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SELF-REGULATION IN EXPOSITORY WRITING

by

MAXINE M. MARCUS

A dissertation submitted to the
Graduate Faculty in Educational Psychology
in partial fulfillment of the requirements
for the degree of Doctor of Philosophy, the
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1988

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Abstract

Self-Regulation in Expository Writing

Maxine M. Marcus

Advisor: Barry J. Zimmerman

Students' ability to self-regulate their learning, to initiate, plan, and direct their own educational experiences, was examined within the context of expository writing. The composing process was examined for evidence of behaviors demonstrating self-control with subjects of three age groups (5th, 8th, and 11th grade students) and two writing ability levels (Good and Poor). It was theorized that, eventually, it might be possible to help writers by teaching those who are younger or less successful the behaviors shown by more successful writers.

An exploratory analysis of a variety of behaviors believed to be related to the writing process was performed. During a brief expository writing task, measures were made of students':

1. Environmental Self-Control

Students' management of features of their environment, like distractors, time, or equipment.

2. Cognitive Self-Control

Students' utilization of planning, goal-setting, and management of resources.

3. Response Self-Control

Students' self-evaluative, self-monitoring processes like review and revision.

The essays were then evaluated, and the self-regulatory behaviors of those who produced Good, Average, or Poor essays were examined. A series of chi square analyses were performed with ANOVA analyses when data was continuous.

A number of behaviors were found to be related to age or ability. Those behaviors found to be most closely related to the composition of better essays were: preparing to write; including a topic sentence; using a dictionary when necessary, spending less time watching the TV; writing longer essays; -itoring the time, and re-reading. The implications of these findings are discussed, and suggestions for educators and for future research are considered.

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To my husband, Joel, and our children, Russell and Ilene: thank you, thank you, thank you....To the children for accepting Dad when they really wanted Mom, or managing on their own because I needed them to. For saying it was fine, even when it really wasn't. For reminding me they were proud

of me and of my work. For growing straight and strong despite my absorption elsewhere. For making me so proud of them. To Joel for always believing, helping, reassuring, comforting me, even when my own faith flagged. For listening patiently, interestedly, repeatedly. For making dinners, doing laundry, taking the children to the doctor, handling crises, missing tennis games, for never failing me. For being my partner, my lover, and my very best friend.

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WRITING AS A SELF-REGULATED ACTIVITY

There's nothing to writing.
All you do is sit down at a typewriter and open a vein.
Red Smith, Sportswriter,
NY TIMES Sportswriter
(In Gundlach, 1982, p.105)

Writing is a natural process--as natural as eating, swimming, talking.
(Kindilien, 1982, p.3)

If you ask someone, "Can you play the violin?" and he says: "I don't know, I have not tried, perhaps I can", you laugh at him. Whereas about writing, people always say: "I don't know, I have not tried", as though one had only to try and one would become a writer.

Leo Tolstoi
(Allen, 1948,frontispiece)

INTRODUCTION

Inadequate writing skills have become an increasing concern to our nation's educators and parents, as well as to students themselves. The need for educational research addressing this problem is clear.

Although educational research has looked at some aspects of writing, few researchers have examined components of the composing process reported by professional writers to be important, such as how writers organize and structure their

physical and social environments or how they monitor and evaluate their progress as they compose.

Recent research in children's composing has stressed the value of learning what it is that successful writers actually do when they write. It is theorized that if poor writers were taught to behave like good writers, they too could become more successful writers.

Each of these issues can be addressed within a Self-Regulation in Writing model. Writers' Environmental Self-Control can be measured by examining how they manage various facets of their environment, like necessary materials and unnecessary distractors. Writers' Cognitive Self-Control can be measured by observing their planning time, their goal-setting through the use of composition titles and topic sentences, and their utilization of available informational resources. Writers' Response Self-Control can be measured by investigating their self-evaluative and self-reward/ punishment responses such as their revision behaviors.

Through an investigation of the self-regulation processes of student writers of several age levels, it could be possible to identify those classes of behaviors related to successful composition and thereby provide concrete instructional information for the use of educators, parents, and students

themselves. In addition, knowledge of the patterns of development of self-regulatory writing behaviors could facilitate diagnostic/prescriptive remediation for problem writers.

CHAPTER ONE

The Writing Problem

In recent years, students' writing skills have become an increasing concern to parents, educators, employers, and the students themselves. A National Association of Educational Progress ten year assessment of 95,000 American students describes their writing skills as "distressingly poor" and stresses the need for suggestions and recommendations from writing researchers (Applebee, 1986). Many students complain they are unable to meet the standards for college writing; composition teachers report that students do not write as well as they had in the past (Brown, 1981; Harris, 1982). Of the 51,135 students who took the New Jersey College Basic Skills Placement Test in 1982, only 27% proved to be proficient in verbal skills (Morante, 1982). Another NAEP report indicated that only 5% of seventeen-year-olds appeared able to write an acceptable job application letter (1975), yet even in those industries that are technological in nature, writing skills are viewed as critically important in work performance and in job advancement (Messelear, 1982).

On the other hand, there are researchers who maintain that the "writing crisis" which emerged in this country during the 1970's may be artifactual, resulting from inadequate measurement devices and naturally changing language patterns

(Brown, 1981). Still others point out that even in highly literate societies, proportionately few people write anyway: the number of writers is very small compared to the number of readers. In addition, much of the writing done by these few is highly routinized or stereotyped (Kress, 1982): business people write business letters, academicians write research papers, journalists write news reports. Since the structure or framework of the writing within each area often becomes stylized, little writing flexibility is necessary. However, these assertions appear to have done little to assuage public distress.

Solutions Attempted

Educators and school boards have responded to community concern by restoring writing to a position of prominence in the curriculum at all levels. Remedial writing courses have become widely available; minimum competency examinations for earning high school diplomas throughout New York State include criteria for writing. Some communities have even explored computer-based writing programs for children of five and six years of age (NY TIMES, Feb. 26, 1984). However, according to Graves (1980), only 156 studies on writing in the elementary grades, or an average of six annually, had been done in the United States in the previous twenty-five years. For every $3000 spent on children's skill in receiving information,

$1.00 was spent on their power to communicate through writing (Graves, 1980).

Numerous attempts to improve students' writing have focused on optimizing school variables. Reductions in class size have enabled teachers to spend more time instructing individual students and reviewing writing assignments. Innovative instructional techniques and curriculum sequencing have been explored as means of teaching students to select, combine, arrange, and develop ideas into sentences, paragraphs, and longer units of discourse (Flynn, 1981; Helping Student Writers, 1983; NCTE, March 1979; Wienke, 1981).

Other efforts to maximize achievement in writing have been sociological in nature. Hirsch (1981) defined illiteracy, in part, as a deficiency in cultural information, and Meyers (1981) asserted that learning can result only from a local culture whose aim it is to produce literacy. Indeed, Mosenthal (1983) has argued that all definitions of classroom writing competence have sociopolitical implications regarding the purposes of education. Researchers have attempted to study the influence of such environmental factors as the home, the family, the community, and society at large in order to devise effective and appropriate interventions (Guidubaldi, 1983; Murray & Jackson, 1982-83). By investing available resources

in improving these situational variables, it is assumed that society could improve students' achievement-related values or experiences.

Other researchers have studied individual differences in writing among students. Rivers (1983) suggested that such character traits as courage, honesty, and humility are reflected in and developed by compositions and composition instruction. Although many scales for the measurement of traits such as attitudes, interests, and motivations have been developed, as yet no attempts have been made to modify them through the use of writing. However, some researchers like Bereiter & Scardamalia (1982a) have found a "great urge towards mastery" in children to be a by-product of experience with procedures which help them manage writing tasks more efficiently (p.58).

While sociopolitical, environmental, instructional, and individual-difference models have helped us to better understand those circumstances which are likely to act as facilitators in the writing process, society as a whole remains quite unsuccessful in optimizing each student's abilities and environmental conditions. Nonetheless, educators are charged with the task of instructing all students in the nation's classrooms, whatever their social, economic, experiential, or academic backgrounds may be. Moreover, it is

seldom possible even to control the extraneous variables operating within the limited confines of the classroom during the course of any lesson; interruptions and distractions occur with regularity, just as they do in the world outside the classroom.

Writing as a Self-Regulated Activity

Self-regulated learning (Corno & Mandinach, 1983) consists of specific cognitive activities, such as deliberate planning and monitoring, which learners carry out as they encounter academic tasks. Zimmerman (1984) has developed a more comprehensive definition of self-regulated learning which includes the environmental dimensions of learning situations. As so defined, self-regulated learning is predicated on the assumption that learners' environments tend to be less than perfect. The world of learners is usually poorly structured and includes many elements antithetical to the learning process. For example, during the course of a teacher's conscientiously-planned lesson, it is quite common for students to be distracted by street noises outside or the antics of their peers inside the classroom, for lessons to be interrupted by fire drills, visitors, or announcements on the intercom, as well as by personal crises such as lost or broken writing instruments.

Effective learners must make some attempt to compensate for these common environmental obstacles. They may attempt to avoid them, or to restructure their environment to overcome them. Self-regulated learners are aware of the impact the environment has on their behavior and the learner's need to take steps to modify elements of that environment. Thus, effective learners may learn to physically block environmental distractors out of their line of vision; they may equip themselves with multiple writing instruments; they may seek a reiteration of instructions from the teacher after an interruption in his/her lesson. This form of self-regulation theory is based on a contextualist model; it suggests that those cognitive variables which learners bring to any learning situation interact with those environmental variables learners meet there; it focuses on the interaction process.

