REVISING BEHAVIOURS OF AVERAGE AND COMPETENT GRADE SIX WRITERS COMPOSING IN TWO MODES OF DISCOURSE

by

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ABSTRACT

The study examined the revisions and revising behaviours of average and competent writers in grade six composing in two modes of discourse, expressive and transactional. It also examined the universality of current cognitive process theories of writing in providing a matrix or template for the explication of the revising strategies of pre-adolescent writers.

The subjects participating in the study were members of a grade six class in an elementary-junior high public school in Calgary, Alberta. Three competent and three average writers were randomly selected from a pool of each type. The study involved the collection of verbal protocols and writing samples as the subjects wrote in two modes of discourse. Writing topics were given in advance of the sessions. Students composed and revised the expressive composition during the first two sessions. The transactional composition was developed and revised in sessions three and four. Each session was conducted on an individual basis. Audiotapes were made of the verbal protocols and of interview sessions at the conclusion of composing to determine student reasons for implementing revisions.

The following is a summary of the major findings of this study:

1. Average writers revised less frequently than competent writers. This difference in frequency of revision between the two groups was not significant in either mode of discourse investigated.

2. Surface changes occurred in a 3:1 ratio to meaning changes in all but the expressive writing of average writers.

3. No clear patterns for revising behaviours emerged within average or competent writer groups. Individual styles of revising behaviour were more apparent.

4. Composing in the expressive mode appeared to be less difficult for the student writers. Many described their writing as "flowing."

5. Composing in the transactional mode was characterized by more frequent rereading of what had been transcribed, pauses and protocol statements reflecting difficulty in matching intentions with language.

6. Evidence of both editing and reviewing was gathered in support of Flower and Hayes (1981b) statement that both editing and reviewing are revision processes in composing.

The pre-adolescent writers in this study reflected an atheoretical approach to the revising of their compositions. Concerns in revision were mainly local ones.

Further, students were unaware of the heuristic value of the composing/revising process, viewing writing solely as a process of communication rather than of discovery.

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Dedication

To Michael, Marc, Mimi and Gail,

for giving me their most precious gift,

time.

Chapter I

The Problem

Introduction

The cataloging in recent years of the processes in which mature writers engage while composing has drawn the focus of teachers and researchers away from the products of writing to the processes. As the dynamics of these processes are increasingly revealed, specific facets of the composing process have also been examined more closely. In particular, revision as an integral component of the writing process has become a subject for investigation and reflection on its role in the complex cognitive interactions of composing.

This study proposed to examine and describe the revising behaviours of average and competent grade six writers within the total composing process, and to determine how revising behaviours of pre-adolescent writers are accommodated within current cognitive process models of the writing process.

The Problem

> That teachers teach and children learn no one will deny. But to believe that children learn because teachers teach and only what teachers teach is to engage in magical thinking.... What constitutes a conversion experience for those who present writing in schools, from the magical thinking paradigm to a developmental view? (Emig, 1981, p. 27)

This statement briefly articulates the state of flux in which many teachers of writing find themselves. Traditionalists view writing as a linear process, one in which prewriting or planning is completed prior to writing, and all revising is in turn effected only when writing is complete. Accordingly, writing instructors follow a practice of relative non-intervention in this process until the submission of the final draft for grading. Their corrections and written suggestions for improvements at this stage attempt to encompass all aspects of the composition from spelling errors to the presentation and development of ideas. The student's task is one of incorporating such suggestions and corrections into the production of a polished final copy, or more usually, of independently applying any knowledge gained from this distanced instruction to the next writing assignment.

If one moves away from this "magical" perspective to composing theory developed in recent years, writing is no longer viewed as a series of stages unfolding in a linear sequence. The activities of composing are interpreted as more recursive than linear, more flexible than constrained as the result of research in composing by Emig (1971), Perl (1979), Sommers (1978a), and Flower and Hayes (1981b). The writing process is modelled as a recursive, hierarchical, and highly embedded set of processes and subprocesses (Flower & Hayes, 1981b). The

teacher's role in developing students' writing skills is one of facilitator and collaborator, giving response and advice throughout the process.

Investigation into composing as an interaction of many complex cognitive processes has also led to scrutiny of some of the component processes. Examination of revision as an integral aspect of the composing process is a recent development in writing research (Perl, 1979; Sommers, 1978a; Bridwell, 1980; Faigley & Witte, 1981). Studies of what writers and students do when revising and their reasons for revising have focussed more on writers of high school, college, or adult age. Graves (1979, 1983) and Calkins (1981) examined the revising stages of children in the early stages of writing development. But Emig (1981) cautions that to present writing from a "non-magical" perspective, teachers must "assess growth in writing against its developmental dimensions" (p. 27).

If teachers need to be aware of the developmental dimensions of a process before they can effectively intervene as responders and collaborators, the gaps between our knowledge of the processes in which mature writers engage as they revise and those of very young writers learning to revise must be narrowed. The strategies and techniques which adult writers use in revising may or may not be appropriate to the composing styles of young writers. From a developmental perspective, the cognitive

maturity of young writers may impose limits on the cognitive processes themselves and on the sophistication of their interactions.

A partial list of questions which would enable educational researchers to explore the nature of the composing processes and practices of young writers would read as follows:

1. In what processes do pre-adolescent writers engage as they revise?

2. How flexible are their composing habits?

3. Do these students employ different composing/ revising styles for different forms of writing?

4. What are their theories of the composing process and revision's role in this?

5. What awareness of the composing process do they possess?

A list such as this serves to illustrate the nascent condition of our knowledge in the burgeoning area of research into developmental aspects of the composing process. The present study proposes to examine one facet of this process, the revising behaviours of pre-adolescent writers. It is hoped that the results of this study will further our understanding of developmental revising processes, and in doing so, will provide support and direction for "non-magical" teaching of revision as an aspect of the composing process.

The Statement of Purpose

The purpose of this study was to examine and describe the revising behaviours of average and competent writers at the chronological mid-point of their school careers, and to determine how appropriately the role of revision as described in current cognitive process models of writing (Nold, 1981; Flower & Hayes, 1980, 1981b) explicates the revising behaviours of these grade six students.

The Definition of Terms

1. Mode of discourse. Mode of discourse refers to the differences in form which a written composition may take. For the purposes of the study, two forms of writing, referred to as modes of discourse, will be examined. Those forms are expressive and transactional writing.

2. Expressive writing. Expressive writing is a form in which the writer shares personal feelings and observations. Topic selection and treatment focus on the concerns of the writer (Britton, 1970).

3. Transactional writing. Transactional writing is a form to get something done, to actively involve the audience in focussing on the content the writer is communicating (Britton, 1970).

4. Revision. Revision is any change made to what is transcribed in developing a written composition, exclusive of motor-aesthetic concerns of penmanship or letter formation, and neatness.

The Research Questions

The following research questions will guide this thesis:

1. What are the characteristics of revisions in the composing process of average and competent grade six writing students composing in the expressive mode?

2. What are the characteristics of revisions in the composing process of average and competent grade six students composing in the transactional mode?

3. What is the nature of revision as part of the total composing process of average writers in grade six?

4. What is the nature of revision as part of the total composing process of competent writers in grade six?

5. What is the role of cognitive process models of composing in explicating the revising behaviours of grade six students?

The Design of the Study

Three students of average writing achievement and three students of competent writing achievement were randomly selected from groups of average and competent writers respectively. They were members of a grade six class in an elementary-junior high public school in Calgary, Alberta.

Students were given an expressive writing topic in advance of session one. All sessions were conducted on an individual basis with the subjects. An audiotape was made of each session. During session one, students were asked to think aloud while composing draft one. Interviews were conducted at the completion of each draft to determine student reasons for revisions made. For the second session, students were asked to repeat the think aloud procedure while writing draft two of their expressive composition. Students were given the transactional writing assignment at the close of session two. Sessions three and four repeated the format of sessions one and two, but utilized a transactional writing assignment.

Revisions were analyzed at five stages during the drafting of each composition. The Faigley and Witte (1981) taxonomy of revision changes was used to classify revisions. Transcripts of the audiotapes of each session were made to provide written verbal protocols for each student.

Chapter III provides a thorough description of the design of this study.

The Limitations of the Study

The researcher acknowledges the following limitations in this study:

1. This study was conducted with students in a grade six class. Therefore, the findings may not be applicable to students at other grade levels.

2. The study was conducted with students in a limited geographical area, and may render the results applicable only to a similar student population.

3. The size of the sample was small, which may limit generalization of results obtained.

4. The study was conducted with "average" and "competent" writers in grade six. The findings may not be applicable to students who are below average in writing achievement.

5. This study was limited by the artificiality of the writing situation as students were required to write on specific topics at scheduled times.

6. The study restricted the mode of discourse in which compositions were written. This may restrict the generalization of findings to other forms of writing.

The Significance of the Study

The findings of this study may give support to current views on the role of revision in the composing process, and assist researchers and teachers in developing a profile of the revision behaviours of students in grade six. This exploratory and descriptive study may also encourage further research into developmental aspects of revision in student writing. The protocols developed during this research may give teachers a broader perspective and deeper understanding of the revision mechanisms used by their students. This may result in the development of techniques of teaching revision to students which more closely fit their developmental capacities and needs at this age. In summary, the primary significance of the study is that the analysis of student revising behaviours within the framework of current cognitive process theories of writing may be of practical value to teachers of writing.

The Organization of the Study

Chapter I has introduced the study and outlined the problem on which it will focus. The remainder of this report is organized as follows:

Chapter II - Review of the Literature

Chapter III - Design of the Study

Chapter IV - Analysis of Data

Chapter V - Summary, Conclusions and Implications

Chapter II

Review of the Literature

Introduction

The purpose of this chapter is to provide an overview and background of significant research related to the problem under investigation. The necessity of establishing a theoretical framework provides the focus for exploring traditional and current models of the writing process. Emphasis is given to cognitive processing models and cognitive-developmental models of the writing process. The role of revision as an integral component of the writing process is examined both as a recursive act to reduce dissonance in the composing cycle and as a developmental phenomenon. Research into revising behaviours is reviewed followed by a concluding section on the development of techniques for observing and measuring revisions in written compositions.

Writing and Revising: A Theoretical Framework

A process, by its very nature, is not a static entity. It is ongoing and dynamic in character, not readily amenable to close examination and manipulation. In building a model of a process, researchers design an artifact which attempts to capture in still life form,

the components of the process and their interactions. Max Weber, describing the rules for social scientific model building noted "that such models are not literal descriptions of reality, but, rather are abstract descriptions of certain aspects of social life by which such aspects can be held constant so that they can be investigated more thoroughly than might otherwise be possible" (cited in Cooper & Holzman, 1983).

Jerome Bruner (1971) discussed the objectives of theory development in a manner associated with the purpose of designing a model: "We now see the construction of theory as a way of using the mind, the imagination, of standing off from the activity of observation and inference and creating a shape of nature" (p. 15).

Flower and Hayes (1981b) specified that designing a theoretical system which reflects the composing process requires three elements. It must define the subprocesses which make up the larger process, indicate the interaction of these subprocesses within the whole, and finally expand one's vision and understanding of the process.

Stage Process Models of Composing

The current traditional paradigm of composing "places an emphasis on the product rather than on the process of composing" (Young, 1978):

> Vitalism, with its stress on the natural powers of the mind and the uniqueness of the creative act, leads to a repudiation of the possibility of teaching the composing process, hence the tendency of current traditional rhetoric to become a critical study of the products of composing and an art of editing. (p. 31)

Young accorded the content and organizational principles of three generations of composition texts to the role played by textbooks in promulgating and perpetuating information about currently acceptable paradigms. He credited a paradigm shift, initiated twenty years ago, in part of theories of writing which focus on the process rather than the product of composing. The composing model developed by Rohman (1965) with prewriting, writing, and rewriting activities represented a departure from the current traditional paradigm in its focus on invention and discovery in the prewriting stage. This awareness of the process of writing was also a feature of The Conception/Incubation/Production Model of Britton, Burgess, Martin, MacLeod and Rosen (1975). However, the emphasis on process in these models was tempered by their strong attachment to the linear development of the writing product. In the prewriting stage, the writer discovers what it is that he has to write, writing is the production of the composition, and rewriting is the final stage in which the writer re-examines and revises. This separation of the writing process was criticized by Sommers (1980):

> What this movement fails to take into account in its linear structure--'first--then--finally' --is the recursive shaping of thought by language: what it fails to take into account is revision.

> In these linear conceptions of the writing process revision is understood as a separate stage at the end of the process--a stage that comes after the completion of a first or second draft and one that is temporally distinct from the prewriting and writing stages of the process. (p. 378)

Research conducted by Sommers (1978a) found that revision by both experienced and student writers was not carried out as a final and discrete stage but occurred throughout the writing process. Sommers viewed the composing process as being both linear and recursive: "it is possible to view the composing process as not just a linear series of stages, but rather as a hierarchical set of subprocesses" (p. 7). In her study of the composing processes of unskilled college writers, Perl (1979) also concluded that writing is not a linear, constantly forward moving phenomenon. She characterized the process as "retrospective structuring; movement forward occurs only after one has reached back, which in turn occurs only after one has some sense of where one wants to go" (p. 331).

The concept of paradigm shift as developed by Thomas Kuhn (1970) in his thesis "The Structure of Scientific Revolutions" described the disorderly and often controversial replacement of one conceptual model by another. When problems and inadequacies surface which cannot be reasonably interpreted by the current paradigm, a movement arises within the discipline to formulate a new model. Opposition to the new paradigm lessens when it functions to deal with

controversies and contradictions which the old model could not explain. Hairston (1982) forecasted an imminent paradigm shift in the teaching of writing, and placed Sondra Perl, Linda Flower and John Hayes at the forefront of this movement.

Cognitive Process Models of Writing

An alternative perspective from which to view writing is that of writing as a cognitive activity of interacting processes. The characteristics of this perspective involve the writer's store of knowledge and experience, the discovery of meaning, selection of aspects of meaning for expression, encoding this in language, reviewing what has been written, and revising to clarify intended meaning or develop newly discovered understandings (Frederiksen & Dominic, 1981). The analysis of writing as a cognitive act confronts two problems, according to Frederiksen and Dominic. The first is the identification of writing's component processes. The second problem involves the explanation and elucidation of the complex interaction of the processes. The authors noted that "they do not necessarily occur in rigid sequence, from planning to language production, to reviewing, and finally, to revising" (p. 4).

The Cognitive Process Theory of Writing developed by Flower and Hayes (1981b) identified as the major units of analysis, three main categories of elementary mental processes. Basing the theory on the interaction of cognitive processes and their hierarchical structure delineates this model from stage models which analyze the composing process on the basis of the linear sequence of completed stages of a written product. The writing processes were identified as planning and its subprocesses: generation, organizing and goal setting; translating, the transfer of mental representations to written form, and; reviewing, which includes the subprocesses of evaluating and revising. The orchestration of each of these processes in the writing act is under the control of a monitor. The cognitive processes of writing interact with two other influencing elements. One is the task environment consisting of the text produced so far, and the rhetorical problem including topic, audience, and exigency. The other is the writer's long term memory, which encompasses knowledge of topic, audience, and writing plan.

