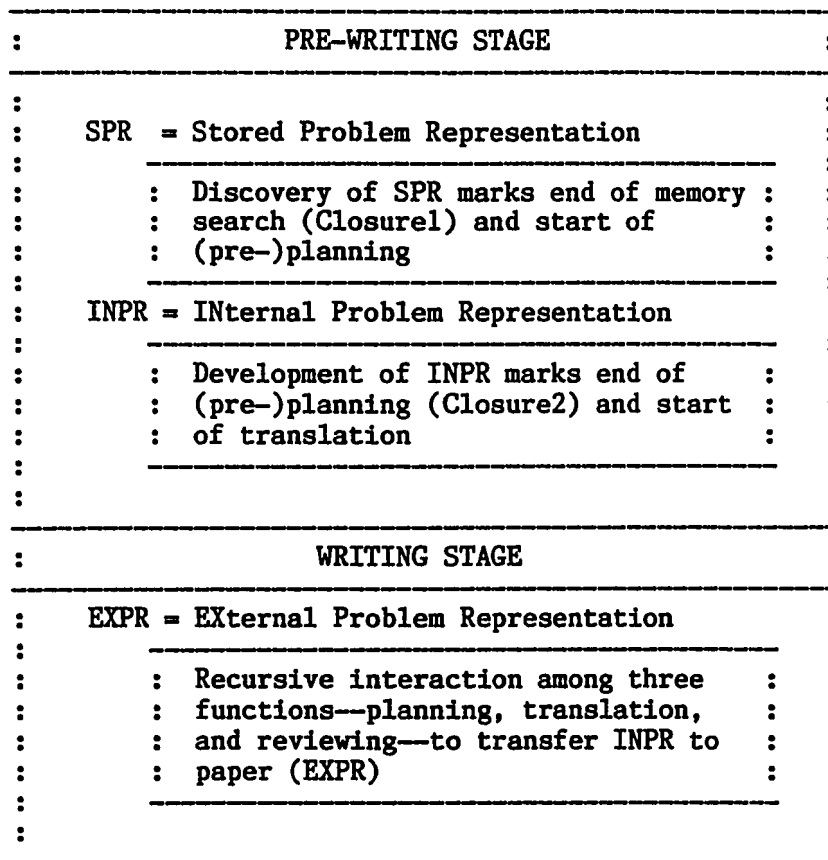


Figure 2. -- Problem Representations in Two Writing Stages

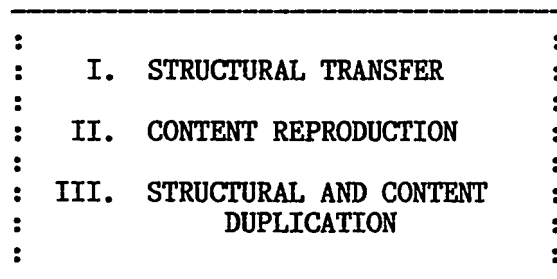


Figure 3. -- Imitation As Three Levels of Cognitive Activity

### III. METHODS AND PROCEDURES

#### A. Independent Variables

Three independent variables were tested. They were labeled TopicFirst, ModelFirst, and NoModel. These labels identified the three treatment groups in the study. Each group received a specific expository writing assignment (task environment). Each assignment consisted of a series of three instructional tasks. The tasks were further ordered into three chronological, or sequential, phases. The phases were roughly equivalent to the pre-planning/planning, translating, and reviewing functions in the WP. Phases I and III were nearly identical for all groups. Phase II, however, varied from group to group. It was the difference in Phase II that distinguished each group.

In Phase I, the student's task was to read the printed directions (see Phase I: Assignment Task; also appendices A-C); in Phase III, it was to write an essay, following the directions in Phase I. These two phases were similar for all three groups. In the printed directions, the student was asked to search his memory for an example of a dialogue that he felt was personally meaningful. He was told that there was no single right or wrong definition for a "meaningful" dialogue. A description of the talk with the other person (SecondParty) served as the subject or content of the student's essay. In Phase III, he wrote an in-class essay.

The task in Phase II consisted of one or two subtasks, the number dependent on the treatment group. One of the subtasks, the completion of the Topic Selection Form (TSF; see appendix D), was assigned to all

three groups. In filling out the TSF, the student was asked to identify the "other person" in the dialogue, that is, to decide on a tentative SecondParty for the as yet unwritten essay. He wrote his SecondParty choice on the TSF.

The second subtask in Phase II, model-reading, was assigned to the ModelFirst and TopicFirst groups. The position of this subtask, however, varied in each of the two groups. In the TopicFirst group, the student completed the TSF before reading the model essay (see figure 4); in the ModelFirst group, the student read the model before filling out the TSF (see figure 5). The subtask model-reading was not assigned to the NoModel group in Phase II (see figure 6).

#### B. Dependent Variables

The primary dependent variable was the "other person," or SecondParty, selected by the students in all three groups in Phase III, essay-writing. Depending on whom the student chose to write about, SecondParty choices were classified as either ParentChoice or OtherChoice. Groups were compared according to how often a parent—mother or father—was chosen as the SecondParty in the students' essays. The SecondParty in the model essay was a parent. It was hypothesized that students who read the model before filling out a TSF would, in their written essays, select a parent more often than students in the other two groups.

For students in the ModelFirst and TopicFirst groups, ParentChoices were considered potential instances of content reproduction. The ParentChoice totals for these two groups were

interpreted as measures of content reproduction when they exceeded, at frequencies considered significant, the total registered by the NoModel group. The NoModel total served as a measure of ParentChoice that could be expected when a model is not used within the population that the sample represented. The assumption is that students in the ModelFirst and TopicFirst groups would have written about a parent at about the same frequencies as students in the NoModel groups if they had not been exposed to the model.

The three alternate instructional sequences—ModelFirst, TopicFirst, and NoModel—were compared to determine whether variations in the sequence of topic selection and model-reading would result in significantly different content, or SecondParty, choices in the translation phase of the WP.

### C. Hypotheses

#### Rationale for the Hypotheses

From a procedural perspective, the hypotheses were based on two assumptions: (1) The "differences in writing stimuli" will affect writing performance (Hilgers 1982, 382). For example, students exposed to different instructional sequences will produce essays of varying quality. (2) Students limit themselves to "cues from the 'task environment'" (Clifford, 100). If the cue from the task environment is a model, and if the model presents the student with a solution to the problem of deciding what to write about, then the student may very well choose the subject in the model.



From a cognitive viewpoint, the hypotheses were based on the theory of closure. For gestalt psychologists, closure originally meant the completion of visual patterns. For non-gestalt psychologists, however, "it is not uncommon to speak of achieving closure when referring to solving a problem, understanding a concept, or simply completing a task" (LeFrancois 1972, 190-1). In this study, the non-gestalt definition was used. The hypothesis, basically, was that the student's need to complete the writing assignment would cause him to close on the first likely solution he encountered in the instructional sequence that made up the experiment.

Not all of the students in the study were expected to close on the first topic they happened to come across. The study assumed that some writers would be less able than others to prolong or suspend closure (Flower and Hayes 1980, 31-2; Stallard, 211). That is, if they encountered the model essay before the TSF, they would be more apt to (1) close on the topic in the model, (2) record the topic on the TSF, and (3) write on the topic in their essays. It was assumed that writers of this type were randomly distributed across all three groups (see Methods and Procedures: Subjects).

The following is a brief summary of the experiment: The focus was on the topic that the student wrote about. The general topic for the expository writing assignment was restricted to a dialogue sample that the student considered successful or effective. A second stipulation was that the student played an active role in the dialogue. The first problem for the student was to identify in writing (on the TSF)—either before or after reading the model, depending on the treatment he was

exposed to—the second party in his dialogue. (For details on the assignment sheet and TSF, see the appropriate appendices and sections under Methods and Procedures.) The SecondParty was his specific topic, or, simply, his subject. The solution to the problem involved one of two types of pre-planning (planning before writing actually occurs), requiring either the imitation or the discovery of a SecondParty. The pre-planning subtasks were presented to the student in one of three sequences: (1) reading a model before completing a TSF and writing an essay, (2) completing a TSF before reading a model and writing an essay, or (3) completing a TSF and writing an essay without reading a model. These alternate sequences, labeled ModelFirst, TopicFirst, and NoModel, served as the treatment, or independent, variables. The type of imitation that resulted, whether reproduction or not reproduction, was indicated by the SecondParty (dependent variable) selected: either ParentChoice (reproduction) or OtherChoice (not reproduction). The study tested the hypothesis that students who first read a model and then complete a TSF will be more prone to close on the topic in the model (ParentChoice) than students who first complete a TSF and then read a model.

The explanation for closure on the first likely solution is the student's need to reduce the tension initiated by the task environment. A problem, such as having to decide on a SecondParty in a dialogue, creates a "'tension system'" (Biehler 1971, 197) within the writer. For the inexperienced writer, the greatest tension producer is deciding on a topic. Given an assignment, he has difficulty getting started because he just does not know what to write about (Price 1980, 175; Winterowd,

139). The writer ". . . can't 'find' something to say," according to Flower and Hayes, "because his or her 'ideas' as such are not actually formed [as SPRs or INPRs]" (1980, 21). The "tension" that results from not knowing, says Sahakian, "impels [the writer] toward completion of incomplete tasks or problematic situations" (1970, 93). The tension is reduced only after he solves the problem or completes the task. Until the problem is solved, the writer will experience a "strain to complete" the job at hand, a tendency "to want to close" (Biehler, 197) on likely solutions.

This "strain to complete" is the force that will drive the student to close on the first solution he encounters in the instructional sequence. In this study, he initially encounters one of two solutions to the problem of deciding what to write about. Depending on the group (ModelFirst or TopicFirst) he is in, the solution is either (A) a topic he discovers independently, or (B) a topic he imitates from a model essay. It was hypothesized that (1) the student who reads a model before completing a TSF will reproduce, in his essay, the SecondParty choice in the model; (2) the student who reads a model after completing a TSF will not reproduce, in his essay, the SecondParty choice in the model; and (3) the student who does not read a model but simply completes a TSF will select, in his essay, the SecondParty in the model as frequently as chance will permit.

### The Hypotheses

NULL HYPOTHESIS: There will be NO significant difference among the three groups—ModelFirst, TopicFirst, and NoModel—in frequency of ParentChoice in the students' essays.

ALTERNATIVE HYPOTHESIS 1: There will be a significant difference among the three groups in frequency of ParentChoice in the students' essays.

ALTERNATIVE HYPOTHESIS 2: There will be a significant difference between the ModelFirst and TopicFirst groups in frequency of ParentChoice.

ALTERNATIVE HYPOTHESIS 3: There will be NO significant difference in frequency of ParentChoice between the TopicFirst and NoModel groups.

ALTERNATIVE HYPOTHESIS 4: There will be a significant difference between the ModelFirst and NoModel groups in frequency of ParentChoice.

### D. Subjects

The sample consisted of 143 students enrolled in 6 of the approximately 20 sections of English 100 offered at Kapiolani Community College during the Spring 1985 semester. The 6 sections were taught by 3 instructors: the experimenter and 2 others who agreed to participate in the study. The college is a part of the University of Hawaii system of colleges and universities. English 100 is the standard, transfer-level, freshman composition course. Credits earned are applicable to a degree at a four-year institution. The 6 intact classes were divided into 3 treatment groups: ModelFirst, TopicFirst, and NoModel (see table 1). Enrollment in the participating sections was determined by the

standard registration process: students were allowed to enroll in the sections of their choice on a first-come-first-served basis if they met the prerequisite for the course: a grade equivalent of 11.5 or higher on the college's English placement test or a grade of "C" or higher in English 22v, which is a nontransfer-level introduction to expository writing course.

There were no significant differences among the groups on four moderator variables. The moderator variables were: (1) sex, (2) year graduated from high school, (3) high school from which the student graduated, and (4) first language. Significant differences among groups in any or all of these variables might have been an indication that the groups represented different populations. If the groups had, in fact, been drawn from different populations, then comparisons would probably not have been valid.

Data for the moderator variables were gathered from two sources: (1) topic selection forms (TSFs) and essays completed on the first day of the experiment, which was also the first day of instruction; and (2) questionnaires (see appendix F) filled out by the students at the beginning of class on the second day of instruction. Of the total of 143 students who participated in the study, 124 or 87% completed and turned in questionnaires: ModelFirst 41 (out of 51), TopicFirst 43 (out of 47), NoModel 40 (out of 45). Of the 19 who did not turn in questionnaires, 10 were from the ModelFirst, 4 were from TopicFirst, and 5 were from the NoModel group. This difference in returns was not significant ( $\chi^2 = 2.88$ ). All students did not answer all the questions; thus, the number of responses for each question differed.

The first two moderator variables, age, which was indirectly measured by year of graduation from high school, and sex, were routine. Less routine were high school location and first language variables. The latter two were used to determine the number of English as a Second Language (ESL) students in each group. Significantly different figures among the groups might have influenced the outcome of the study.

The ratio of males to females (see table 2) in the entire sample was nearly one to one (72 males to 71 females). Among the groups, the male-female ratios varied only slightly; the differences were not significant (see table 3).

There were also no significant differences among groups for year of graduation from high school (see tables 4 and 5). Year of graduation served as an indirect measure of student age at the time of the study. Of the 124 students who completed the questionnaire, 10 (or 8%) did not respond to this question and 5 (or 4%) listed 1985 as their year of graduation. The 5 who indicated 1985 were not included in the tally since it could not be determined whether the date was mistakenly entered (the students were already in college when they supposedly graduated from high school) or whether there was a time overlap between high school graduation and college entrance.

Of those (120 out of 124, or 97%) who completed the questionnaire and indicated the high school from which they graduated, only 5 (or 4%) listed non-U.S. institutions (see table 6). The non-U.S. high schools were in Korea, 2; the Philippines, 1; Hong Kong, 1; and Saipan, 1. Two students listed high schools in Guam and one listed a high school for military dependents in Yokota, Japan, but these three were included in

the U.S. total. Although there were two more non-U.S. graduates in the NoModel group than in the other two groups, the differences among groups were not significant (see table 7).

There were also no significant differences among and between groups in first languages. Of the 124 (or 100% of all students who completed the questionnaire) who responded to this question, the overwhelming majority (93%) listed English as their first language (see table 8). The first languages other than English were: Korean, 4; Tagalog, 3; Chinese, 1; and Palauan, 1. Although there were a few more whose first language was not English in the NoModel group than in the other two groups, the difference was not significant (see table 9).

#### E. Experimental Tasks

The experiment was conducted in class during the first two days of instruction at the start of the spring 1985 semester. The experimental task was completed on the first day; the survey, on the second. The first days of instruction were selected to avoid history effects; also, the three participating instructors, like many of their colleagues, usually collected expository writing samples at the start of each new semester. The students completed the major portion of the experiment on the first day. At the beginning of the second class session, they spent a few minutes filling out a brief questionnaire.

The decision to have the essay done in class was based on the need to control the sequence in which students received information from the writing context. Both in- and out-of-class writing assignments invite inherent experimental control problems: in-class, the drawback is

"simplistic . . . stimuli"; out-of-class, "possibilities for 'cheating'" (Hilgers 1980, 295), or history effects. In-class was chosen over out-of-class primarily because history effects would have been detrimental to the study. The major concern was to control for what Hilgers refers to as "unequal familiarity with information" (1982, 388); Bereiter refers to this potential problem as "'facilitating emotional and stimulus conditions'" (qtd. in Newkirk, 87). Control over both the content and the sequence of information given to the students was vital to the study.

Another consideration for the in-class design was generalizability. One of the criticisms against the interview approach used by WP researchers is artificiality: students do not normally compose under interview conditions. Voss's suggestion is: ". . . we may stand to learn more about students' composing processes if we avoid direct interview or taping sessions [and] . . . observe students in the act of composing in classrooms" (1983, 282). Classrooms, or "real-life educational settings," are not without generalizability limitations (Hilgers 1982, 381; Newkirk, 87), but they are, at least, less artificial than interviews. Furthermore, Voss points out that very few process-oriented studies have been conducted in classrooms, where most writing instruction--if not writing--occurs. He says that ". . . only replicative studies of the first type [interview] have been numerous" (283).

The students in each group completed the experimental tasks in one of three sequences (see figure 7). The decision to order the tasks chronologically was a concession to practicality. Although the WP is



theoretically recursive, its application in the classroom necessitated "translation into a temporal order" (Steinhoff 1980). Application lags behind theory (Burhans, 639, 656), and this was just such a case of knowing but not being able to do. The Hayes and Flower protocol was also time-bound: "A protocol," they say, "is a description of the activities, ordered in time, which a subject engages in while performing a task" (1980, 4).

Furthermore, the decision to divide the experiment into tasks and subtasks was in line with standard educational practice. Under classroom conditions, breaking down a writing assignment into modules to facilitate learning is quite common. "Nobody," say Eckhardt and Stewart, "teaches simply 'writing'; everyone who teaches writing fashions a series of compositional experiences, dividing the larger subject into meaningful, manageable parts" (1979, 338).

In the overall sequence of phases, the first and last were the same for all groups. The second, however, varied from group to group. The differences in the middle phases were critical to the study: these variations distinguished one treatment from the other.

#### Phase I: Assignment Task

Printed directions for the writing assignment were given to the students at the beginning of the first class session. (See appendices A-C for the three versions of "First In-Class Writing Assignment" used with the three different groups.) To control for deviations in the writing context, introductory remarks by the participating instructors (Hilgers 1980, 294) were kept to a minimum, confined to answering

student questions about procedural items on the assignment sheet. Once students began reading the handout, instructor comments were generally unnecessary. A few students individually approached the instructors and asked questions about the directions, but none asked for help in deciding what to write about.

The directions were similar for all groups, except where treatment variables differed. The writing problem, which was number 5 in the handout, remained constant across all groups:

5. **WRITING ASSIGNMENT:** The imagined audience for this essay is your classmates. Your purpose is to explain what the phrase "real communication" means--to you. You are sharing a personal view; assume there is no one correct definition. The question you might want to ask yourself is: What do I mean when I say that I really communicated with another person? Your essay should be based on an actual episode, a real-life experience, involving you and another person. Your essay should also create a vivid, lifelike impression in your classmates' minds.

The "another person" (or SecondParty) in number 5 was a key element in this study. The person chosen by the writer was used as the primary dependent variable.