Individuals as active participants in their own functioning have been studied extensively under the rubric "self-control". Thoreson & Mahoney (1974) have offered a behavioral definition of this process: "a person displays self-control when in the relative absence of immediate external constraints, he engages in behavior whose previous probability has been less than that of alternatively available behaviors" (p. 12). For example, a person who is attempting to stop smoking exhibits self-control if he/she resists smoking

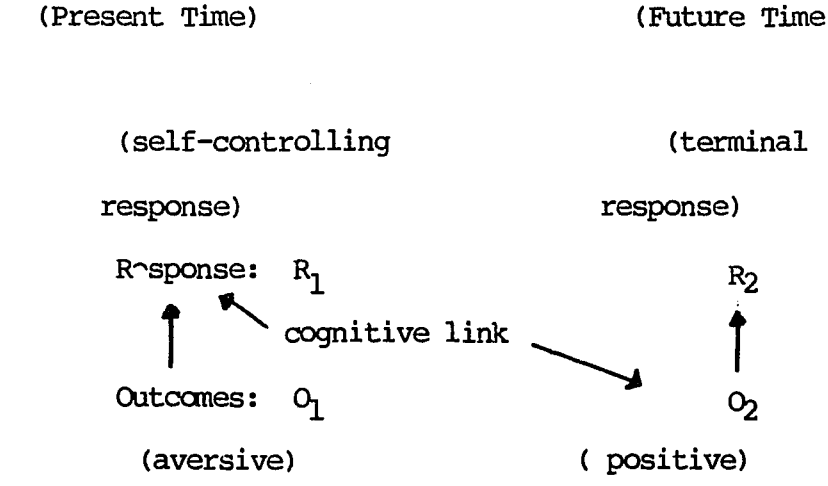
in a setting where it is supported (i.e. at a party where cigarettes are available and others may be smoking.) Self-control can only emerge in adverse or nonsupportive environments; if the immediate environmental setting is optimal, self-control is unnecessary: rewards or punishments directly control the response. That is, in a public building like a library where one is legally restrained from smoking, external constraint rather than self-control is responsible for one's non-smoking behavior. In learning terms, a student exhibits self-control when s/he chooses to spend his afternoon studying for a math test the next day instead of watching MTV; if the TV is broken and his parents are looking over his shoulder monitoring his study behavior, he is not self-controlling. This analysis suggests that a more comprehensive definition of self-control should include consideration of the purposes or goals of a learner as well as the prior probability of a particular response.

The temporal gradient of consequences is a key element in defining and conceptualizing this cognitive dimension of self-regulation. A self-controlling attempt usually involves the acceleration (increase) or deceleration (decrease) of one or more responses (Thoreson & Mahoney, 1974). Accelerative self-control occurs in a situation in which the immediate consequences of a behavior are aversive but its delayed

consequences are pleasant. Physical exercise, for example, may bring immediate discomfort, but long-term well-being. Decelerative self-control occurs in a situation in which the immediate consequences of a behavior are pleasant, but its delayed consequences are aversive (e.g.overeating). The exhibition of a self-controlling response in the present time in order to obtain a future satisfaction is the essence of both accelerative and decelerative self-control. This relationship can be graphically delineated as in Figure 1.

FIGURE 1

THE TEMPORAL GRADIENT OF CONSEQUENCES IN SELF-CONTROL



A more comprehensive definition of self-control that involves this cognitive dimension of functioning can now be offered. Individuals can be described as self-regulated when they adjust their current behaviors, their internal cognitions and affective responses, and their immediate external environments (R_1) according to the long-term goals they have set for themselves (R_2). Persons must recognize that they are in a situation where self-control may be a problem; they must analyze the task setting to determine which aspects are related to their target behaviors; they must formulate a plan to reduce the influence of extraneous variables; then, they must execute the plan. As Zimmerman (1984) has stressed, self-regulated learners not only are aware of the relationship between their proximal environment and personal functioning, but also have acquired strategies for optimally organizing their social and physical surroundings. According to social learning theorists, self-regulated learning processes are not assumed to be autonomous, but are constantly being re-evaluated as long-term outcomes occur; self-regulating responses which do not prove functional over time will be discarded or modified (Zimmerman, 1984).

The process of writing appears to be one which is singularly self-regulated, for teachers have difficulty prescribing the writing of prose even for children at the

youngest age levels. From the time they begin to write, young children must learn to make many decisions on their own. Writers are required to perform a complicated self-controlled sequence of behaviors before their final product emerges. Moreover, since writers' external social feedback is usually delayed until well after text completion, the act of writing is poorly externally reinforced. Bandura (1977) described the act of writing as a familiar example of a behavior that is continuously self-regulated through evaluative self-reinforcement. He noted that mature authors do not need someone sitting beside them selectively reinforcing each statement they write; they have formed an internal standard against which they compare their constructions and revisions.

The self-regulated learning model (Zimmerman, 1984) has three components: environmental control, cognitive control and response control. Research has shown these variables to be significantly related to academic achievement (Ballard & Glynn, 1975; Boice, 1982; Heffernan & Richards, 1981; Hull, 1981; Rosenbaum & Drabman, 1981; Sagotsky, Patterson & Lepper, 1978; Schunk, 1983a; Schunk, 1983b;). However, writing has not yet been examined from the self-regulation perspective. Environmental self-control in writing would include adding or rearranging environmental components in order to assist the writer, like selecting physical settings,

organizing existing settings, or selecting models. Cognitive self-control in writing would include setting goals for one's writing, planning and organizing, monitoring one's progress, and self-instructing. Response self-control in writing would include self-recording and self-evaluative activities and setting contingent self-rewards for task completion.

The self-regulation processes in writing as conceptualized herein are summarized in Table 1 below.

TABLE 1
THE SELF-REGULATION PROCESSES IN WRITING

ENVIRONMENTAL	COGNITIVE	RESPONSE
Physical:	Goal-setting	Revision
Objects or Arrangements	Planning	Self-recording
	Self - Instructing	Self-rewarding
		Self-punishing
Intellectual:		
Models		
References		
Temporal:		
Scheduled work periods		

It is believed that self-regulation processes in writing are separate from but predictive of success in writing. Self-regulated writing skills and attendant actions such as goal-setting and self-evaluation are separate from minimalist definitions of writing (e.g. putting words on paper) but will be shown to relate to accomplished levels of performance. The construct of self-regulation as herein defined deals with

classes of action that are reflective of thought processes: those actions transform the writing environment and are observable. If self-regulation theory can be demonstrated to describe a set of observable behaviors and explain their relationship to the cognitive processes of successful writers, then it should be possible to teach less successful writers to modify their own writing behaviors accordingly.

This study attempts to establish a paradigm for the observation and study of those self-regulatory behaviors in school children which occur during the writing process. It attempts to discern which of these behaviors are related to achievement in writing. It also attempts to delineate the development of these behaviors in young writers.

CHAPTER TWO

Self-Regulation of Professional Writers: Environmental Self-Control

One way to learn how to write successfully is to examine the way successful writers do it. It is striking that the professional literature on writing has evident parallels to the self-control literature, although the terminology is often different. Many of the idiosyncratic, interesting, and often amusing practices of professional writers clearly are attempts to practice various forms of environmental self-control. For example, the professional writer Jacques Barzun (1964) cautioned writers always to keep their feet warm; Schiller, however, advised writers to immerse their feet in ice water (Gould, 1980). Other environmental supports cherished by prominent writers have included silk dressing gowns, purring cats, horses, pipes, mistresses, exotic headgear, whips, beverages and drugs, and hair shirts (Barzun, 1964; Gould, 1980). Victor Hugo is reported to have removed all of his clothing, locked himself in his study, and ordered his valet not to return with his clothing until the hour he expected to be through with his writing (Wallace & Pear, 1977). Milton, Twain, and Descartes wrote lying stretched out (Barzun, 1964; Gould, 1980). The French writer Cendrars required small

enclosed places; Mailer preferred a long room with a view; Zola pulled the shades midday to avoid daylight; Proust lined his room with cork (Gould, 1980). This literature indicates clearly that many professional writers consider environmental control issues to be central to their ability to write effectively.

Zimmerman (1984) included the selection of models as another form of environmental self-control. A number of famous authors emphasized the process of imitation as invaluable in developing their skills. Robert Louis Stevenson, Benjamin Franklin, and Edward Dowden specifically recalled their early attempts to copy and imitate "good writers" as essential in forming their own writing abilities (Fulton, 1929). Yet, little is known about how student writers use models in learning to write, or even whether they do so spontaneously at all.

Many professional writers also exercise environmental self-control by scheduling regular work periods. Joseph Conrad sat and worked for six hours every day (Lowther, 1969); Balzac worked six to twelve hours daily; Maugham worked four hours each day; Hemingway worked six hours each day (Wallace & Pear, 1977). While students are often encouraged by adults to set aside regular homework times, little is understood about the

relationship between this facet of environmental self regulation and effective writing.

Self-Regulation of Professional Writers: Cognitive Self-control

Professional writers also exercise several forms of cognitive self-control. For example, many writers set themselves daily goals of a predetermined number of pages of writing. Barzun (1964) advocated a set stint for each day based on each writer's honest estimate of his or her own ability. Weisbord (1979) recommended converting long-term goals (a 600 page piece) into short-term goals (two pages per day). Anthony Trollope set goals for numbers of pages and numbers of words-per-page, as well (Wallace & Pear, 1977).

Some sort of planning activities usually have been acknowledged by professional writers, as well, although only a few writers reported using outlines regularly. Barzun (1964) perceived outlines as useless in planning; he believed that outlines could be useful retroactively, in jotting down the ideas or areas one has already covered; instead of an outline, he advocated the use of a pile of papers with ideas relating to the topic. Emig (1971) surveyed sixteen writers on writing and reported that only four of them operated the way texts

prescribed (i.e. formal outlining); most writers did use some kind of informal plan, however. B. F. Skinner indicated that he prepared a series of increasingly detailed outlines, almost to the point of producing the final prose (Wallace & Pear, 1977). Of course, all planning does not precede all writing, just as all writing does not precede all revision.