The Cognitive Process Theory is framed by four essential understandings. The first is that writing is viewed as a set of distinct thinking processes which writers coordinate and arrange while composing. The hierarchical and highly imbedded nature of the processes which allows for their flexible interactions is the second

feature. The third key point stresses the goal directed nature of the composing act. Finally, writers are viewed as developing goals and subgoals on the basis of the writers' purpose but also of revising these goals or originating new goals based on what the writer has learned while composing.

In the model, two subprocesses, generate and edit, may interrupt other processes. Editing is viewed as a production system consisting of two parts. The first part specifies the type of language to be examined (e.g., notes, sentences) and the second aspect is the fault detector. If both conditions are met, the type of language specified is examined and a fault detected, the writer responds by moving to fix the fault. Flower and Hayes distinguish editing, an automatic process if the conditions for editing are met, from reviewing. Reviewing is an activity which occurs when the writer opts to conduct a more specific examination of the text. Rather than interrupting the translating process as editing may, reviewing occurs when the writer has finished a translating process. Flower and Hayes view revision not "as a unique stage in composing, but as a thinking process that can occur at any time a writer chooses to evaluate or review his text or plans" (p. 376).

The cognitive process model proposed by Flower and Hayes is a model of the composing process of a competent

writer. Evidence for the existence of the processes and their interaction has been drawn from "protocol analysis." Writers were asked to work on a composing task while thinking aloud. The researchers described protocols as being typically incomplete, its analysis "like following the tracks of a porpoise, which occasionally reveals itself by breaking the surface of the sea" (Hayes & Flower, 1980, p. 9). The investigator's task is to examine the incomplete record of the cognitive process coupled with a knowledge of human capabilities and the task. The knowledge gained in this analysis is used to construct a model of the cognitive process. Frederiksen and Dominic (1981) commented that the "crucial requirement for cognitive research is to develop convincing sources of evidence on which to base detailed descriptions of process that writers use" (p. 4). It is important to note that detractors of Flower and Hayes' cognitive process theory, Cooper and Holzman (1983) caution that while it is possible though problematic to observe the actions of cognitive processes, the processes themselves cannot be observed. In their discussion of revision, Faigley and Witte (1981) remarked, "What we learn from protocol analysis--is uncertain--the writing situation is artificial--many writers find that analyzing orally interferes with their composing processes--a lot is going on and not all of it gets verbalized" (p. 412).

The cognitive process model developed by Nold (1979, 1981) is based on her view of writing as a solution to a complex communication problem. A major purpose of the model was to provide for the differences between skilled and unskilled adult writers. Basing her interpretation on a psychological model of problem solving, Nold identified three processes in writing: planning, transcribing and reviewing. Nold emphasized that these are not one time processes, rather as the text develops and changes, these processes occur recursively in irregular patterns. In clarifying the model, Nold dealt mainly with the processing demands related to transcribing and revising. Transcribing is constrained by two aspects: global plans, reflecting the writer's representations of meaning, audience, and personal and local plans, including such concerns as semantic layout, syntax and word choice.

Revising is not seen as a subprocess in the way that planning, transcribing, and reviewing are, rather it is the "retranscribing" of text already produced. Nold cautions that writers need to be able to generate a better form of the text in order to retranscribe. Thus one cannot determine revising strategies from text examination alone. A writer may recognize a need for revision but be unable to generate a solution to the retranscription problem. Nold linked the planning and reviewing subprocesses. Only if in planning a writer has elaborated on his intentions

for audience, meaning, and persona will he be able to mount a comparison of text to intention during the review process. Nold further stipulated that young writers who do not usually develop elaborate plans as to audience, persona, and meaning can be expected to examine during the review process only those conventions and intentions which operated during planning and transcribing.

Cognitive-Developmental Models of the Writing Process

Barritt and Kroll (1978) presented the cognitive-developmental position as one which "believes that one of the most fruitful ways to understand any mature mental activity is to study the ontogenesis of that process in the child" (p. 50). Through noting the observable actions in composing, the cognitive-developmentalist posits the cognitive processes orchestrating the composing behaviours. For Bereiter (1980), a cognitive-developmental process model is seen as central to advancing our understanding of the development of the writing process in children. He stated that a complete processing model has not yet been developed. According to Bereiter, such a model would have to consider three aspects--the cognitive processes which interact to produce writing, different types of processing requirements from highly intentional and conscious to the routine, unconscious, and; the strategies applied to orchestrate the various functions in order that writing occurs.

The information processing load in writing is an important issue in the cognitive-developmental model of the composing process. Donaldson (cited in Burtis, Bereiter, Scardamalia & Tetroe, 1983) argued that cognitive development does not involve the acquisition of new elementary logical operations. It is the acquisition and development of knowledge structures and control structures applied to these elementary logical operations which enable the child to develop flexible and monitored approaches to more challenging processing tasks.

A quantitative analysis of information processing load in writing by Scardamalia (1981) revealed that high achieving children aged 10 to 14 handle the coordination of content schemes at a reduced level of complexity in writing. Normally capable of handling three to five content schemes, the children appeared to deal with only one to three in writing. Scardamalia concludes that writing does not facilitate cognitive processing for most children, and that children often attempt writing tasks which are too difficult for them. She noted a paradox in children's difficulties with idea integration in writing:

> The very activities adults use to break up this complex activity into manageable subroutines are what children fail to take advantage of. Not only do adults plan ahead, stop to reread, to review and to reorganize their thoughts as they develop them sequentially; they frequently do this through a sequence of drafts.... In writing, the beginner tries to do as a single complex act what the skilled person does in pieces. (p. 100)

She also recorded the readiness with which children accept instruction in developing more mature composing tactics such as developing "executive procedures" to coordinate and organize their composing processes. Scardamalia concluded that educators must learn more of the nature of cognitive processes in writing, the coordination of these processes, and the effects of their "demand characteristics" on the limited information processing capacities of young writers.

Revision: An Integral Component of the Composing Process

Revision: A Recursive Process

Sommers (1980) defined revision as "a sequence of changes in a composition--changes which are initiated by cues and occur continually throughout the writing of a work" (p. 380). She theorized that revision strategies are a part of the process of discovering meaning. The recognition and resolution of dissonance are seen as essential elements in revision. In this model, writers confront and attempt to reduce dissonance according to a scale of concerns. Sommers emphasized the recursive nature of the process which continues until the writer has resolved enough dissonance to achieve satisfaction with the written results and to feel that meaning has been achieved and communicated.

As a writer delving into the processes of his craft, Donald Murray (1980) theorized that prevision, vision, and revision occur cyclically throughout the duration of composing. Murray divided revision into two separate acts, internal revision and external revision. Internal revision is done by the writer for himself, to discover where his writing has led. It encompasses four skills: content, the information a writer must have; form and structure, to bring order and meaning to a composition; language, its manipulation leads to meaning; and voice, the detachment which allows the writer to view and hear what he has written, rather than what he hoped was written. The second type of revision, external, takes place when writers examine what they have written to see if it communicates to its intended audience. This aspect of revision includes attention to form and language, style and mechanics. For mature writers, internal revision is said to occupy more time and attention than external revision. Murray contends that external revision is not likely to be successful unless the writer has undertaken the process of internal revision to discover and clarify meaning.

In a similar manner, Della-Piana (1978) did not limit revision to the editing and polishing that come just before a work is completed. He, too, saw revision as an ongoing process occurring throughout the writing experience. He defined revision, in terms of poetry, as:

> Both the discrimination or sensing of something in a work that does not match what the poet intends or what the poem itself suggests and the synthesis that brings the writer closer to what was intended or suggests the way this might be done. (p. 106)

In this model, the writer's preconceptions of what the work will be like guide initial work. Using written or cognitive representations, the writer then makes discriminations as to what the work accomplishes. Dissonance may be followed by tension, resulting from the mismatch between the author's conception of a work and what it actually does, or arising from the outcome of a work following the author's original intentions which have not altered. Tension is resolved by reconception or reseeing. Della-Piana states that this need not be a conscious process, or that the elements follow a fixed sequence. Obstacles to revision such as limited discrimination, failure to sense tensions, or reconceptions which are not useful may occur at any point. He further suggests that the number of elements in the writing-as-revision process and the obstacles which prevent its successful completion imply that the development of a writer is a lengthy process, and that investigation of the process may well reveal its complexity and diversity.

The theory of revision advanced by Bridwell (1980) is a composite based in part on the work of Emig (1971), Pianko (1979), Della-Piana (1978), and Sommers (1978a, 1980),

as well as on a synthesis of findings from her own research on revision strategies. Bridwell conceived of the revision process as being both linear and recursive. The writer may proceed linearly with an idea to its end, or more typically, may stop during writing for rescanning or rereading. Verification of congruence with concept of form may then end or continue the writing. If dissonance is perceived, a decision is made to make changes, to stop writing or to continue on without revision. The looping process continues until all dissonance has been satisfactorily resolved or until the decision to make no further changes is made. Bridwell did not view this as a definitive model of revision but rather as one which will enable researchers to examine other patterns of revision and elucidate the role of revision in the composing process.

Revision: A Developmental Perspective

The preceding theoretical notions of the revision process have largely approached revision from the point of view of the mature writer or one in the final grades of school. Donald Graves (1983), in viewing revision from a developmental standpoint, described revision as an intertwining of one's vision of a work and one's perceptions. The vision aspect involves focusing first on a word, part or idea, realizing its relationship to the whole, and finally becoming aware of related ideas emerging

in one's consciousness. Graves maintained that perceptions are acquired and enhanced through writing and through gaining an understanding of the writing process. Children change their concept of the writing process in accordance with changing perceptions. The order of dominance for concept principles guiding children's revision is as follows:

1. Spelling
2. Motor-aesthetic issues
3. Conventions
4. Topic and information
5. Major revisions (addition and exclusion of information, reorganization) (p. 152)

While children may be able to make changes in all areas, the dominant category is the one used as a conscious, independent strategy. Graves cautioned that the force or energy for revision is wedded to the child's voice or need to express himself. He sees revision as not necessarily a natural act but rather one which must draw on anticipation of self-satisfaction and response from others.

In a study of third grade students, Calkins (1981) described rewriting as "manipulating thinking, it is thinking about thinking" (p. 331). Through case study, observation and examination of writing samples, Calkins identified four types of revising behaviour for this age group. The first, random drafting, occurs when children write successive drafts without reference to any previous drafts. Rewriting was described as "a random, undirected process of moving on" (p. 333). Refining, the second

level, includes children who attend to concerns of penmanship and spelling and perhaps add a few lines to what was previously written. In the transition stage, children fluctuate between refining drafts and abandoning other drafts. They can look back and evaluate earlier drafts but are not content with their writing. It was described as a backward motion of refinement rather than a process of discovery. The fourth phase, interacting, alludes to the interaction between the writer and the writing, the writer and intended meaning, and the writer and internalized audience. This stage was characterized by its recursive nature in the forward movement of writing and the backwards motion of assessing to ease the tension between intended and discovered meaning. Calkins described revision for these children as a "hands-on rethinking process" (p. 340). Calkins derived support for her observations from the developmental theories of Bruner (cited in Calkins, 1983):

> Intellectual development is marked by an increasing capacity to deal with several alternatives simultaneously, to tend to several sequences during the same period of time, and to allocate time and attention in a manner appropriate to these multiple demands. (p. 57)

The concept of interacting ideas and the coordination of a multitude of forces in the composing act is not dissimilar to the "central executive monitor" noted by Bereiter (1980). Flower and Hayes (1980) have made a similar observation about the difficulties adult writers experience in composing:

> One of the greatest things protocol analysis reveals is that a great part of skill in writing is the ability to monitor and direct one's composing process.... Some writers have a large and powerful repertory of composing skills; others don't.... They seem to lack this degree of conscious control over the process of writing itself. (p. 39)

In a case study of a nine year old girl, Calkins (1983) chronicled the sequence in which the young writer learned to revise. In the first phase, what begins as correction by the teacher later becomes correction by the child. Following this, what begins as correction becomes a guiding act. The last stage describes the movement of the overt and explicit to underground and implicit.

The need for a monitoring scheme in the composing process of writers of all age levels was aptly demonstrated in Calkins' (1983) description of the growth in a young writer's approach to a composition: "we saw Susie's writing process move from a linear sequence of steps to a vibration of processes" (p. 150). This concurs with a description made by Flower and Hayes (1981a): "As a dynamic process, writing is the act of dealing with an excessive number of simultaneous demands and constraints" (p. 33).

In an examination of student revising behaviours, Bartlett (1982) observed that revision must involve both evaluation and correction. Corrections occur when malfunctions or discrepancies are detected and identified.

Bartlett noted that revision differs from generating text in that it involves distinct comparisons of written work with the writer's knowledge of text. Revisions must be formulated from an existing text and their implementation involves integration with that text. Revisions arise from a detection of problems in the text, but detection does not imply that corrections will be carried out appropriately. That elementary school children in the study were able to detect problems that they were not able to correct led Bartlett to query the possibility that knowledge used in detecting and understanding problems in text may not be available for output in generating text and producing corrections. She further emphasized the difference between generating text and reading for revision by noting the need for authors to inhibit their use of privileged knowledge when reading to revise their own texts. Bartlett speculated that developing this "critical eye" may occur only as explicit knowledge of the kinds of processes used, "inferencing and expecting" (p. 361), is acquired. She concluded that revision is a process distinct from the writing of initial text, in both the skills required and in its developmental nature.

Research and Revising Behaviour

The following studies present relevant research into revision as an aspect of the composing process. The investigation of revision as a distinct but integral component of writing, rather than as a cosmetic touch-up to the final draft, may be seen as a relatively recent development in language arts research.

In a study of twelfth grade students, Emig (1971) reported that the amount of reformulation undertaken by student writers depends on the mode of composing. Reflexive writing, contemplative in nature, is voluntarily revised. Extensive writing, detached and reportorial is not. A major difference between the two types of writing involves intended audience. Students spend more time in writing and reformulating reflexive writing for which the audience is the self or a trusted peer than on school sponsored extensive writing intended for teachers.

The case study of a competent grade twelve writer by Mischel (1974) revealed a student with a definite dislike for large scale rewriting. While he engaged in a modicum of revising, such revisions mainly entailed switching the order of groups of words, usually done during the rereading of a composition. Revision as required in school, the writing of many drafts, was cited by the student as the source of his dislike for revision.

Stallard (1974) compared the writing behaviours of good student writers with a randomly selected group. For both groups, the main emphasis in revision was on word choice although the major differences between the groups involved single and multiple word changes, and paragraph changes. The good writers made significantly more changes in these areas. Stallard reported that the groups of good writers stopped writing frequently to read what they had written. He noted that all of the good writers made changes during these reflective periods. Stallard speculated that the "time spent in reading what has been written during the process of writing furthers the conceptualization of the message that is evolving as it is being encoded" (p. 216). Revision is the tool used in assisting and refining this evolving conception.

As a part of a large study of the composing processes of unskilled college writers, Perl (1979) also examined the rereading aspect of revision. She found that students used what she termed "selective perceptions" (p. 323) in rereading what they had written. Interpreting her observations by using Goodman's model of miscue analysis, Perl contended that students reread their papers from an internal semantic model. They reread what they want to have on the page, not what is actually there. Editing by these unskilled writers occurs so often as to seriously limit the generation of thought and writing. For these students, revision is primarily an exercise in error hunting.