"Content-matter," says Hilgers, is a "central aspect of the writing stimulus." The assumption is that the topic of the essay will affect writing performance. For example, a student with a well-defined SPR on a given subject will have an advantage over a student with only a vague SPR. To avoid "unequal familiarity with the content of ideas associated with the writing stimulus" (1982, 382-3; Plec 1979), it was vital that the topic be, as much as possible, common to all students in the study. It was assumed that the general topic, a meaningful dialogue, met this criterion.

The general topic for the study also met other criteria for an effective expository writing assignment: (1) it allowed for choice within broad yet defined limits; (2) it was not so detailed that it could not be implemented by other researchers; (3) it was not so difficult that students in other educational institutions would not be able to write on it (Hilgers 1982, 386-9); and (4) it called for vivid, life-like description (Kelly, 653; Scott, 5).

Finally, it was felt that the general topic met the new-yet-familiar standard for assignments that Brown mentions in How the French Boy Learns to Write. When a topic is effective, says Brown, "the pupils will have enough acquaintance with the subject to keep them from being discouraged, yet not enough to make them feel satisfied and indifferent" (1963, 75). In other words, the subject ought to be a big enough problem for the student so that he does not have a ready-made SPR, but not so big that he has no hopes of retrieving an SPR from memory to solve it.

Where treatment variables differed, directions for Phase II also differed. For the ModelFirst group, model-reading came before the TSF. For the TopicFirst group, the sequence was switched—the TSF came before model-reading. The following excerpts from "First In-Class Writing Assignment" illustrate the variations in instructional sequences:

[Printed Directions for the ModelFirst Group:]

7. READ the model essay on the following page.
8. After you've read the model, fill out the Topic Selection Form and turn it in to the instructor. Consider the topic you select tentative. You may write on another topic if you wish, and you do not have to fill out another form.

9. After turning in the completed Topic Selection form to the instructor, begin writing. Turn in your essay, the model essay, and these directions at the end of the session. Thank you.

[Printed Directions for the TopicFirst Group:]

7. TOPIC SELECTION FORM: Before you begin writing, fill out the attached Topic Selection Form and turn it in to the instructor. Consider the topic you select tentative. You may write on another topic if you wish, and you do not have to fill out another form.

8. When you turn in the completed Topic Selection Form, the instructor will give you a model essay to read. Read the essay. After reading the essay, begin writing. Turn in your essay, the model essay, and these directions at the end of the session. Thank you.

The directions for the NoModel group were identical to the TopicFirst group's, except that model-reading was omitted.

#### Phase II-A: TSF-Completion Subtask

All students completed the Topic Selection Form (TSF; see appendix D). In the TSF, students were asked to identify the SecondParty ("other person") they planned to include in their essays. The directions were:

#### TOPIC SELECTION FORM (TSF)

1. Complete the following statement:

In this essay, I plan to write about a talk that I had with \_\_\_\_\_ . (The person's name is not important. What is important is the person's relationship to you. Fill in the blank with information that will briefly explain who the other person is and what your relationship to him/her is. Please be specific.)

2. Further instructions: You will not be held to this topic. If you wish to write on another topic later on, you are free to do so.

Please do not discuss your choice of topic with your classmates.

Turn this form in to your instructor as soon as you complete it.  
Thank you.

The order of the TSF in the middle phase varied (see figure 8): (1) In the TopicFirst group, students completed and turned the TSF in to the instructor before reading the model. (2) In the ModelFirst group, students completed and turned the TSF in to the instructor after reading the model. (3) In the NoModel group, students completed the TSF, turned it in, and wrote an essay—without the intervention of model-reading.

The use of paper-and-pencil to observe and perhaps evaluate a phase in the WP is suggested by De Beaugrande. De Beaugrande's conception of the WP is recursive, but for classroom applications he fashioned a nine-step "inventive procedure . . . sequence." He found that, with "beginning writers," it is "easier to evaluate any step [in the WP] with reference to its predecessors" if some or all of the steps are recorded on paper (266). In this study, the completion of the TSF was a means of acquiring tangible data on an otherwise invisible phase of the WP, the retrieval of an SPR from long-term memory.

#### Phase II-B: Model-Reading Subtask

The model selected for the study, "A Break in the Silence" (see appendix E), had been written by a student for a similar assignment in a prior academic year. A student-written model was selected because of the control it provided over the rhetorical context (Gere, 46). Students in the ModelFirst and TopicFirst groups read the model essay; students in the NoModel group did not. For the groups that read the model, the position of the reading in the instructional sequence varied.

In the ModelFirst group, model-reading preceded the TSF; in the TopicFirst group, model-reading followed the TSF.

### Phase III: Essay-Writing Task

As the final task on the first day, students in all three groups wrote an essay. For this final phase, the printed directions in "First In-Class Writing Assignment" varied according to treatment (see appendices A-C). The non-treatment-specific directions, however, were kept constant across all groups. These constants were:

Welcome to English 100. On this, our first day of instruction, I am collecting a sample of your writing. This is not a test, and your writing will not be graded. The purpose is to gather information that will be used to improve the instructional process. Relax, read all the directions very carefully, and do the best you can. Please turn in your essay at the end of the session, finished or not. Since this is not a test, do not be overly concerned if you are unable to complete the assignment. I realize a single class session does not give you much time to write a complete, polished essay.

1. DO NOT WRITE YOUR NAME ON THE ESSAY.
2. Use dark-colored ink or No. 2 pencil.
3. Use standard sheets of paper (8-1/2 x 11, white). Write on every other line, and use only one side of a sheet of paper. Leave about an inch of margin on all four sides.
4. On the top right corner of the page, write your SOCIAL SECURITY number. This should be the only identification appearing at the top of the page. DO NOT WRITE YOUR NAME ON THE ESSAY.

## F. Data Analysis

### Primary Data: SecondParty in Essays

The experimenter and the other two participating instructors collected the TSFs (N=143) and essays (N=143) from the 143 students who

participated in the study at the end of the first day; the surveys (n=124, or 87%), at the end of the second. The experimenter then gathered and analyzed all the data. The most important piece of data was the essay since it contained the dependent variable. (The TSF was a Phase II treatment variable in this study.) Each of the 143 essays written by the students in the three groups was read and categorized. Each essay was sorted according to the "other person," or SecondParty, selected by the student. SecondParties of either a father or a mother were counted as ParentChoices; SecondParties other than ParentChoice were counted as OtherChoices. The three groups were compared according to how often students wrote about talks they had with either their mothers or fathers.

Two separate chi-square procedures were used to compare the frequency of ParentChoice among the three groups. A standard procedure was used to test for significant differences among the three groups. In this test, data were arranged in a 3-rows-by-2-columns matrix (see table 10). This procedure was followed by a second chi-square test that used a z-calculation. The z-calculation allows for between-groups chi-square comparisons when there are more than two different groups. This second procedure was used to compare groups two at a time. In this test, cell frequencies for ParentChoice and OtherChoice were arranged in a 2-by-2 matrix (see table 11). A third chi-square was used to analyze portions of the survey data. For questions that were confined to only two treatment groups, a chi-square with Yates' correction was used. For this last procedure, data were arranged in a 2-by-2 matrix.

To facilitate chi-square and other statistical calculations, the experimenter wrote and used a computer program in Microsoft's QuickBASIC 2.0 (1986). The program, "KI51.EXE" (see the text version in appendix J), utilized formulas from both McNemar (1969) and Downie and Starry (1977). "KI51.BAS" was written, compiled, and used on an IBM-PC compatible to calculate all of the chi-square and chi-square-related statistics found in this study.

### Secondary Data

EACH CATEGORY VS. Other11: All SecondParty choices in the students' essays were further sorted into twelve separate categories (see table 12). This additional step was taken to see if there were any significant differences in selection patterns in categories other than ParentChoice/OtherChoice. An among-groups chi-square was calculated for the three groups across all twelve categories. If the among-groups chi-square proved to be significant, then between-groups chi-squares for each category versus the other 11 categories (Other11) would be calculated (McNemar, 267). Since the only category targeted by the model was ParentChoice, it was expected that the only significant chi-square would be between ParentChoice and Other11 (which is the same as ParentChoice/OtherChoice). The emergence of other significant chi-squares would be an indication that the groups might have been systematically different.

~~S~~TRUCTURAL TRANSFER: Although this study was designed specifically to measure the frequency of SecondParty choices in the students' essays, a check for structural transfer was included. Since



the model essay relied extensively on verbal exchanges between the writer and her father, quoted dialogue was selected as the structure to be observed. Student essays were read for instances of quoted passages (QuoteDialogue), and the frequencies of essays containing these passages were compared via chi-square.

A simple rule was used to distinguish QuoteDialogue from other prose passages: the QuoteDialogue had to be (1) an utterance addressed directly to one of the principals in the essay--normally the student writer or the SecondParty, but sometimes a third party, and (2) the utterance had to be enclosed in quotation marks.

SURVEY QUESTIONS #2-4: Questions 2-4 from the survey were also analyzed via chi-square to provide additional data to aid in the interpretation of the results from the main treatment variables:

2. Did you have an easy time deciding on a subject for the essay on "real communication"? A difficult time? Please check one of the following and explain briefly.

easy  
 difficult

Explanation:

3. Have you ever written a similar essay? Please check yes or no.

yes  
 no

If yes, briefly describe the essay:

4. Did the model essay (about the writer's conversation with her father) help you in any way to write the paper? Please check yes or no and briefly explain.

yes  
 no

Explanation:

Sequence	Phase	Task
A	I.	Assignment
	II.	TSF/Model-Reading
		Subtasks:
B		(a) Completion of TSF
C		(b) Model-Reading
D	III.	Essay-Writing

Figure 4. -- TopicFirst Instructional Sequence

Sequence	Phase	Task
A	I.	Assignment
	II.	TSF/Model-Reading
		Subtasks:
B		(a) Model-Reading
C		(b) Completion of TSF
D	III.	Essay-Writing

Figure 5. -- ModelFirst Instructional Sequence

Sequence	Phase	Task
A	I.	Assignment
	II.	TSF/Model-Reading
		Subtask:
B		Completion of TSF
C	III.	Essay-Writing

Figure 6. -- NoModel Instructional Sequence

Phase	Task	Group
I	Read Assignment Sheet.....	All
II	A. Complete TSF/Read Model.....	TopicFirst
	B. Read Model/Complete TSF.....	ModelFirst
	C. Complete TSF.....	NoModel
III	Write Essay.....	All

Figure 7. -- Phases and Tasks for Each Group

	I	II	III
TopicFirst:	Assignment-->TSF	Model-->Essay	
ModelFirst:	Assignment-->Model	TSF-->Essay	
NoModel:	Assignment-->TSF		Essay

Figure 8. -- Group Variations in the 3 Phases

Table 1

## Three Groups by Six Classes

GROUPS (3)	CLASSES (6)
ModelFirst	MJ* and MR
TopicFirst	TJ and TR
NoModel	NJ and NL
* M,T,N=Group; J,R,L=Instructor	

Table 2

## Breakdown of Males and Females

: Group	MALE	FEMALE	Total	:
: TopicFirst	27 (19%)	20 (14%)	47 (33%)	:
: ModelFirst	26 (18%)	25 (17%)	51 (36%)	:
: NoModel	19 (13%)	26 (18%)	45 (31%)	:
: Total	72 (50%)	71 (50%)	N=143	:

Table 3

## Chi-Square Scores for Male/Female Data

: Groups	CHI-SQUARE	df	:
: All 3	2.14	2	ns :
: ModelFirst/NoModel	.74	1	ns :
: ModelFirst/TopicFirst	.41	1	ns :
: TopicFirst/NoModel	2.13	1	ns :

Table 4

## Year Graduated from High School

: Group	1984	1980-83	PRE-1980	Total	:
: TopicFirst	12 (11%)	12 (11%)	10 (9%)	34 (31%)	:
: ModelFirst	17 (16%)	13 (12%)	9 (8%)	39 (36%)	:
: NoModel	16 (15%)	12 (11%)	8 (7%)	36 (33%)	:
: Total	45 (41%)	37 (34%)	27 (25%)	n=109	:

Table 5

## Chi-Square Scores for Year of Graduation

Groups	Chi-Square	df	
All 3	.89	4	ns
ModelFirst/NoModel	.01	2	ns
ModelFirst/TopicFirst	.62	2	ns
TopicFirst/NoModel	.74	2	ns

Table 6

## High School from Which Student Graduated

Group	U.S.	OTHER	Total
TopicFirst	39 (33%)	1 (0.8%)	40 (33%)
ModelFirst	40 (33%)	1 (0.8%)	41 (34%)
NoModel	36 (30%)	3 (3%)	39 (33%)
Total	115 (96%)	5 (4%)	n=120

Table 7. — Chi-Square Scores for High School from Which the Student Graduated

GROUPS	CHI-SQUARE	df	
All 3	1.80	2	ns
ModelFirst/NoModel	1.16	1	ns
ModelFirst/TopicFirst	.0003	1	ns
TopicFirst/NoModel	1.11	1	ns

Table 8

## Students' First Language

Group	ENGLISH	OTHER	Total
TopicFirst	41 (33%)	2 (2%)	43 (35%)
ModelFirst	39 (31%)	2 (2%)	41 (33%)
NoModel	35 (28%)	5 (4%)	40 (32%)
Total	115 (93%)	9 (7%)	n=124

Table 9

## Chi-Square Scores for First Language

Groups	CHI-SQUARE	df	
All 3	2.41	2	ns
ModelFirst/NoModel	1.49	1	ns
ModelFirst/TopicFirst	.002	1	ns
TopicFirst/NoModel	1.65	1	ns

Table 10

## Two-by-Three Matrix for Standard Chi-Square

Group	ParentChoice	OtherChoice	Total
TopicFirst			
ModelFirst			
NoModel			
Total			

Table 11. -- Two-by-two Matrix for z-Calculation and  
Chi-Square with Yates' Correction

Group	ParentChoice	OtherChoice	Total
ModelFirst			
NoModel			
Total			

Table 12. -- Twelve Categories for SecondParty Choices  
in Student Essays

1. Friend (f*)	7. Relative (r)
2. Boy-/Girlfriend (l)	8. Unique Ind'l (u)
3. Parent (p)	9. Professional (d)
4. Sibling (s)	10. Acq/Stranger (a)
5. Work Relationship (w)	11. Child (c)
6. Indeterminate (i)	12. Spouse (m)
(* symbol used in list of raw data, appendix G)	



#### IV. PRESENTATION AND ANALYSIS OF DATA

##### Null Hypothesis and Alternative Hypothesis 1

Sixteen, or 11% of all the students in the study, chose to write about a talk they had with a parent (see table 13; also appendix G for raw data) in phase III. Of the 16, 14 (87.5%) were in the two groups exposed to the model essay: 10 (62.5%) in ModelFirst and 4 (25%) in TopicFirst. Only 2 (12.5%) were in the NoModel group. This difference in frequency of ParentChoice among the three groups was significant at  $p < .05$ . On the basis of this result, the null hypothesis was rejected, and Alternative Hypothesis 1, which stated that there would be a significant difference in frequency of ParentChoice among the three groups, was accepted.

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: REJECTED: NULL HYPOTHESIS: There will be no :  
: significant difference among the three groups-- :  
: ModelFirst, TopicFirst, and NoModel--in frequency :  
: of ParentChoice in the students' essays. :

---

---

: ACCEPTED: Alternative Hypothesis 1: There will :  
: be a significant difference among the three groups :  
: in frequency of ParentChoice in the students' :  
: essays. :

---

The acceptance of Alternative Hypothesis 1 meant that one or more of the treatments did make a difference in frequency of ParentChoice. In other words, the subtask variations introduced in Phase II, pre-planning, were related in some critical way to the different rates at which students wrote about a parent. The among-groups chi-square, however, is an overall measure and does not specify the treatment or

treatments that contributed to or caused the critical difference. To identify the source of the variation, between-group chi-square scores were analyzed.

Alternative Hypothesis 4: ModelFirst and NoModel

To determine the contribution of each of the treatments to the overall outcome, the ParentChoice/OtherChoice frequencies were further analyzed via z-calculations. The analysis showed that the critical difference was between the ModelFirst and the NoModel groups (see table 14). The chi-square for these two groups was 5.03, which was significant at  $p < .05$ . Ten students in the ModelFirst group selected a parent in their essays; only 2 in the NoModel group did the same. Thus, Alternative Hypothesis 4, which stated that there would be a significant difference in frequency of ParentChoice between students in the ModelFirst and NoModel groups, was accepted. Acceptance meant that the difference in frequency of ParentChoice between (1) the ModelFirst and (2) the NoModel groups played a critical role in producing the significant among-groups chi-square.

---

: ACCEPTED: Alternative Hypothesis 4: There will :  
 : be a significant difference between the ModelFirst :  
 : and NoModel groups in frequency of ParentChoice. :  
 :

---

Alternative Hypothesis 2: ModelFirst and TopicFirst

Ten students in the ModelFirst group wrote about a father or a mother; in contrast, only 4 in the TopicFirst group selected a parent

(see table 15). Although the figures were quite different, they fell within the range of chance. The frequencies of ParentChoice for the two

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: REJECTED: Alternative Hypothesis 2: There will :  
 : be a significant difference between the ModelFirst :  
 : and TopicFirst groups in frequency of ParentChoice. :  
 :

---

groups were not significantly different (chi-square = 2.46).

Consequently, Alternative Hypothesis 2, which stated that there would be a significant difference between the two groups, was not accepted.

Failure to accept this hypothesis meant that the alternate instructional sequences—(1) reading a model before completing a TSF and (2) completing a TSF before reading a model—did not play a critical role in producing the significant among-groups chi-square.

The lack of significant difference between the ModelFirst and TopicFirst treatments can be partially explained by examining the chi-square figures for the completed TSFs. According to these figures, the ParentChoice frequencies for both groups were significantly different (see table 16) prior to the essay-writing phase. In Phase II, 10 students in the ModelFirst group planned to write about a mother or a father, but only 2 in the TopicFirst group planned to do the same. (Plans were represented by completed TSFs.) At the end of Phase II, but before Phase III, this 10-to-2 ratio was significant. In Phase III, the essay-writing phase, the 10 ModelFirst students followed through with their pre-plans and wrote about a parent; the 2 TopicFirst students did, too. In Phase III, however, 2 additional students (T-0890 and T-3583) in the TopicFirst group—students who had indicated OtherChoice on their

TSFs—switched to ParentChoice. (Students were told, in the directions, that their choices in the TSF were tentative and that it was all right to switch to other topics when they entered the essay-writing phase.) Thus, the ratio in Phase III changed from 10-to-2 to 10-to-4. The difference in Phase III was not significant.