Self-Regulation of Professional Writers: Response Self-Control

Revision may be seen as a form of response self-control. Text revision is the result of a kind of internal censorship or criticism; it could be construed to be self-punitive in that it delays or prohibits task-completion; it is self-rewarding, however, to permit text to remain in its unedited condition and to allow oneself to progress towards the completion of the composing process. Most well-known authors do extensive revisions as they work, although the process may vary (Gould, 1980). For example, Hemingway wrote most of his stories straight through, then wrote draft after draft in revision; Robert Benchley rarely wrote more than one draft, but he sometimes spent an hour writing a sentence (Rivers, 1975). Marjorie Rawlings did comparatively little rewriting; she tried to make the first draft as perfect as she

could, and then resigned herself to the belief that it was the best she could do. William Styron needed to correct each sentence of each paragraph as he composed (Lowther, 1969). Gould (1980) suggested that perhaps heavy revision is limited to professional writing, that done by professional authors or people whose careers may be directly affected by how they formulate and communicate their thoughts in writing. It is also true that a few writers have experienced writing in an altogether different way: Poe maintained that he planned every detail of "The Raven" before he began to write (Allen, 1948); Roger Shepard's ideas would sometimes take sudden and virtually complete form just before he awakened in the morning (Distinguished Scientific Contribution, 1977).

Response self-control is also demonstrated in professional writers' use of self-recording and self-rewarding. When Trollope began a new book, he prepared a diary divided into the number of weeks he had allotted to completing the work; in the book, he entered a count of the number of words and pages he completed daily (Wallace & Pear, 1977). Hemingway made charts showing his daily output of words; on some days, he put in extra work so he wouldn't have to feel guilty spending the next day fishing in the Gulf Stream (Wallace & Pear, 1977). This behavior may readily be seen as both self-recording and

self-rewarding facets of response self-control. Wallace kept detailed charts of the number of pages he wrote daily, from the start to the completion of his novels. He observed that the charts were an attempt to create discipline for himself and that he would feel too guilty to ignore them; the charts both scolded and encouraged him. Trollope would have agreed:

> There has ever been the record before me, and a week passed with an insufficient number of pages has been a blister to my eye, and a month so disgraced would have been a sorrow to my heart.
>
> (Trollope, in Wallace & Pear, p. 518)

Writers themselves perceive writing as a difficult process necessitating a great deal of personal discipline, or self-control. Georges Simenon, author of the Inspector Maigret suspense novels, allotted himself eleven days to complete each novel:

> After I have started a novel, I write a chapter each day, without ever missing a day. Because it is a strain, I have to keep pace with the novel. If, for example, I am ill for forty-eight hours, I have to throw away the previous chapters. And I never return to that novel.
>
> When I am doing a novel, I don't see anybody, I don't speak to anybody, I don't take a phone call--I live like a monk. All the day I am one of my characters. I feel what he feels.
>
> It is in this character's skin I have to be. And it's almost unbearable after five or six days.
>
> That is one of the reasons my novels are so short--after eleven days it's impossible. I am too tired. That is why before I start a novel I look to see that I don't have any appointments for eleven days. Then I call the doctor. He takes my blood pressure, he checks everything. I have to be sure I am good for eleven days.
>
> (Simenon, in Lowther, pp. 19-20)

Thus, the self-regulatory variables have been reported by professional writers to be important to the writing process. To date, these variables have been subject to little empirical investigation, as will be shown presently. Moreover, there is a need to determine how much self-regulation characterizes non-professional writing, for the writing process may be quite different for non-professionals. Indeed, the author of seminal research in this field,(Emig, 1971) asserted that only a limited amount can be learned from professional writers. She recommended, instead, empirical studies of individual students as a way of learning more about how to help students learn to write: investigation of the writing process via direct observation of a cross-section of school-age writers. Bereiter & Scardamalia (1982) added that the most promising applications of cognitive science to instruction have been ones that involve analyzing the strategies used by experts and the strategies used by learners and devising means of bringing the two into congruence. This study has attempted to provide such empirical information about students' writing behaviors.

TABLE 2
PROFESSIONAL WRITERS' USE OF SELF-REGULATION

Environmental	Cognitive	Response
Physical:		
1.Objects (cats, pipes) or 2.Arrangements (room with view)	1.Set Goals (page quota) 2.Plan (topic, locale) 3.Self-Instruct (Become a persona)	1.Revise (text changes) 2.Self-Record (pages done) 3.Self-Reward (fish, rest) 4.Self-Punish (Isolation)
Intellectual:		
1. Models (read for style) 2. References (Books, people)		
Temporal:		
1.Schedule work periods (daily sessions)		

Empirical Research on Environmental Self-control:

Physical Dimensions

The self-regulatory processes relating to writing should be available for inspection through observable classes of action that are believed to reflect the writer's thought processes as they act on the environment. In the present account, the physical environment is defined not only as the physical and social environment surrounding the writer (e.g. room, lighting, seating, writing materials, models) which can be influenced by the writer, but also as the text itself: the text is a dynamic linguistic environment which will evoke

self-regulatory actions. For example, when portions of the text are completed, a self-evaluation process should be initiated. The writing itself is a tangible manifestation of the thinking process on the emerging physical text.

The physical dimensions of environmental self-control include selecting, ordering, or organizing features of one's physical or social environment in order to facilitate the writing process. Certainly, a plethora of anecdotal evidence exists that skilled writers perform self-controlling actions upon their environment. However, little empirical data supporting these informal reports is available.

Some empirical evidence exists that manipulating features of one's physical environment is related to better performance in academic areas. For example, Heffernan & Richards (1981) examined the study habits of 45 college students and found that students rated as successful naturally studied in settings which were free from distraction by others. Successful students were found to use more self-controlled study techniques such as planned schedules and isolation, and to do so more consistently than unsuccessful students.

Bloom (1980), observed college students who identified themselves as anxious or non-anxious writers, and found that anxious writers succumbed to distractions in their environment

more often than did non-anxious writers. The less anxious writers, who were also identified as better writers, were better able to ignore observers in their room as well as other auditory and visual intrusions.

Graves (1975) conducted a multiple-phase, naturalistic study of classroom writing by second-grade students. Data was culled from writing folders of 94 children in two formal and two informal classrooms, from observations during 53 classroom writing episodes, from interviews with 17 students, and from case studies of eight "normal" students, (i.e. not exceptionally gifted or handicapped). Formal classrooms were defined as those in which teachers gave more specific directions and children had less choice in determining their learning activities; informal classrooms were defined as those in which children were given less teacher direction and had more choice in determining their own learning activities. Graves reported that classroom environment was a major determinant of outcome: informal environments facilitated boys' writing while formal environments facilitated girls' writing, encouraging them to write more and to write more frequently. Girls were found to write more in both environments than boys, however. Since Graves did not analyze specific environmental features in detail, it is difficult to

determine why these environments affected girls and boys differentially. Clearly, more detailed information about these processes is needed.

Thus, self-controlling one's physical environment has been shown to make a difference for professional writers and for college students. There is also some evidence that the externally imposed structure of a classroom environment does affect second-grade students' writing behaviors. However, little is known about the age at which young writers recognize a need to self-control the physical dimensions of their writing environments.

Intellectual Dimensions

The intellectual dimensions of environmental self-control include information-seeking through the selection and use of models as well as the use of other reference material. Although professional writers have long acknowledged the value and import of models and resource materials in writing, little is known about children's use of written models. No empirical data which examines children's understanding of the function of models in formulating written prose has been found.

Do young writers perceive written models as useful? Given such models, are children able to employ them profitably? Do better writers use them more than poorer writers? Do younger

writers use them less often than older writers? Similarly, are young childen able to utilize other available resources when doing expository writing? Teachers and parents frequently exhort children to use a dictionary when they write, for example. Given an environment in which such materials are close at hand, do better writers choose to make use of them more often than poorer writers? Do better writers seek more information from social sources as well? The answers to these questions could provide valuable information for those responsible for instructing young writers.

Temporal Dimensions

A number of professional writers have stressed the need for structuring the temporal dimension of writing. Although this aspect of self-control has not been well-explored empirically, some evidence that achievement in writing and the structuring of writing time are related does exist.

When Boice (1982), using an ABAB experimental design, treated six academicians for writer's block, he employed contingency management techniques in shaping subjects' use of regularly scheduled working regimens to achieve specific goals. The rationale, based on the author's informal survey of professional writers, was that small, steady amounts of writing are preferable to large bursts of output which are

impractical to sustain. These writers were shown to increase their output to goal levels during contingent phases of the experiment, to drop below criterion levels when contingencies were withdrawn, and to return to goal levels when contingencies were restored. Moreover, their writing continued at goal levels for at least a year when subjects continued to employ techniques of contingency management. Thus, the use of regularly scheduled work periods has been shown to be functionally related to increases in writers' productivity.

An informal observational study (Bloom, 1980) suggested that the temporal dimension of self-control is also related to quality in writing. When a group of college students self-identified as anxious writers were observed performing writing tasks, the anxious, poor writers were found to procrastinate more and to fail to structure their writing time; non-anxious, good writers set aside specific blocks of time for writing and utilized this time for its allotted purpose more efficiently.

Among other dimensions, Stallard (1974) examined the temporal aspect of the writing process of twelfth grade students in a Virginia high school. Using an observational checklist followed by individual interviews, Stallard observed 15 good writers and 15 average writers composing, and found

statistically significant differences in the use of time by good and poor writers. He found that good writers took more time to plan before they began to write, worked significantly more slowly than average writers, stopped longer and more often to review what they had written, and took more time to complete the assignment than did average writers.

Thus, the use of time has been shown to be an important self-controlled dimension for successful adult writers, and college students. However, it is unclear at what age the temporal dimension of self-control begins to influence the quality of writing: younger students' use of time in writing has not yet been examined. At what age do children begin to be able to structure the temporal aspects of their writing without assistance from adults? Do better writers employ their time more efficiently than poorer writers even at younger ages? A systematic observational system for measuring the use of writing time by younger students could help to provide answers for some of these questions.