A comparative study of the composing processes of traditional college writers and remedial writers by Pianko (1979) had similar results to those of Stallard (1974). Pianko found that traditional college writers have a more fully developed understanding of the factors involved in good writing than do their remedial counterparts. Traditional college writers were cognizant of the need for style, purpose, and clear communication of ideas. Such students spent more time pausing and rescanning to check that the message was evolving as intended, then pausing again for reformulation. Remedial students used such pauses for diversion. Pianko characterized such differences as indicating for the good writers, a higher developmental level in their conception, both conscious and unconscious, of the composing process.

Beach (1976) examined the self-evaluation strategies of extensive revisers and non-revisers. His descriptions of the writing behaviours of the two groups parallel those described by Stallard (1974) and Pianko (1979). Beach concluded that revisers are better writers than non-revisers because they are better able to produce a successful first draft requiring few revisions. Bridwell (1980) stated that the nature of the relationship between revision and quality remains unanswered.

The following studies focus exclusively on the revision process. Each of the studies in turn raises questions as to the developmental nature of this process.

Using a case study methodology, Sommers (1978b) examined the composing processes of college freshmen and experienced writers. Sommers found that student writers had formal rules and assumptions for revising, but their theories of revision were largely inchoate. In contrast, experienced writers had synthesized structured, articulate theories which gave them an awareness and control over the revision process. While both students and writers shared common concerns over aspects of revision, the experienced writers judged as significant, a far different range of concerns than those selected by students. The experienced writers focused on global concerns such as form, balance, rhythm, and communication in initial drafts, attending to local issues such as stylistic concerns in later drafts. Sommers concluded from her study that "the control writers exert over their revision process is directly related to their theory of the process" (p. 5374A).

Bridwell (1980) examined revisions made at three stages in the transactional writing of grade twelve students. She found that students who revised most successfully (in terms of improving the judged quality of their writing) carried out revision after rereading their first drafts and before beginning the second draft. Students who had mechanical problems in their writing were attending to those problems during production. Surface level revisions were negatively associated with mechanics ratings. Bridwell

surmised that such students were so mired in mechanical problems that they had little inclination to attend to these difficulties between drafts. Positive associations were found for word, sentence, and clause level changes, and all ratings. Bridwell concluded that the evidence from the study supports the notion of developmental differences in the tendency to revise and the ability to revise successfully.

In a related study, Faigley and Witte (1981) analyzed the revisions made by inexperienced college writers. More first draft revisions were made by both the expert adults and the advanced students but most revisions of every type occurred between the first and second drafts. The expert adults and advanced students attended to surface changes during the second drafts. Few revisions were carried out by the inexperienced writers at this stage. Faigley and Witte cautioned that successful revision cannot be determined from the number of changes a writer makes but rather must be judged on the basis of how well revisions bring the writing closer to the demands of the composing situation. The authors saw as the major implication for their study that revision cannot be separated from other aspects of composing, especially during that period when writers come to grips with the demands of the particular writing situation. Success in revision is intimately tied to a writer's planning and reviewing skills.

Investigating the development of the revision process in young children, Donald Graves (1979) reported on some preliminary findings in this area. Graves found that children revise in other media before they revise in writing. Beginning writers, however, do not revise. Their attention to the new task precludes attention to other aspects. Such early writing is often about feelings and is only revised if the feeling words do not match the emotion the child wishes to describe. Children find it easier to recall experiences and revise topics that are of a personal nature. Calkins (1983) noted that writing personal experience stories places constraints on young authors that imaginary stories do not impose. The constraints provide a focus for revising toward intentions for a piece of writing. Graves found that revision begins when children make topic choices. Children who can list personal topics for writing, and write a series of leads for a chosen topic exhibit a strong capacity for revision.

Graves described certain behaviours which indicate a changed attitude toward writing. When children stop erasing and choose instead to cross out words, or use arrows and lines to reposition parts of a passage, they are indicating that they see words as temporary, manipulatable elements which will help them discover meaning. Children who write rapidly have a greater tendency to revise larger segments of a passage and to sustain work on a composition than children who write at a slower pace.

Several conclusions may be drawn from the results of the reported research. Revising appears to be a recursive process which occurs throughout the cycle of composing activities. The nature of revisions made and the stage at which revisions occur are related developmentally to the skill of the writer. The success of revisions in drawing a composition closer to a writer's intended communication is related to the writer's development of goals and plans for the writing, and his ability to inhibit privileged knowledge in reviewing what has been written. For children, the constraints of accurately communicating actual experiences foster the development of revising behaviours.

Revision: Methods of Investigation

The study by Sommers (1978a) was one of the first to focus exclusively on revision and develop an instrument for measuring the occurrence. Students were asked to write three essays, one expressive and two transactional. Interviews were conducted at the conclusion of each of the final drafts. Counting and categorization procedures were used to analyze the essays. Using the same categories that Chomsky used to classify transformations, Sommers identified four revision operations: deletion, substitution, addition, and reordering. Four levels of changes were also identified: word, phrase, sentence and theme. A

system was developed to code revision according to the type of operation used, the level at which they occurred, and their frequency. Data obtained in interviews were rated against a "scale of concerns," enabling the researcher to determine the relative importance of a writer's revision concerns at major stages in drafting.

A system related to the Sommers scheme was utilized by Bridwell (1980). Revisions were classified according to seven levels corresponding to linguistic structures from surface and lexical level to multisentence and text level. Revisions were coded at three stages: Stage A (in-process, first draft); Stage B (between drafts, second day); and Stage C (in-process, second draft). The association among these measures enabled the researcher to determine revision patterns throughout the development of the composition.

Monahan (1984) employed a system of categorizing revisions similar to that of Bridwell and Sommers in a case study of the revision strategies of basic and competent twelfth grade writers as they wrote for different audiences. Perl (cited in Crowley, 1981) supported the use of case study research techniques:

> The link between case study research and theory is made in the individual observer who uses theory to guide and control observation and observation to test and redefine theory. In this interactive way, the research process itself leads to a fuller apprehension of the human phenomena it seeks to understand. (p. 41)

In the Monahan study, revisions were anlayzed according to the point, level, type and purpose of the revision. This information was supplemented by verbal protocols and interviews gathered from students during composing. Information from the verbal protocol was analyzed in conjunction with the drafts produced and the revision data to form a composite picture of the students' group and individual composing/revising behaviours.

An alternative to revision analysis based on the length of the syntactic change is the system for determining the effects of revision changes on meaning developed by Faigley and Witte (1981). This method of analysis was founded on research in text linguistics and text comprehension. The "taxonomy of revision changes was based on whether new information is brought to the text or removed in such a way that it cannot be recovered through drawing inferences" (p. 402). Changes are of two major types. Surface changes neither delete nor add new information to the text. The two subcategories under the surface changes rubric are formal changes such as spelling and punctuation, and meaning preserving changes. The latter encompasses additions, deletions, and reorderings which do not add new or remove old information from the text. Text-base or meaning changes either add new content or delete existing content that cannot be supplied or recovered by making inferences. Of the two subcategories of meaning changes,

microstructure changes do not affect the summary of the text. Macrostructure changes are those text-base changes which would alter the summary. Faigley and Witte cautioned that several situational variables may influence the number and types of revisions made by a writer. They include the following list of situational variables which researchers must account for:

> The reason why the text is being written, the format, the medium, the writer's familiarity with the subject, the writer's familiarity with the audience, the projected level of formality, and the length of the task and the projected text. (p. 141)

The authors concurred with Bartlett (1982) that the skewed results of the NAEP (1977) study of revision can be traced to a failure to note such situational variables.

Faigley and Witte stressed the sound conceptual basis of a text analysis over the "ad hoc" methodologies of Sommers and Bridwell. They offered the taxonomy of revision changes based on meaning as a methodology to be used in combination with other research techniques such as protocol analysis.

Summary

The study of revision as a recursive component of the writing process is a recent development in writing research, coinciding and complementing the paradigm shift from traditional models of the writing process to current

cognitive process theories. The investigation of revision as an aspect of writing has revealed its function in the process from the earliest stages to completion, and the changing and multi-faceted purposes for which it is engaged throughout composing. The review of the literature indicates the relatively recent emergence of studies which focus on revision as an integral aspect of the cyclical processes of composing rather than on the traditional view of revision as a final act in a linear sequence. The dichotomous nature of research in revising behaviours which has focussed on very young writers and writers of high school or college age indicates a need to provide a more complete perspective on the developmental nature of the revising processes of students at all levels of writing achievement.

Chapter III

Design of the Study

Introduction

In this chapter the mechanics of the study are detailed. The selection of subjects and specifics of the design are described. A rationale for the topics developed for the writing assignments is included with the topics, their order of presentation, and a description of scoring procedures. The chapter concludes with a background of each subject's writing development followed by a self-description of each student's writing/revising practices.

Overview

Theoretical and empirical research on revision illuminates the important function revision provides in shaping and refining the writing of mature and professional writers. Additionally, research into the early development of revision in the composing processes of very young writers has given insights into the beginning revision practices of children who have been given instruction in writing as a process approach. The present study examined and described the revising behaviours of competent and average writers at the chronological mid-point of their school career. In addition to examining the revising

strategies of pre-adolescent students, the study also investigated the universality of current cognitive process models of writing (Nold, 1981; Flower and Hayes, 1980, 1981b) in explicating the revising behaviours of grade six students. The investigation included the following tasks: (a) to apply a revision classification scheme reliably to the samples of student writing, (b) to analyze frequencies for patterns in kinds of revisions and composing stage at which revisions were made, (c) to compare patterns in kinds of revisions, frequencies, and stage differences at which revisions are made in two different modes of writing, and (d) to explore and analyze students' thought processes in making revisions.

Purpose

Research Questions

The following research questions guided this study:

1. What are the characteristics of revisions in the composing process of average and competent grade six writing students composing in the expressive mode?

2. What are the characteristics of revisions in the composing process of average and competent writing students composing in the transactional mode?

3. What is the nature of revision as a part of the total composing process of average writers in grade six?

4. What is the nature of revision as part of the total composing process of competent writers in grade six?

5. What is the role of cognitive process models of composing in explicating the revising behaviours of grade six students?

Related Issues

Related to the issue of the characteristics and nature of revision in the composing behaviour of grade six students is their perception of the purpose and function of revision in their writing. This study also briefly explored the affective aspects of revising in student writing.

Design

Subject Selection

The students participating in the study were members of a 22 pupil grade six classroom in an elementary-junior high school in Calgary, Alberta. The school is located in an upper middle class area of the city but draws students from many parts of the city.

In order to select students for the study, the teacher was asked to arrange students' names on a continuum from weakest to most competent in writing skills. The teacher's

judgment was to be based on her observations and evaluations of students' writing over the previous eight months of the school year. From this continuum, one student was eliminated due to age (14) and difficulties with English as a non-native speaker. The ranked students were then divided into three groups. The top third were classified as competent writers, the middle third as average writers, and the lower third as below average writers. For the purposes of this study, only pupils from the top and middle third of the class were included in the investigation.

The next step in the selection process involved training in think aloud procedures, all students in the average and competent writer categories. In gathering a verbal or "think aloud" protocol, subjects were instructed to say aloud everything that they were thinking while performing a task. If subjects fell silent, they were reminded by the investigator to, "Tell me what you are thinking." The training session was divided into two parts. In the first phase of the training session, each subject in the two groups was asked to solve a water jug problem while "thinking aloud." There was no time limit set on this task and the time required by the students varied from a few seconds to fifteen minutes. The water jug problem, extracted from Flower and Hayes (1980), was as follows:

> There are three jugs containing water. None of the jugs has calibration markings for measurement. Given Jug A which contains 9 litres; Jub B, 42 litres, and; Jug C, 6 litres; measure out 21 litres.

Students were not required to write during this part of the training procedure but several elected to use paper and pencil to assist them in solving the problem. The investigator's role during this was to answer any questions arising from the problem and to remind students to "think aloud" if they lapsed into silence for periods of longer than ten seconds.

In the second phase of the training session, each student was asked to write an account of an activity of their choice in which they had recently participated. Before writing, students were asked to continue the "think aloud" technique used earlier in solving the jug problem while composing their written account. The ten second prompt routine was again followed by the investigator.

The screening resulted in the elimination as a candidate for the study, one male student in the group of competent writers. This student did not talk at all during the writing episode. Random selection of three subjects from each group was made from a pool of six candidates classified as competent writers and seven classified as average writers in grade six. In the competent writers group, three girls were selected. The average writing ability group included two boys and one girl.

Procedures

The writing assignments. Two writing assignments were given to the selected students over the course of the study. The tasks were designed to elicit writing in two modes, expressive and transactional.

The expressive writing assignment was as follows:

> Write about a time in your life when you have felt an emotion very strongly. You may have been angry, happy, disappointed, jealous or any other strong feeling experienced.

The transactional writing topic asked the students to:

> Imagine you can change anything in your school, provided you make a good case for doing so. What would you change? What reasons would you give for the changes you would like to make?

The writing assignments used in the experimental design were selected as the result of consideration given to previous research findings reporting a link between the type of writing topics given and student engagement with the task. In the committed and exploratory writing for self which she termed reflexive, Emig (1971) found that student writers were more likely to contemplate and reformulate this type of writing. Fewer reformulations occurred in school sponsored extensive writing. Similarly, Pianko (1979) urged teachers to assist students in becoming more reflective writers. Through exploring ideas, happenings, and emotions in their writing, she reported that students become more aware of the dimensions of writing and their composing processes accordingly. A choice of

personal topic within the limitations of a transactional assignment, coupled with allowing students to involve themselves in prewriting activities in a study by Bridwell (1981) was said to increase student task engagement. It must be noted, however, that Sommers (1978a), in using one expressive and two transactional writing assignments, did not find that language function resulted in altered revision strategies by either professional or student writers.

For the purposes of writing assignments used in this study, the function categories of language designated by Britton (1975) were utilized. The three language functions, transactional, expressive, and poetic, reflect the writer's engagement with the task as spectator or participant. In the participant role, writing is used "to get things done, to inform people... to advise, persuade or instruct people. Thus the transactional is used... to record facts, exchange opinions, explain and explore ideas, construct theories; to transact business, conduct campaigns, change public opinion" (p. 88). Britton and his colleagues determined that the majority of school sponsored writing falls into the transactional category. Of the 1,992 pieces of school writing analyzed for their study, 64% were classified as transactional.

Expressive writing is deemed as the "matrix" from which transactional and poetic writing emerge. It is

described as language which functions primarily to express the self. It is "informal or casual, loosely structured language used when the writer senses that his audience has an interest in the writer as a person, as well as in the content of the writing (Britton, 1978). This type of writing in which a stronger writer-reader relationship is formed encourages the writer to examine, analyze, and evaluate more fully what is written.

The selection of an expressive and a transactional writing assignment was undertaken in an attempt to elicit two different types of writing from the students. Accordingly, it may be determined if the function for which writing is undertaken influences revision strategies used by grade six writers. The students were given each topic three days prior to each first draft writing session. They were encouraged to think about their topics and record any plans or ideas for writing in pocket size notebooks provided for this purpose. Both the choice of assignment topics and the advance introductions of the topics were meant to increase student engagement with the writing tasks in the investigation.

Writing sessions. Each of the four one-hour sessions were conducted on an individual basis with all six subjects. Students were told that they would be doing writing to assist the researcher in a study of composing but were not told that the emphasis was on revision.