The two additional students in the TopicFirst group switched from OtherChoice to ParentChoice (T-0890 from BoyGirlFriend to Parent, T-3583 from Friend to Parent) somewhere between filling out the TSF (Phase II) and writing the essay (Phase III). For the TopicFirst students, the only factor to intervene between these two points in time was the model essay; for both the ModelFirst and NoModel students, writing began immediately after completion of the TSF. Thus, it was concluded that (1) the switches were content reproductions and (2) the model was the cause. The explanation behind this conclusion is: The writer of the model essay wrote about her father. Two students who had indicated OtherChoice in the TSF switched to ParentChoice after reading the model essay. Thus, the model essay was the most probable cause of the imitation.

From the standpoint of the learning theory inherent in the WP, the switch in topics by the two students was probably due to the discovery of poorly formed SPRs (stored problem representations). The students were simply not familiar with the general topic for the writing assignment. Their searches for suitable subject-matter that would translate into effective essays were futile, ending with the location of vague or perhaps inappropriate SPRs. Their responses in the questionnaire support this theory. Student T-0890, who switched from

BoyGirlFriend to Parent, had difficulty deciding on a topic. He explained, "I've never written about such a topic." He said he found the model essay helpful because "It was hard to understand what you [the instructor] wanted us to write." Student T-3583, who switched from Friend to Parent, did not have difficulty selecting a topic, but the topic she came up with was apparently not very fertile. She said, "I had an easy time deciding on the topic but I had a hard time wording & putting my thoughts on the essay." She said that the model was helpful because it gave her "sort of an idea of how to write it (the way it should be done)."

Immediately after reading the assignment sheet, they were asked to write their SecondParty choices on TSFs. The act of moving their selections from memory to paper, however, did not make them any more concrete or useful. The SPRs remained nebulous. Since the time allotted for the writing assignment was limited to a single class session, these students were under quite a bit of pressure. After completing the TSF, they were given a model to read. In the model, they found a fully-formed solution to the problem of a murky SPR. Either consciously or subconsciously, the students closed on the SecondParty in the model. In their essays, they abandoned their original SecondParties, BoyGirlFriend and Friend, and wrote on the SecondParty in the model. The result of this switch is content reproduction.

On the one hand, the fact that there was no significant difference in frequency of ParentChoice between the ModelFirst and TopicFirst groups in the students' essays would seem to indicate that variations in the sequence of model-reading and topic selection make no difference in

the rate at which students will reproduce topics in model essays. On the other hand, the TopicFirst-NoModel results indicate that students who select a topic before reading a model are likely to select the topic in the model about as frequently as students who don't read the model. This apparent contradiction is discussed below in the context of other treatment interactions.

Alternative Hypothesis 3: TopicFirst and NoModel

Very few in these two groups—4 in the TopicFirst and 2 in the NoModel—actually wrote about a parent in their essays (see table 17). The difference was not significant (chi-square = 0.62). This lack of significance justified acceptance of Alternative Hypothesis 3, which

---

: ACCEPTED: Alternative Hypothesis 3: There will :  
 : be no significant difference between the TopicFirst :  
 : and NoModel groups in frequency of ParentChoice. :  
 :

---

stated that there would be no significant difference between (A) students who completed the TSF before reading the model and (B) students who completed the TSF but did not read the model.

Secondary Analysis

EACH CATEGORY VS. OTHER11: Eleven additional categories were used to sort OtherChoice (see table 18). An analysis of all three groups across twelve categories was conducted to locate systematic, pretreatment differences among the groups in SecondParty selection patterns. An overall chi-square for all three groups across the twelve

categories was computed (see table 19). The test failed to produce a significant difference among the groups. The score for the 3x12 matrix with  $df=22$  was 28.76.

STRUCTURAL TRANSFER (QUOTED DIALOGUE): Using the QuoteDialogue rule (see p. 72), it was determined that the following excerpt, taken from one of the essays (identifying details have been changed), did not contain QuoteDialogue:

One early morning, I heard a knocking on my front door. I quickly got out of bed to see who it is. And to my surprise, it was my brother all the way from Los Angeles, California. I couldn't believe it. I told him to come in. When we sat down, I asked him what is he doing here? Why did he travel to Hawaii from Los Angeles, California for? Well, he said. Tomorrow is mom and dad's anniversary and I wanted to surprise them; after all I haven't seen them for 5 years. And I said to him, Tomorrow is mom and dad's anniversary? I forgot all about it. . . . (N-8007)

Using the same rule, it was determined that the following excerpt from another student's essay did contain QuoteDialogue:

I think of "real communication" [not QuoteDialogue] as being able to relay the whole message across to whomever I'm associating with. That is, having the fellow I'm communicating understand entirely what I say and mean. Take for instance this situation; Two restaurant employees working at different stations within the restaurant. One is a Hawaiian resident and the other is fresh from the mainland. The two boys are eating a quick meal before work when suddenly the Hawaiian turns to the mainlander and says (asks?) "Eh brah, where you stay." . . . . (N-8442)

The quoted phrase "'real communication'" was not considered QuoteDialogue. It was enclosed in quotes, but it was not directly addressed to a principal in the essay. The last line, "'Eh brah, where you stay . . .'," was considered QuoteDialogue even though it did not

involve the writer. It met the two requirements: it was directly addressed to a principal, and it was enclosed in quotation marks.

These two examples, selected from the total of 143 essays, were representative of a handful of essays that required a bit of judgment to categorize. On the whole, the overwhelming majority of essays readily fell into one or the other of the categories, QuoteDialogue or No QuoteDialogue.

Obviously, as a measure for structural transfer, the presence or absence of QuoteDialogue is simplistic. Still, it does provide an indication, however rough, of structural imitation.

The among-groups chi-square for frequency of QuoteDialogue was significantly different (see table 20). The chi-square figure, 19.85, was significant at  $p < .001$ . The z-calculations traced the critical between-groups differences to the ModelFirst-NoModel and TopicFirst-NoModel scores (see tables 27 and 28). The differences in frequency of QuoteDialogue between the essays of students in the model-assisted groups (ModelFirst and TopicFirst) and the NoModel group were significant at  $p < .001$ . The essays of students in the model-assisted groups were not significantly different in frequency of QuoteDialogue (see table 23). On the basis of the QuoteDialogue results, it can be concluded that (1) structural transfer did occur with students who were exposed to the model, and (2) success or failure of transfer was not influenced by the alternate sequencing of model-reading and topic selection.

SURVEY QUESTION #2--"Did you have an easy time deciding on a subject for the essay on 'real communication'? A difficult time?"



Please check one of the following and explain briefly."—The among-groups chi-square for question #2 was significant at  $p < .01$  (see table 24). The significance was attributable to the differences between the ModelFirst group and the other two groups (see tables 25 and 26). The chi-square score between the ModelFirst and TopicFirst groups was significant at  $p < .01$ ; between the ModelFirst and NoModel,  $p < .02$ . The chi-square score between the TopicFirst and NoModel groups was not significant (see table 27).

Students who read the model before completing the TSF found it significantly more difficult to select a topic than students who read the model after completing the TSF and students who did not read the model. A possible explanation is that the students in the ModelFirst group, exposed to the model before filling out the TSF, felt confused, constrained, or intimidated by the content and structure of the model. A review of the survey results (see appendix H), however, does not fully support this explanation.

Only three students who had difficulty selecting topics mentioned being confused by the model. Two students in the ModelFirst group said:

I had a difficult time because I had an idea in my mind of what real communication was but the model essay sort of confused me. (M-4204)

Because it [the model] threw me more of [SIC] course of what to write. I was going to explain what real communication [SIC]. Not in a story form. (M-8133).

One student in the TopicFirst group, who said he had difficulty selecting a topic, explained:

It was an in-depth essay that described a lifetime in 2 pages. But it made me want to Change my subject. Luckily my topic was general enough to let me choose from a number of individuals. (T-9287)

The responses of these three students to question ]2, had they been different, would not have altered the pattern of statistically significant results. The chi-square scores and levels of significance would change slightly (tables 30-33: 8.05  $p < .02$ , 7.46  $p < .01$ , 4.05  $p < .05$ , 0.50 ns), but the changes would not be critical.

The most frequent explanation for difficulty in selecting a topic tended to center on the lack of time. Six students in the ModelFirst group, one student in the TopicFirst group, and none of the students in the NoModel group mentioned the need for more time. The TopicFirst and ModelFirst students made the following comments:

TopicFirst:

I usually take time to make a topic sentence [SIC]. (T-5572)

ModelFirst:

It was hard to come up with a topic on such short notice. (M-3025)

When I have to write something I need time to think about it. (M-9649)

It was difficult because you don't have much time to think about it. (M-7258)

Because I felt there wasn't enough time and I felt rushed. (M-7388)

I always have a difficult time deciding on a topic and it takes me a long time to get started, but once I'm started, I'm okay. (M-6061)

I couldn't think of a recent experience of real communication. I needed more time on [SIC] to decide what

to write about and a better definition of real communication. (M-6800)

The responses of these seven students, had they been different, would have altered the pattern of statistically significant results for question #2. The among-groups chi-square score would be 3.45, which is not significant, instead of 10.06, which is significant at  $p < .01$ . The between-groups chi-squares in tables 31 and 32 would also no longer be significant.

The order of the model in the instructional sequence apparently had an impact on whether or not the students in the study experienced difficulty with the amount of time allotted for topic selection. The majority of the students who complained about not having enough time to select a topic were in the ModelFirst group, and that number, six, was statistically critical for question #2. A possible explanation for this outcome is that the six students used the length of the model essay as a criterion for deciding what to write about. The model was approximately two-and-a-quarter typed, single-spaced pages (see appendix E). Considering the length of the model and the limited amount of in-class time they had to write their essays, they must have wondered: Will I, in a single class session, be able to translate the talk that I had with so-and-so into an essay that's as long as the model?

SURVEY QUESTION #3—"Have you ever written a similar essay? Please check yes or no. If yes, briefly describe the essay."—The among-groups chi-square for survey question #3 was not significant (see table 28). The students with, or without, prior experience in writing an essay about a personally meaningful communication event were not

systematically distributed among the three groups. This means that unequal familiarity with the essay topic was not a factor in the outcome.

SURVEY QUESTION #4—"Did the model essay (about the writer's conversation with her father) help you in any way to write the paper? Please check yes or no and briefly explain."—Of the 124 students who completed the questionnaire, 41 were from the ModelFirst and 43 were from the TopicFirst group. (Question #4 was omitted from the questionnaire given to the NoModel group.) All 84 students in these two groups responded to the question; the breadth and depth of the responses, however, varied (see appendix I).

The among-groups chi-square was not significant (see table 29). The students who considered the model helpful in writing the essay were not systematically distributed between the two groups. Apparently, the alternate sequencing of topic selection and model-reading did not have an effect on whether or not the students found the model helpful. Whether the reading of the model essay preceded or followed the completion of the TSF, the overwhelming majority of the students (83%) found the model helpful.

Although the results from question #4 were not statistically significant, an analysis of the responses of the students who found the model helpful provided insights into the potential advantages of including model-reading in the WP. The predominant response was that it helped to clarify the writing assignment:

**WRITING ASSIGNMENT:** The imagined audience for this essay is your classmates. Your purpose is to explain what the phrase

"real communication" means—to you. You are sharing a personal view; assume there is no one correct definition. The question you might want to ask yourself is: What do I mean when I say that I really communicated with another person? Your essay should be based on an actual episode, a real-life experience, involving you and another person. Your essay should also create a vivid, lifelike impression in your classmates' minds.

More specifically, the model served as a concrete example of the evaluation criteria implied in the assignment statement. For ten students, clarification meant knowing exactly "what the instructor wanted":

I got an idea of how you [the instructor] wanted it. (M-3025)

The model essay gave me a better idea of what you were asking of me. (\*M-0441)

It was an example of what the instructor wanted. (\*M-1388)  
It set some guidelines for . . . what you wanted me to do .  
. . . (M-0742)

It helped me because it gave me an idea of what kind of conversation you wanted me to talk about. (T-2056)

Yes because it gave me an example of what you wanted as far as this idea was concerned. (T-3812)

[The model was helpful because] It was hard to understand what you wanted us to write. (\*T-0890)

It kind of first explained the format that you wanted. (T-9247)

It gave me an idea of exactly what you wanted. (T-9691)

It gave me an idea of basically what you were looking for, and the format that you were looking for. (T-8573)

The model apparently helped these students to "figure out" the instructor. They wanted to know exactly what the instructor considered an excellent paper.

The model helped to clarify other evaluation criteria. Eight students said that it helped them to better understand the general topic, a personal view of the meaning of "real communication":

When the question was what is real communication, I did not know exactly what was meant. (M-3410)

It made me think about how communication is important and how I can communicate to others better. (M-5447)

It helped me understand what real communication is . . . . (\*M-9488)

It did help because it made me understand more about real communication. (M-7388)

[a definition of "real communication":] You should always be able to learn something from communicating with someone. (M-1297)

It helps to understand the topic better. (M-6319)

The model essay gave me an idea of what sort of real communication paper you wanted. (T-4186)

Showed me an example of real communication. (T-9887)

These students needed help in interpreting the general topic, which was vaguely referred to as "real communication":

Your purpose is to explain what the phrase "real communication" means--to you. You are sharing a personal view; assume there is no one correct definition. The question you might want to ask yourself is: What do I mean when I say that I really communicated with another person?

The wording in the assignment sheet was purposely vague (1) to emphasize the need for discovery of an SPR and (2) to increase the difficulty of achieving Closure1 (see figure 2 on page 17). A certain amount of difficulty was necessary to allow for the possibility of content reproduction among students in the NoModel and ModelFirst groups.

The model also helped students to better understand the form requirements implied in the assignment statement:

Your essay should be based on an actual episode, a real-life experience, involving you and another person. Your essay should also create a vivid, lifelike impression in your classmates' minds.

The wording regarding structure in the assignment sheet was purposely vague (1) to emphasize the need for pre-planning and the discovery of an INPR and (2) to increase the difficulty of achieving Closure2 (see figure 2 on page 17). Furthermore, the assignment needed to be sufficiently difficult to allow for the possibility of structural transfer (indicated by the presence of quoted dialogue in a student's essay) among students in the TopicFirst and ModelFirst groups.

Twelve students said the model helped them to understand "how" to write the essay. Eight said the model helped with "format"; two, with "structure"; and one, with "form." Five students specifically mentioned the helpfulness of the dialogue structure used in the model:

I got an idea of how you wanted it. More monologue [SIC] that [SIC] story format. (M-3025)

It set some guidelines for (1) what you wanted me to do & (2) how to incorporate dialogue into my essay. (M-0742)

It kind of first explained the format that you wanted. Then I saw that I had to think of the paper as a conversation and not a regular essay. (T-9247)

It showed me to write was was [SIC] actually said and to pick a dramatic conversation. (\*T-9648)

It was easier to write my essay with dialog [SIC]. (T-2655)

These students apparently needed help in interpreting the formal criteria—such as, "real-life . . . vivid, lifelike"—implied in the assignment statement. The dialogue format in the model presented a ready interpretation.



Table 13. -- ParentChoice by All Three Groups in Phase III: Essay Writing

Group	ParentChoice	OtherChoice	Total
TopicFirst	4 (3%)	43 (30%)	47 (33%)
ModelFirst	10 (7%)	41 (29%)	51 (36%)
NoModel	2 (1%)	43 (30%)	45 (31%)
Total	16 (11%)	127 (89%)	N=143
	chi-square = 6.04		p<.05

Table 14. -- ParentChoice by ModelFirst and NoModel Groups in Phase III: Essay-Writing

Group	ParentChoice	OtherChoice	Total
ModelFirst	10 (10%)	41 (43%)	51 (53%)
NoModel	2 (2%)	43 (45%)	45 (47%)
Total	12 (13%)	84 (88%)	n=96
	chi-square = 5.03		p<.05

Table 15. -- ParentChoice by ModelFirst and TopicFirst Groups in Phase III: Essay-Writing

Group	ParentChoice	OtherChoice	Total
ModelFirst	10 (10%)	41 (42%)	51 (52%)
TopicFirst	4 (4%)	43 (44%)	47 (48%)
Total	14 (14%)	84 (86%)	n=98
	chi-square = 2.46		ns

Table 16. -- From the TSF: TopicFirst and ModelFirst  
ParentChoice/OtherChoice in Phase II

Group	ParentChoice	OtherChoice	Total
TopicFirst	2 (2%)	45 (46%)	47 (48%)
ModelFirst	10 (10%)	41 (42%)	51 (52%)
Total	12 (12%)	86 (88%)	n=98
	chi-square = 5.36		p<.05

Table 17. -- ParentChoice by TopicFirst and NoModel  
Groups in Phase III: Essay-Writing

Group	ParentChoice	OtherChoice	Total
TopicFirst	4 (4%)	43 (47%)	47 (51%)
NoModel	2 (2%)	43 (47%)	45 (49%)
Total	6 (7%)	86 (93%)	n=92
	chi-square = 0.62		ns

Table 18. -- Twelve Categories and Their  
Frequencies of Selection in Phase III: Essay  
Writing

1.	Friend	65	45.4%
2.	BoyGirlfriend	17	11.9%
*3.	Parent	16	11.2%
4.	Sibling	9	6.3%
5.	Work Relationship	9	6.3%
6.	Indeterminate	9	6.3%
7.	Relative	6	4.2%
8.	Unique 2ndParty	5	3.5%
9.	Professional	3	2.1%
10.	Stranger/Acq	2	1.4%
11.	Child	1	0.7%
12.	Spouse	1	0.7%
		143	100.7%

Table 19

## Chi-Square for Twelve Categories by Three Groups

Category	TopicFirst	ModelFirst	NoModel	Total
1. FRIEND	21 (15%)	23 (16%)	21 (15%)	65 (45%)
2. BOY/GIRLFRIEND	5 (3%)	8 (6%)	4 (3%)	17 (12%)
3. PARENT	4 (3%)	10 (7%)	2 (1%)	16 (11%)
4. SIBLING	4 (3%)	3 (2%)	2 (1%)	9 (6%)
5. WORK RELATION	2 (1%)	1 (.7%)	6 (4%)	9 (6%)
6. INDETERMINATE	4 (3%)	1 (.7%)	4 (3%)	9 (6%)
7. RELATIVE	1 (.7%)	4 (3%)	1 (.7%)	6 (4%)
8. UNIQUE 2ND PARTY	2 (1%)	0 (0%)	3 (2%)	5 (3%)
9. PROFESSIONAL	1 (.7%)	1 (.7%)	1 (.7%)	3 (2%)
10. STRANGER/ACQ	2 (1%)	0 (0%)	0 (0%)	2 (1%)
11. CHILD	0 (0%)	0 (0%)	1 (.7%)	1 (.7%)
12. SPOUSE	1 (.7%)	0 (0%)	0 (0%)	1 (.7%)
<b>Total</b>	<b>47 (33%)</b>	<b>51 (36%)</b>	<b>45 (31%)</b>	<b>N=143</b>
	<b>chi-square = 28.76</b>	<b>df = 22</b>	<b>ns</b>	

Table 20

## Use of Quoted Dialogue in Phase III: Essay Writing

Group	YES	NO	Total
TopicFirst	30 (21%)	17 (12%)	47 (33%)
ModelFirst	31 (22%)	20 (14%)	51 (36%)
NoModel	10 (7%)	35 (24%)	45 (31%)
<b>Total</b>	<b>71 (50%)</b>	<b>72 (50%)</b>	<b>N=143</b>
	<b>chi-square = 19.85</b>	<b>p&lt;.001</b>	

Table 21

Use of Quoted Dialogue in ModelFirst and NoModel Groups

Group	YES	NO	Total
ModelFirst	31 (32%)	20 (21%)	51 (53%)
NoModel	10 (10%)	35 (36%)	45 (47%)
Total	41 (43%)	55 (57%)	n=96
chi-square = 14.53			p<.001

Table 22

Use of Quoted Dialogue in TopicFirst and NoModel Groups

Group	YES	NO	Total
TopicFirst	30 (33%)	17 (18%)	47 (51%)
NoModel	10 (11%)	35 (38%)	45 (49%)
Total	40 (43%)	52 (57%)	n=92
chi-square = 16.19			p<.001

Table 23. -- Use of Quoted Dialogue in ModelFirst and TopicFirst Groups

Group	YES	NO	Total
ModelFirst	31 (32%)	20 (20%)	51 (52%)
TopicFirst	30 (31%)	17 (17%)	47 (48%)
Total	61 (62%)	37 (38%)	n=98
chi-square = .096			ns

Table 24. -- All Three Groups: Difficulty Selecting Essay Subject?