Empirical Research on Cognitive Self-Control

The essential activities constituting cognitive self control in writing are planning, goal-setting, and self-instruction. Goal-setting is an integral part of planning

for successful writers; as professional authors plan, they set long term and short-term goals for themselves.

Goal-Setting

Relatively little detailed information about goal setting in writing is available; however, manipulation of goals has been shown to facilitate learning in other academic areas like mathematics (Bandura & Schunk, 1981; Schunk, 1983a; Schunk 1983b). The features of goals that were found to be important in math were level of difficulty, proximity in time, and specificity.

Flower & Hayes (1981b) have suggested that many oal-related activities occur during pauses before episodes of writing, and that long pauses occur when writers are engaged in goal-related activities like setting a new goal or evaluating a completed goal. However, these researchers appear to have based their conclusions upon anecdotal evidence obtained during informal observations of students performing writing tasks rather than upon quantifiable data: they have not provided information about the specifics of their methodologies or quantifiable data concerning their results.

Goal-setting has been shown to increase writing productivity in an adult population. Boice (1982) reported treating six academicians who sought treatment for complaints

of an inability to do professional writing. They were exposed to an ABAB single-subject design treatment program that included weekly therapy sessions, group meetings, and contracted external contingency management. Complaints of an inability to write were often found to be related to poor skills in the management of both writing situations and writing times. All subjects showed clear increases in productivity once they agreed to arrange situations designed to reinforce writing activities, (i.e. once subjects established regular writing times and goals for productivity.) During both noncontingent phases, subjects showed variable output that reached criterion levels on few scheduled working days. However, once preferred activities and rewards were made contingent upon writing and self-graphing their progress relative to their goals, these writers increased their writing output and maintained stable levels of productivity over an extended period of time. When subjects continued to employ contingency management techniques, writing was produced at goal levels for at least a year following the therapy sessions. This study clearly provides powerful confirmation for the value and importance of goal-setting in the self-control of writing productivity with an adult population.

Hull (1981) tested the effects of self-monitoring and

goal-setting on the journal writing of a college freshman composition class (18 students) and a remedial class (15 students). Subjects were given the goal of doubling their initial daily number of journal lines written, and instructed to create graphs for recording their daily progress. Both self-monitoring and goal-setting increased the number of lines and entries written per week by both groups, whether goals were set by the teacher or by the students themselves.

Thus, goal-setting has been shown to be important in increasing the amount written by adults and college freshmen. However, little is actually known about whether young children set goals for themselves as they write or whether they use goals as guides in their own planning.

Self-Instruction

Self-instructions (Meichenbaum, 1977) are often employed as a means of assisting children in gaining control over their own behaviors. Usually, task-analytic self-statements are modeled by an adult and rehearsed by a child, first aloud, then covertly; eventually, these are enlarged by means of response chaining and successive approximation procedures.

This component of self-control appears to be very important to the writing process, in that during composition, writers are required to consider the current status of their

work and the directions in which it is moving repeatedly; it appears likely that they must therefore iteratively self-instruct. However, no research has been done on self-instruction during composing. Self-instruction in writing would often be a by-product of self-monitoring and self-evaluating; during the writing task, it would normally be visible only through such response control activities as revision.

Self-instruction has been shown to be effective in several areas related to classroom functioning, however. For example, researchers have demonstrated its ability to significantly reduce children's impulsive behaviors on pencil-paper tasks (Douglas, Parry, Marton, & Garson, 1976; Meichebaum & Goodman, 1971) increase their motor control (Bem, 1967; Luria, 1971); and increase their resistance to temptation (Hartig & Kanfer, 1973; Mischel & Patterson, 1976; Monahan & O'Leary, 1971). Generally, however, self-instructions have been shown to be effective self-controlling procedures only if children used them to influence behaviors at which they were already skilled (O'Leary & Dubey, 1979). Although self-instruction is inferred to be going on during writing episodes, it can not readily be inspected during non-intrusive observation procedures.

Planning

Planning and organization are usually considered the sine qua non of skilled composition. Rivers (1975) asserted that much of the work of writing is disorderly because writers cannot entirely anticipate the outcome of their efforts; realizing that, writers must plan and organize the part of the work that can be anticipated in order to free their minds to develop the rest spontaneously. At least one writer (Murray, 1978) has asserted that even periods of procrastination before writing are important, because the seeds of ideas are nurtured in one's mind.

Some writers (e.g. Neman, 1980) have insisted that outlining is an indispensable tool in planning for writing expository prose, and that it is inevitably used by professional writers and publishing scholars. However, empirical research may support a more complex process. A recent survey of 165 adult writers in management positions in Washington D.C. (Aldrich, 1979) indicated that little planning of any sort regularly preceded their writing. Although this report did not include statistical measures, its suggestions are compelling. Many skilled writers have testified that they often use writing as a tool for thinking, and that they do not know what they want to say until they see it before them on the page (Walvoord & Smith, 1982). Thus, planning may be more

an interactive than a proactive process. Although all planning does not precede writing, the period of time spent before writing begins is generally considered by researchers to be planning time. Planning was one element examined in a seminal study by Emig (1971). Emig asked eight twelfth-grade students to compose three themes each, aloud and on paper, in the presence of an investigator. She found a wide discrepancy between what writers did and what was recommended in textbooks about planning: students in this study planned little before they began to write, and they seldom outlined. However, when the assignments were self-sponsored and not school-sponsored, students planned longer. This suggests that planning processes may be contextually determined. However, Emig's case-study, pre-experimental design does not provide statistical data (no data were quantified or subjected to tests), and her small sample included only volunteers, none of whom were poor writers.

Mischel (1974) used Emig's design in a case study of a student named Clarence. This subject made no notes or outlines and his planning time ranged from less than one minute for school-sponsored writing to twenty minutes for self-sponsored writing.

Perl (1979) reported detailed individual case studies of five college freshmen in a basic writing class. She observed and tape-recorded them for four 90-minute periods as they composed four separate assignments aloud and interviewed them subsequently. She found that these students generally spent four minutes in planning or pre-drafting. However, the design of this study was pre-experimental and no information was available as to how the dependent variables were quantified. In addition, no information was available about the students' backgrounds or the selection process. Thus, the results cannot be considered statistically reliable.

In Stallard's (1974) study of 15 good and 15 average high school senior writers, only one student used any form of outlining in planning, but good writers took significantly more time to plan than did average writers. On the other hand, Wright (1983) compared 39 average writers with 30 unskilled college freshman writers as they composed four assignments in the classroom. No differences were found between these students in prewriting planning time, although statistically significant differences were found in pauses of 6-15 seconds during which planning could have been occurring.

In these samples, then, planning was found to range from less than one minute to a few minutes, and the absence of

written notes was evident. The existence of differences between good and poor writers in planning time has not yet been established statistically. Moreover, subjects in each of these studies were adults or college students. The planning processes of younger, less select students have been studied little to date.

Sawkins (1975) interviewed 60 average-ability fifth grade students and compared the fifteen highest rated compositions with the fifteen lowest rated. She concluded that these writers, too, generally wrote without notes or outlines. Although her evidence is based on what children said they did rather than on objective observations, this study is one of few examining younger writers. Sawkins' measures, statistical analyses, and results were not defined in an experimentally replicable way; she concluded that no significant differences between the groups were present, although it is unclear how this was determined.

Van Bruggen (1946) investigated the rate of flow of composing of 84 junior high school students using an elaborate mechanical device. He found that good writers often paused before writing large segments of text, while poor writers paused frequently before word and sentence level tasks. These researchers have provided scant information about younger

writers' planning behaviors in composing, therefore; a systematic, objective, observation-based methodology could yield a great deal more reliable and useful information.

Planning and goal-setting have been examined, albeit anecdotally, by process-oriented researchers, who have attempted to discover "what goes on in a writer's mind during the writing process" (Walvoord & Smith, p.4). These researchers have tried to make thought processes visible to the observer, often by asking writers to think aloud as they composed. For example, Flower & Hayes (1979; 1980; 1981a; 1981b; Hayes & Flower 1980; 1983) have developed a procedure they call "protocol analysis" for studying writers' plans: protocols are transcripts of writers' tape-recorded speech while thinking aloud. They have found expert writing to be characterized by copious planning, not only in advance of writing, but also during writing as plans were revised and further elaborated in response to the composition process. No information is provided as to how these results were obtained, however.

Bereiter & Scardamalia (1982; Scardamalia & Bereiter, 1982a; 1982b; 1983) have developed another method for observing the writing process which they call "procedural facilitation". This method attempts to ease the central

processing burden on writers by externally structuring their decision making. For example, these researchers have utilized prescribed beginning sentences or ending sentences in assigning a composition topic in order to observe how writers interacted with these goals. These authors reported finding that the number of words written by children on any given assignment increased with age, and also that the number of words written correlated with any indications of quality or maturity applied to writing (Bereiter & Scardamalia, 1982b). No specific measures, means, or statistical results were reported, however. Bereiter (1980) asserted that the principal obstacle for beginning writers is thinking of what to write. In fact, Bereiter & Scardamalia (1982b) also reported that preadolescents and early adolescent students generally used a "knowledge-telling" routine, whereby they reduced writing assignments to topics and told what they knew about the topic instead of explicitly formulating and operating upon representations of goals for the text. The planning children did was to consider "What next?" rather than to attend to the whole and to do the backwards and forwards analyses that are considered to be the hallmarks of compositional planning (1982b). These authors conceded that the little planning shown

by elementary school-age children may be an illusion created by the methodology (1982b).

Indeed, the information about children's writing reported by Bereiter & Scardamalia as well as by Flower & Hayes appears to derive from non-experimental methods and informal training studies; little information is available about the selection process employed for obtaining subjects, about the numbers of students involved in the work, about the identifying characteristics of the writers, or even about the precise methodologies employed. Because neither group means nor the results of statistical tests have been reported, reports of differences among groups cannot be interpreted as statistically significant. The bulk of these writings tends to be more theoretically and heuristically important than experimentally replicable. Nevertheless, their findings have been most provocative and would certainly appear to warrant empirical validation.