Session 1: During the first session students were asked to compose aloud while writing a composition in the expressive mode on the topic listed previously in this paper. Following silences of more than ten seconds, students were reminded to tell the investigator what they were thinking. This session and each of the following were audiotaped to record composing aloud behaviours elicited by the students. Following the completion of each draft, students were interviewed by means of probes from the researcher to determine their reasons for making specific revisions within the composition. The probe was usually worded as: "I notice that you changed _____ here. Can you tell me your reasons for making that change?"

Session 2: Prior to revising and redrafting the compositions written in session one, students were interviewed to reveal any proposed revisions that they planned to make and questioned as to their reasons for making such changes. Following the composing aloud and writing of the second draft, students were again interviewed as in session one.

Session 3: The third session took place approximately one week following session two. Procedures followed those carried out in session one. The essay topic for this research was designed to elicit a composition in the transactional mode.

Session 4: The fourth session, while focussing on draft two of the essay in the transactional mode mirrored the procedures used in session two. This final session concluded with an interview which explored the students' writing and revising practices.

Method of Analysis

The analysis of data was both quantitative and qualitative. The quantitative analysis used the scheme developed by Faigley and Witte (1981) to categorize revisions according to those which affect meaning and those which do not.

The writing sample, draft one and draft two of the expressive and transactional mode compositions, were analyzed according to the type of revision made, and the process stage at which revisions were implemented. Changes made while composing draft one were analyzed as Stage A revisions. Changes to draft one after the initial completion of the draft, during session one, were termed Stage B revisions. Stage C revisions were those changes made during the second composing session, prior to writing draft two. Changes made to draft two in-process were termed Stage D revisions, while Stage E included any revisions made to draft two after its initial completion. The analysis of revisions was made by the researcher. Three papers selected randomly were analyzed by a trained

teacher. The reliability of revisions analyzed by the researcher and teacher was over 90%.

The qualitative analysis of data was based on the results of verbal protocols gathered during composing, and from interviews with the subjects. Case study descriptions and interpretations of each student's revising behaviours within the total composing act were drawn. The results were compared with those of recent studies in revision and with cognitive process models of writing as developed by Nold (1981), and Flower and Hayes (1981b).

Student Profiles

Average Writers

Cary.

Context: Cary (12) was presently in her second year at the school, having transferred at the parents' request from an elementary school located nearby. At the time of her transfer she was in poor health, and unhappy in her peer relationships. Cary had been performing at an average level of achievement during her sixth year of school. Cary appeared to be a confident and personable girl. She spoke in a strong, assertive voice, and seemed at ease during the testing session.

Cary's teacher described Cary's writing as terse and limited in the development of ideas. Cary found it

difficult to accept direction and incorporate suggestions for improvement into her writing. She brought to school writing done voluntarily at home. It was characterized as being lengthy and lacking focus.

Writing and revising, a self-description: Cary viewed writing as an important aspect of her studies, but felt that report writing was of greater importance than story writing. She preferred to write on topics of her own choosing without being given time restrictions. Cary seldom talked over her ideas with another person before writing and usually did not plan before writing began. she described herself as writing into a topic, and changing her ideas if they did not fit what she had written. She didn't like any of her story writing because her ideas were "stupid." When this was the case, Cary "worked" on the story, changing ideas to improve it. Outside of school, Cary liked to write humorous poems about children, and wrote letters to relatives and friends on a weekly basis.

Cary stated that she concentrated on the storyline while writing the first draft, but also on finding the right word or words. When all of her ideas were recorded, stories were checked in order of priority for spelling, capitals, periods, changing words, and sometimes ideas. The first draft was reread for attention to these concerns only if it would be submitted to the teacher. A second draft was made for the purpose of producing a good copy.

Brian.

Context: Brian (12) attended the school as a neighborhood resident. He had been enrolled in the school since September, following a move from Ontario. Brian's teacher described him as being artistic and imaginative but reluctant to finish things. Brian had a short attention span, and did not often express enthusiasm for class activities. Brian didn't write voluntarily, but did like to read aloud what he had written. His writing was mechanically sound, but many of Brian's ideas were not transferred from his imagination to the composition.

Writing and revising, a self-description: Brian enjoyed writing funny stories and reading them to an audience of peers. His emphasis in writing was on entertaining rather than expressing his emotions. Brian described himself as having to plan ideas for some stories, but when he was writing well, the ideas "flow," and he didn't think about the words he was using. He preferred to write on topics he had chosen, and liked to have unlimited time in which to compose.

Brian wrote only one draft of a composition unless a teacher requested that he do another. His priorities in revising were to look at punctuation, placement of new paragraphs, and spelling. He stated that he "can't be bothered choosing the right word," if he had a "real good

story." He did not look at words, sentences, and ideas in revising. Brian was generally pleased with what he wrote unless it was "messy."

Steven.

Context: Steven (12) was a resident of the neighborhood in which the school was located. He was a confident, sociable youngster with a friendly, relaxed manner.

His teacher noted that Steven wrote lengthy stories which seemed to come "jamming" out. His stories were full of action, and he derived great enjoyment from them. In revising compositions, his teacher preferred that Steven delete material, and develop a finer focus to his writing. Steven usually responded by adding more material to the second draft.

Writing and revising, a self-description: Steven preferred to write on topics which he had developed. He usually planned what he wrote, but if he perceived the topic as "boring," he did no overt planning, only writing to finish the assignment. Steven often wrote to express his feelings, including as his audience himself, his peers, or his teacher. He considered detail and description to be important considerations in writing. When writing description or adding detail, he sometimes imagined that he must make the description clear enough to be understood by a visiting Martian.

Revision, to Steven, meant correcting spelling and punctuation. He usually reread school sponsored writing for this purpose. He reviewed his writing to search for mistakes, and stated that he did not attend to word choice, sentence structure, or the development of ideas. A second draft was made for the purpose of producing a good copy with no mechanical errors.

Competent Writers

Anita.

Context: Although she lived in a nearby district, Anita (12) had elected to attend the school for the past two years. Anita was a confident, sociable person who enjoyed talking.

Anita's writing was described by her teacher as having a strong storyline with two or three events interwoven, but because she worked at great speed, mechanics could be weak. Anita wrote on her own, but the teacher noted that this had declined over the past year. Anita was an organized person who immediately began work on long-term assignments.

Writing and revising, a self-description: Anita appeared to value writing as an activity. She used it both to communicate with others, and to express her feelings. She preferred to write on self generated topics,

and to have unlimited time to allow ideas to "flow" better. Anita usually planned before writing. While composing, she found that ideas arose faster than she could write, so that she often found it necessary to make notes before she forgot the ideas.

Anita always reread what she had written. During the first draft her major concern was to record ideas. She described such drafts as messy, having frequent spelling mistakes, and abbreviations. An important concern in revising was changing anything which didn't sound the way she wanted it to sound. She also attended to spelling, punctuation, and word choice before writing a second draft.

Kelly.

Context: Kelly (12) lived in a district in the northwest section of the city, travelling many miles with three siblings to attend the school. Kelly was a quiet, passive, and happy youngster. She spoke in a soft voice, but appeared to be a confident child.

Kelly did not often write at home on her own initiative. Her favorite topics for compositions were her family, and experiences they had shared. Kelly's teacher described her writing as well organized, and carefully executed, but more conventional than creative.

Writing and revising, a self-description: Kelly enjoyed writing, and saw herself as a good writer. Her

criteria for judging a story as good were that it made sense, and that it be interesting, or exciting. Kelly sometimes planned writing for tests, or if time was limited. She preferred to develop ideas without time constraints. She considered that she was her most important audience, and liked to write to satisfy herself.

In writing a first draft, Kelly concerned herself mainly with stating ideas. She "almost always" reread to put in paragraphs, and to fix punctuation and spelling. A second draft was made to remove all "mistakes," and a third draft, if necessary, was for "perfection."

Tara.

Context: Tara (12) also attended the school by choice. She and an older brother travelled from the western part of the city. Tara was a physically large girl who was described by her teacher as a happy person with a good self-image. She was liked and respected by classmates for her intelligence, quiet manner, and subtle sense of humor.

Tara wrote on her own for personal reasons. Her writing was characterized as very creative and thorough in its development of ideas and attention to detail.

Writing and revising, a self-description: Tara preferred to write on assigned topics as she found it

Chapter IV

Results and Interpretation of Data

The aim of this study was to examine and analyze the revision and revising behaviours of grade six students writing in two modes of discourse, expressive and transactional. This chapter presents the data obtained in the study, and the techniques used in analyzing and interpreting the data. The results are discussed as they relate to the questions directing the study.

The five research questions which guided this study are presented below to provide a focus for the presentation of quantitative and qualitative findings.

1. What are the characteristics of revisions in the composing process of average and competent grade six students composing in the expressive mode?

2. What are the characteristics of revisions in the composing process of average and competent students composing in the transactional mode?

3. What is the nature of revision as part of the total composing process of average writers in grade six?

4. What is the nature of revision as part of the total composing process of competent writers in grade six?

5. What is the role of cognitive process models of composing in explicating the revising behaviours of grade six students?

To provide a structure for the presentation of results, data obtained from quantitative analyses are presented first, followed by the results derived from qualitative findings.

Composing in the Expressive Mode

The revisions of all writers were analyzed using the taxonomy developed by Faigley and Witte (1981). Raw numbers of revisions for each writer were charted according to type of revision and draft stage in which implemented. Frequencies of occurrence for each type of revision were calculated per 100 words at each of the five drafting stages. An average total of revisions for each type was calculated per 100 words in the final draft.

Average Writers

The data for the average number of revision changes per 100 words in each draft, Stages A, B, C, D, and E, made by average writers composing in the expressive mode are presented in Table 1. A graphic representation of the data is provided in Figure 1.

The two major stages at which revisions were made were Stage B, during the rereading of the first draft immediately following its completion, and Stage D, the writing of draft two. At Stage C, only Brian revised. He made spelling changes, and microstructure additions.

Table 1

Average Writers--Expressive Compositions:

Average Number of Revision Changes per 100 Words in Each Draft (Stages A, B, C, D, E) and Average Number of the Total Revision Changes per 100 Words in the Final Draft

	Stage					Total
	A	B	C	D	E	
Surface Changes						
A. Formal Changes						
Spelling	0.3	0.3	0.2	0.6	0.1	1.2
Tense	0.0	0.0	0.0	0.4	0.1	0.5
Abbreviations	0.0	0.0	0.0	0.0	0.0	0.0
Punctuation	0.0	0.8	0.0	0.0	0.5	0.9
Paragraph	0.0	0.0	0.0	0.6	0.0	0.6
Other Format	0.0	0.0	0.0	0.2	0.0	0.2
Total	0.3	1.0	0.2	1.9	0.7	3.4
B. Meaning-Preserving Changes						
Additions	0.1	1.2	0.0	0.4	0.1	1.4
Deletions	0.0	0.0	0.0	0.5	0.2	0.7
Substitutions	0.4	0.4	0.0	0.9	0.0	1.4
Permutations	0.1	0.0	0.0	0.0	0.0	0.1
Distributions	0.0	0.0	0.0	0.0	0.0	0.0
Consolidations	0.0	0.0	0.0	0.1	0.0	0.1
Total	0.7	1.6	0.0	1.9	0.4	3.7
Meaning Changes						
A. Microstructure Changes						
Additions	0.0	2.7	0.2	2.6	0.0	4.9
Deletions	0.0	0.5	0.0	0.1	0.1	0.5
Substitutions	0.0	0.8	0.0	0.0	0.1	0.6
Permutations	0.0	0.0	0.0	0.0	0.0	0.0
Distributions	0.0	0.0	0.0	0.0	0.0	0.0
Consolidations	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	4.0	0.2	2.6	0.1	6.0

Table 1 continued

	Stage					Total
	A	B	C	D	E	
B. Macrostructure Changes						
Additions	0.0	0.0	0.0	0.0	0.0	0.0
Deletions	0.0	0.0	0.0	0.0	0.0	0.0
Substitutions	0.0	0.0	0.0	0.0	0.0	0.0
Permutations	0.0	0.0	0.0	0.0	0.0	0.0
Distributions	0.0	0.0	0.0	0.0	0.0	0.0
Consolidations	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	0.0	0.0	0.0

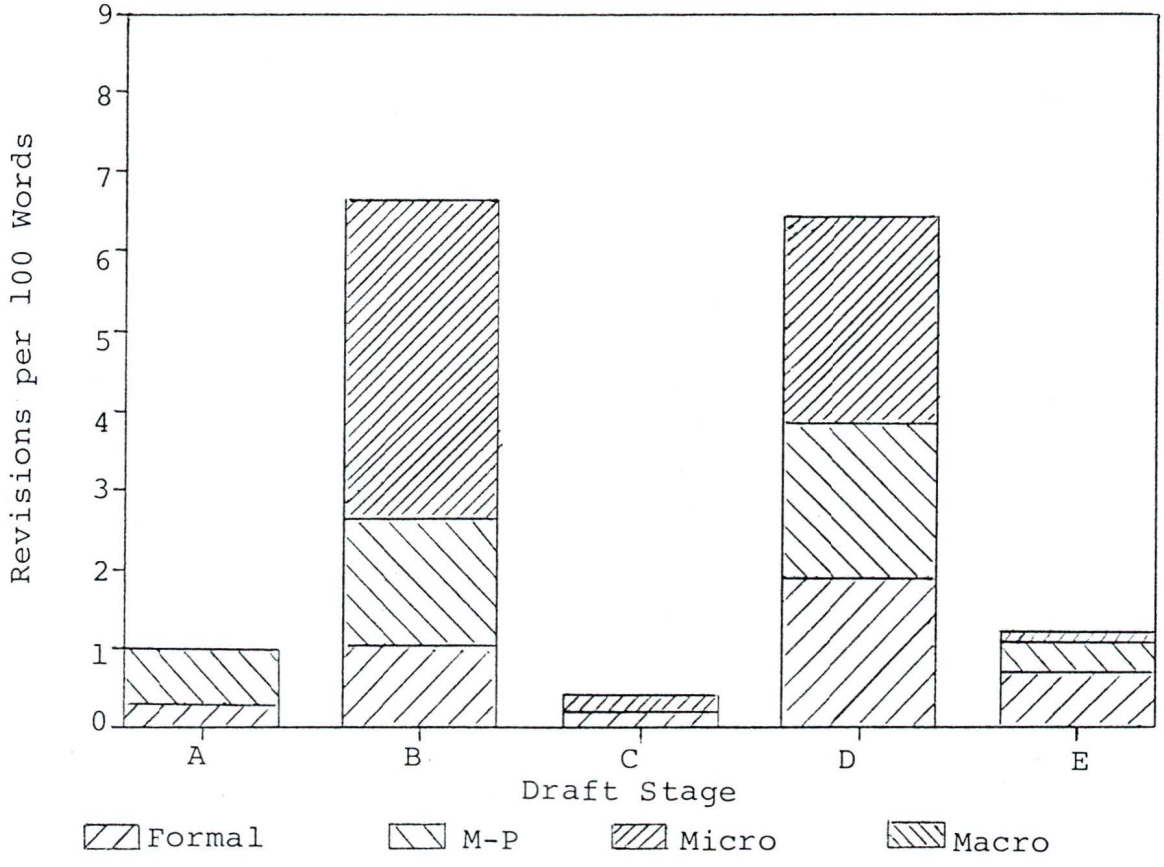

Figure 1. Average writers--expressive composition.