Group	DIFFICULT	EASY	Total
TopicFirst	15 (12%)	28 (23%)	43 (35%)
ModelFirst	27 (22%)	13 (11%)	40 (33%)
NoModel	16 (13%)	24 (20%)	40 (33%)
Total	58 (47%)	65 (53%)	n=123
	chi-square = 10.06		p<.01

Table 25. -- TopicFirst and ModelFirst: Difficulty Selecting Essay Subject?

Group	DIFFICULT	EASY	Total
TopicFirst	15 (18%)	28 (34%)	43 (52%)
ModelFirst	27 (33%)	13 (16%)	40 (48%)
Total	42 (51%)	41 (49%)	n=83
	chi-square = 8.82		p<.01

Table 26. -- ModelFirst and NoModel: Difficulty Selecting Essay Subject?

Group	DIFFICULT	EASY	Total
ModelFirst	27 (34%)	13 (16%)	40 (50%)
NoModel	16 (20%)	24 (30%)	40 (50%)
Total	43 (54%)	37 (46%)	n=80
	chi-square = 6.08		p<.02

Table 27. -- TopicFirst and NoModel: Difficulty  
Selecting Essay Subject?

Group	DIFFICULT	EASY	Total
TopicFirst	15 (18%)	28 (34%)	43 (52%)
NoModel	16 (19%)	24 (29%)	40 (48%)
Total	31 (37%)	52 (63%)	n=83
			chi-square = 0.23 ns

Table 28

All Three Groups: Experience Writing Similar Essay?

Group	YES	NO	Total
TopicFirst	7 (6%)	36 (29%)	43 (35%)
ModelFirst	7 (6%)	34 (27%)	41 (33%)
NoModel	2 (2%)	38 (31%)	40 (32%)
Total	16 (13%)	108 (87%)	n=124
			chi-square = 3.29 ns

Table 29

TopicFirst and ModelFirst Groups: Model Essay Helpful?

Group	HELPFUL	NOT HELPFUL	OTHER	Total
TopicFirst	35 (42%)	7 (8%)	1 (1%)	43 (51%)
ModelFirst	35 (42%)	5 (6%)	1 (1%)	41 (49%)
Total	70 (83%)	12 (14%)	2 (2%)	n=84
				chi-square = .047 ns

## V. SUMMARY, CONCLUSIONS, AND IMPLICATIONS

### Summary of Results

The goal of this study was to learn more about the relationship between model-reading and a form of imitation that is referred to as reproduction. The question that guided the research was: When model-reading is used in process-oriented writing instruction (ostensibly to attain structural transfer), is the sequence of learning tasks that make up the WP related to the frequency of content reproduction? More specifically, the purpose of this study was (1) to compare the frequencies of a specific topic choice that resulted from alternate instructional sequences of model-reading and topic selection, (2) to analyze the results of these comparisons to determine whether or not content reproduction had occurred, and (3), if content reproduction had occurred, to determine how it was related to alternate sequences of model-reading and topic selection.

In summary, the major results of this study were: (1) The three instructional sequences—ModelFirst, TopicFirst, and NoModel—did produce significantly different frequencies of ParentChoice, but (2) the critical difference was not between the alternate instructional sequences, ModelFirst and TopicFirst. Instead, (3) the critical difference occurred between the ModelFirst and the NoModel sequences.

The secondary analysis of data produced results that have implications for the use of models in process-oriented writing instruction. Some of these results were: (1) the frequencies of structural transfer (QuoteDialogue) between the two model-aided groups and the NoModel group were significantly different; (2) the frequency of

students in the ModelFirst group who said they had difficulty deciding on a topic was significantly different from the frequencies in the other two groups; (3) the frequency of students in the ModelFirst group who said that the model was helpful in writing the essay was not significantly different from the frequency in the TopicFirst group.

### Conclusions

The results of this study lead to a number of conclusions about the relationship between model-reading and content reproduction in student-written expository essays:

CONCLUSION 1: The order of topic selection and model-reading in the pre-planning phase of the WP, when the choice is between the ModelFirst and TopicFirst sequences, does not seem to matter. Alternating the sequence of reading a model and selecting a topic will not significantly affect the frequency of content reproduction in the writing phase; that is, students will either imitate or not imitate the content of the model at about the same rate—regardless of whether they first read the model or decide on a topic.

CONCLUSION 2: However, when the choice during pre-planning is between the ModelFirst and NoModel sequences, selecting the ModelFirst sequence will probably result in content reproduction; that is, students who read a model before deciding on a topic will choose to write on a topic similar to the model's more often than students who do not read the model.

CONCLUSION 3: When the choice during pre-planning is between the TopicFirst and NoModel sequences, choosing the TopicFirst sequence will



not significantly affect the frequency of content reproduction; that is, students who decide on a topic before reading a model will choose to write on a topic similar to the model's as often as students who do not read the model.

CONCLUSION 4: Students exposed to models exemplifying a particular writing structure, such as quoted dialogue, will use that structure in their writing significantly more often than students not exposed to models. Furthermore, structural transfer can be accomplished without content reproduction when the TopicFirst sequence is used instead of the NoModel sequence. However, the same does not hold true for the ModelFirst sequence. When the ModelFirst sequence is used instead of the NoModel sequence, content reproduction can be expected to accompany structural transfer.

CONCLUSION 5: Topic selection was significantly more difficult for students in the ModelFirst group than in the other two groups.

CONCLUSION 6: The alternate sequencing of topic selection and model-reading did not have an effect on whether or not the students in the ModelFirst and TopicFirst groups found the model helpful.

#### Implications for the Classroom

The lack of significant difference between the ModelFirst and TopicFirst groups in content reproduction seems to suggest that instructors can disregard the sequence of model-reading and topic selection during the pre-planning phase of the WP. Apparently, reading a model before deciding on subject-matter will no more cause a student

to reproduce the content of the model than reading a model after choosing subject-matter.

Caution, however, is suggested. First, the ModelFirst-TopicFirst statistic was based on a special between-groups chi-square (z-calculation). Its purpose was to identify the source of the among-groups difference, which was significant at  $p < .05$ . Used primarily to assess the relationships between the treatment variables two at a time, it offers only a partial explanation of the more complex three-group interaction. The ModelFirst-TopicFirst chi-square must be viewed in the larger context of multiple interactions. From this perspective, to say that the ModelFirst-TopicFirst difference in ParentChoice (10-to-4) did not contribute significantly to the overall outcome is not the same as saying that the choice of either treatment will not result in significantly different frequencies of content reproduction. The chi-square between these two groups was not a critical factor in determining the overall chi-square, but a choice of one or the other sequence in relationship to the NoModel sequence can result in significantly different frequencies of content reproduction.

The significant ModelFirst-NoModel difference in frequency of ParentChoice strongly suggests that when the choice for the classroom instructor is between not using and using models, the decision to use them in the ModelFirst sequence will probably result in content reproduction. Furthermore, when the choice is between not using and using models, the TopicFirst sequence will result in content reproduction at about the same frequency as the NoModel sequence--with the additional benefit of significantly higher occurrences of structural

transfer. That is, while students who select a subject before reading a model will reproduce the topic in the model about as often as students who do not read the model, they will also use the structure in the model significantly more often than students who do not read the model.

The results of the study suggest that writing instructors can expect students (1) to imitate the formal structure and (2) to not simultaneously imitate the subject-matter of a model when the TopicFirst instructional sequence is used. For example, a student in the TopicFirst group said, "[The model] Gave me some kind of an idea of structure and which person to write in" (T-8813). This student, who used quoted dialogue in his essay, indicated a friend in his TSF and wrote about a friend in his essay. The fact that he read a model essay about a dialogue between a daughter and her father after completing the TSF but before writing the essay did not cause him to alter his choice.

Finally, the overwhelming number of students who said that the model was helpful in interpreting the writing assignment underscores the need for clear essay evaluation criteria. When the wording in an assignment is necessarily nonspecific to emphasize discovery and pre-planning in the WP, a model essay is apparently useful as a concrete illustration of form and general topical requirements.

#### Implications for Further Studies

The majority of studies involving the use of model essays have concentrated on structural transfer. Few if any have focused on the relationship between model-reading and content reproduction, a form of imitation that works against discovery in the pre-planning phase of the

WP. This study was undertaken to learn more about the relationship between model-reading, topic selection, and content reproduction in the portion of the WP that is referred to in this study as pre-planning. More specifically, three pre-planning instructional sequences were compared to see if the order of model-reading and topic selection would affect the frequency of reproduction.

A number of controls were used to ensure validity. Many of the controls, however, that were necessary for actual classroom testing limited generalizability. Thus, there is a need for further studies in other locations with other students. There is also a need for further tests on different methods and procedures. Some questions that need to be investigated are: Would the results be the same with (1) Students in different geographical locations? (2) Samples from another student population? (3) A new set of samples from the same population? (4) A different model essay? (5) Other methods and procedures?

## APPENDIX A

## Assignment Sheet for ModelFirst Group

## FIRST DAY OF INSTRUCTION: IN-CLASS WRITING ASSIGNMENT (M)

ALERT: Please read the following directions very carefully.

Welcome to English 100. On this, our first day of instruction, I am collecting a sample of your writing. This is not a test, and your writing will not be graded. The purpose is to gather information that will be used to improve the instructional process. Relax, read all the directions very carefully, and do the best you can. Please turn in your essay at the end of the session, finished or not. Since this is not a test, do not be overly concerned if you are unable to complete the assignment. I realize a single class session does not give you much time to write a complete, polished essay.

1. DO NOT WRITE YOUR NAME ON THE ESSAY.
2. Use dark-colored ink or No. 2 pencil.
3. Use standard sheets of paper (8-1/2 x 11, white). Write on every other line, and use only one side of a sheet of paper. Leave about an inch of margin on all four sides.
4. On the top right corner of the page, write your SOCIAL SECURITY number. This should be the only identification appearing at the top of the page. DO NOT WRITE YOUR NAME ON THE ESSAY.
5. WRITING ASSIGNMENT: The imagined audience for this essay is your classmates. Your purpose is to explain what the phrase "real communication" means--to you. You are sharing a personal view; assume there is no one correct definition. The question you might want to ask yourself is: What do I mean when I say that I really communicated with another person? Your essay should be based on an actual episode, a real-life experience, involving you and another person. Your essay should also create a vivid, lifelike impression in your classmates' minds.
6. Please do not discuss this assignment or your topic with other students.
7. READ the model essay on the following page.
8. After you've read the model, fill out the Topic Selection Form and turn it in to the instructor. Consider the topic you select tentative. You may write on another topic if you wish, and you do not have to fill out another form.
9. After turning in the completed Topic Selection Form to the instructor, begin writing. Turn in your essay, the model essay, and these directions at the end of the session. Thank you.

## APPENDIX B

## Assignment Sheet for TopicFirst Group

## FIRST DAY OF INSTRUCTION: IN-CLASS WRITING ASSIGNMENT (S)

ALERT: Please read the following directions very carefully.

Welcome to English 100. On this, our first day of instruction, I am collecting a sample of your writing. This is not a test, and your writing will not be graded. The purpose is to gather information that will be used to improve the instructional process. Relax, read all the directions very carefully, and do the best you can. Please turn in your essay at the end of the session, finished or not. Since this is not a test, do not be overly concerned if you are unable to complete the assignment. I realize a single class session does not give you much time to write a complete, polished essay.

1. DO NOT WRITE YOUR NAME ON THE ESSAY.
2. Use dark-colored ink or No. 2 pencil.
3. Use standard sheets of paper (8-1/2 x 11, white). Write on every other line, and use only one side of a sheet of paper. Leave about an inch of margin on all four sides.
4. On the top right corner of the page, write your SOCIAL SECURITY number. This should be the only identification appearing at the top of the page. DO NOT WRITE YOUR NAME ON THE ESSAY.
5. WRITING ASSIGNMENT: The imagined audience for this essay is your classmates. Your purpose is to explain what the phrase "real communication" means--to you. You are sharing a personal view; assume there is no one correct definition. The question you might want to ask yourself is: What do I mean when I say that I really communicated with another person? Your essay should be based on an actual episode, a real-life experience, involving you and another person. Your essay should also create a vivid, lifelike impression in your classmates' minds.
6. Please do not discuss this assignment or your topic with other students.
7. TOPIC SELECTION FORM: Before you begin writing, fill out the attached Topic Selection Form and turn it in to the instructor. Consider the topic you select tentative. You may write on another topic if you wish, and you do not have to fill out another form.
8. When you turn in the completed Topic Selection Form, the instructor will give you a model essay to read. Read the essay. After reading the essay, begin writing. Turn in your essay, the model essay, and these directions at the end of the session.  
Thank you.

## APPENDIX C

## Assignment Sheet for NoModel Group

## FIRST DAY OF INSTRUCTION: IN-CLASS WRITING ASSIGNMENT (C)

**ALERT:** Please read the following directions very carefully.

Welcome to English 100. On this, our first day of instruction, I am collecting a sample of your writing. This is not a test, and your writing will not be graded. The purpose is to gather information that will be used to improve the instructional process. Relax, read all the directions very carefully, and do the best you can. Please turn in your essay at the end of the session, finished or not. Since this is not a test, do not be overly concerned if you are unable to complete the assignment. I realize a single class session does not give you much time to write a complete, polished essay.

1. DO NOT WRITE YOUR NAME ON THE ESSAY.
2. Use dark-colored ink or No. 2 pencil.
3. Use standard sheets of paper (8-1/2 x 11, white). Write on every other line, and use only one side of a sheet of paper. Leave about an inch of margin on all four sides.
4. On the top right corner of the page, write your SOCIAL SECURITY number. This should be the only identification appearing at the top of the page. DO NOT WRITE YOUR NAME ON THE ESSAY.
5. WRITING ASSIGNMENT: The imagined audience for this essay is your classmates. Your purpose is to explain what the phrase "real communication" means--to you. You are sharing a personal view; assume there is no one correct definition. The question you might want to ask yourself is: What do I mean when I say that I really communicated with another person? Your essay should be based on an actual episode, a real-life experience, involving you and another person. Your essay should also create a vivid, lifelike impression in your classmates' minds.
6. Please do not discuss this assignment or your topic with other students.
7. TOPIC SELECTION FORM: Before you begin writing, fill out the attached Topic Selection Form and turn it in to the instructor. Consider the topic you select tentative. You may write on another topic if you wish, and you do not have to fill out another form.
8. After turning in the completed Topic Selection Form to the instructor, begin writing. Turn in your essay and these directions at the end of the session. Thank you.

APPENDIX D  
TOPIC SELECTION FORM (TSF)

Name: \_\_\_\_\_ ENG 100, Section: \_\_\_\_\_

Social Security No.: \_\_\_\_\_ Date: \_\_\_\_\_

1. Complete the following statement:

In this essay, I plan to write about a talk that I had with

\_\_\_\_\_  
(The person's name is not important. What is important is the person's relationship to you. Fill in the blank with information that will briefly explain who the other person is and what your relationship to him/her is. Please be specific.)

2. Further instructions:

You will not be held to this topic. If you wish to write on another topic later on, you are free to do so.

Please do not discuss your choice of topic with your classmates.

Turn this form in to your instructor as soon as you complete it.  
Thank you.



## APPENDIX E

## Model Essay

## A Break in the Silence

The warm evening progressed into a winter night. My father lay on the couch reading the evening newspaper while I prepared dinner. We lived in a small two-bedroom apartment in a noisy three-story building. I could hear neighbors in the apartment above us laughing as they entertained their party guests. Two apartments away from ours, a neighbor banged on his bongos. Downstairs, someone was blasting Japanese music on his stereo. The only sound that came from our apartment was the whisper of the television set. My father and I hardly spoke to each other. If we did, it was either to ask a question or to answer a question. That night, my father asked about my brother Frank. He was constantly worried about my brother. We talked about Frank. At the end of our talk, I understood my father's feelings for not only my brother Frank, but for my other brothers and me as well.