All planning does not precede all composing; planning during composing is commonly inferred also to be taking place during pauses, or periods between writing episodes (Humes, 1981). Pauses have been investigated by a number of researchers. Schumacher (1982) videotaped 22 college freshmen and 20 upperclass college students as they composed, and

afterwards prompted them with the videotape for comments about their writing activities. Although the groups did not differ 'n number of pauses, the freshmen paused for significantly longer periods of time; short-term planning was the most commonly reported activity during pauses. This suggests that older students require less planning time.

Van Bruggen (1946) found that good junior high school writers paused numerically more at the end of thought units, while less competent writers paused between words of a thought unit: pauses breaking up thought units occurred twice as often in poorer essays. He also reported that poorer authors planned longer. However, his use of only a small portion of his sample for these statistics (18 students), and his selection of arbitrary figures for computing significance of pause length, suggest that his evidence is less than conclusive. Atwell (1981) studied ten traditional and ten remedial undergraduate college writers during "blind" writing (writing on textured paper which does not take an imprint: only an attached carbon was legible). The good writers reported that they spent more time in global planning than in local, sentence, and word-level planning; remedial students spent more time in local planning. These differences were not tested for significance, however.

Planning, then, occurs before writers put pen to paper and during pauses in the writing. Previous research has indicated that children of all levels do some planning, but there are indications that good writers may plan longer before and during writing than poor writers. Better writers may pause longer and poorer writers may pause more briefly, because they may be planning differentially. Few student writers at any level utilize notes or outlines. However, little well-controlled research with young writers has been reported. It is not clear whether young writers' planning resembles the planning strategies and patterns of older students.

Although professional writers have stressed the importance of careful planning and goal-setting in facilitating their own abilities to write effectively, it is, in fact, unclear whether inexpert writers appreciate their potential and do in fact employ these useful forms of self-control when they write.

Empirical Research on Response Self-Control:

Response control in writing includes self-recording and self-evaluative activities like self-monitoring one's writing behaviors, reading what has already been written, and revising. The revision process may be seen as one form of

self-reward/self-punishment: it is self-rewarding to allow oneself to complete a piece and self-punitive to make corrections.

Self-Recording

Ballard & Glynn (1975) investigated the effect of self-management procedures on 14 third-grade children's writing behaviors: number of sentences written, number of different action words, and number of different describing words. Children self-assessed and self-recorded and were reinforced with points towards free time activities for contingent productivity. Quality of writing was also assessed, by independent raters. Results demonstrated that self-management procedures effectively increased writing responses and improved the quality of the writing. Although self-assessment and self-recording alone did not modify writing behavior, statistically significant improvement was shown when self-reinforcement contingencies were added.

Sagotsky, Patterson, & Lepper (1978) found that when fifth and sixth grade students maintained daily records of their own study behavior during math classes, this behavior increased significantly. In their review of self-control training studies, Rosenbaum & Drabman (1979) found that although self-recording alone has not always produced effects, when

effects have appeared, they have always been in a positive direction; no evidence of negative effects has been reported. They further suggested that the effects of self-recording tend to be significantly enhanced by the addition of a self-evaluation component.

Writers' transcriptions may be seen as a form of self-recording: the prose itself is a written record of the development of writers' thought processes. In the early elementary school years, the act of writing is tied closely with mechanical skills like spelling, punctuation, and fine-motor control of a writing implement. One educator (Kress, 1982) suggested that the shift from trivial mechanical concerns to substantive concerns does not come until the age of 11 or 12, but he has offered no empirical confirmation for this assertion.

Some differences have been found between the amount of time good and poor writers spend in actual writing during a composition task. For example, Flower & Hayes (1981b) found that the length of time expert writers spent in episodes of writing between pauses was greater than the time spent by novice writers. It was unclear, however, how these authors reached this conclusion, since, no statistical data were offered. Stallard (1974) provided some empirical basis for

this assertion in his observational study of 15 good writers and 15 average writers. Stallard found that good writers took significantly more time to complete an assignment and wrote insignificantly more words than average writers.

It would seem important to distinguish what differences could emerge if good writers were compared with poor writers, and if younger children were included in the sample. For example, Wright (1983), examining the writing behaviors of college freshmen, found significant differences in the total amount of composing time between skilled and unskilled writers. A recent study (Gunderson & Murphy, 1981) of the characteristics of 20 below-average readers' writing in each of four grades (2,5,8, and 11) found that the number of words and thought units increased mathematically over the grades, with a high degree of association between number of words and quality of writing (.80 to .91); eighth and eleventh grade students produced significantly more words than second and fifth grade students.

Sawkins' (1975) interview study of 60 average-ability fifth graders whose essays were qualitatively assessed revealed that girls' writing quality was numerically lower than boys' at this age, but no group means or statistical data were provided. Graves (1974) was the only other researcher who

found sex differences in writing, and his work, too, lacked statistical reliability. In his study of second grade writers, he found that girls wrote numerically more than boys in both structured and unstructured classrooms, and that boys were more concerned with mechanical elements in defining "good" writing while girls were more concerned with organizational features of writing.

Thus, it has been shown experimentally that older writers produce more written material than younger writers and that the quality of writing improves concomitantly. It has also been suggested that older skilled writers write for longer periods of time, and longer uninterrupted periods of time, than unskilled writers, but reliable data are not yet available. Among younger writers, it has been suggested that girls are better writers and more substantively concerned writers than boys. However, these suggestions tend to be based on anecdotal data rather than on empirical evidence. A more thorough understanding of young children's writing patterns could serve to guide educators in establishing realistic expectations for student writers at each age level.

Self-Reward/ Self-Punishment:Revision

When goals have been achieved, writers self-reward by concluding the writing episode. Hemingway's self-rewards also

included such activities as allowing himself a day of fishing in the Gulf Stream. When goals have not been achieved, revision is necessary. Revision is assumed to be the result of self-monitoring and self-evaluating: when goals require correction or modification, when transcription has not successfully accessed goals, when self-rewards are not imminent, revision must be undertaken. Revision is a complex set of behaviors which occurs throughout the writing process. Revision processes have been examined by a number of researchers.

The Second National Assessment of Writing (Write/Rewrite, 1977) examined detailed writing assignments of 2500 students across the nation in each of three different age groups (9, 13, 17) to ascertain how they revised their writing. Some attempt at revision was evident in the protocols of 60% of the 17-year-olds; however, these writers' revisions seldom addressed organizational or transition issues; more often, revisions included substitution of more appropriate terminology, additions, or attention to mechanical conventions. This study directly instructed writers to revise after composing.

Bereiter & Scardamalia (1982) suggested that revision practices sharply distinguish expert writers from novice

writers; they also felt that children rarely overhaul large units of text, but they have offered no empirical foundation for these assertions. Sommers (1982) observed similar findings from case studies with eight college freshmen and seven experienced adult writers; she asked them to write and revise compositions and interviewed them subsequently. Sommers found that adults but not college freshmen used revision as a recursive process and had a codified set of principles about how their revision worked: skilled adults first reviewed globally and then locally. This study relied heavily on writers' reflections on their own writing, rather than on impartial observation and did not include any statistical data, either. On the other hand, Gould (1980) researched the revision process with 50 adults composing business letters. Revisions were made spontaneously by writers rather than as a result of task instructions. He found that they reviewed their texts infrequently and when they did make changes, they did so locally rather than globally; they almost never made changes by inserting or deleting material. These results were statistically based and methodologically clear, but Gould's population was limited to adults in the upper 20% of the population in intelligence, and generalization of these results to a more diverse adult population let alone to a

younger population would be dubious. However, the results do suggest that the process of revision may not be employed characteristically, even by adult writers.

Crowhurst (1983) examined revisions made by 14 good and 14 average writers in grades 5, 7, and 11 in their own compositions. Students were directly instructed to revise and were given a separate session in which to do so. There was a significant decrease in formal revisions (spelling, punctuation, capitalization, etc.) from grade 5 to grade 11, but the total number of revisions made at grade 5 was similar to the number of revisions made at grade 11. Perplexingly, grade 7 students made significantly fewer revisions than did grade 5 or grade 11 students. In the early grades, then, students who revised concentrated on correcting errors and changing the surface features of their texts; more sophisticated writers restructured their texts to some extent, but this difference was a non-significant trend. Crowhurst concluded that this study provided little evidence of the existence of age-related or ability related differences in revision practices.

However, other researchers have reported different findings. For example, Sawkins (1975) indicated that the average fifth graders she interviewed did proofread primarily

to check on the mechanical aspects of their writing, but they were also concerned with content: better writers even at this age were concerned with the content of their work as well as with more sophisticated mechanics. However, Sawkins' lack of statistical information about means or procedures necessitates interpreting her conclusion cautiously. There was also no indication whether these students revised spontaneously or in response to task instructions. Emig's (1971) impression of her twelfth grade subjects was that they tended not to revise their school-sponsored writing voluntarily, but more readily revised self-sponsored writing. Similarly, the 17-year-old writer observed in a case study by Mischel (1974) did little spontaneous revision. However, when Perl (1979) observed five college freshmen during four 90-minute periods as they composed, she found that their zealous editing interfered with their writing: because they tried to get the mechanical, surface features of their texts "factory-perfect", they repeatedly interrupted the flow of their composing process. It was unclear whether these students were specifically cued to revise by the examiner in any way.