The researcher noted that Brian made these changes to the first draft during the session allotted for the writing of draft two with the expectation that rewriting to produce a second draft would not be necessary.

During Stage A, writing draft one, all revisions were surface changes, although more meaning-preserving than formal changes were made. At Stage B, microstructure meaning changes were the dominant form of revision, although formal changes and meaning-preserving changes were also undertaken. During the writing of draft two, Stage D, the majority of revisions were surface changes, but 41% were meaning changes, microstructure additions and deletions. At Stage E, in all samples collected for all writers, only Steven revised. Steven's Stage E revisions were overwhelmingly surface changes.

Data for average numbers of total revisions expressed as a percent are presented in Table 2. An examination of the data presented in Table 2 and Figure 1 for average writers composing in the expressive mode revealed that the majority of revision changes per 100 words were surface changes. These changes were almost evenly distributed between formal and meaning-preserving changes. In the meaning changes category, only microstructure changes were made. These changes accounted for 46% of all revisions implemented. There were no instances of macrostructure changes in the expressive mode compositions of average writers.

Table 2

Average and Competent Writers--Expressive Compositions:

Number of Revision Changes per 100 Words
- Average by Major Subcategory in Each Draft (Stages A, B, C, D, E)
- Average of the Total Revision Changes in the Final Draft

Averages also Expressed as a Percent of the Total Revision Changes per 100 Words

	Average Writers						Competent Writers					
	Stage					Total	Stage					Total
	A	B	C	D	E		A	B	C	D	E	
Surface Changes												
Formal Changes	0.3	1.0	0.2	1.9	0.7	3.4	5.5	1.8	0.0	3.8	0.0	10.9
	30%	15%	52%	29%	58%	26%	68%	54%	0%	57%	NA	60%
Meaning-Preserving Changes	0.7	1.6	0.0	1.9	0.4	3.7	0.7	0.7	0.0	2.1	0.0	3.2
	70%	24%	0%	30%	31%	28%	8%	22%	0%	31%	NA	17%
Meaning Changes												
Microstructure Changes	0.0	4.0	0.2	2.6	0.1	6.0	1.9	0.8	0.5	0.8	0.0	3.7
	0%	61%	48%	41%	11%	46%	24%	24%	57%	12%	NA	21%
Macrostructure Changes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4
	0%	0%	0%	0%	0%	0%	0%	0%	43%	0%	0%	2%
Totals	1.0	6.7	0.4	6.4	1.2	13.1	8.1	3.3	0.9	6.7	0.0	18.2

In summary, in the expressive mode, average writers revised most frequently after the initial composing of draft one, and during the writing of the second draft. By a slim margin, the majority of revisions changes in all drafts were at the surface level. Microstructure meaning changes were responsible for an average of 46% of all revisions made per 100 words in the final draft.

Competent Writers

The data for average numbers of revision changes per 100 words in each draft (Stages A, B, C, D, and E), and total revision changes per 100 words in the final draft for competent writers composing in the expressive mode are presented in Table 3. The data are presented in graphic form in Figure 2.

Competent writers revised most while composing draft one (Stage A). The majority of revisions were formal changes at the surface level. Relatively few meaning-preserving changes were made, as approximately one quarter of the Stage A revisions involved microstructure changes. As in Stage A, one-fourth of Stage B revisions were meaning changes at the microstructure level. At Stage C, only Tara revised prior to writing draft two. All of her Stage C revisions were meaning changes. Macrostructure changes formed 43% of these meaning changes, while micro-structure changes comprised the remainder of the revisions.

Table 3

Competent Writers--Expressive Compositions:

Average Number of Revision Changes per 100 Words in Each Draft (Stages A, B, C, D, E) and
Average Number of the Total Revision Changes per 100 Words in the Final Draft

	Stage					Total
	A	B	C	D	E	
Surface Changes						
A. Formal Changes						
Spelling	3.8	0.4	0.0	2.4	0.0	6.6
Tense	0.0	0.5	0.0	0.4	0.0	0.9
Abbreviations	0.1	0.0	0.0	0.1	0.0	0.2
Punctuation	0.6	0.3	0.0	0.7	0.0	1.6
Paragraph	0.1	0.5	0.0	0.0	0.0	0.6
Other Format	0.8	0.0	0.0	0.3	0.0	1.0
Total	5.4	1.8	0.0	3.9	0.0	10.9
B. Meaning-Preserving Changes						
Additions	0.1	0.5	0.0	0.4	0.0	0.9
Deletions	0.1	0.0	0.0	0.4	0.0	0.4
Substitutions	0.3	0.2	0.0	1.0	0.0	1.4
Permutations	0.2	0.0	0.0	0.1	0.0	0.2
Distributions	0.0	0.0	0.0	0.1	0.0	0.1
Consolidations	0.0	0.0	0.0	0.1	0.0	0.1
Total	0.7	0.7	0.0	2.1	0.0	3.2
Meaning Changes						
A. Microstructure Changes						
Additions	0.4	0.7	0.3	0.2	0.0	1.4
Deletions	0.6	0.0	0.3	0.0	0.0	0.9
Substitutions	0.9	0.1	0.0	0.5	0.0	1.4
Permutations	0.0	0.0	0.0	0.0	0.0	0.0
Distributions	0.0	0.0	0.0	0.0	0.0	0.0
Consolidations	0.0	0.0	0.0	0.1	0.0	0.1
Total	1.9	0.8	0.5	0.8	0.0	3.7

Table 3 continued

	Stage					Total
	A	B	C	D	E	
B. Macrostructure Changes						
Additions	0.0	0.0	0.4	0.0	0.0	0.4
Deletions	0.0	0.0	0.0	0.0	0.0	0.0
Substitutions	0.0	0.0	0.0	0.0	0.0	0.0
Permutations	0.0	0.0	0.0	0.0	0.0	0.0
Distributions	0.0	0.0	0.0	0.0	0.0	0.0
Consolidations	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.4	0.0	0.0	0.4

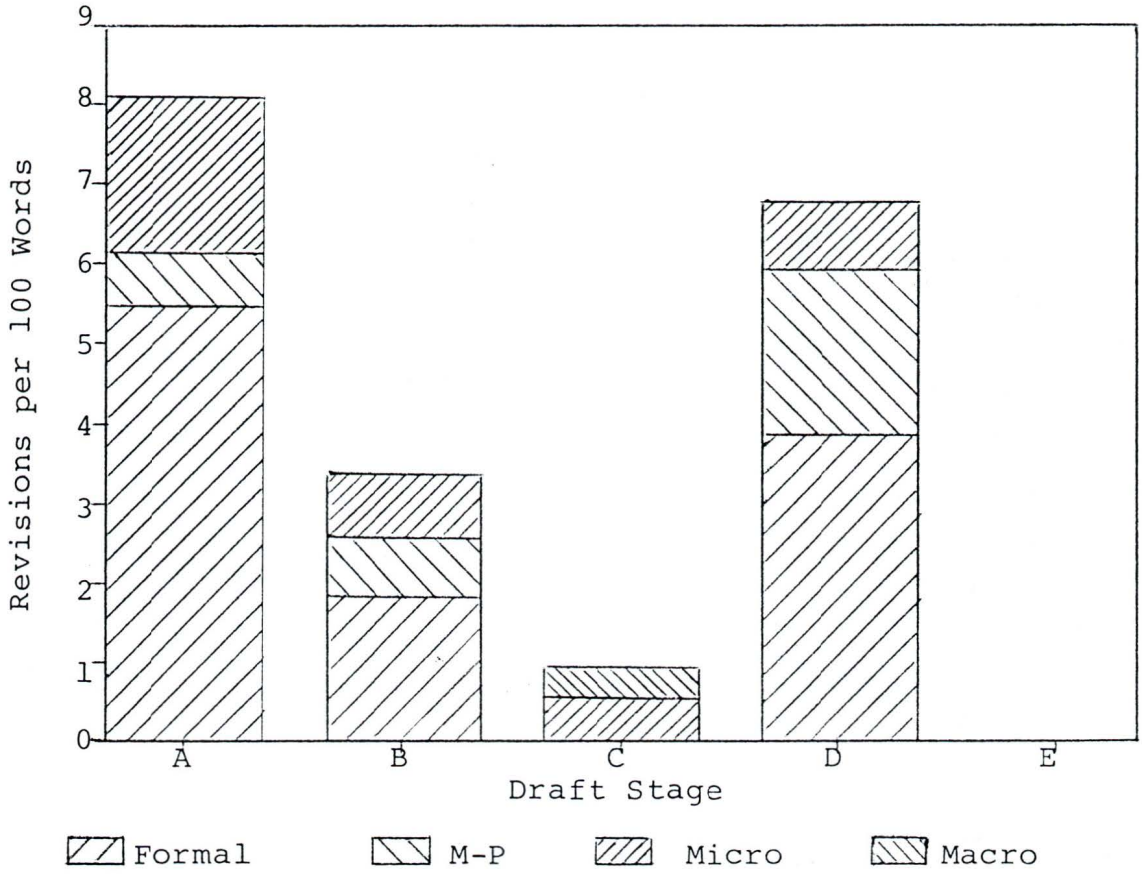

Figure 2. Competent writers--expressive composition

The second major point for revising occurred at Stage D. This was the final draft stage in this mode for all competent writers. Only 12% of revisions were meaning changes, and these were at the microstructure level. Surface changes accounted for 88% of all Stage D revisions.

To summarize, competent writers revised most often at Stage A and Stage D. Surface changes were predominant, with 60% of all revisions classified as formal changes. Meaning changes accounted for 23% of all revisions, including 2% as macrostructure changes.

Average and Competent Writers: A Comparison

Table 2 presents comparative data on the frequency and percentages for revisions made to expressive mode compositions by average and competent writers.

In the expressive mode, competent writers revised most frequently at Stages A and D, in-process draft one, and in-process draft two, but instigated most revisions at Stage B, while rereading draft one on the day it was written.

Competent writers revised more often than average writers. The majority of revisions made by both groups of writers were surface changes, but these formal and meaning-preserving changes comprised 77% of revisions made by competent writers, and only 54% of changes by average

writers. Slightly less than half of all the average writers' revisions were meaning changes, but all of these were microstructure changes. Competent writers made fewer meaning changes, but macrostructure changes accounted for 2% of all revisions. A chi-square analysis of total revisions made at each stage by competent and average writers indicated that differences were not significant.

Revising in the Transactional Mode

Average Writers

Table 4 presents the average number of revision changes per 100 words in each draft (Stages A, B, C, D, and E), and the average of the total revision changes per 100 words in the final draft of transactional mode compositions by average writers. Figure 3 presents the average totals of each type of revision category at each draft stage in graphic form. Table 5 charts the average number of revision changes per 100 words by average and competent writers in each revision category at each draft stage, also expressed as a percent of total changes. Averages of total revision changes for the major categories per 100 words in the final draft are also calculted as a percent.

Average writers revised most frequently while writing draft two, Stage D. Although Stages C, D, and E represented the drafting on the second day of writing, the average

Table 4

Average Writers--Transactional Compositions:

Average Number of Revision Changes per 100 Words in Each Draft (Stages A, B, C, D, E) and Average Number of the Total Revision Changes per 100 Words in the Final Draft

	Stage					Total
	A	B	C	D	E	
Surface Changes						
A. Formal Changes						
Spelling	0.9	0.8	0.0	0.7	0.0	2.5
Tense	0.0	0.5	0.0	0.0	0.0	0.5
Abbreviations	0.0	0.0	0.0	0.0	0.0	0.0
Punctuation	0.2	1.7	0.0	0.6	0.0	2.4
Paragraph	0.0	0.0	0.0	0.0	0.0	0.0
Other Format	0.0	0.0	0.0	0.0	0.0	0.0
Total	1.1	3.0	0.0	1.4	0.0	5.4
B. Meaning-Preserving Changes						
Additions	0.0	0.2	0.0	0.4	0.0	0.5
Deletions	0.0	0.2	0.0	0.0	0.0	0.2
Substitutions	0.4	0.2	0.0	1.0	0.0	1.6
Permutations	0.0	0.0	0.0	0.4	0.0	0.4
Distributions	1.0	0.0	0.0	0.0	0.0	0.7
Consolidations	0.0	0.0	0.0	0.4	0.0	0.5
Total	1.4	0.6	0.0	2.2	0.0	3.9
Meaning Changes						
A. Microstructure Changes						
Additions	0.0	0.0	0.0	1.8	0.0	1.8
Deletions	0.0	0.0	0.0	0.9	0.0	0.9
Substitutions	0.0	0.0	0.0	0.0	0.0	0.0
Permutations	0.0	0.0	0.0	0.3	0.0	0.3
Distributions	0.0	0.0	0.0	0.0	0.0	0.0
Consolidations	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	3.0	0.0	3.0

Table 4 continued

	Stage					Total
	A	B	C	D	E	
B. Macrostructure Changes						
Additions	0.0	0.0	0.0	0.0	0.0	0.0
Deletions	0.0	0.0	0.0	0.0	0.0	0.0
Substitutions	0.0	0.0	0.0	0.0	0.0	0.0
Permutations	0.0	0.0	0.0	0.0	0.0	0.0
Distributions	0.0	0.0	0.0	0.0	0.0	0.0
Consolidations	0.0	0.0	0.0	0.0	0.0	0.0

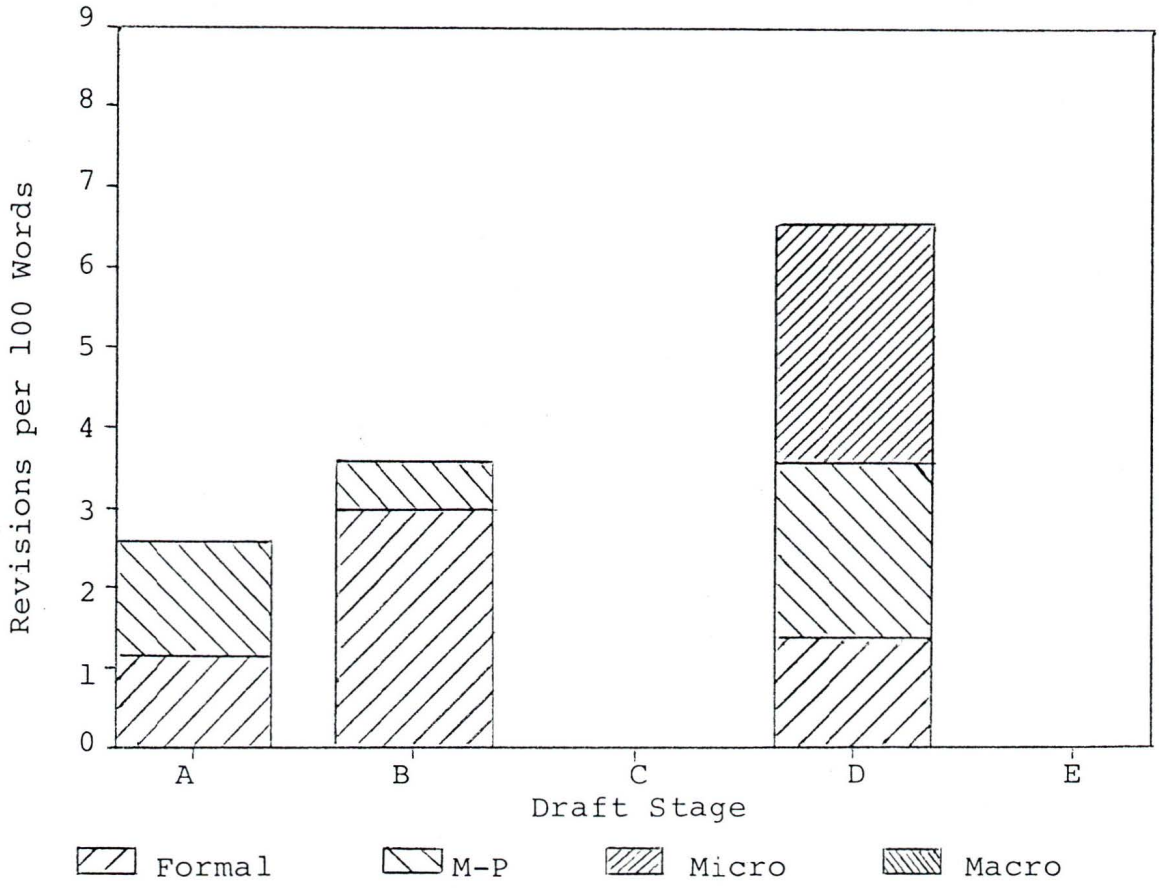

Figure 3. Average writers--transactional composition.