My father and I had our supper in the living room. He was seated on the couch, and I, on a chair in front of him.

"Did you hear from Frank?" my father asked. His voice startled me as it broke the silence.

Without turning around, I shook my head. I stared at the television screen and continued to eat.

"Doesn't he care?" my father asked.

I thought it was a silly question. I turned around and said, "Of course he cares."

He placed his plate on the coffee table and stared at the ceiling. He sighed heavily and closed his eyes.

"That guy hasn't contacted us since he left for the Air Force," he said.

I reminded him that Frank had written about five letters in the previous three years.

My father said, "Yeah, but if he was a good boy, he would've contacted us about now. It's almost Christmas, at least your brother Harold called up last night from Seattle."

"Dad, Frank is like that," I assured him. "He'll surprise us when we least expect him. He likes to make us worry. He's lazy, too. He probably keeps forgetting to write."

My father shook his head and grumbled, "I don't know. If it's almost Christmas, he should've written or at least called us by now. Maybe he's in trouble or something. Maybe something happened to him."

I looked at my father. I was surprised that he was concerned about my brother. He never showed his feelings, and he never opened up to anyone before.

I assured him once more. "He's okay, dad. Besides, if something went wrong, the Air Force would've contacted us." It didn't seem to hit my father because he kept his eyes closed. A large roar of laughter from the apartment above echoed in our little apartment.

I finished my dinner and walked into the kitchen. The bare tile floor was icy cold. I plugged the sink with the stopper and turned on the hot water. I poured dish detergent into the sink. My father entered the kitchen with his plate. The worried look was still on his face.

"Maybe he got caught with the wrong crowd and lost," my father said as he placed his dish in the sudsy hot water.

What could I say? My father believed Frank was a good student in high school because he always had good grades. But I knew that Frank took easy courses in school. My brother had been hanging around the wrong crowd since the seventh grade. How could I tell my father that Frank was never the son he dreamed up. It would hurt him. It would hurt me just to see his expression if he ever learned the truth.

I smiled and said, "Dad, Frank is smart enough to know who he should hang around with."

I was pleased when he smiled. I turned my attention to the dishes and continued to wash.

"I thought I raised all of you up good," he mumbled. "He should at least call!" he shouted.

I was stunned. He saw the alarmed expression on my face and sat down on a stool. He shook his head.

"I don't know," he said.

My chest grew heavy as I watched him. I felt pity for him. For seventeen years, he had raised my three brothers and me, but he never knew us. When he was home, he locked himself in his room to do his work.

"Dad . . ." I started to say. My mouth opened, but nothing came out.

My father interrupted the brief silence. "I put a roof over their heads, put clothes on their bodies. I gave them everything they wanted. And what do I get? A son who skipped college to get married, a son who is running wild in Washington, and a son who hasn't contacted us. Where did I go wrong?"

"You never gave us your time," I sputtered.

My father looked at me, confused.

I continued, "You didn't give us your love. Or at least shown us your love. Your job always took your time from us. You didn't give enough of your time to know your sons. You don't even know me."

My father slowly lowered his head. He sighed heavily.

I looked in the sink and sighed, also. I was ashamed of myself. Silence crept between us. I'm sorry, dad," I apologized.

No, no," my father replied. "You're right." He paused and then continued, "You know, I don't remember spending any time with any of you? I guess I thought all of you were just fine. It's hard being a single parent for such a long time."

He looked up and stared deeply into my eyes. He was searching for something, but I didn't know what.

The Japanese music ceased, and the party upstairs ended. I could hear the neighbors thank their guests for coming.

Tears formed in my father's eyes.

I felt like crying. I wished everything were reversed and we could have just another quiet night at home. The television echoed in our still living room.

I wiped my hands on a towel and went to my father like a child. I hugged him and said, "You can get to know me, dad."

He nodded silently.

I sniffed and didn't realize that I was crying. My father held on to me like a fragile crystal figurine.

"We've got a lot to catch up with," he replied.

I nodded and looked into his face. I saw him for the first time, and he saw me for the first time.

Since that night, there has never been a silent night.

## APPENDIX F

## Survey Questionnaire

## QUESTIONS ABOUT THE FIRST DAY'S WRITING ASSIGNMENT

Name: \_\_\_\_\_ SS: \_\_\_\_\_ ENG 100 Sec: \_\_\_\_\_  
 Sex: \_\_\_\_\_ High School Graduated From: \_\_\_\_\_ Year: \_\_\_\_\_

1. My first language is (circle one):            ENGLISH  
    CHINESE  
    KOREAN  
    TAGALOG  
    Other: \_\_\_\_\_  
    (please specify)

NOTE: FOR THE FOLLOWING QUESTIONS, PLEASE WRITE BRIEF RESPONSES.

2. Did you have an easy time deciding on a subject for the essay on "real communication"? A difficult time? Please check one of the following and explain briefly.

\_\_\_\_\_ easy  
 \_\_\_\_\_ difficult

Explanation:

3. Have you ever written a similar essay? Please check yes or no.

\_\_\_\_\_ yes  
 \_\_\_\_\_ no

If yes, briefly describe the essay:

4. Did the model essay (about the writer's conversation with her father) help you in any way to write the paper? Please check yes or no and briefly explain.

\_\_\_\_\_ yes  
 \_\_\_\_\_ no

Explanation:

## APPENDIX G

## Raw Data

Explanation of column labels: No.=last 4 digits of student's SS#; Gp=group: m=ModelFirst, t=TopicFirst, n=NoModel; Ins=instructor; TSF=SecondParty choice in TSF; Essay=SecondParty choice in essay (p=ParentChoice; see table 12); Dlg= QuoteDialogue; HS=high school graduated from; Grad=year of graduation; Lang=student's first language; Sel?=difficulty selecting topic?; Exp?=experience writing similar essay?; Mod?=was model helpful? Sex=student's sex

No.	Gp	Ins	TSF	Essay	Dlg	HS	Grad	Lang	Sel?	Exp?	Mod?	Sex
0066	n	j	d	d	n	u	72	e	d	n		f
0070	m	r	l	l	y	u	69	e	e	n	y	f
0190	m	r	f	f	y							m
0270	m	j	f	f	n	u	83	o	e	y	y	f
0336	t	j	f	f	y	u	84	e	d	n	y	m
0367	n	j	f	f	n	u	84	e	e	n		f
0391	t	r	f	f	y	u	84	e	e	y	n	f
0441	m	j	p	p	n	u	83	e	d	n	y	f
0648	n	j	f	f	n	u	84	e	d	n		f
0659	m	r	s	s	n	u	84	e	d	n	n	m
0742	m	r	l	l	y	u	76	e	d	n	y	f
0849	n	l	f	f	n							m
0890	t	j	l	p	y	u	84	e	d	n	y	m
0899	n	l	f	f	n	u	83	o	d	n		f
0990	n	j	w	w	n	u	84	e	e	n		f
1024	n	j	f	f	n	u	84	e	e	n		f
1056	t	r	d	i	n							f
1297	m	j	f	f	y	u	78	e	e	y	y	m
1342	m	r	d	d	y	u	79	e	d	n	y	f
1364	t	j	f	f	y	u	84	e	e	n	y	f
1388	m	j	p	p	y	u	84	e	e	y	y	m
1776	n	j	f	f	y	u	84	e	e	n		f
1815	t	r	a	a	y			e	e	n	n	f
1888	n	l	c	c	y	u	76	e	e	n		f
2024	n	j	f	f	n	u	74	e	e	n		m
2056	t	j	l	l	n	u	84	e	e	n	y	f
2145	t	r	f	f	n							m
2327	m	r	p	p	y							f
2465	m	r	r	r	y	u	82	e	d	y	y	m
2476	t	r	f	f	y	u	76	e	e	y	y	f
2531	m	j	l	l	y							f
2655	t	r	r	r	y	u	84	e	e	n	y	f
2682	n	l	p	p	n	u	84	e	d	n		f
2756	n	j	f	f	y	u	84	e	e	n		f
2760	t	r	s	s	n	u	80	e	e	n	y	m
2830	n	j	p	s	n	u	83	e	e	n		f



6551	t	r	i	i	n	u	76	e	e	n	o	f
6588	n	j	l	l	n	u	84	e	e	n		f
6670	t	j	s	s	n	u	70	e	e	y	y	f
6684	m	j	p	p	y	u	84	e	e	n	y	f
6731	t	j	f	f	n	u	80	e	e	y	n	m
6800	m	r	f	f	y	u	84	e	e	d	n	m
6943	m	r	f	f	y	u	83	e	e	d	n	f
7087	t	r	s	s	y	u		e	e	d	n	f
7113	t	j	w	w	y	u	83	e	e	d	n	y
7168	n	l	l	l	n	u	83	e	e	d	n	f
7195	n	j	f	f	y							m
7204	n	l	f	f	n	u	82	e	e	d	n	m
7258	m	j	f	f	y	u	84	e	e	d	n	y
7388	m	j	l	l	n	u	81	e	e	d	n	y
7482	m	r	l	l	n							f
7575	m	r	p	p	n	u	80	e	e	d	n	y
7588	n	l	f	f	n			e	e	d	n	f
7773	m	r	p	p	y	u	79	e	e	d	n	y
7777	t	j	f	f	y	u	84	e	e	d	n	y
7844	t	j	p	p	y	u	84	e	e	d	n	y
7888	m	j	f	f	n							f
8003	n	j	f	f	n	u	84	e	e	d	n	
8007	n	j	s	s	n	u	82	e	e	d	n	
8034	m	j	f	f	y	u	83	e	e	d	n	y
8060	n	j	f	f	n							f
8101	n	j	s	i	n							f
8133	m	r	f	f	n	u	84	e	e	d	n	n
8145	n	l	p	p	n	u	84	e	e	d	n	n
8178	m	j	l	l	y	u	84	e	e	d	n	n
8203	t	r	f	s	n	u	82	o	e	d	n	y
8236	t	j	i	u	y	u	74	e	e	e	n	y
8442	n	j	u	i	y	o	83	e	e	e	n	
8573	t	r	f	f	y	u	80	e	e	e	n	y
8639	n	l	l	l	y	u	82	e	e	e	n	
8693	m	j	i	f	y							f
8707	t	j	r	i	y	u	72	e	e	d	n	y
8799	n	l	l	l	n							f
8813	t	j	f	f	y	u	67	e	e	d	n	y
8909	n	j	f	f	y	u	84	e	e	d	n	
8949	n	j	f	f	n	u	84	o	e	d	n	
8985	n	l	f	f	n	u		e	e	e	n	
9035	n	l	w	w	n	u	83	e	e	e	n	
9066	m	j	r	r	n							m
9098	m	j	p	p	n	u	81	e	e	o	n	y
9247	t	r	f	f	y	u	85	e	e	d	n	y
9258	n	j	f	f	y	n	74	o	e	d	n	
9287	t	j	a	a	y	u	83	e	e	d	y	y
9488	m	j	p	p	y	u		e	e	d	n	y
9524	m	r	f	f	y	u	82	e	e	e	n	y
9530	t	r	u	u	y	u	78	e	e	e	n	y
9648	t	r	p	p	y	u	83	e	e	e	n	y

9649	m	j	f	f	y	u	84	e	d	n	y	m
9691	t	r	w	w	n			e	e	n	y	m
9854	t	r	f	f	y	u		e	e	n	n	m
9887	t	j	f	f	n	u		e	e	n	y	m
9988	n	l	w	w	n	u	79	e	e	n		m



## APPENDIX H

## Responses and Comments to Survey Questions 2-4

NOTE: The following responses and comments were taken directly from the survey questionnaires (appendix F) completed by the students. The information provided by each student appears in the following order:

- (a) group/instructor (e.g., "NJ": "N"=NoModel, "J"=Instructor "J")
- (b) four-digit student ID number (e.g., "3491")
- (c) SecondParty choices in TSF/SecondParty choices in Essay (e.g., "Friend/Friend")
- (d) response (e.g., "EASY") and explanation to the question "Did you have an easy time deciding on a subject for the essay on 'real communication'? A difficult time?"
- (e) response/explanation to the question "Have you ever written a similar essay?"
- (f) response/explanation to the question "Did the model essay (about the writer's conversation with her father) help you in any way to write the paper?" This last question was not included on the questionnaire given to the students in the NoModel group.

NoModel Group

NJ 3491 Friend/Friend (1) EASY—Because the conversation was still fresh in my mind. (2) NO

NJ 8101 Sibling/Indeterminate

NJ 8003 Friend/Friend (1) DIFFICULT—No. I was caught offguard because I thought you would give a brief description of the course. I like to think or plan out what I am going to write about. (2) NO

NJ 8909 Friend/Friend (1) DIFFICULT—It was hard to think of something to write that would fit the phrase. (2) NO

NJ 0367 Friend/Friend (1) EASY—It was on my mind. (2) NO

NJ 0648 Friend/Friend (1) DIFFICULT—I couldn't decide which subject to write about. (2) NO

NJ 0066 Professional/Professional (1) DIFFICULT—I wasn't sure what exactly            was expected of me. (2) NO

NJ 9258 Friend/Friend (1) DIFFICULT—It's hard for me to think in English. (2) NO

NJ 2830 Parent/Sibling (1) EASY (2) NO

NJ 4478 Friend/Friend (1) EASY—Relatively easy. Takes time to think what to write but once arrived upon a thought it flows well. (2) NO—Nothing on the basic question of real communication.

NJ 0990 WorkRelation/WorkRelation (1) EASY—As soon as I heard the topic I knew what I wanted to write about. (2) NO

NJ 8442 Unique/Indeterminate (1) EASY—The incident was fresh in my mind. (2) NO

NJ 1776 Friend/Friend (1) EASY—Its easy to think of a subject on real communication just hard on how to explain or write it. (2) NO

NJ 8060 Friend/Friend

NJ 2024 Friend/Friend (1) EASY—I felt strongly about the subject though I think that I had a tough time writing it. I was very interested in writing something well done. (2) NO

NJ 7195 Friend/Friend

NJ 1024 Friend/Friend (1) EASY—Because I've been playing tennis since high school and we talk alot about it. (2) NO

NJ 8949 Friend/Friend (1) DIFFICULT—I always have a hard time choosing a subject to write. (2) NO

NJ 5825 Friend/Friend (1) EASY—Communication is easy to write on when it concerns what I feel about real communication! (2) NO

NJ 2756 Friend/Friend (1) EASY—I guess because I talk alot with my friends. (2) NO

NJ 8007 Sibling/Sibling (1) DIFFICULT—I'm having difficulty in writing. Writing is not my strong subject. (2) NO

NJ 4670 Unique/WorkRelation (1) EASY—It was pretty easy because communication is an important part as being a leader in an organization. (2) NO

NJ 6588 BoyGirlFriend/BoyGirlFriend (1) EASY—It was rather easy because I have a lot of incidents with a form of communication. (2) NO

NL 9035 WorkRelation/WorkRelation (1) EASY—I found it rather easy to write on because of my communication class that I was enrolled in last semester. (2) NO

NL 9988 WorkRelation/WorkRelation (1) EASY—The work that I am enrolled in requires real communication (2) NO

NL 7588 Friend/Friend (1) EASY--Because I'm good friends with the guy.  
(2) NO

\*NL 2682 Parent/Parent (1) DIFFICULT--Didn't know what to write about.  
(2) NO

NL 4114 Unique/Unique (1) EASY--Unforgettable encounter `not in  
explanation area@ (2) NO

NL 0899 Friend/Friend (1) DIFFICULT--I had a difficult time deciding  
because I wasn't really prepared since it was only the first day of the  
class. (2) NO

\*NL 8145 Parent/Parent (1) EASY--I knew what I wanted to write in the  
essay. (2) NO

NL 4165 Unique/Unique (1) EASY--Work outside enough years to  
understand requirement. (2) NO

NL 5654 Relative/Relative (1) DIFFICULT--I had a difficult time  
expressing what I XXX to say and how I wanted to say it. (2) NO

NL 7204 Friend/Friend (1) EASY--I don't know if was right but I  
finished in time. (2) NO

NL 5346 Friend/Indeterminate (1) DIFFICULT--Thought easy at first but  
had hard time. (2) NO

NL 5964 Friend/Friend (1) DIFFICULT--It was sort of difficult because  
I had to arrange my thoughts which I believe I hardly do. (2) NO

NL 3768 Unique/Unique (1) DIFFICULT--I couldn't think of a subject to  
use. (2) NO

NL 8799 BoyGirlFriend/BoyGirlFriend

NL 0849 Friend/Friend

NL 5715 Friend/WorkRelation (1) DIFFICULT--I just can't decide on w/c  
subject to concentrate on, or develop. (2) YES

NL 7168 BoyGirlFriend/BoyGirlFriend (1) DIFFICULT--Didn't know what to  
write about. (2) NO

NL 1888 Child/Child (1) EASY--It had just happened and it had seemed  
important. (2) NO

NL 4463 WorkRelation/WorkRelation (1) EASY--It wasn't too hard. After  
I organized what I wanted to say in my mind, writing it was easy. (2)  
YES--My senior year of English consisted of many similar assignments.

NL 6310 Child/Indeterminate (1) DIFFICULT—It was recommended that I take Eng 100. I'd have liked to take a lower English so I can learn better. I realize the last day to change was yesterday. (2) NO

NL 8639 BoyGirlFriend/BoyGirlFriend (1) EASY (2) NO

NL 8985 Friend/Friend (1) EASY—I didn't have a too hard time picking the subject. (2) NO

ModelFirst Group

MJ 7888 Friend/Friend

MJ 9066 Relative/Relative

MJ 0270 Friend/Friend (1) EASY—It was quite easy for me because, many a time I had a communication breakdow with the people around me. (2) YES—Yes, in my speech class. We looked at a cartoon strip and had to explain why the communication breakdown ocured. (3) YES—It did help me because on the first day of class, my mind was distracted by various elements. When I read the example, it gave me an idea of the assignment.

MJ 3025 Friend/Friend (1) DIFFICULT—It was hard to come up with a topic on such short notice. Just unexpected. (2) NO (3) YES—I got an idea of how you wanted it. More monologue that story format.