Stallard (1974) found significant differences in the revision practices of the 15 good writers and 15 average writers from the high school senior class he observed. Good

writers stopped longer and more often to review their writing, and revised more: good writers changed or corrected significantly more items at the single-word, multiple-word, and paragraph level. There were no significant differences between the groups in correcting spelling or punctuation errors, however. This study was the closest in form to that proposed, in that careful observation was made of these students using behavioral checklists. However, since these groups were not widely disparate in ability, (good/average), differences may not have been as pronounced as they could be in examining good and poor writers: indeed, many poor writers may have dropped out of writing classes by twelfth grade, or even dropped out of school entirely. Stallard's students were cued as to how to revise (i.e. cross out instead of erasing) but were not explicitly told to do so. One experimental variable which remains unclear in many of these studies is whether writers were cued in advance to do revision and how this would effect their writing behavior. Certainly, obedient students who conscientiously follow a teacher's instructions, ("When you have finished writing, be sure to check your spelling and other errors") are not self-controlling. When those students make these practices a natural and regular part

of their behavioral repertoire, they may be said to be exercising self-control.

Nevertheless, despite the frequently contradictory assertions by experts on revision, some facts appear clear. Most professional authors have built extensive revision processes into their composing. Some revision is found in the writing of students of all ages and abilities, but the issues addressed by these revisions may differ. Young and inexperienced writers may be more concerned with the surface features of their text,(format, number of pages, spelling, and punctuation), and a shift to more substantive concerns may come at ages 11-12, although this has not been empirically validated. Older and more expert writers tend to show more concern for substantive issues, although there is also some evidence (Perl, 1979) that older writers may lose track of their goals entirely when they edit. Good writers may do more revising, in general, than poor writers.

Summary

More than twenty years ago, one expert (Kitzhaber, 1963) estimated that 15-20 years more research were needed to understand the writing process and the teaching of writing. Today, educators are still very far from that goal. Professional writers who understand the need to self-control

have established a framework of anecdote and personal experience which strongly suggests that the self-regulation component of writing is crucially important. It remains necessary for educational researchers to explore the empirical basis of professional writers' beliefs about writing.

The existing research on children's composition is long on suggestions, trends, and speculations, but very short on concrete data. Some pieces of the writing task have been examined empirically, but, in general, little factually can be said about writing. Most researchers have examined writing with older subjects, high school seniors or college students; those who have looked at younger students tended to provide more anecdotal evidence than controlled research. The controlled research that does exist has sampled only a few of the categories of the self-control model: planning, self-recording, and revision. Relatively little of this model has been investigated; very little is known about the physical, intellectual, or temporal dimensions of environmental self-control in writing, about the goal-setting or self-instruction components of cognitive self-control, or about the self-reward/ self-punishment facets of response self-control in writing.

Nor has existing research examined the development of these processes; little effort has been made to look at when children begin to demonstrate self-control in writing and whether they appear in an orderly progression as children continue through the grades.

This study has been a preliminary comprehensive effort to examine all three categories of self-regulation in writing relative to children. It has attempted to determine the age levels at which each of these varieties of self-control are achieved and the impact of self-controlling responses on the quality of children's writing. It has done so with a methodology which is scientifically recorded and replicable.

CHAPTER THREE

Method

Subjects 120 children drawn from three grade levels of a middle-class suburban school district in Nassau County, NY served as subjects in this study: 40 fifth-grade students, 40 eighth-grade students, and 40 eleventh-grade students. Subjects were selected on two bases: performance on an objective test of student writing skills and teacher ratings. Teachers in each grade were asked to rank-order their students according to writing proficiency. Numerous researchers have recognized the value of using teachers as sources of data for children's classroom behaviors (Edelbrock, 1979): they have many opportunities to make direct comparisons among children of the same developmental level. This subjective ranking was used to corroborate the results of the objective writing measures detailed below.

Thus, within each grade, 20 good writers and 20 poor writers were selected, and their parents were contacted by the Chairman of the English Department (for eighth graders and eleventh graders) or the building Principal (for fifth graders). Permission was solicited for the children's participation in a cooperative study between the school district and the CUNY Graduate Center in order to learn more about the way students learn to write (See Appendix A).

Instruments

1. The Writing Tests:

The objective writing tests by which students were selected as participants in the study were the Writing Test for New York State Elementary Schools for fifth grade and the Preliminary Competency Test in Writing for the older groups. (See Appendix B) Both tests are group measures routinely administered for purposes of instructional planning. As noted in the Manual for Administration and Scoring (page 6) appendixed herein, a "holistic" scoring procedure is utilized, whereby scores are assigned on the basis of a general impression of the writing quality, rather than making separate judgments about content, organization, syntax, and mechanics. In holistic scoring,

> "the rater looks at a piece of writing as an indication of how well the writer has used the English language to accomplish a task, i.e. how well the writer has communicated.

Three features are included in the holistic scoring approach:

1. a common writing assignment for all students
2. a common writing time for all students
3. the uniform application of a detailed rating guide by which all student responses are judged

2. The Self-Regulation Scoring System

Based on the theoretical constructs and research evidence of self-regulated learning (cf. Corno & Mandinach, 1983; Schunk, 1983b; Thoreson & Mahoney, 1974; Zimmerman, 1984) and on the previous studies of the composing process in the literature (cf. Crowhurst, 1983; Flower & Hayes, 1981a, 1981b; Stallard, 1974), a behaviorally based scoring system was devised for this exploratory study. The writer's execution of all phases of the writing task was considered, from planning through revision, within a carefully structured environment. A preliminary form of this system (See Appendix C) was employed during a pilot study. The pilot study, which involved 20 5th and 8th grade students (5 good writers and 5 poor writers in each grade), indicated a need for some revision in the scoring categories. For example, the form of environmental structuring involving the television was changed from "shutting the TV" to "adjusting the TV." It should be noted that the 15 categories of behavior ultimately selected for measurement (See Appendix D) were not considered to be a complete or exhaustive view, but were seen as the most important behaviors to be measured in this preliminary overview.

3. The Questionnaire on Jogging

A brief questionnaire about jogging was devised in order to assess each student's knowledge about and experience with

jogging.(See Appendix E) It was theorized that differences in students' familiarity with the activity could possibly skew the results by acting as an intervening variable. The 7-item questionnaire was a cursory measure and its validity and reliability as an instrument were not assessed.

Operational Definitions

1. "Good" and "Poor" Writers:

The state reference point for passing the fifth grade writing test is a score of 8. In this study, students who earned a combined score of 8 or below out of a possible 16 points on the elementary writing test and who were confirmed by their teachers to be poor writers were operationally defined as such. Students who earned a score of 11 or above and were confirmed by their teachers to be good writers were operationally defined as such. Similarly, secondary students who were attending homogeneously-grouped Competency or Honors English classes on the basis of their grades on the Preliminary Competency Test, and who were confirmed by their teachers to be good or poor writers, were operationally defined as such.

2. The "Expository Writing" task:

Expository writing is herein defined as a persuasive discourse in which positions are set forth and particular perspectives on a topic are defended. Students are frequently

asked to produce compositions of this kind during their school years, and this writing task was seen as one which would be most comfortable and familiar to school age children. The essay subject, jogging, was chosen because it was judged likely to be universally familiar. Although, as in most sports, the novice manages the task quite differently from the seasoned athlete, basically, jogging requires no specialized locale, equipment, or instruction: everyone can run. It is an activity that may be practiced by 5th graders, 8th graders, or 11th graders. The topic was considered to be one which might appeal to students in all three age groups and one about which all of the subjects in the study would be able to find something to say.

3. Jogging knowledge and experience:

On the basis of answers given by students on the questionnaire about jogging, each student was judged to be high or low in jogging knowledge and having or not having jogging experience, according to the following criteria:

Students who asserted they jogged any distance with any regularity were operationally defined as having jogging experience. Those who denied such experience or who said they jogged a block or two once in a while were operationally defined as having no jogging experience.

Students who were able to answer three or more of the six questions about jogging correctly were operationally defined as being high in jogging knowledge; those who answered less than three questions correctly were operationally defined as being low in jogging knowledge.

Apparatus. Each student's behavior during composition was recorded by means of a videocamera. In addition, a small television set was employed as a potential distractor. A reference book (The Joy of Running by T. Kostrubala) and some themes on a parallel topic (tennis) composed by other students were nearby as available models and sources of information. A pocket-sized Merriam-Webster Dictionary was nearby. A portable wall clock was also accessible. Other materials were those naturally available to the student writer: theme paper, scrap paper, and if necessary, writing implements.

Procedure Students were taken individually to a location in the school building where the apparatus had been prepared in advance for videorecording. Along the way, students were reminded that they would be asked to write a composition while they were videorecorded.

After entering the room, subjects were seated at a student's desk facing and abutting a teacher's desk at which the experimenter was seated. (See Appendix F)

Theme paper (lined) and scrap paper (unlined) for making preliminary notes or outlines were on the student's desk. On the teacher's desk, facing the student, were a small television set, a resource book on running, a dictionary, and face down, some model student essays on a parallel topic (tennis). A clock was positioned on the wall above the examiner's head.

The videocamera was positioned obliquely so as to monitor the student's interactions with each of these items. The television set was turned on to act as a potential environmental distractor requiring environmental self-control.

The model essays were available as a source of information about format and peer comparisons. The resource book was available to provide students with substantive information about the topic given. The dictionary was to be used for deriving the meaning of unfamiliar words either in the resource book or in the directions for the assignment they were given by the examiner; it could also be used to check the spelling of vocabulary generated by the students themselves.

Upon entering the room, students were told:

> Please sit down and do whatever you would like to make yourself as comfortable as you can. In a few moments, I am going to give you a topic and I will ask you to write a composition about it.
>
> You will notice two piles of paper in front of you. This paper (gesture to indicate) is for writing your composition; this paper (gesture) is for scrap. Some people like to make notes on scrap paper when they write,

and some people don't: you may choose to use it or not, whatever you like.

You will also notice a couple of other books here (gesture). Some people like to be able to look things up when they write, and some people don't. You may choose to use them or not, whatever you like.