Table 5

Average and Competent Writers--Transactional Compositions:

Number of Revision Changes per 100 Words
- Average by Major Subcategory in Each Draft (Stages A, B, C, D, E)
- Average of the Total Revision Changes in the Final Draft

Averages also Expressed as a Percent of the Total Revision Changes per 100 Words

	Average Writers						Competent Writers					
	Stage					Total	Stage					Total
	A	B	C	D	E		A	B	C	D	E	
Surface Changes												
Formal Changes	1.1	3.0	0.0	1.4	0.0	5.4	4.4	1.7	0.5	3.8	0.0	9.7
	44%	82%	NA	21%	NA	44%	53%	41%	43%	55%	NA	50%
Meaning-Preserving Changes	1.4	0.6	0.0	2.2	0.0	3.9	1.8	1.8	0.0	2.1	0.0	5.5
	56%	18%	NA	33%	NA	31%	22%	43%	0%	30%	NA	29%
Meaning Changes												
Microstructure Changes	0.0	0.0	0.0	3.0	0.0	3.0	2.0	0.7	0.0	1.0	0.0	3.5
	0%	0%	NA	45%	NA	25%	25%	16%	0%	15%	NA	18%
Macrostructure Changes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.6
	0%	0%	NA	0%	NA	0%	0%	0%	57%	0%	NA	3%
Totals	2.6	3.6	0.0	6.6	0.0	12.4	8.2	4.2	1.1	6.9	0.0	19.4

writers revised only at Stage D. This was also the only stage at which microstructure meaning changes were made. No macrostructure changes were made in the transactional compositions of these writers. First day revisions, Stages A and B, were not notably dissimilar in frequency. All revisions in these two stages were surface changes, although the majority of Stage B revisions were formal changes. In terms of total revisions in all drafts, 75% of all revisions made by average writers in the transactional mode were surface changes. The 25% of total revision changes at the meaning level were microstructure changes.

In summary, the average writers revised while writing and rereading draft one on the first day, and during the composing of draft two on the second day. Surface revisions outnumbered microstructure changes, the only type of meaning changes made, by a ratio of 3:1.

Competent Writers

Average numbers of revision changes per 100 words in each draft (Stage A, B, C, D, and E), and average numbers of the total revision changes per 100 words in the final draft of transactional compositions written by competent writers are displayed in Table 6. The average total of each type of change during the drafting stages is presented in Figure 4.

Table 6

Competent Writers--Transactional Compositions:

Average Number of Revision Changes per 100 Words in Each Draft (Stages A, B, C, D, E) and
Average Number of the Total Revision Changes per 100 Words in the Final Draft

	Stage					Total
	A	B	C	D	E	
Surface Changes						
A. Formal Changes						
Spelling	3.9	0.9	0.5	2.5	0.0	7.0
Tense	0.0	0.1	0.0	0.4	0.0	0.5
Abbreviations	0.0	0.1	0.0	0.0	0.0	0.1
Punctuation	0.1	0.0	0.0	0.7	0.0	0.8
Paragraph	0.0	0.6	0.0	0.1	0.0	0.7
Other Format	0.4	0.0	0.0	0.2	0.0	0.6
Total	4.4	1.7	0.5	3.9	0.0	9.7
B. Meaning-Preserving Changes						
Additions	0.5	0.9	0.0	0.5	0.0	1.8
Deletions	0.3	0.4	0.0	0.3	0.0	1.0
Substitutions	0.9	0.2	0.0	0.9	0.0	1.9
Permutations	0.1	0.1	0.0	0.0	0.0	0.2
Distributions	0.0	0.2	0.0	0.0	0.0	0.2
Consolidations	0.0	0.0	0.0	0.3	0.0	0.3
Total	1.8	1.8	0.0	2.1	0.0	5.5
Meaning Changes						
A. Microstructure Changes						
Additions	0.1	0.5	0.0	0.7	0.0	1.1
Deletions	1.4	0.2	0.0	0.0	0.0	1.5
Substitutions	0.5	0.0	0.0	0.4	0.0	0.9
Permutations	0.0	0.0	0.0	0.0	0.0	0.0
Distributions	0.0	0.0	0.0	0.0	0.0	0.0
Consolidations	0.0	0.0	0.0	0.0	0.0	0.0
Total	2.0	0.7	0.0	1.0	0.0	3.5

Table 6 continued

	Stage					Total
	A	B	C	D	E	
B. Macrostructure Changes						
Additions	0.0	0.0	0.0	0.0	0.0	0.0
Deletions	0.0	0.0	0.0	0.0	0.0	0.0
Substitutions	0.0	0.0	0.7	0.0	0.0	0.6
Permutations	0.0	0.0	0.0	0.0	0.0	0.0
Distributions	0.0	0.0	0.0	0.0	0.0	0.0
Consolidations	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.7	0.0	0.0	0.6

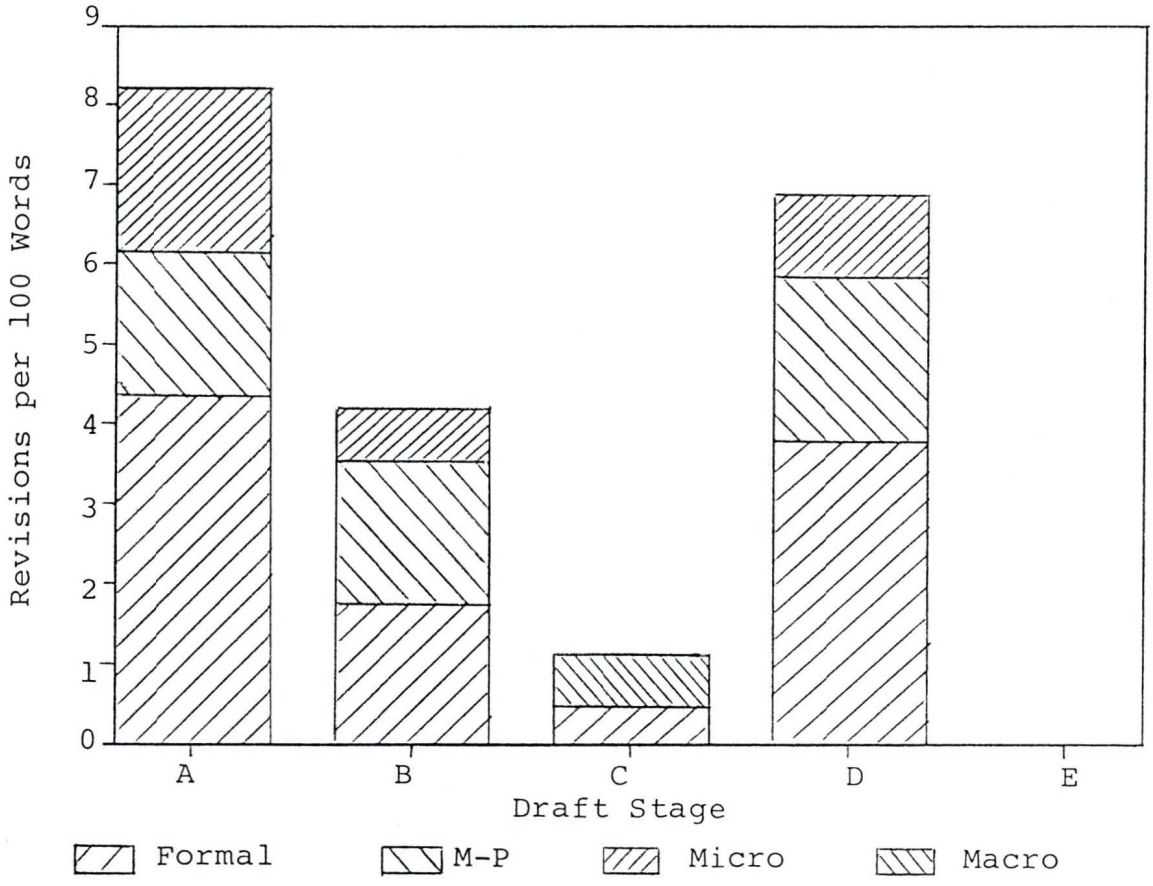

Figure 4. Competent Writers--Transactional Composition

Competent writers revised most frequently at Stage A. Although 75% of Stage A revisions were surface changes, the 25% which were microstructure meaning changes represented the largest proportion of revisions of this type at any stage. Students made approximately half the number of revisions at Stage B as were made at Stage A. Surface changes occurred five times more frequently than meaning changes. At Stage C, only Tara revised. She made several formal changes, but 57% of the revisions were macrostructure meaning changes. The second highest frequency for revisions occurred at Stage D. Again surface changes comprised 85% of all revisions, with the remaining 15% of revisions classified as meaning changes at the microstructure level. No revisions were made by competent students after writing draft two, Stage D.

To summarize the nature of revisions made by competent writers composing in the transactional mode, 79% of all changes were at the surface level. Meaning changes accounted for 21% of all revisions, including 3% which were macrostructure changes. Most revisions were enacted at Stages A and D, the in-process stages of drafts one and two.

Average and Competent Writers: A Comparison

Competent writers revised more often than average writers at every stage of the drafting process. The

distribution of revisions between the major categories of surface changes and meaning changes was similar for both groups of writers. Average writers made more meaning changes than competent writers (25% versus 31%), but 3% of all revisions made by competent writers were macro-structure meaning changes. No macrostructure changes were made by writers in the average group. A chi-square analysis of the total revisions made at each stage in transactional compositions by competent and average writers revealed no significant differences between the two groups of writers.

Revision Within the Composing Process

The descriptions and assessments of individual revising behaviours were drawn from verbal protocols collected during composing sessions, from interviews conducted with the students, from the researchers' observations and notes made during the sessions, and from the analysis of revisions made.

Average Writers

Cary. Cary's compositions were the briefest samples collected (expressive, 79 words; transactional, 45 words), and her composing sessions were also the shortest. Although she gave some evidence of planning for the

expressive composition ("I thought of something that made me really angry."), these plans did not appear to be well developed. She began writing quickly. The verbal protocols consisted largely of verbalizations about content as it was being written. Prompts were necessary as reminders for Cary to think aloud. Responses to such reminders involved content generation or language production, as the following excerpt illustrates:

I. What are you thinking?

C. I was thinking the concert was cancelled and it wasn't her fault after all.

Cary gave little evidence of her composing process during any of the sessions. Cary revised most frequently by making meaning changes at the microstructure level. She revised twice as often in the expressive mode as in the transactional mode of discourse. Almost one-half of all revisions were made to add information which could not be assumed through inferencing, but did not affect the summary of the text. Cary revised most frequently while writing draft two (Stage D), but also revised at Stages A and B. She approached the second draft as the writing of a polished copy. Draft one was reread in parts while transcribing draft two. The revisions made were smoothly incorporated into a neat product.

Cary revised as if the purpose of revisions was to add information which may have been omitted due to vague

planning procedures. She appears to have thought about her compositions between sessions, and this is evidenced by the meaning change microstructure additions made at Stage D. Her revision concerns are local ones. Her approach appeared to be one of accepting what had been written in the first draft, and adding a few details to flesh out her initial meagre writing.

Brian. Brian's approach to composing the expressive and transactional mode compositions reflected the different nature of the tasks. In the expressive mode, Brian's writing plan was to relate the events which had led up to the winning of a prize. His verbal protocol for draft one, expressive writing, is a series of content directed statements. Only one prompt did not result in a content statement, and it revealed that Brian was attempting to recall a hazy event from memory. In the expressive mode, Brian revised most at Stages B and D. He made revisions to draft one at Stage C, but these were made with the expectation that writing a second draft would not be necessary. The ratio of surface revisions to meaning changes was 2:1 in expressive writing.

In the transactional mode, Brian's verbal protocol reflects the challenges of the task. Unlike the retelling of a personal experience in chronological order, Brian wrestled with the need to structure a persuasive argument. Writing was less flowing. Pauses to reread were more

frequent. Prompts to verbalize what he was thinking were also required more often. Such reminders usually resulted in Brian rereading aloud, but in several instances he reported that he mind was blank. Of the twelve revisions Brian made in this form, only one, a microstructure substitution, was a meaning change. If the expressive mode was predominantly linear in its progress, Brian's transactional mode composing could best be described as recursive. The recursions were to generate what to say next, rather than to undertake any "re-seeing" of the composition's development. Revision in the transactional mode was largely a matter of correcting minor infelicities.

Steven. Steven also presented differences in composing/revising styles as he wrote in the expressive and transactional modes. He wrote the first expressive draft in a rambling, "stream of consciousness" manner about the death of his dog. The verbal protocol was reflection of similar content directed musings. Steven made only five surface changes at this stage. On completing the initial writing of draft one, Steven reread the draft (Stage B) making more revisions at this time. The changes made included 23% microstructure meaning changes. Steven showed an awareness of audience in some of his retrospective comments on revision.

I. Why did you add that particular sentence?

S. To tell the person why I'm talking to her in heaven.

In writing the second expressive draft, Steven did not reread the first draft. He had the first draft on the desk while writing, but did not look over it. In producing the second draft, Steven's behaviour was somewhat like the revising behaviour Calkins (1980) described as random. However, in spite of making no reference to draft one, the second draft repeated the storyline of draft one, but contained 536 words compared to 261 words at Stage B. Not surprisingly, the majority of the 46 revisions were microstructure additions. The verbal protocol for the second draft session reflects a more orderly, purposeful approach to this draft with an emphasis on presenting facts and details. Most items in the verbal protocol were directly related to content intended for inclusion in the text. Steven revised at Stage E, the only student to do so. Most revisions to draft two at this stage were surface changes.