MJ 9649 Friend/Friend (1) DIFFICULT—When I have to write something I need time to think about it. I had a hard time thinking about what to write about also. (2) NO (3) YES—The model essay helped a little. It reminded me about my friend and how we became good friends.

MJ 8178 BoyGirlFriend/BoyGirlFriend (1) EASY—because my girlfriend and I just argued the night before about me working to many days (2) NO (3) NO—because I generally had an idea since High School what an essay was all about

MJ 3410 Friend/Friend (1) DIFFICULT—There has not been many instances in which I communicated in that manner. (2) NO (3) YES—When the question was what is real communication, I did not know exactly what was meant.

MJ 5447 Friend/Friend (1) DIFFICULT—I had a little difficulty finding examples and experiences (2) NO (3) YES—It made me think about how communication is important and how I can communicate to others better.

\*MJ 6684 Parent/Parent (1) EASY—It was quite easy because it was something that actually happened. But it was hard to get down on paper due to the time. (2) NO (3) YES

MJ 8034 Friend/Friend (1) DIFFICULT—Whenever I write papers I have a difficult time beginning the paper. My mind is completely blank. I don't know how to start and what to write about. (2) NO (3) YES—It kind of did. It gave you examples on how the paper was suppose to be like. The way the girl & the father began to communicate.

MJ 4290 Friend/Friend (1) EASY—I found it quite easy because it happened very recently as my paper stated. It was also easy because I could relate to it very well. (2) NO (3) YES—It helped me because it showed me step-by-step how the communication actually came about.

\*MJ 0441 Parent/Parent (1) DIFFICULT—Depending on what the teacher wants as a subject . . . Personal topics are the most difficult for me to write about—usually. As for the essay itself, it is hard to decide about who I want for my subject. Besides being personal, I tend to jump around when I really talk to someone because I have a lot to say about so much, there isn't one main topic within the conversation. (2) NO (3) YES—The model essay gave me a better idea of what you were asking of me.

MJ 7258 Friend/Friend (1) DIFFICULT—It was difficult because you don't have much time to think about it. (2) NO (3) YES—It gave me an idea on how to write it.

MJ 8693 Indeterminate/Friend

\*MJ 6000 Parent/Parent (1) DIFFICULT—There was simply too many episodes to choose from where I really communicated with someone. (2) YES—It was an in-class paper for my Expos. class last year in high school. It had to do with communication, but through actions, not words. (3) YES—It helped me to cut down on my choices for my paper.

\*MJ 9098 Parent/Parent (1) OTHER checked both easy and difficult The decision was both easy & difficult. I had an idea of what I wanted to get across, but it was not clear on exactly what I was going to stress on. (2) NO (3) YES—Ideas that I had were taken from the thoughts, ideas, and feelings that the writer & father were expressing.

\*MJ 1388 Parent/Parent (1) EASY—It was easy because the instructions were clear. and there was an example of what the instructor wanted. (2) YES—A conversation between Rev. Jonathan Edwards and me. (3) YES—It was an example of what the instructor wanted

\*MJ 9488 Parent/Parent (1) DIFFICULT—It was difficult because we really didn't communicate, we just talked. Also because I guess I really don't know what real communication is. (2) NO (3) YES—It helped me understand what real communication is, Even though I may not have written about it.

MJ 6311 Friend/Friend (1) DIFFICULT—It was difficult to try and think of a time when I really communicated with someone. (2) NO (3) YES—It gave me a general idea of what to write about.

MJ 2531 BoyGirlFriend/BoyGirlFriend

MJ 5236 BoyGirlFriend/BoyGirlFriend (1) DIFFICULT—I have never, I guess really had a real communication. Maybe I may have but not realized it. (2) NO (3) YES—It did because there was a problem in the story, such as the I had written about.

MJ 7388 BoyGirlFriend/BoyGirlFriend (1) DIFFICULT—Because I felt there wasn't enough time and I felt rushed. (2) NO (3) YES—It did help because it made me understand more about real communication.

MJ 4310 BoyGirlFriend/BoyGirlFriend (1) EASY—It happened recently. (2) NO (3) YES—I didn't have any idea on how start and in what form to write it in. The model essay gave me a start.

MJ 6061 Friend/Friend (1) DIFFICULT—I always have a difficult time deciding on a topic and it takes me a long time to get started, but once I'm started, I'm okay. (2) NO (3) YES—It gave me a format to follow.

\*MJ 3214 Parent/Parent (1) DIFFICULT—There is alot of types of real communication depending on your relationship with that person. I just had a hard time deciding. (2) YES—I have written essay such as this but I can't specify what type. (3) NO—The model essay looked familiar. The essay looks like the essay you would have read in a book of some sort. The description of the actions and verbal communication was story book form.

MJ 3834 Friend/Friend (1) DIFFICULT—I had to think back on what is 'real communication'. (2) NO (3) YES—It gave me an example on how to start my essay.

MJ 1297 Friend/Friend (1) EASY—I didn't think that the subject was too difficult. I felt as though something was accomplished by talking to my friend. (2) YES—last semester and I'll try again. (3) YES—You should always be able to learn something from communicating with someone.

MJ 6319 Friend/Friend (1) DIFFICULT—Eventhough that I know the idea, I don't how to convey them in writing. (2) NO (3) YES—It helps to understand the topic better.

\*MR 7575 Parent/Parent (1) DIFFICULT—Its hard to recall a conversations from the past in detail. (2) NO (3) YES—It gave me an idea of what the paper had to be like

MR 7482 BoyGirlFriend/BoyGirlFriend

MR 4020 Relative/Relative (1) EASY—It was something that happened just recently so it was still fresh in my mind. (2) NO (3) YES—The first thing that struck me was their family relation. After that I just thought of my own family and went on from there.

MR 5763 Sibling/Sibling

MR 2465 Relative/Relative (1) DIFFICULT—I had a very bad cold for the past week, only now disappearing, and my mind wasn't clear. The sudden stress of coming back to school, as well. (2) YES—I had a conversation with a friend of mine from History 152 --we work it together, since I was not in the class. (3) YES—Gave me an idea of format.

\*MR 2327 Parent/Parent

MR 6800 Friend/Friend (1) DIFFICULT—I couldn't think of a recent experience of real communication. I needed more time on to decide what to write about and a better definition of real communication (2) NO (3) YES—I knew the point they were trying to get across but I just needed some time to gather my thoughts.

MR 0742 BoyGirlFriend/BoyGirlFriend (1) DIFFICULT—I had a hard time finding a particular example of a real communication. (2) NO (3) YES—It set some guidelines for '1@ what you wanted me to do & '2@ how to incorporate dialogue into my essay. However, I don't think I came close.

MR 0659 Sibling/Sibling (1) DIFFICULT—I could only think of the topic I chose because it was the most recent and it truly affected me in a dramatic way. (2) NO (3) NO—Because it really didn't have anything to do with my particular situation. We were never in that position, it was a personal matter that came about. In the end however, we were able to communicate a lot better on all subjects.

MR 5583 Relative/Relative

MR 0190 Friend/Friend

MR 2901 WorkRelation/Indeterminate (1) EASY—It was fairly easy to pick a subject cause everytime I think of communication I think of that on instance. There was a strong lack of communication. (2) NO (3) NO —Because I don't feel that my essay dealt with feeling; it was more a lack of communication, that created the disaster in our office.

MR 6249 Friend/Friend (1) DIFFICULT—I had a hard time deciding on a subject because I really couldn't think of anyone who I really communicated with. I'm more to myself when it comes out to pouring my feelings out. (2) NO (3) YES—It showed an example of what it wants. I wouldn't want to be doing the wrong thing.

MR 8133 Friend/Friend (1) DIFFICULT—Because I hadn't had much real serious conversations with anyone. (2) NO (3) NO—Because it threw me more of course of what to write. I was going to explain what real communication ment. Not in a story form.

MR 9524 Friend/Friend (1) EASY—I think the topic is broad. (2) NO (3) YES—It helped with picking a type of style to use.

MR 3730 Friend/Friend

MR 0070 BoyGirlFriend/BoyGirlFriend (1) EASY—I have a variety of subjects to choose from. (2) NO (3) YES—It helped by giving, more or less, a format to follow and brought to mind similar personal situations to use as topics

MR 4204 Friend/Friend (1) DIFFICULT—I had a difficult time because I had an idea in my mind of what real communication was but the model essay sort of confused me. I also could not recall any specific time in which I had a conversation that displayed real communication. (2) YES—Once, I had to describe exactly what I saw when walking home from school. (3) OTHER—Yes, because it gave me an idea of what to write. No, because of question 2.

MR 1342 Professional/Professional (1) DIFFICULT—I had a hard time remembering a conversation that I had that I felt I really communicated with someone. (2) NO (3) YES—It just helped with some basic guidelines.

MR 6422 WorkRelation/WorkRelation (1) DIFFICULT—I didn't know where to begin, And I just couldn't thing of anything about real communication (2) NO (3) YES—I'm not a writer, I used the model as how to write the essay, Even the title.

MR 6943 Friend/Friend (1) EASY—I had an easy time on deciding on a subject because it was recent and I feel that it was a major discussion but somehow I could not relate it well. (2) NO (3) YES—Yes, it did because I was influenced strongly by it to share an experience I had.

\*MR 7773 Parent/Parent (1) DIFFICULT—It is a great skill to be able to communicate well. Most of us will always just be trying with very few real `double underline@ successes (2) NO (3) YES—It gave a standard idea of what was asked for and something to relate to.

MR 4462 Sibling/Sibling (1) EASY—Subject I used is a strong memory so after reading model essay it easily came to mind. (2) NO (3) YES—It helped me by clarifying what was wanted.



TopicFirst Group

TJ 2056 BoyGirlFriend/BoyGirlFriend (1) EASY—I knew what I wanted to write about, but I wasn't quite sure exactly how to phrase it correctly. (2) NO (3) YES—it helped me because it gave me an idea of what kind of conversation you wanted me to talk about.

TJ 2907 Professional/Professional (1) DIFFICULT—I spent most of my time trying to understand my feelings toward the issue than writing about it. Before I can write, I usually try to envision its composure. (2) NO (3) YES—It gave me a more vivid portrayal of what I had to compose.

\*TJ 7844 Parent/Parent (1) DIFFICULT—I feel the reason why I had a difficult time deciding on a subject was the last time I had to do any sort of English work was almost a year ago. (2) NO (3) YES—The essay helped me decide how to write my essay

TJ 5448 BoyGirlFriend/BoyGirlFriend (1) EASY—The subject was easy, but putting it in form was difficult. (2) NO (3) YES—It gave me an idea on how to word `structure crossed out@ it.

TJ 8813 Friend/Friend (1) DIFFICULT—I have never `double underline@ written an essay before in my life, let along a post card in the past ten years, thus I vaguely remember even what I wrote in its entirety. (2) NO (3) YES—Gave me some kind of an idea of structure and which person to write in.

TJ 0336 Friend/Friend (1) DIFFICULT—It was very hard to think of something to write about. But once I started I got on a roll. (2) NO (3) YES—After reading the essay it helped to open up some new ideas

TJ 4186 Friend/Friend (1) EASY—I found it easy because this experience had happened recently and it made a perfect example of real communication. (2) NO (3) YES—Yes. The model essay gave me an idea of what sort of real communication paper you wanted.

TJ 9887 Friend/Friend (1) EASY—Because I had an experience where I really communicated with someone and had a conversation with someone that was superficial. (2) NO (3) YES—showed me an example of real communication.

TJ 8236 Indeterminate/Unique (1) EASY—I simply used the experience of a previous classes exchange of conversation (2) NO (3) YES—Structure, description, content, human relations of the model added to coherence in my essay.

TJ 3812 Friend/Friend (1) EASY—I had an easy time picking a subject for this paper. The idea was kind of on top of my tongue (2) NO (3) YES—Yes because it gave me an example of what you wanted as far as this idea was concerned.

TJ 2963 Friend/Friend (1) EASY—It came right to mind because that is what real communication is to me. When you can come out of a conversation satisfied (2) NO (3) YES—Because it was a relationship with conflict.

TJ 7777 Friend/Friend (1) DIFFICULT—I can't seem to concentrate, because of so many student in the classroom and different noises that I here makes me loose my concentration. (2) NO (3) YES

\*\*TJ 0890 BoyGirlFriend/Parent (1) DIFFICULT—Because I've never written about such a topic (2) NO (3) YES—It was hard to understand what you wanted us to write

TJ 1364 Friend/Friend (1) EASY—My friends and I communicate well, so any subject would do. (2) NO (3) YES—It was easy to comprehend.

TJ 9287 Acquaintance/Acquaintance (1) DIFFICULT—I've met many people recently, so narrowing down an instance was rather difficult. So many occurences, faces and situations were flashing in my mind. (2) YES—I took a similar course in high school. I enjoy poetry—it leaves much to be imagined. We wrote on many different subjects similar to this essay. (3) YES—It was an in- depth essay that described a lifetime in 2 pages. But it made me want to Change my subject. Luckily my topic was general enough to let me choose from a number of individuals.

TJ 4840 BoyGirlFriend/BoyGirlFriend (1) DIFFICULT—Not really because I just thought about my girlfriend. (2) YES—we had to describe a fruit. (3) YES—because it made it more clear what to write about.

TJ 7113 WorkRelation/WorkRelation (1) EASY (2) NO (3) YES

TJ 8707 Relative/Indeterminate (1) DIFFICULT—I had no problem deciding on a subject. Putting my experiences into words and paragraphs is where I had difficulty. (2) NO (3) YES—I tried to standardize my format with the model essay. Personally I felt that my essay took on too many unnecessary words.

TJ 6670 Sibling/Sibling (1) EASY—The incident was extremely fresh in my mind. And as such, my emotions were still involved. (2) YES—I'm sure that I did in High School, But that was a long time ago. (3) YES—The essay gave me an example of the Basic format (opening, Body, and closing.).

TJ 6731 Friend/Friend (1) EASY—I find writing easy. (2) YES—Spur of the moment poetry all the time. (3) NO—My words and thoughts flow like a river.

TJ 3855 Friend/Friend (1) DIFFICULT—I had a hard time because there were a lot of subjects to write about. (2) NO (3) YES—It show how to write an essay better.

TR 2476 Friend/Friend (1) EASY—It was on my mind the whole morning. (2) YES—Conversation with English class commenting on previously written work. (3) YES—It was a good example because its content was clear, i.e. setting, mood, situation, questions, answers etc.

TR 9247 Friend/Friend (1) DIFFICULT—First I had to remember the situation, then I had to figure out how to get it on paper, which was the hard part. (2) NO (3) YES—It kind of first explained the format that you wanted. Then I saw that I had to think of the paper as a conversation and not a regular essay. Even though I might have done the essay wrong, I think w/ help from the example, I was able to make my point

TR 6382 BoyGirlFriend/BoyGirlFriend

TR 0391 Friend/Friend (1) EASY—I feel that communication is the vital necessity of a relationship of any kind and I my friend and I have good communication. So, it was easy for me to decide what to write about. (2) YES—It was part of an anthropology paper that I had to write about a subculture I belong. In this subculture (where I met this friend) I talked about how well we got to know & understand each other in such a short time. (3) NO—Not really, because I wasn't planning on writing that kind of story form.

TR 2760 Sibling/Sibling (1) EASY—The subject was easy to think about. The paper itself was difficult to write in the time allowed. (2) NO (3) YES—Reading the essay beforehand gave me an example of the process of building up to the conclusion of the story. The essay also set the scene and brought the characters closer together thereby giving the reader a better understanding of the scene.

TR 4822 Friend/Friend (1) DIFFICULT—I had a difficult time because I really wasn't sure on what to write about in class. (2) NO (3) NO—The model essay was too vague for me to understand it I needed more time to think about the model essay.

TR 9530 Unique/Unique (1) EASY—A shared a wonderful experience in India, where I spent 4 days on a camel safari. I went alone with one guide he could not speak English. During this time few words were spoken, besides yes & no & we eat. But I found a much deeper level of communication that goes beyond language and culture (2) NO (3) YES—It helped but was a bit humbling, to try to write after reading something so skillfully written.

TR 6535 Friend/Friend

TR 2978 Friend/Friend (1) EASY—It was in between easy and difficult because I was not used to, to write one line after another. (2) YES—I had to write a lot of essays in high school. (3) YES—It gave me an idea what to write about.

\*TR 9648 Parent/Parent (1) EASY—The conversation w/ my father was in my mind at the time. (2) NO (3) YES—It showed me to write was actually said and to pick a dramatic conversation

TR 9691 WorkRelation/WorkRelation (1) EASY—It happened recently. (2) NO (3) YES—It gave me an idea of exactly what you wanted. But I can not write that way in that short period of time.

TR 5572 Friend/Friend (1) DIFFICULT—I usually take time to make a topic sentence. (2) NO (3) NO

TR 6551 Indeterminate/Indeterminate (1) EASY—Everyday subject for me. (2) NO (3) OTHER `checked both yes and no@ Yes, in general model }- no communication No, because different aspect my essay }- needs alot of communication

TR 1815 Acquaintance/Acquaintance (1) EASY—It was something that I was interested in. (2) NO (3) NO—I knew what I was going to write about.

TR 9854 Friend/Friend (1) EASY—I can think of millions of ways to communicate (2) NO (3) NO—It put a limit on the meaning of real communication

TR 8573 Friend/Friend (1) EASY—The time I really communicated the most was when I went to college in Iowa. (2) NO (3) YES—It gave me an idea of basically what you were looking for, and the format that you were looking for.

TR 2145 Friend/Friend

TR 7087 Sibling/Sibling (1) DIFFICULT—Unless you had a meaningful conversation (ei sample essay) w/ someone very recently—it's hard to remember exactly `underlined@ what was said. (2) NO (3) NO—I thought it was quite boring, much too long and more of a story than an essay

\*\*TR 3583 Friend/Parent (1) EASY—I had an easy time deciding on the topic but I had a hard time wording & putting my thoughts on the essay. (2) NO (3) YES—The example essay gave me sort of an idea of how to write it (the way it should be done.)

TR 2939 Friend/Friend (1) EASY—I had an easy time because there have been so many miscommunications at work. The times that there is communication it stands out in my mind. (2) NO (3) YES—It helped me pick up on a certain style of writing. I just didn't have the time needed to polish & end the way I would have liked to.

TR 2655 Relative/Relative (1) EASY—It wasn't very long ago when I had that discussion with my cousin. (2) NO (3) YES—It was easier to write my essay with dialog.