Here (gesture) are some compositions written by other students on a different but similar topic. You may wish to look at them to get an idea of how others have managed this kind of an assignment. Again, you may choose to look at them or not, whichever you prefer.

You will also notice the television in front of you. Some people like to do their writing with the TV on and some do not. You may choose to leave it on, or turn to another station, or turn it off completely. Again, the decision is entirely up to you: do whatever makes you feel most comfortable.

After I give you your topic, you will have fifteen minutes to write your composition; I will stop you at the end of exactly fifteen minutes. If you would like to keep track of the time, you may look at the clock above my head (gesture).

The experimenter then handed the student an index card with the following written on it:

> "Explain why it is (or it is not) good for 5th grade/ 8th grade/ 11th grade students and their colleagues to jog."

The experimenter read the words aloud as the student read the card silently in order to control for reading difficulties or any misunderstandings arising from careless reading errors by the student.

The experimenter waited until the student looked up after reading the card and then said "You may begin now." The experimenter timed each student's writing with a stopwatch; she stopped the student from writing after fifteen minutes by saying, "Your time is up; you must stop writing now" and by removing the paper from the student's desk.

No instructions were given the students regarding their writing instruments initially. It was anticipated that some students would come to this task with writing utensils and some would not. Those who came prepared were operationally categorized as having demonstrated one form of self-regulating behavior. If a student brought pencils for writing, the experimenter substituted a pen. If a student did not produce a writing instrument by the time the experimenter finished reading the assignment aloud, the experimenter handed the student a pen.

While students were composing, the experimenter was observing and recording their self-regulating behaviors.

When the composition period was completed, the examiner asked each student a series of questions in order to control for prior knowledge of jogging as an intervening variable. (See Appendix E)

In order to clarify and "flesh-out" the examiner's observations during the writing period, the examiner also asked each student to define the meaning of the key word "colleague." If the student used the resources available, the examiner asked questions to probe specifically what each student was seeking. (i.e. "What did you look up in the dictionary?" "What were you looking for when you read the other essays?")

Operationally, self-regulation in writing was defined as demonstrating the following behaviors in the following categories:

ENVIRONMENTAL SELF-CONTROL

Environmental Structuring

1. Bringing a writing instrument to the task

   If students brought any writing instrument to the task, they received one point.

2. Adjusting the television

   If students made any TV adjustment in order to facilitate their writing, they received one point. Besides shutting the TV entirely, this also included turning down the volume, and changing the station.

COGNITIVE SELF-CONTROL

Planning, Organizing and Goal-setting

3. Preparing to write:

   Subsequent data analysis showed that the most sensible approach to this variable was to give students a point if they took between 10 and 120 seconds to plan the essay before beginning to write or if they took 180 or more seconds and made notes before beginning to write.

Students who took a longer period of time were not seen as task-involved unless they were making notes.

4. Making notes or outlining:

   Students received one point if they made any preliminary notes to organize their thinking.

5. Titling the essay:

   Students received one point if they titled their essay spontaneously and thereby indicated its goal in any way.

6. Writing a focused opening sentence:

   Students received one point if they wrote an opening sentence which set the direction of their essay.

Seeking Information

7. Using the dictionary:

   Students received one point if they consulted the dictionary at any time during the writing task.

7a. Dictionary Consonance:

   Subsequent data analysis suggested the need to examine dictionary usage further. Students received a point either if they did not know what the key word "colleagues" meant and they looked it up, or if they

did know what it meant and did not look it up. This item is important only in its absence: when students did not know what the word meant but did not look it up in the dictionary.

8. Using the resource book:

   Students were given this point if they used the book in any way during the task. This included skimming the table of contents for ideas as well as looking up specific items.

9. Examining the model essays:

   Students were given a point if they read any or all of the model essays at any time during the writing task.

10. Asking questions:

    Students were credited if they asked the examiner any relevant, substantive question.

RESPONSE SELF-CONTROL

Self-Evaluation

11. Interim re-reading:

    Students were credited if they stopped writing and re-read the section(s) they had written during the writing task. This, clearly, is a way to assess one's progress.

12. Re-reading the completed essay:

If students read the essay over when it was finished, they earned a point.

13. Editing:

Making substantive changes or corrections (not spelling, punctuation, capitalization) yielded an additional point.

14. Time-checking:

Checking the clock in order to coordinate their behaviors with time constraints earned students another point.

Scoring Following the writing period, the examiner viewed each of the videotapes and tallied the total number of self-controlling behaviors in each category demonstrated by each subject. Thus, each subject received a total Self-Regulation score ranging from 0 to 15: an Environmental Self-Control score ranging from 0 to 2, a Cognitive Self-Control score ranging from 0 to 9, and a Response Self-Control score ranging from 0 to 4.

A second evaluator viewed the videotapes and evaluated the results independently from the primary experimenter. Inter-rater reliability (.90) was evaluated by comparing the results of scores obtained when the evaluators independently viewed the tapes of ten students chosen at random. When

sources of disagreement were found, these were reconciled by employing a third evaluator.

Although the indicated self-regulation rating measures were the primary sources of information in this study, other elements were also examined. The total amount of time each student actually spent composing and the total number of words produced by each student were recorded in order to determine whether these factors related meaningfully to essay quality or to self-control behaviors. The numbers and types of changes or corrections made by students were also recorded and evaluated: mechanical changes (spelling, punctuation, capitalization) were considered separately from substantive changes (word-level, phrase-level, sentence-level, or paragraph-level).

The essays composed by the students were then read by an experienced teacher in each grade. These teachers were not acquainted with the subjects, but identifying information was deleted from each paper in order to prevent contamination by recognition of the family name, for example. The teachers were asked to score the essays holistically (See Instruments above) and to divide them into three groups using the following three-point scale:

1. Good Essay; fairly well-developed ideas; organized coherently; some errors may remain, but an attempt to edit/revise has been made.

2. Average Essay; a few interesting ideas, but not well organized; some editing has been attempted but the essay needs reworking.

3. Poor Essay; student has said little of interest, has made little attempt to communicate ideas or to adhere to written conventions.

HYPOTHESES

Since this study is, in part, an attempt to validate the self-regulation in learning model as a relevant and useful tool for exploring the writing process, the major hypotheses advanced reflected this relationship. Specific hypotheses dealt with two major aspects of the literature reviewed. The study attempted to discern at what ages children demonstrate the behaviors herein characterized as self-controlling. It also attempted to discover whether these processes were related to high quality writing. Since there is very little research evidence about the ages at which these behaviors occur, no specific predictions were made about the presence or absence of particular self-control behaviors at particular ages. Instead, general hypotheses were advanced concerning increments in each of the three major categories of self-regulation with increasing age.

Specific Hypotheses

A. Age Groups

1. Eighth grade students would display significantly more self-regulatory responses in each of the three major self-control areas than would fifth grade students: more Environmental Self-Control, more Cognitive Self-Control, more Response Self-Control.

2. Eleventh grade students would display significantly more self-regulatory responses in each of the three major

self-control areas than would eighth grade students: more Environmental self-control, more Cognitive self-control, more Response self-control.

3. A linear trend would be found between the age of the child and each of the three classes of self-control responses.

B. Ablility Groups

4. Among each age group, students rated high in writing skills would display significantly more self-control responses than would students rated low in writing skills.

C. Essay Ratings

5. Among each age group, students whose essays were rated high would display significantly more self-control responses than students whose essays were rated low.

Chapter Four

RESULTS

Introduction

The results of this study are presented in three parts. First, (Part IA), each of the fifteen self-regulation measures considered in the study is examined independently, with factor by factor Chi-square analyses. Each variable is examined first within a developmental framework, then, within each grade, ability differences which relate to each variable are considered. That is, in order to show the effects of age and ability on self-regulation, for each self-regulation factor the following sequence of Chi-squares is reported:

1) The variable as it relates to each age: grade 5, grade 8, and grade 11.

2) The variable as it relates to the ability level of the writer, (good/poor) controlling for grade.

Thus, for each factor, the results of four Chi-square analyses are presented.

In addition, the relation between several additional variables and subjects' age and ability is examined: students' jogging knowledge and experience, their total time on task, total time watching TV, and essay length. While no hypotheses were advanced regarding these factors, differences obtained

are deemed to be of heuristic value, and are therefore worthy of report (Part IB).

Then, the relationship between the quality of the completed essay and each of the 15 factors is reported. The effects of students' self-regulation on the quality of the essays they produced at each age are presented, using a series of Chi-square crosstabs for each factor.

In Part IIB, the relationship between the additional variables (jogging knowledge and experience, time on task, time on TV, essay length) and the quality of the essays obtained is then presented in the form of Chi-squares and ANOVA analyses for metric data. Part III addresses the hypotheses tested in this study, and summarizes the findings regarding confirmation or disconfirmation of these hypotheses.

PART IA: AGE/ ABILITY EFFECTS ON SELF-REGULATION

The following results were obtained when each self-regulatory writing behavior was considered within the framework of writers' age and writing ability level.

MEASURE 1: Brought a writing instrument to the task.

Age Effects: 8th and 11th graders were significantly more likely to be equipped with a pen or pencil as the task began than 5th graders, chi square (2)= 19.44, $p<.0001$). Less than half of the 5th graders (45%) but most of the 8th (85%) and

11th (82.5%) graders were physically prepared to begin writing when the task began.

TABLE 3
AGE EFFECTS: MEASURE 1
BROUGHT A WRITING INSTRUMENT

GRADE	YES	NO	ROW TOTAL
5	18[a]	22	40
	45.0[b]	45.0	33.3
8	34	6	40
	85.0	15.0	33.3
11	33	7	40
	82.5	17.5	33.3
COLUMN	85	35	120
TOTAL	70.8	29.2	100.0

a= cell frequency
b= cell percentage

Ability Effects Within each grade, similar numbers of students in each ability group came properly equipped to perform the writing task. No significant differences were obtained at any age. In the 5th grade, 40% of the good writers and 50% of the poor writers brought a writing instrument; in the 8th grade, 85% of each group did so; in the 11th grade, 75% of the good writers and 90% of the poor writers did so.