In transactional writing, Steven seemed to take more time to formulate what he was going to say, as if to marshall his arguments in support of points made. Pauses requiring prompts from the investigator were more frequent. The protocol consisted of many content directed statements, but generating content was more difficult in this mode:

I. What are you thinking:

S. Uh, how to write. How to explain something. Like I feel this because...

Steven revised most frequently at Stages B and D in the transactional writing. Ninety percent of revisions were surface changes. In writing the second draft, Steven wrote to produce a better argument. Comments such as "Oh, oh, I don't really need that sentence there," appeared in the protocol. His efforts to revise in order to produce a tighter argument were evident as he explained the reasons for his revisions:

> S. Well some of the things I had here, I didn't really need them 'cause they weren't right on the topic, like what I was talking about.
>
> I. What were those things? Can you show me?
>
> S. Some of the junior highs run down the hallway, make loud noises and do nothing and accomplish nothing, I didn't really need all those words. This time I didn't write as like I wrote um more about the things, but I didn't cover all the things I had because they weren't all that important.

Average Writers Revising: A Synthesis

No clear pattern emerges in examining the revising behaviours of the average writers. Cary and Brian wrote shorter compositions and revised less often than Steven. All revised most frequently while rereading draft one during session one, and while writing draft two. For Cary, both the expressive and transactional mode compositions reflected a linear progression in the composing process. For Brian and Steven, the recursive nature of

the writing process was evident in the development of their transactional mode compositions. For average writers, microstrucure meaning changes dropped from a frequency of 6 per 100 words in expressive writing to 3 per 100 in transactional writing. Difficulties in developing the argument in persuasive writing were evident in the protocols. Fewer revisions may have resulted from an inability to deal with these difficulties and enact changes by revising.

Competent Writers

Anita. Prior to beginning writing, Anita reviewed her plans for the expressive story. The plans reflected a chronological account of a disagreement with a friend. Her writing followed these plans. Anita was unique in the extensive amount of rereading she did while composing. The rereading was often used to generate new content, but also served an evaluative function which led to revising:

A. (writing) When I got there
I went on all the rides
except
except one
because the line-up
was too big
(rereading) So when I got there
(evaluating) No, somehow I don't like that sentence.
It doesn't make sense.

Anita revised most frequently while writing draft one in both types of composition, but revised at Stage B, and

more frequently again at Stage D. About one-quarter of all revisions were microstructure meaning changes. Anita was able to verbalize her reasons for revising as seen in this sequence which occurred after Stage D, expressive writing:

> A. In some places when I did my first draft, I thought that the sentence made sense, but it really didn't so I had to change it.
>
> I. I didn't hear you talking about those. Were you saying the sentence the new way as you wrote it?
>
> A. Yeah, I didn't, well as I was writing I knew what the storyline was. I would glance over to it (draft one) once in a while to see what it said, but as I was reading it I would just use other words I was thinking... the way I want it to sound instead of the way I made it sound before.

Anita's composing and revising behaviours in draft one, transactional writing were similar to the patterns she exhibited in expressive writing. She reread extensively to plan and generate new content. Stage A revisision were almost 40% microstructure changes, the majority of which were deletions. Most of these changes were the result of rereading and evaluating statements as inappropriate for the purposes of her arguments. Comments such as the following were more frequent:

> A. No, that's not right.
> A. No, that doesn't make sense.
> A. No, that's not a good reason. It stinks.
> A. No, I've got to rephrase that.

Writing draft two in the transactional mode was an exercise in following draft one closely, but working on

language used and making sure that ideas were clearly expressed.

Kelly. Kelly's writing in the expressive mode was uninspired. She had vague plans as to the subject of her writing before she began, but the story seemed to "flow." Kelly seemed to remember well the events of the experience forming her topic, and seemed to express her intended content with little difficulty. Most revisions were formal changes at the surface level. Writing draft two was largely a matter of making a good copy although she made several spelling corrections. Following Stage D of the expressive writing, Kelly stated that she revises for mistakes, new paragraph formation, and better words. The verbal protocol is a record of content generation.

In transactional writing, Kelly seemed much less sure of plans and organization of ideas. Rereading to plan, generate content, evaluate, and in some instances revise was a new feature in her writing. Kelly revised more frequently at the meaning-preserving level at Stages A and B in transactional writing. The verbal protocol gave more evidence of thinking other than content generation during composing.

> K. Why would it have to be better? I have to have a good reason.

Writing the second draft in transactional writing was again an exercise in producing a good copy. Only surface

changes were made. The protocol for this drafting session is a record of content intended for transcription.

Tara. Tara's expressive composition had been well planned in advance. She wrote quickly and fluently. Her verbal protocol was solely concerned with content generation. She made few revisions while composing and rereading. For the second session, Tara began by rereading draft one. During the rereading she made seven meaning changes, three of which were macrostructure additions. She marked up the draft, including a notation for a long insertion done on a separate sheet of paper. The verbal protocol was not revealing, but in an interview following draft two, Tara replied to the following question:

> I. Did you do any thinking about draft one?
>
> T. Yeah, I thought words that I thought would be better to use, and things that would fit in, and crossing things out that didn't quite fit.

It appears that Tara planned her revisions in the interim between sessions, and executed them smoothly on the second day.

The first session for transactional writing began with a planning session. Tara explored ideas and evaluated them as she planned her argument. While writing draft one in this form, more rereading was done for making plans and generating content, but not revising. Few revisions were made at Stages A and B. Tara began the second session by

rereading draft one in its entirety. She then generated and evaluated some ideas for an additional major argument in her paper. At this point, Stage C, she made a series of four macrostructure meaning changes, repeating a pattern previously seen in her expressive writing. Writing was then largely a matter of writing a good copy. As in the expressive drafting, the verbal protocol gave evidence of little more than content intended for immediate transcription.

Competent Writers Revising: A Synthesis

As with the average writers, no clear patterns emerged in examining the revising behaviours of the competent writers. All revised with consistent frequency between expressive and transactional writing. All revised at Stages A, B, and D. None revised after Stage D, treating the second draft as a polished, final copy. Of all the writers in the study, only Tara made Macrostructure changes. These were made smoothly and efficiently, indicating that Tara had given some thought to revising draft one after the first composing session.

For Kelly, the expressive composition was a matter of relating an experience in chronological order. Revisions were largely cosmetic. For Tara and Anita, a need to shape their writing to meet audience demands and their intentions for the writing was more evident

in the amount of reviewing undertaken, and in the higher frequency of meaning changes made to their compositions.

A more consistent pattern of composing and revising was apparent in the transactional writing. All writers reviewed extensively. Kelly's composing behaviour became more recursive and similar to that of Tara and Anita, and meaning changes became a feature in her revisions for this type of composition.

Student Revising Behaviours in the Framework of Cognitive Process Models of Composing

Evidence for the existence of cognitive functions in the Flower and Hayes (1981) Cognitive Process Theory of writing was drawn from verbal protocols. These protocols, collected from adult writers, contained a variety of statements which were classified as briefly reflecting the underlying psychological subprocesses used in composing, and the organization of those subprocesses. The major processes identified were planning, translating, and reviewing. Of particular interest to this study are reviewing and its subprocesses, reading and editing, and their relationship to the other composing processes.

The verbal protocols gathered from the composing sessions of the 12-year-old students in this study were very different from the examples used by Flower and Hayes in support of their model. Unlike the protocols of adult

writers which reflected evidence of many different processes, and a metacognitive awareness of the processes, the student verbal protocols obtained in this study are remarkable in their limited scope. Most statements in the protocols are verbatim recitations of content prior to or as it is being transcribed, or as it is being read over. Prompts such as "What are you thinking?" during pauses often made little difference in the types of statements elicited. A statement such as "I'm trying to think of a way to say..." were rare. Usually the students acknowledged such questions by generating more content for transcription.

Hayes and Flower distinguish between reviewing and editing. Editing examines any content that the writer puts into words, including words from speaking, reading or writing. It is similar to a two-part fault detection system in which identification of inaccuracies, errors in conventions, or evaluations may trigger corrective strategies. While editing may interrupt any other ongoing composing process, reviewing occurs when the writer allots a period of time, and systematically sets about examining the text with the goal of improving it. Editing best describes the revisions which occurred during the in-process composing of draft one in the expressive compositions. The average students in particular made only surface changes at Stage A. Editing also occurred frequently at

Stage D. During editing, spelling was corrected, and words were added or replaced with synonyms. This was an almost automatic process, reflected in the protocols only by the repeating of words altered. Editing was a feature throughout Stages A and D in all compositions.

Reviewing was most evident at Stages B and D in both modes of discourse, but reviewing was also a prominent feature in Stage A of the transactional compositions. For Brian, an average writer, and all of the competent writers, reading and reviewing were more frequent during the initial composing of the transactional piece. In the protocols this appeared as rereading what had been transcribed, usually followed by the generation of more content or making revisions. At Stage B, for both types of writing, the reading and evaluating of compositions for the purpose of improvement was in evidence. At Stage C, Tara, a competent writer, made the review process a time for making macrostructure additions to her compositions. Stage D for the competent writers was characterized by more editing than reviewing. At Stage D, Steven, while not giving evidence of reviewing in the protocol, made extensive additions to his compositions.

The protocols give some evidence of the recursive nature of the composing process as described by Flower and Hayes. The analysis of revisions using the Faigley and Witte taxonomy, and the record of stages at which

revisions occurred are necessary supplements to the limited range of statements collected from student verbal protocols. From the combination of analyses, the patterns of reviewing and editing are more visible.

Summary

To review the results of this study, the questions which directed the investigation will guide the presentation of summarized findings.

1. In the expressive mode, average writers revised less frequently than competent writers. Revisions made by average writers were almost evenly split between surface changes and microstructure meaning changes. Competent writers made three times more surface changes than meaning changes, but made macrostructure as well as microstructure meaning changes.

2. In the transactional mode, average writers revised less often than competent writers. The ratio of surface changes to meaning changes for both groups of writers was approximately 3:1.

3. Average writers presented no clear pattern of revising behaviours. They revised most often at Stages A, B, and D. Revisions at the meaning level occured more often in expressive writing than in transactional writing.

4. Competent writers reviewed and paused more often in transactional writing than in expressive writing.

Patterns for revision at surface and meaning levels were consistent for the group, but individual differences were apparent in revising strategies for the two forms of discourse.

5. Revision occurred recursively throughout the composing process. Evidence was gathered for Flower and Hayes (1981) statement that both editing and reviewing are revision processes in composing. Verbal protocols gathered gave little evidence of underlying cognitive processes in composing.

Chapter V

Conclusions and Implications

This was an exploratory, descriptive study designed to examine the various aspects of revising behaviours of average and competent writers at the chronological mid point of their school careers, and to determine how appropriately the role of revision as described in current cognitive process models of writing (Nold, 1980; Flower & Hayes, 1980, 1981b) explicate the revising behaviour of these grade six students.

The purpose of this chapter is to summarize the investigatory procedures, present the findings of the study, place these findings in the context of current theoretical paradigms, and discuss implications these findings may have for directions and practices in research and teaching.

The Study

Specifically, this study of revising behaviours involved the collection of verbal protocols and writing samples of six grade six students while composing in the expressive and transactional modes of discourse. A random selection of three students was made from each group of average and competent writers. Students were given the writing topics in advance of each first draft

session. Audiotapes were made as students were asked to think aloud during composing. Revisions were noted at five stages for each type of composition (Stage A, in-process draft 1; Stage B, reviewing draft 1 during session 1; Stage C, reviewing draft 1, session 2; Stage D, in-process draft 2; Stage E, reviewing draft 2). At the end of each composing session, students were interviewed as to their purposes in making specific revisions. The Faigley and Witte (1982) taxonomy of revisions was used to classify revisions at each stage of composing. Frequencies for each type of revision at each stage of composing were calculated for the expressive and transactional compositions of average and competent students. The verbal protocol records, interview information, observational data, and the results of taxonomic analysis were used to develop a description of individual and group revising behaviours.

Findings

1. The total frequency per 100 words with which average and competent writers revised was consistent for both expressive and transactional modes of discourse. Average writers, however, made only half the number of microstructure meaning changes in transactional writing as made in expressive writing, drawing their distribution of types of revision closer to that of competent writers.

2. Surface changes occurred in a 3:1 ratio to meaning changes in all but the expressive writing of average writers.

3. Average writers revised less frequently than competent writers.

4. No clear patterns for revising behaviours emerged within the average or competent writer groups. Individual styles of revising behaviour were more apparent.

5. Both editing, and reviewing for more serious (text base) revision concerns occurred recursively throughout the composing process.

6. Composing in the expressive mode appeared to be less difficult for the student writers. Many described their writing as "flowing."

7. Composing in the transactional mode was characterized by more frequent reading of what had been transcribed, pauses, and protocol statements reflecting difficulty in matching intentions with language.

8. Verbal protocols offered few insights into cognitive processes. Most statements involved verbalizing content as it was being transcribed.

9. Most students revised according to local concerns. There was some evidence of concerns for audience. Only one student, a competent writer, made macrostructure meaning changes which indicated a more global concernfor the direction of the composition.

10. Writing draft two was often the production of a polished copy rather than a "re-seeing" of what had been written in draft one.

Conclusions

Revising for the young people in this study reflected an atheoretical approach to "re-seeing" what had been transcribed. Concerns in revision were mainly local ones at the level of words, phrases, and sentences which had little effect in altering the conceptual basis or direction for their compositions. Nold (1981) noted that revising is inextricably linked with planning. The students' vague plans to describe or relate personal experiences in the expressive task may be associated with the content generating focus of the verbal protocols and with the subsequent localized concerns in revising. If these young writers do not develop elaborate plans as to intended audience, persona, and meaning, but rather plan to "write what happened," their thinking during writing will be directed toward a recording of events rather than thinking about the composition on a conceptual level. For these students, writing may be viewed as having a communicative function, but the heuristic value of the composing process is not explored. Under these circumstances, the goals of revision are as localized and limited as the goals for writing.

The taxonomy for classifying revisions developed by Faigley and Witte (1981) provided an analysis of revisions and an understanding of their effect on the compositions which would not have been readily apparent in examining raw numbers of revisions, or in an analysis based on linguistic structures. The preponderance of surface changes and the very limited number of macro-structure meaning changes produced readily available evidence of the revision concerns and their relative implementation by students. The taxonomic distinctions between surface changes and meaning changes served to focus the researcher's attention on the depth to which students re-examined and revised their writing. A survey of the total number of revisions made in a composition, or a frequency count could lead an uninformed observer to conclude that pre-adolescent children often revise extensively. Such a conclusion would fail to consider the surface versus meaning changes and the implications such contrasts have for indicating whether revisions made reflect local or global concerns in the composition.

The large proportion of surface changes as revealed in the taxonomic analysis of revisions indicated that student concerns were mainly local ones. That macro-structure changes were carried out by only one of the students, a competent writer, leads to the conclusion that pre-adolescent writers revise according to concerns

which reflect an attention to superficial details rather than a focus on the nature and development of the conceptual foundation of the composition.