TR 5667 Spouse/Spouse (1) EASY—Related to my marriage, or how important communication really is (2) NO (3) YES—Gave me an idea on what to write. On how to write my essay, but usually it takes time for me a while to really write a good essay.

TR 5088 Friend/Indeterminate (1) EASY—I'm always wondering in my mind, what's the other person thinking about? And relationships is difficult to understand. (2) NO (3) YES—In some way the model essay sort of helped me decide on the topic. The essay dealt with again, Relationships, with loved ones and the most difficult part in a relationship is understanding each other.

TR 8203 Friend/Sibling (1) DIFFICULT—My mind was totally blank I could not find anything to write about. (2) NO (3) YES —After reading the essay I had a bit of idea on how I should start my writing.

TR 4925 Friend/BoyGirlFriend  
(1) EASY—I had an easy time on my essay because I could relate to what I read. Also I wrote about something that happened a few days ago and I remembered it. (2) NO (3) YES—The model essay really helped me because I could understand

TR 1056 Professional/Indeterminate

## APPENDIX I

Responses to Survey Question 4: Did the model essay (about the writer's conversation with her father) help you in any way to write the paper? Please check yes or no and briefly explain.

Note: The twelve categories below were used to group the SecondParty choices in the students' written essays. Within each category, the responses were divided into two groups: ModelFirst and TopicFirst. Question four did not apply to students in the NoModel group; thus, responses from the NoModel group do not appear in any of the categories. To facilitate the interpretation of the list, the 70 "Yes" responses to question four (ModelFirst=35; TopicFirst=35) were listed as "HELPFUL" and the 12 "no" responses (ModelFirst=5; TopicFirst=7) as "NOT HELPFUL"; the 2 "yes-no" responses (ModelFirst=1; TopicFirst=1) were listed as "OTHER." Each response is accompanied by three bits of identifying data: 4-digit student ID number (e.g., "0270"); treatment group (e.g., "ModelFirst"); and SecondParty choices in the Topic Selection Form (TSF) and the written essay (e.g., "friend/FRIEND": lower-case = SecondParty in TSF; upper-case = SecondParty in written essay).

CATEGORY 1: FRIEND (n=38, HELPFUL=31, NOT HELPFUL=6, OTHER=1)

	<u>ModelFirst</u>	
01	0270	ModelFirst friend/FRIEND
HELPFUL:		It did help me because on the first day of class, my mind was distracted by various elements. When I read the example, it gave me an idea of the assignment.
02	3025	ModelFirst friend/FRIEND
HELPFUL:		I got an idea of how you wanted it. More monologue that story format.
03	9649	ModelFirst friend/FRIEND
HELPFUL:		The model essay helped a little. It reminded me about my friend and how we became good friends.
04	3410	ModelFirst friend/FRIEND
HELPFUL:		When the question was what is real communication, I did not know exactly what was meant.
05	5447	ModelFirst friend/FRIEND
HELPFUL:		It made me think about how communication is important and how I can communicate to others better.
06	8034	ModelFirst friend/FRIEND
HELPFUL:		It kind of did. It gave you examples on how the paper was suppose to be like. The way the girl & the father began to communicate.
07	4290	ModelFirst friend/FRIEND
HELPFUL:		It helped me because it showed me step-by-step how the communication actually came about.
08	7258	ModelFirst friend/FRIEND
HELPFUL:		It gave me an idea on how to write it.
09	6311	ModelFirst friend/FRIEND
HELPFUL:		It gave me a general idea of what to write about.
10	6061	ModelFirst friend/FRIEND

HELPFUL: It gave me a format to follow.  
 11 3834 ModelFirst friend/FRIEND  
 HELPFUL: It gave me an example on how to start my essay.  
 12 1297 ModelFirst friend/FRIEND  
 HELPFUL: You should always be able to learn something from  
 communicating with someone.  
 13 6319 ModelFirst friend/FRIEND  
 HELPFUL: It helps to understand the topic better.  
 14 6800 ModelFirst friend/FRIEND  
 HELPFUL: I knew the point they were trying to get across but I just  
 needed some time to gather my thoughts.  
 15 6249 ModelFirst friend/FRIEND  
 HELPFUL: It showed an example of what it wants. I wouldn't want to be  
 doing the wrong thing.  
 16 9524 ModelFirst friend/FRIEND  
 HELPFUL: It helped with picking a type of style to use.  
 17 6943 ModelFirst friend/FRIEND  
 HELPFUL: Yes, it did because I was influenced strongly by it to share  
 an experience I had.  
 18 8133 ModelFirst friend/FRIEND  
 NOT HELPFUL: Because it threw me more of course of what to write. I  
 was going to explain what real communication ment. Not in a story form.  
 19 4204 ModelFirst friend/FRIEND  
 OTHER: `checked both yes and no@ Yes, because it gave me an idea of  
 what to write. No, because of question 2.

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-----TopicFirst-----

20 8813 TopicFirst friend/FRIEND  
 HELPFUL: Gave some kind of an idea of structure and which person to  
 write in.  
 21 0336 TopicFirst friend/FRIEND  
 HELPFUL: After reading the essay it helped to open up some new ideas  
 22 4186 TopicFirst friend/FRIEND  
 HELPFUL: Yes. The model essay gave me an idea of what sort of real  
 communication paper you wanted.  
 23 9887 TopicFirst friend/FRIEND  
 HELPFUL: showed me an example of real communication.  
 24 3812 TopicFirst friend/FRIEND  
 HELPFUL: Yes because it gave me an example of what you wanted as far as  
 this idea was concerned.  
 25 2963 TopicFirst friend/FRIEND  
 HELPFUL: Because it was a relationship with conflict.  
 26 7777 TopicFirst friend/FRIEND  
 HELPFUL  
 27 1364 TopicFirst friend/FRIEND  
 HELPFUL: It was easy to comprehend.  
 28 3855 TopicFirst friend/FRIEND  
 HELPFUL: It show how to write an essay better.  
 29 2476 TopicFirst friend/FRIEND  
 HELPFUL: It was a good example because its content was clear, i.e.  
 setting, mood, situation, questions, answers etc.

30 9247 TopicFirst friend/FRIEND  
 HELPFUL: It kind of first explained the format that you wanted. Then I saw that I had to think of the paper as a conversation and not a regular essay. Even though I might have done the essay wrong, I think w/ help from the example, I was able to make my point

31 2978 TopicFirst friend/FRIEND  
 HELPFUL: It gave me an idea what to write about.

32 8573 TopicFirst friend/FRIEND  
 HELPFUL: It gave me an idea of basically what you were looking for, and the format that you were looking for.

33 2939 TopicFirst friend/FRIEND  
 HELPFUL: It helped me pick up on a certain style of writing. I just didn't have the time needed to polish & end the way I would have liked to.

34 6731 TopicFirst friend/FRIEND  
 NOT HELPFUL: My words and thoughts flow like a river.

35 0391 TopicFirst friend/FRIEND  
 NOT HELPFUL: Not really, because I wasn't planning on writing that kind of story form.

36 4822 TopicFirst friend/FRIEND  
 NOT HELPFUL: The model essay was too vague for me to understand it I needed more time to think about the model essay.

37 5572 TopicFirst friend/FRIEND  
 NOT HELPFUL

38 9854 TopicFirst friend/FRIEND  
 NOT HELPFUL: It put a limit on the meaning of real communication

CATEGORY 2: BOY/GIRLFRIEND (n=10, HELPFUL=9 ,NOT HELPFUL=1)

-----ModelFirst-----

01 5236 ModelFirst boy-girl/BOY-GIRL  
 HELPFUL: It did because there was a problem in the story, such as the I had written about.

02 7388 ModelFirst boy-girl/BOY-GIRL  
 HELPFUL: It did help because it made me understand more about real communication.

03 4310 ModelFirst boy-girl/BOY-GIRL  
 HELPFUL: I didn't have any idea on how start and in what form to write it in. The model essay gave me a start.

04 0742 ModelFirst boy-girl/BOY-GIRL  
 HELPFUL: It set some guidelines for (1) what you wanted me to do & (2) how to incorporate dialogue into my essay. However, I don't think I came close.

05 0070 ModelFirst boy-girl/BOY-GIRL  
 HELPFUL: It helped by giving, more or less, a format to follow and brought to mind similar personal situations to use as topics

06 8178 ModelFirst boy-girl/BOY-GIRL  
 NOT HELPFUL: because I generally had an idea since High School what an essay was all about



-----TopicFirst-----  
 07 2056 TopicFirst boy-girl/BOY-GIRL  
 HELPFUL: it helped me because it gave me an idea of what kind of  
 conversation you wanted me to talk about.  
 08 5448 TopicFirst boy-girl/BOY-GIRL  
 HELPFUL: It gave me an idea on how to word `structure crossed out@ it.  
 09 4840 TopicFirst boy-girl/BOY-GIRL  
 HELPFUL: because it made it more clear what to write about.  
 10 4925 TopicFirst friend/BOY-GIRL  
 HELPFUL: The model essay really helped me because I could understand

CATEGORY 3: PARENT (n=13, HELPFUL=12, NOT HELPFUL=1)

-----ModelFirst-----  
 01 6684 ModelFirst parent/PARENT  
 HELPFUL  
 02 0441 ModelFirst parent/PARENT  
 HELPFUL: The model essay gave me a better idea of what you were asking  
 of me.  
 03 6000 ModelFirst parent/PARENT  
 HELPFUL: It helped me to cut down on my choices for my paper.  
 04 9098 ModelFirst parent/PARENT  
 HELPFUL: Ideas that I had were taken from the thoughts, ideas, and  
 feelings that the writer & father were expressing.  
 05 1388 ModelFirst parent/PARENT  
 HELPFUL: It was an example of what the instructor wanted  
 06 9488 ModelFirst parent/PARENT  
 HELPFUL: It helped me understand what real communication is, Even  
 though I may not have written about it.  
 07 7575 ModelFirst parent/PARENT  
 HELPFUL: It gave me an idea of what the paper had to be like  
 08 7773 ModelFirst parent/PARENT  
 HELPFUL: It gave a standard idea of what was asked for and something to  
 relate to.  
 09 3214 ModelFirst parent/PARENT  
 NOT HELPFUL: The model essay looked familiar. The essay looks like the  
 essay you would have read in a book of some sort. The description of  
 the actions and verbal communication was story book form.

-----TopicFirst-----  
 10 7844 TopicFirst parent/PARENT  
 HELPFUL: The essay helped me decide how to write my essay  
 11 0890 TopicFirst boy-girl/PARENT  
 HELPFUL: It was hard to understand what you wanted us to write  
 12 9648 TopicFirst parent/PARENT  
 HELPFUL: It showed me to write was was actually said and to pick a  
 dramatic conversation  
 13 3583 TopicFirst friend/PARENT  
 HELPFUL: The example essay gave me sort of an idea of how to write it  
 (the way it should be done.)

CATEGORY 4: SIBLING (n=6, HELPFUL=4, NOT HELPFUL=2)

-----ModelFirst-----  
 01 4462 ModelFirst sibling/SIBLING  
 HELPFUL: It helped me by clarifying what was wanted.  
 02 0659 ModelFirst sibling/SIBLING  
 NOT HELPFUL: Because it really didn't have anything to do with my  
 particular situation. We were never in that position, it was a personal  
 matter that came about. In the end however, we were able to communicate  
 alot better on all subjects.

-----TopicFirst-----  
 03 6670 TopicFirst sibling/SIBLING  
 HELPFUL: The essay gave me an example of the Basic format (opening,  
 Body, and closing.).  
 04 2760 TopicFirst sibling/SIBLING  
 HELPFUL: Reading the essay beforehand gave me an example of the process  
 of building up to the conclusion of the story. The essay also set the  
 scene and brought the characters closer together thereby giving the  
 reader a better understanding of the scene.  
 05 8203 TopicFirst friend/SIBLING  
 HELPFUL: After reading the essay I had a bit of idea on how I should  
 start my writing.  
 06 7087 TopicFirst sibling/SIBLING  
 NOT HELPFUL: I thought it was quite boring, much too long and more of a  
 story than an essay

CATEGORY 5: WORK RELATION (n=3, HELPFUL=3, NOT HELPFUL=0)

-----ModelFirst-----  
 01 6422 ModelFirst workrel/WORKREL  
 HELPFUL: I'm not a writer, I used the model as how to write the essay,  
 Even the title.

-----TopicFirst-----  
 02 7113 TopicFirst workrel/WORKREL  
 HELPFUL  
 03 9691 TopicFirst workrel/WORKREL  
 HELPFUL: It gave me an idea of exactly what you wanted. But I can not  
 write that way in that short period of time.

CATEGORY 6: INDETERMINATE (n=4, HELPFUL=2, NOT HELPFUL=1, OTHER=1)

-----ModelFirst-----  
 01 2901 ModelFirst workrel/INDETERMINATE  
 NOT HELPFUL: Because I don't feel that my essay dealt with feeling; it  
 was more a lack of communication, that created the disaster in our  
 office.

-----~~TopicFirst~~-----  
 02 8707 TopicFirst relative/INDETERMINATE  
 HELPFUL: I tried to standardize my format with the model essay.  
 Personally I felt that my essay took on too many unnecessary words.  
 03 5088 TopicFirst friend/INDETERMINATE  
 HELPFUL: In some way the model essay sort of help me decide on the  
 topic. The essay dealt with again, Relationships, with loved ones and  
 the most difficult part in a relationship is understanding each other.  
 04 6551 TopicFirst indeterminate/INDETERMINATE  
 OTHER: `checked both yes and no@ Yes, in general model } no  
 communication No, because different aspect my essay } needs alot  
 of communication

CATEGORY 7: RELATIVE (n=3, HELPFUL=3, NOT HELPFUL=0)

-----~~ModelFirst~~-----  
 01 4020 ModelFirst relative/RELATIVE  
 HELPFUL: The first thing that struck me was their family relation.  
 After that I just thought of my own family and went on from there.  
 02 2465 ModelFirst relative/RELATIVE  
 HELPFUL: Gave me an idea of format.

-----~~TopicFirst~~-----  
 03 2655 TopicFirst relative/RELATIVE  
 HELPFUL: It was easier to write my essay with dialog.

CATEGORY 8: UNIQUE SECONDPARTY (n=2, HELPFUL=2, NOT HELPFUL=0)

-----~~TopicFirst~~-----  
 01 8236 TopicFirst indeterminate/UNIQUE  
 HELPFUL: Structure, description, content, human relations of the model  
 added to coherence in my essay.  
 02 9530 TopicFirst unique/UNIQUE  
 HELPFUL: It helped but was a bit humbling, to try to write after  
 reading something so skillfully written.

CATEGORY 9: PROFESSIONAL (n=2, HELPFUL=2, NOT HELPFUL=0)

-----~~ModelFirst~~-----  
 01 1342 ModelFirst professional/PROFESSIONAL  
 HELPFUL: It just helped with some basic guidelines.

-----~~TopicFirst~~-----  
 02 2907 TopicFirst professional/PROFESSIONAL  
 HELPFUL: It gave me a more vivid portrayal of what I had to compose.

CATEGORY 10: STRANGER/SLIGHT ACQUAINTANCE (n=2, HELPFUL=1, NOT HELPFUL=1)

-----TopicFirst-----  
 01 9287 TopicFirst acquaintance/ACQUAINTANCE  
 HELPFUL: It was an in-depth essay that described a lifetime in 2 pages. But it made me want to Change my subject. Luckily my topic was general enough to let me choose from a number of individuals.  
 02 1815 TopicFirst acquaintance/ACQUAINTANCE  
 NOT HELPFUL: I knew what I was going to write about.

CATEGORY 11: CHILD (n=0)

CATEGORY 12: SPOUSE (n=1, HELPFUL=1, NOT HELPFUL=0)

-----TopicFirst-----  
 01 5667 TopicFirst spouse/SPOUSE  
 HELPFUL: Gave me an idea on what to write. On how to write my essay, but usually it takes time for me a while to really write a good essay.

## APPENDIX J

## KI51: Three Chi-Square Tests

```
'revised 10-31-86 03:54
'Jim Shimabukuro
'University of Hawaii-Kapiolani Community College
'4303 Diamond Head Rd., Honolulu, HI 96816
'Note: some lines word-wrapped to fit on printed page; when
'copying, extend beyond right margin
```

```
BEGIN:
COMMON SHARED TITLE$,ROWTOT,ROWSTOT,ROWSPTOT,COLTOT,COLSTOT,COLSPTOT,CP
COMMON SHARED CHI,DF,OD,DFILE$,CFILE$,ZFILE$,YFILE$
COMMON SHARED A,B,C,D,E,F,G,H,I,J,K,M,N,P,Q,R,S,T,U,X,Y,Z
DIM SHARED F(20,20), ROWTOT(20), COLTOT(20), ROWP(20), COLP(20),
CP(20,20)
```

```
CLS
CALL BOXER
CALL SIGNON
CALL BOXER2
CALL TITLEIN
CALL FIRSTLINE
CALL ROWIN :IF OD=1 THEN GOTO BEGIN
CALL SECONDLINE
CALL COLUMNIN : IF OD=1 THEN GOTO BEGIN
CALL THIRDLINE
CALL PAUSER
CALL INFREQ
CALL TOTPERS
CALL MAINMENU
CLEAR
GOTO BEGIN
```

```
SUB MAINMENU STATIC
```

```
START:
```

```
CLS
CALL BOXER3
LOCATE 2,25:COLOR 0,7 : PRINT "          TASKS MENU          ":COLOR 7,0
PRINT
IF CFIL$<>"pau" THEN LOCATE 4,27:COLOR 15,0:PRINT"C";:COLOR 7,0:PRINT"
Chi-Square"
IF CFIL$<>"pau" THEN LOCATE 5,27:COLOR 15,0:PRINT"Y";:COLOR 7,0:PRINT"
Yates' Correction"
IF CFIL$<>"pau" THEN LOCATE 6,27:COLOR 15,0:PRINT"Z";:COLOR 7,0:PRINT"
z-Technique"
IF CFIL$="pau" AND DFIL$<>"printed" THEN LOCATE 7,27:COLOR
15,0:PRINT"P";:COLOR 7,0:PRINT"  Print Disk Datafile"
LOCATE 8,27:COLOR 15,0:PRINT"R";:COLOR 7,0:PRINT"  Restart"
LOCATE 9,27:COLOR 15,0:PRINT"Q";:COLOR 7,0:PRINT"  Quit--GOTO DOS"
```

```
'IF DFILE$ <> "printed" THEN CALL NOTPRINTED : 'activate when disk file
is critical
```

```
'IF DFILE$ = "printed" THEN CALL PRINTED
2000 CHOICE$=INKEY$ : IF CHOICE$="" THEN 2000
IF CHOICE$="c" OR CHOICE$="C" THEN CALL chisquare : GOTO START
IF CHOICE$="y" OR CHOICE$="Y" THEN CALL yates : GOTO START
IF CHOICE$="z" OR CHOICE$="Z" THEN CALL ztechnique : GOTO START
IF CHOICE$="r" OR CHOICE$="R" THEN GOTO 3000
IF CHOICE$="p" OR CHOICE$="P" THEN CALL diskfile : GOTO START
IF CHOICE$="q" OR CHOICE$="Q" THEN CALL endki
3000 END SUB
```

```
SUB INFREQ STATIC
```

```
CLS
```

```
'*****CELLFREQUENCIES
```

```
FOR A = 1 TO R : PRINT
  FOR B = 1 TO C
    PRINT "CELL FREQUENCY R(";A;"),C(";B;")= ";
      COLOR 15,0 : INPUT"",F(A,B) : COLOR 7,0
    N = N + F(A,B)
  NEXT B
NEXT A
END SUB
```

```
SUB TOTPERS STATIC
```

```
'*****ROWTOTALS
```

```
CLS
```

```
FOR A = 1 TO R
  FOR B = 1 TO C
    ROWTOT(A) = ROWTOT(A) + F(A,B)
  NEXT B
  PRINT "ROW ";A;" TOTAL= ";
  COLOR 15,0
  PRINT ROWTOT(A)
  COLOR 7,0
  ROWSTOT = ROWSTOT + ROWTOT(A)
NEXT A
PRINT "ROWS TOTAL= ";
COLOR 15,0
PRINT ROWSTOT
COLOR 7,0
'*****COLTOTALS
FOR B = 1 TO C
  FOR A = 1 TO R
    COLTOT(B) = COLTOT(B) + F(A,B)
  NEXT A
  PRINT "COLUMN ";B;" Total= ";
  COLOR 15,0
  PRINT COLTOT(B)
  COLOR 7,0
  COLSTOT = COLSTOT + COLTOT(B)
```

```

NEXT B
PRINT "COLUMNS TOTAL ";
COLOR 15,0
PRINT COLSTOT
COLOR 7,0
CALL PAUSER
'*****CellRowPercentages
CLS
FOR A = 1 TO R
  FOR B = 1 TO C
    CP(A,B) = F(A,B)/N
    PRINT "CELL (";A;" ";B;") %= ";
    COLOR 15,0 : PRINT CP(A,B) : COLOR 7,0
    ROWP(A) = ROWP(A) + CP(A,B)
  NEXT B
  PRINT TAB(30) "ROW (";A;") %= ";
  COLOR 15,0 : PRINT ROWP(A) : COLOR 7,0
  ROWSPTOT = ROWSPTOT + ROWP(A)
NEXT A
PRINT "TOTAL ROWS %= "; : COLOR 15,0 : PRINT ROWSPTOT : COLOR 7,0
'*****ColumnPercentages
FOR B = 1 TO C
  FOR A = 1 TO R
    CP(A,B) = F(A,B)/N
    COLP(B) = COLP(B) + CP(A,B)
  NEXT A
  PRINT TAB(27) "COLUMN (";B;") %= ";
  COLOR 15,0 : PRINT COLP(B) : COLOR 7,0
  COLSPTOT = COLSPTOT + COLP(B)
NEXT B
PRINT "TOTAL COLUMNS %= ";
COLOR 15,0 : PRINT COLSPTOT : COLOR 7,0
CALL PAUSER
END SUB

SUB NOTPRINTED STATIC
LOCATE 23,20
PRINT "Data ";
COLOR 25,0
PRINT "NOT";
COLOR 7,0
PRINT " printed to disk file "; TITLE$
END SUB

SUB PRINTED STATIC
LOCATE 23,25
PRINT "Data printed to ";TITLE$
END SUB

SUB CHISQUARE STATIC
CFILE$="pau"

```

```

CLS
G=0
DEFDBL G,E,D
FOR A = 1 TO R
  E=0
  FOR B = 1 TO C
    D=0
    D = (F(A,B))^2/COLTOT(B)
    PRINT "F(";A;",";B;") ";D
    E = E + D
  NEXT B
  PRINT "ROW ";A;" =";E/ROWTOT(A)
  G = G + E/ROWTOT(A) : PRINT
NEXT A
PRINT "ROW FIGURES TOTAL=" ;G
CHI = (G-1) * N
DF = (R-1) * (C-1)
CALL CHITABLE (DF,CHI)
CALL PAUSER
END SUB

SUB YATES STATIC
CFILE$="pau"
YFILE$="yes"
CLS
DEFDBL J,K
J=(ROWSTOT*(((F(1,2)*F(2,1))-(F(1,1)*F(2,2)))-(ROWSTOT/2))^2))
K=((F(1,1)+F(1,2))*(F(2,1)+F(2,2))*(F(1,1)+F(2,1))*(F(1,2)+F(2,2)))
CHI = J/K
DF = (R-1) * (C-1)
CALL CHITABLE (DF,CHI)
CALL PAUSER
END SUB

SUB ZTECHNIQUE STATIC
CFILE$="pau"
ZFILE$="yes"
CLS
DEFDBL X,Y,P,Q,Z
X = F(1,C)/ROWTOT(1) : Y = F(2,C)/ROWTOT(2)
P = ((ROWTOT(1)*X)+(ROWTOT(2)*Y))/(ROWTOT(1)+ROWTOT(2))
Q = 1-P
Z = (X-Y) / (SQR((P * Q) * (1/ROWTOT(1) + 1/ROWTOT(2))))
CHI = Z^2
DF = (R-1) * (C-1)
CALL CHITABLE (DF,CHI)
CALL PAUSER
END SUB

```



```

SUB CHITABLE (DF,CHI) STATIC
CLS
CALL BOXER4
LOCATE 8,25 : PRINT "FOR ";TITLE$
LOCATE 10,25 : PRINT "df=";DF
LOCATE 11,25 : PRINT "chi-square=";CHI
IF ZFILE$="yes" THEN LOCATE 12,25 : PRINT "(z-calculation)"
IF YFILE$="yes" THEN LOCATE 12,25 : PRINT "(with Yates' correction)"
FOR I = 1 TO 271
  READ M
  IF M = 999 THEN 2525 ELSE 2480
  IF M = 25 THEN 2470 ELSE 2480      : 'trap for 25.00
  2470 H = H+1 : IF H=1 THEN 2530
  2480 IF M = DF THEN 2490 ELSE 2530
  2490 FOR S=1 TO 8
    READ U
    IF CHI >= U THEN 2520 ELSE GOTO PTABLE
  2520 NEXT S
  2525 RESTORE
2530 NEXT I

PTABLE:
IF S=1 THEN T=.0!
IF S=2 THEN T=.3
IF S=3 THEN T=.2
IF S=4 THEN T=.1
IF S=5 THEN T=.05
IF S=6 THEN T=.02
IF S=7 THEN T=.01
IF S=8 THEN T=.001

LOCATE 13,25 : PRINT "level of significance=" ;T

DATA 1,1.07,1.64,2.71,3.84,5.41,6.64,10.83,100
DATA 2,2.41,3.22,4.60,5.99,7.82,9.21,13.82,100
DATA 3,3.66,4.64,6.25,7.82,9.84,11.34,16.27,100
DATA 4,4.88,5.99,7.78,9.49,11.67,13.28,18.46,100
DATA 5,6.06,7.29,9.24,11.07,13.39,15.09,20.52,100
DATA 6,7.23,8.56,10.64,12.59,15.03,16.81,22.46,100
DATA 7,8.38,9.80,12.02,14.07,16.62,18.48,24.32,100
DATA 8,9.52,11.03,13.36,15.51,18.17,20.09,26.12,100
DATA 9,10.66,12.24,14.68,16.92,19.68,21.67,27.88,100
DATA 10,11.78,13.44,15.99,18.31,21.16,23.21,29.59,100
DATA 11,12.90,14.63,17.28,19.68,22.62,24.72,31.26,100
DATA 12,14.01,15.81,18.55,21.03,24.05,26.22,32.91,100
DATA 13,15.12,16.98,19.81,22.36,25.47,27.69,34.53,100
DATA 14,16.22,18.15,21.06,23.68,26.87,29.14,36.12,100
DATA 15,17.32,19.31,22.31,25.00,28.26,30.58,37.70,100
DATA 16,18.42,20.46,23.54,26.30,29.63,32.00,39.25,100
DATA 17,19.51,21.62,24.77,27.59,31.00,33.41,40.79,100
DATA 18,20.60,22.76,25.99,28.87,32.35,34.80,42.31,100

```

```

DATA 19,21.69,23.90,27.20,30.14,33.69,36.19,43.82,100
DATA 20,22.78,25.04,28.41,31.41,35.02,37.57,45.32,100
DATA 21,23.86,26.17,29.62,32.67,36.34,38.93,46.80,100
DATA 22,24.94,27.30,30.81,33.92,37.66,40.29,48.27,100
DATA 23,26.02,28.43,32.01,35.17,38.97,41.64,49.73,100
DATA 24,27.10,29.55,33.20,36.42,40.27,42.98,51.18,100
DATA 25,28.17,30.68,34.38,37.65,41.57,44.31,52.62,100
DATA 26,29.25,31.80,35.56,38.88,42.86,45.64,54.05,100
DATA 27,30.32,32.91,36.74,40.11,44.14,46.96,55.48,100
DATA 28,31.39,34.03,37.92,41.34,45.42,48.28,56.89,100
DATA 29,32.46,35.14,39.09,42.56,46.69,49.59,58.30,100
DATA 30,33.53,36.25,40.26,43.77,47.96,50.89,59.70,100
DATA 999
END SUB

```

```

SUB DISKFILE STATIC:

```

```

DFILE$ = "printed"

```

```

CLS

```

```

PRINT "Printing to disk file ";TITLE$;" . . ."

```

```

OPEN "O",#1,TITLE$

```

```

PRINT#1,DATE$,TIME$

```

```

PRINT#1,""

```

```

PRINT#1,"DATA FOR: ";TITLE$

```

```

PRINT#1,""

```

```

DEFDBL G,Y,W

```

```

PRINT#1,"chi square= ";CHI

```

```

DF = (R-1) * (C-1)

```

```

PRINT#1,"df= ";DF

```

```

PRINT#1,"level of sig= ";T

```

```

PRINT#1,""

```

```

FOR A = 1 TO R

```

```

    FOR B = 1 TO C

```

```

        PRINT#1,"Cell Frequency R(";A;"),C(";B;")= ";F(A,B)

```

```

    NEXT B

```

```

NEXT A

```

```

FOR A = 1 TO R

```

```

    PRINT#1,"    Row ";A;" Total= ";ROWTOT(A)

```

```

NEXT A

```

```

FOR B = 1 TO C

```

```

    PRINT#1,"Column ";B;" Total= ";COLTOT(B)

```

```

NEXT B

```

```

PRINT#1,"Rows Total= ";ROWSTOT;" and Columns Total= ";COLSTOT

```

```

PRINT#1,""

```

```

FOR A = 1 TO R

```

```

    FOR B = 1 TO C

```

```

        PRINT#1,"Cell(";A;",";B;) %= ";CP(A,B)

```

```

    NEXT B

```

```

    PRINT#1,"    ROW ";A;" %= ";ROWP(A)

```

```

NEXT A

```

```

FOR B = 1 TO C

```

```

    PRINT#1,"    COLUMN ";B;" %= ";COLP(B)

```

```

NEXT B
PRINT#1,"Total Rows %= ";ROWSPTOT;" and Total Columns %= ";COLSPTOT
PRINT#1,""
CLOSE
END SUB

```

```

SUB SIGNON STATIC
LOCATE 2,17:COLOR 0,7:PRINT TAB(36)"KI51                               ":COLOR 7,0
LOCATE 3,17:COLOR 0,7:PRINT TAB(28)"Three Chi-Square Tests
":COLOR 7,0
LOCATE 4,26:PRINT"by Jim Shimabukuro 4/6/85"
LOCATE 5,25:PRINT"rev for IBM-PC/COMP 10/31/86"
END SUB

```

```

SUB TITLEIN STATIC
LOCATE 9,23 :PRINT"(No more than 8 characters + EXT)"
LOCATE 11,23:PRINT"DATA TITLE: ";
COLOR 15,0 : INPUT"", TITLE$ : COLOR 7,0
END SUB

```

```

SUB ROWIN STATIC
LOCATE 15,23:PRINT"NUMBER OF ROWS= ";
COLOR 15,0 : INPUT"", R : COLOR 7,0
IF R>20 THEN CALL OVERDIM
END SUB

```

```

SUB COLUMNIN STATIC
LOCATE 19,23:PRINT"NUMBER OF COLUMNS= ";
COLOR 15,0 : INPUT"", C : COLOR 7,0
IF C>20 THEN CALL OVERDIM
END SUB

```

```

SUB OVERDIM STATIC
OD=1
10 CLS
LOCATE 15,22:PRINT "Array limited to 20 columns by 20 rows."
LOCATE 16,22:PRINT "To increase size, revise DIM SHARED statement."
LOCATE 17,22:PRINT "To return to program, press spacebar."
L$=INPUT$(1)
IF L$=CHR$(32) THEN 20 ELSE 10
20 END SUB

```

```

SUB PAUSER STATIC
100 LOCATE 22,27:COLOR 20,0:PRINT "press space bar to resume":COLOR 7,0
H$=INPUT$(1)
IF H$<>CHR$(32) THEN 100
IF H$=CHR$(32) THEN 150
150 END SUB

```

```

SUB ENDKI STATIC
CLS
END
END SUB

```

```

'*****GRAPHICS SUBROUTINES*****
SUB BOXER STATIC                                'for opening choice
LOCATE 1,15:PRINT CHR$(201)                    'top-left corner
FOR PA=16 TO 61
  LOCATE 1,PA:PRINT CHR$(205)                  'top horizontal line
NEXT PA
LOCATE 1,62:PRINT CHR$(187)                    'top-right corner
FOR QA=2 TO 5
  LOCATE QA,62:PRINT CHR$(186)                'right vertical line
NEXT QA
LOCATE 6,62:PRINT CHR$(188)                    'bottom-right corner
FOR QQ=61 TO 16 STEP -1
  LOCATE 6,QQ:PRINT CHR$(205)                'bottom horizontal line
NEXT QQ
LOCATE 6,15:PRINT CHR$(200)                    'bottom-left corner
FOR PP=5 TO 2 STEP -1
  LOCATE PP,15:PRINT CHR$(186)                'left vertical line
NEXT PP
END SUB

```

```

SUB BOXER2 STATIC                               'for opening choice
LOCATE 8,15:PRINT CHR$(201)                    'top-left corner
FOR PA=16 TO 61
  LOCATE 8,PA:PRINT CHR$(205)                  'top horizontal line
NEXT PA
LOCATE 8,62:PRINT CHR$(187)                    'top-right corner
FOR QA=9 TO 22
  LOCATE QA,62:PRINT CHR$(186)                'right vertical line
NEXT QA
LOCATE 23,62:PRINT CHR$(188)                   'bottom-right corner
FOR QQ=61 TO 16 STEP -1
  LOCATE 23,QQ:PRINT CHR$(205)                'bottom horizontal line
NEXT QQ
LOCATE 23,15:PRINT CHR$(200)                   'bottom-left corner
FOR PP=22 TO 9 STEP -1
  LOCATE PP,15:PRINT CHR$(186)                'left vertical line
NEXT PP
END SUB

```

```

SUB FIRSTLINE STATIC
FOR PQ=16 TO 61                                'first ques horiz line
  LOCATE 13,PQ:PRINT CHR$(205)
NEXT PQ
END SUB

```

```

SUB SECONDLINE STATIC

```

```

FOR PQ=16 TO 61
  LOCATE 17,PQ:PRINT CHR$(205)
NEXT PQ
END SUB

SUB THIRDLINE STATIC
FOR QP=16 TO 61
  LOCATE 21,QP:PRINT CHR$(205)
NEXT QP
END SUB

SUB BOXER3 STATIC
LOCATE 1,24:PRINT CHR$(201)
FOR PA=25 TO 51
  LOCATE 1,PA:PRINT CHR$(205)
NEXT PA
LOCATE 1,52:PRINT CHR$(187)
FOR QA=2 TO 10
  LOCATE QA,52:PRINT CHR$(186)
NEXT QA
LOCATE 11,52:PRINT CHR$(188)
FOR QQ=51 TO 25 STEP -1
  LOCATE 11,QQ:PRINT CHR$(205)
NEXT QQ
LOCATE 11,24:PRINT CHR$(200)
FOR PP=10 TO 2 STEP -1
  LOCATE PP,24:PRINT CHR$(186)
NEXT PP
END SUB

SUB BOXER4 STATIC
LOCATE 7,23:PRINT CHR$(201)
FOR PA=24 TO 54
  LOCATE 7,PA:PRINT CHR$(205)
NEXT PA
LOCATE 7,55:PRINT CHR$(187)
FOR QA=8 TO 13
  LOCATE QA,55:PRINT CHR$(186)
NEXT QA
LOCATE 14,55:PRINT CHR$(188)
FOR QQ=54 TO 24 STEP -1
  LOCATE 14,QQ:PRINT CHR$(205)
NEXT QQ
LOCATE 14,23:PRINT CHR$(200)
FOR PP=13 TO 8 STEP -1
  LOCATE PP,23:PRINT CHR$(186)
NEXT PP
FOR PZ=24 TO 54
  LOCATE 9,PZ:PRINT CHR$(205)
NEXT PZ
END SUB

```

'second ques horiz line

'third ques horiz line

'for mainmenu

'top-left corner

'top horizontal line

'top-right corner

'right vertical line

'bottom-right corner

'bottom horizontal line

'bottom-left corner

'left vertical line

'for chitable

'top-left corner

'top horizontal line

'top-right corner

'right vertical line

'bottom-right corner

'bottom horizontal line

'bottom-left corner

'left vertical line

'mid horizontal line

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