The cognitive process theory as developed by Flower and Hayes (1981), and based on the composing processes of a mature writer is not adequate in explicating the composing process of pre-adolescent writers. In contrast to the varied composing statements and metacognitive awareness Flower and Hayes identified in their studies, the verbal protocols of these young writers offer little evidence of cognitive processes other than a generating of content or of producing language to express ideas for content. The cognitive process model proposed by Nold (1979, 1981) offers more promise in reaching an understanding of cognitive-developmental features in composing/revising behaviours. Nold stresses possible developmental constraints in the functioning of the subprocesses of reviewing, and the constraints of representing intended meaning, audience, and persona. The complexity of matching intentions to what has been transcribed is only one step. Revision may not be attempted if the writer cannot generate a more acceptable alternative. An explanation for the contrast of the much more recursive pattern of composing in the transactional mode as compared with the more linear "flow" of writing in the expressive form may lie in this cognitive-developmental stance. While the students seemed

to be struggling more to express their ideas and marshall their persuasive arguments, revision did not increase. For average writers, there was a 50% decline in meaning changes made. Perhaps the generation of ideas involved in revising or retranscribing was an overload on an already taxed system.

The evidence of reduced revisions in drafting the transactional composition provides support for the necessity of creating a comprehensive cognitive-developmental model of the writing process. As earlier stated, Bereiter (1980) emphasized the need for a cognitive-developmental model which considers the interacting cognitive processes, the different types of processing requirements from highly intentional and conscious to automatic, unconscious routines, and the strategies applied in orchestrating the various functions to produce writing. Evidence on quantitative differences in children's information processing load capabilities (Scardamalia, 1981), and the observed reduction in revising behaviours in transactional writing noted in this study indicate that cognitive-developmental concerns as to different types of processing requirements in composing are valid considerations in the structuring of a cognitive-developmental model of the writing process.

That grade six students do revise their compositions throughout the writing process was an outcome of this study. Their focus on surface changes and revisions

which do not alter their conception of a piece of writing reveals a limited idea of the power of writing as one which communicates what one has to say, not one which explores and discovers new directions and new meanings through composing.

In summary, the following conclusions may be drawn from this study:

1. Pre-adolescent writers revised in a manner which reflected their concern with local, surface concerns rather than the conceptual basis of their composition.

2. For these students, writing has a communicative rather than an heuristic function.

3. The taxonomy of revision was an important tool in revealing an emphasis on surface level rather than meaning or text base changes.

4. The limited nature of the verbal protocols gathered from pre-adolescent writers provides little support for applying the Flower and Hayes (1981b) model of the composing process of mature writers to interpreting the composing behaviours of developing writers.

5. The developmental constraints which may inhibit the reviewing/revising function in pre-adolescent writers and the interaction of planning and revising as illustrated in the Nold (1981) model of the writing process provide a more plausible explanation of the differences in revising behaviours noted in expressive and transactional compositions.

6. The information load processing capabilities of children emphasize the need for a cognitive-developmental model of the writing process which accounts for maturational differences in the cognitive development of young writers.

Implications

The findings of the present study give rise to the following suggestions as to future directions in research and teaching:

1. This study should be replicated with a broader sampling to validate the statistical significance of the results.

2. The present study should be expanded to include students at several grade levels to trace the developmental nature of revision within the composing process.

3. The present study investigated revisions made at one point in the students' school careers. It may be beneficial to our understanding of the role of revision in the developing composing process to study its ontogenesis and longitudinal development in a small population of students.

4. The present study was designed to investigate the nature of revisions in expressive and transactional writing. Further investigation might explore the type of revisions made in teacher sponsored and self sponsored writing.

5. The present study investigated revising behaviours within the composing process with little emphasis on the link between planning and revising. A study of the relationship between these two processes in composing may yield valuable information as to the significance of assisting students in planning and revising.

6. Pedagogically, students need to be shown that revision is not a tidying up of errors and infelicities, but a re-seeing and re-thinking of what has been transcribed.

7. The idiosyncratic approach to revising exhibited by students in the study may indicate the necessity of teacher conferencing on an individual or small group basis to provide assistance to students in effectively revising their compositions.

8. Teachers may gain valuable insights into the revising concerns and practices of their students by applying the taxonomy of revisions (Faigley & Witte, 1981) in a limited manner to selected compositions.

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Appendix A

Student Revision Data

Student Revision Data

Average Writer--Brian

Revision Changes in Each Draft (Stage A, B, C, D, E) and
Total Revision Changes for All Drafts for Expressive and Transactional Compositions

	Expressive						Transactional					
	Stage					Total	Stage					Total
	A	B	C	D	E		A	B	C	D	E	
Words	133	139	156	159			136	136		122		
Surface Changes												
A. Formal Changes												
Spelling			1	2		3	3					3
Tense						0		2				2
Abbreviations						0						0
Punctuation				3		3		2		1		3
Paragraph						0						0
Other Format				1		1						0
Total	0	0	1	6	0	7	3	4	0	1	0	8
B. Meaning-Preserving Changes												
Additions		2				2						0
Deletions						0						0
Substitutions	1			1		2		1		1		2
Permutations						0						0
Distributions						0						0
Consolidations						0				1		1
Total	1	2	0	1	0	4	0	1	0	2	0	3

Brian - continued

	Expressive						Transactional					
	Stage					Total	Stage					Total
	A	B	C	D	E		A	B	C	D	E	
Meaning Changes												
A. Microstructure Changes												
Additions		3	1			4						0
Deletions						0						0
Substitutions						0				1		1
Permutations						0						0
Distributions						0						0
Consolidations						0						0
Total	0	3	1	0	0	4	0	0	0	1	0	1
B. Macrostructure Changes												
Additions						0						0
Deletions						0						0
Substitutions						0						0
Permutations						0						0
Distributions						0						0
Consolidations						0						0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Totals	1	5	2	7	0	15	3	5	0	4	0	12

Student Revision Data

Average Writer--Cary

Revision Changes in Each Draft (Stage A, B, C, D, E) and
Total Revision Changes for All Drafts for Expressive and Transactional Compositions

	Expressive						Transactional					
	Stage					Total	Stage					Total
	A	B	C	D	E		A	B	C	D	E	
Words	53	62		79			32			45		
Surface Changes												
A. Formal Changes												
Spelling						0				1		1
Tense				1		1						0
Abbreviations						0						0
Punctuation						0						0
Paragraph						0						0
Other Format						0						0
Total	0	0	0	1	0	1	0	0	0	1	0	1
B. Meaning-Preserving Changes												
Additions						0						0
Deletions				1		1						0
Substitutions				1		1						0
Permutations						0	1					1
Distributions						0						0
Consolidations						0						0
Total	0	0	0	2	0	2	1	0	0	0	0	1

Cary - continued

	Expressive						Transactional					
	Stage					Total	Stage					Total
	A	B	C	D	E		A	B	C	D	E	
Meaning Changes												
A. Microstructure Changes												
Additions		3		2		5				2		2
Deletions		1				1				1		1
Substitutions		1				1						0
Permutations						0						0
Distributions						0						0
Consolidations						0						0
Total	0	5	0	2	0	7	0	0	0	3	0	3
B. Macrostructure Changes												
Additions						0						0
Deletions						0						0
Substitutions						0						0
Permutations						0						0
Distributions						0						0
Consolidations						0						0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Totals	0	5	0	5	0	10	1	0	0	4	0	5

Student Revision Data

Average Writer--Steven

Revision Changes in Each Draft (Stage A, B, C, D, E) and
Total Revision Changes for All Drafts for Expressive and Transactional Compositions

	Expressive						Transactional					
	Stage					Total	Stage					Total
	A	B	C	D	E		A	B	C	D	E	
Words	228	261		540	536		166	167		186		
Surface Changes												
A. Formal Changes												
Spelling	2	2		3	2	9	1	4				5
Tense					1	1						0
Abbreviations						0						0
Punctuation		6			8	14	1	6		2		9
Paragraph						0						0
Other Format						0						0
Total	2	8	0	3	11	24	2	10	0	2	0	14
B. Meaning-Preserving Changes												
Additions	1	6		6	2	15		1		2		3
Deletions				1	4	5		1				1
Substitutions	1	3		5		9	2			4		6
Permutations	1					1				2		2
Distributions						0						0
Consolidations				2		2				1		1
Total	3	9	0	14	6	32	2	2	0	9	0	13

Steven - continued

	Expressive						Transactional					
	Stage					Total	Stage					Total
	A	B	C	D	E		A	B	C	D	E	
Meaning Changes												
A. Microstructure Changes												
Additions		3		28		31				2		2
Deletions				1	1	2				1		1
Substitutions		2			1	3						0
Permutations						0						0
Distributions						0						0
Consolidations						0						0
Total	0	5	0	29	2	36	0	0	0	3	0	3
B. Macrostructure Changes												
Additions						0						0
Deletions						0						0
Substitutions						0						0
Permutations						0						0
Distributions						0						0
Consolidations						0						0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Totals	5	22	0	46	19	92	4	12	0	14	0	30

Student Revision Data

Competent Writer--Anita

Revision Changes in Each Draft (Stage A, B, C, D, E) and
Total Revision Changes for All Drafts for Expressive and Transactional Compositions

	Expressive						Transactional					
	Stage					Total	Stage					Total
	A	B	C	D	E		A	B	C	D	E	
Words	368	389		378			254	256		272		
Surface Changes												
A. Formal Changes												
Spelling	17	2		2		21	7	7		10		24
Tense		3		1		4		1				1
Abbreviations	1					1		1				1
Punctuation	2	4		2		8	1			4		5
Paragraph	1					1				1		1
Other Format						0						0
Total	21	9	0	5	0	35	8	9	0	15	0	32
B. Meaning-Preserving Changes												
Additions	1	4		4		9	2	1		1		4
Deletions	1			4		5	1			1		2
Substitutions	3			7		10	5			5		10
Permutations				1		1	1	1				2
Distributions				1		1						0
Consolidations				1		1				1		1
Total	5	4	0	18	0	27	9	2	0	8	0	19

Anita - continued

	Expressive						Transactional					
	Stage					Total	Stage					Total
	A	B	C	D	E		A	B	C	D	E	
Meaning Changes												
A. Microstructure Changes												
Additions	1	3		1		5	1			4		5
Deletions	4					4	9					9
Substitutions	8	1		4		13	1			3		4
Permutations						0						0
Distributions						0						0
Consolidations				1		1						0
Total	13	4	0	6	0	23	11	0	0	7	0	18
B. Macrostructure Changes												
Additions						0						0
Deletions						0						0
Substitutions						0						0
Permutations						0						0
Distributions						0						0
Consolidations						0						0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Totals	39	17	0	29	0	85	28	11	0	30	0	69

Student Revision Data

Competent Writer--Kelly

Revision Changes in Each Draft (Stage A, B, C, D, E) and
Total Revision Changes for All Drafts for Expressive and Transactional Compositions

	Expressive						Transactional					
	Stage					Total	Stage					Total
	A	B	C	D	E		A	B	C	D	E	
Words	128	128		128			169	177		170		
Surface Changes												
A. Formal Changes												
Spelling	8	1		7		16	9			3		12
Tense		1		1		2				1		1
Abbreviations						0						0
Punctuation	1			1		2				1		1
Paragraph		2				2		3				3
Other Format	3			1		4	2			1		3
Total	12	4	0	10	0	26	11	3	0	6	0	20
B. Meaning-Preserving Changes												
Additions						0	1	4		1		6
Deletions						0	1	2		1		4
Substitutions				1		1	1	1				2
Permutations						0						0
Distributions						0		1				1
Consolidations						0				1		1
Total	0	0	0	1	0	1	3	8	0	3	0	14

Kelly - continued

	Expressive						Transactional					
	Stage					Total	Stage					Total
	A	B	C	D	E		A	B	C	D	E	
Meaning Changes												
A. Microstructure Changes												
Additions	1					1		1				1
Deletions	1					1	1	1				2
Substitutions						0	2					2
Permutations						0						0
Distributions						0						0
Consolidations						0						0
Total	2	0	0	0	0	2	3	2	0	0	0	5
B. Macrostructure Changes												
Additions						0						0
Deletions						0						0
Substitutions						0						0
Permutations						0						0
Distributions						0						0
Consolidations						0						0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Totals	14	4	0	11	0	29	17	13	0	9	0	39

Student Revision Data

Competent Writer--Tara

Revision Changes in Each Draft (Stage A, B, C, D, E) and
Total Revision Changes for All Drafts for Expressive and Transactional Compositions

	Expressive						Transactional					
	Stage					Total	Stage					Total
	A	B	C	D	E		A	B	C	D	E	
Words	156	160	244	250			115	118	205	212		
Surface Changes												
A. Formal Changes												
Spelling	1			3		4	4		3	4		11
Tense						0				1		1
Abbreviations				1		1						0
Punctuation	1			2		3						0
Paragraph						0						0
Other Format						0						0
Total	2	0	0	6	0	8	4	0	3	5	0	12
B. Meaning-Preserving Changes												
Additions		1				1				1		1
Deletions						0						0
Substitutions		1		1		2						0
Permutations	1					1						0
Distributions						0						0
Consolidations						0						0
Total	1	2	0	1	0	4	0	0	0	3	0	3

Tara - continued

	Expressive						Transactional					
	Stage					Total	Stage					Total
	A	B	C	D	E		A	B	C	D	E	
Meaning Changes												
A. Microstructure Changes												
Additions		2	2	1		5		1		1		2
Deletions			2			2						0
Substitutions	1			1		2						0
Permutations						0						0
Distributions						0						0
Consolidations						0						0
Total	1	2	4	2	0	9	0	1	0	1	0	2
B. Macrostructure Changes												
Additions			3			3						0
Deletions						0						0
Substitutions						0			4			4
Permutations						0						0
Distributions						0						0
Consolidations						0						0
Total	0	0	3	0	0	3	0	0	4	0	0	4
Totals	4	4	7	9	0	24	4	1	7	9	0	21

Appendix B

Chi-Square Analysis

Chi-Square Analysis

Average and Competent Writers

Expressive Compositions

	Stage					Marginals
	A	B	C	D	E	
Average Writer						
Expected	4.06	4.50	0.61	5.93	0.53	
Observed	0.96	6.66	0.41	6.43	1.18	15.64
Chi-Square Value	2.37	1.03	0.06	0.04	0.79	
Competent Writer						
Expected	4.95	5.50	0.75	7.24	0.65	
Observed	8.05	3.35	0.94	6.75	0.00	19.09
Chi-Square Value	1.94	0.84	0.05	0.03	0.65	
Marginals	9.01	10.0	1.35	13.1	1.18	34.73

Degrees of Freedom = 4

Chi-Square = 7.813

Score Required for 95% Probability of Significance = 9.488

Score Required for 90% Probability of Significance = 7.779

Chi-Square Analysis

Average and Competent Writers

Transactional Compositions

	Stage					Marginals
	A	B	C	D	E	
Average Writer						
Expected	4.14	3.00	0.44	5.19		
Observed	2.57	3.60	0.00	6.60		12.77
Chi-Square Value	0.60	0.12	0.44	0.38		
Competent Writer						
Expected	6.64	4.80	0.70	8.31		
Observed	8.21	4.20	1.14	6.90		20.45
Chi-Square Value	0.37	0.07	0.27	0.24		
Marginals	10.7	7.79	1.13	13.5		33.22

Degrees of Freedom = 3

Chi-Square - 2.498

Score Required for 95% Probability of Significance = 7.815

Score Required for 90% Probability of Significance = 6.251

VITA

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REVISING BEHAVIOURS OF AVERAGE AND COMPETENT GRADE SIX WRITERS COMPOSING IN TWO MODES OF DISCOURSE

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September 30, 1985
(date)