MEASURE 2: Adjusted the TV

Age Effects Less than half of the students in any grade adjusted the TV, either to turn it off, change the station, or adjust the volume. In the youngest group, about 1/3 of the students made an adjustment (32.5%), while slightly more 8th

graders (40%) and 11th graders (42.5%) did so. The groups did not differ significantly in relation to this measure.

Ability Effects No significant differences were obtained for 5th or 8th graders: in the former group, 20% of the good writers compared to 45% of the poor writers adjusted the TV; in the latter group, 30% of the poor writers compared to 50% of the poor writers did so. A marginally significant difference was found in the 11th grade group (chi square (1) = 3.68, $p<.0550$.) As shown in Table 4, sixty percent of the good writers in the oldest group adjusted the TV in order to facilitate their writing in some way, but only 25% of the poor writers did so.

TABLE 4
GRADE 11 ABILITY EFFECTS: MEASURE 2
ADJUSTED THE TV

ABILITY	YES	NO	ROW TOTAL
POOR	5	15	20
	25.0	75.0	50.0
GOOD	12	8	20
	60.0	40.0	50.0
COLUMN TOTAL	17	23	40
	42.5	57.5	100.0

MEASURE 3: Prepared to Write

(Took between 10 seconds and 120 seconds before writing or took more than 180 seconds and made notes)

Age Effects On all grade levels, more students than not did prepare to write, but many more 11th graders prepared

(82.5%) than did 5th graders (62.5%) or 8th graders (65%.) This difference was not of statistical significance, however.

Ability Effects No significant differences were found between any of the groups on this variable. At the 5th grade level, 75% of the better writers, but only 50% of the poorer writers prepared to write (chi square (1) = 1.7067, p<.1914.) In the 8th grade group, 70% of the better writers and 60% of the poorer writers prepared (chi square (1) = 0.1099, p<.7403.) In the oldest group, 90% of the better writers and 75% of the poorer writers were prepared to write (chi square (1) = 0.6926, p<.4053.)

MEASURE 4: Made preliminary notes.

Age Effects Eighth graders were significantly more likely to make preliminary notes or outlines than were 5th or 11th graders, chi square (2) = 15.3125, p<.0005. Relatively few students in the grade 5 (20%) or grade 11 (12.5%) made notes, but 40% of those in grade 8 did so.

TABLE 5
AGE EFFECTS: MEASURE 4
MADE PRELIMINARY NOTES

GRADE	YES	NO	ROW TOTAL
5	3	37	40
	7.5	92.5	33.3
8	16	24	40
	40.0	60.0	33.3
11	5	35	40
	12.5	87.5	33.3
COLUMN TOTAL	24	96	120
	20.0	80.0	100.0

Ability Effects Relatively few good or poor writers made notes before writing their essays. In the youngest group, 10% of the poor writers and 5% of the good writers did so. At the 8th grade level, 45% of the poor writers and 35% of the good writers did so. Among the eldest writers, 5% of the poor writers but 20% of the good writers made preliminary notes. None of these differences were statistically significant.

MEASURE 5: Titled the essay spontaneously.

Age Effects Although few writers in any group titled their essays spontaneously, 11th graders were least likely to do so. While 12.5% of both younger groups gave their essays a title, not one 11th grader did so. This difference proved to be marginally significant, chi square (2) = 5.4545, p<.0654.

TABLE 6
AGE EFFECTS: MEASURE 5
TITLED THE ESSAY

GRADE	YES	NO	ROW TOTAL
5	5	35	40
	12.5	87.5	33.3
8	5	35	40
	12.5	87.5	33.3
11	0	40	40
	0.0	100.0	33.3
COLUMN TOTAL	10	110	120
	8.3	91.7	100.0

Ability Effects Not one 11th grade good or poor writer spontaneously titled an essay. Few, and similar numbers of 8th grade good (3 students) and poor (2 students) gave their

essays titles. In the 5th grade group, 12.5% of the better writers (5 students) gave their essays a title, but none of the poorer writers did so. This difference proved to be of marginal significance, chi square (1) = 3.6571, p<.0558.

TABLE 7
GRADE 5 ABILITY EFFECTS: MEASURE 5
TITLED THE ESSAY

ABILITY	YES	NO	ROW TOTAL
POOR	0	20	20
	0.0	100.0	50.0
GOOD	5	15	20
	25.0	75.0	50.0
COLUMN	5	35	40
TOTAL	12.5	87.5	100.0

MEASURE 6: Wrote a topic sentence.

Age Effects No significant grade effects were obtained on this factor. Most students at each grade level did write a topic sentence which set the direction of their essays: 95% of 11th graders; 87.5% of 8th graders; 85% of 5th graders.

Ability Effects In the youngest group, 95% of the good writers (19 students) and 75% of the poor writers (15 students) wrote a topic sentence. This difference was not statistically significant, chi square (1) = 1.7647, p<.1840. By the time they reached 11th grade, all of the good writers (100%) included a topic sentence, and even 90% of the poor writers did so; this difference was also non-significant, chi

square (1) = 0.5263, p<.4682. A marginally significant difference was found in the 8th grade group, however, where all of the good writers but still only 75% of the poor writers included a topic sentence, chi square (1) = 3.6571, p<.0558.

TABLE 8
GRADE 8 ABILITY EFFECTS: MEASURE 6
WROTE A TOPIC SENTENCE

ABILITY	YES	NO	ROW TOTAL
POOR	15	5	20
	75.0	25.0	50.0
GOOD	20	0	20
	100.0	0.0	50.0
COLUMN	35	5	40
TOTAL	87.5	12.5	100.0

MEASURE 7: Consulted the dictionary.

Age Effects A marginally significant smaller number of 11th graders consulted the dictionary, chi square (2) = 5.2712, p<.0717. While 25% of both younger groups utilized this resource, only 7.5% of the oldest group checked the dictionary during the writing task.

TABLE 9
AGE EFFECTS: MEASURE 7
CONSULTED THE DICTIONARY

GRADE	YES	NO	ROW TOTAL
5	10	30	40
	25.0	75.0	33.3
8	10	30	40
	25.0	75.0	33.3
11	3	37	40
	7.5	92.5	33.3
COLUMN	23	97	120
TOTAL	19.2	80.8	100.0

Ability Effects No ability effects were found on this variable. At each age, few but similar numbers of good and poor writers consulted the dictionary. In the youngest group, 30% of the good writers and 20% of the poor did so; in the 8th grade group, 20% of the good writers and 30% of the poor did so; in the oldest group, 10% of the good writers and 5% of the poor looked at the dictionary during the writing task.

MEASURE 8: Dictionary use

Age Effects A significant age effect was found on this variable, chi square (2) = 10.6093, $p<.0050$. Similar numbers of 8th (12.5%) and 11th (15%) graders failed to consult the dictionary when they found the key word (colleague) unfamiliar. However, 40% of the 5th graders did not use the dictionary when they needed to do so.

TABLE 10
AGE EFFECTS: MEASURE 8
DICTIONARY USE

GRADE	YES	NO	ROW TOTAL
5	24	16	40
	60.0	40.0	33.3
8	35	5	40
	87.5	12.5	33.3
11	34	6	40
	85.0	15.0	33.3
COLUMN	93	27	120
TOTAL	77.5	22.5	100.0

Ability Effects No effects were found for 5th or 11th grade good vs. poor writers, but a marginally significant effect was found in the 8th grade group, chi square (1) = 3.6571, $p<.0558$). In the 5th grade group, 50% of the poor writers and 30% of the good writers failed to use the dictionary when they needed to do so; in the 11th grade group, 25% of the poor writers, and only 5% of the good writers needed to use the dictionary and did not. In the 8th grade group, however, 25% of the poor writers, but not even one of the good writers failed to use the dictionary when the target word was unfamiliar to them.

TABLE 11
GRADE 8 ABILITY EFFECTS: MEASURE 8
DICTIONARY USE

ABILITY	YES	NO	ROW TOTAL
POOR	15 75.0	5 25.0	20 50.0
GOOD	20 100.0	0 0.0	20 50.0
COLUMN TOTAL	35 87.5	5 12.5	40 100.0

MEASURE 9: Consulted the reference book.

Age Effects Similar numbers of students at each age made use of the reference book: 30% of 5th graders; 27.5% of 8th graders; 25% of 11th graders. No significant age effects were found on this measure.

Ability Effects Relatively few, but similar numbers of good and poor writers consulted the reference book at each age level. In the youngest group, these numbers were identical (30%.) In grade 8, 20% of the poor writers, but 35% of the good writers used the book. In grade 11, 15% of the poor writers but 35% of the good writers utilized the reference book. These differences were not statistically significant.

MEASURE 10: Examined the model essays.

Age Effects Slightly fewer 5th graders utilized this resource (45%) than 8th graders (55%) or 11th graders (52.5%). This difference was not statistically significant.

Ability Effects No significant ability effects were found on this variable. In both younger groups, identical numbers of both good and poor writers looked at the essays (grade 5 = 45%; grade 8 = 55%.) In the oldest group, 40% of the poor writers, but 55% of the good writers availed themselves of this resource.

MEASURE 11: Asked questions.

Age Effects This measure yielded no age effects. Sixty percent of the 5th graders, 47.5% of the 8th graders, and 42.5% of the 11th graders sought assistance or clarification during the writing task.

Ability Effects No statistical differences were found between ability groups in asking questions. Numerically

greater numbers of poor writers asked questions at each grade level: 65% vs. 55% in grade 5; 60% vs. 35% in grade 8; 45% vs. 40% in grade 11.

MEASURE 12: Reread sections of work in progress.

Age Effects Older students were significantly more likely to reread portions of their essays while they worked, chi square (2) = 9.3507, $p<.0093$. While 90% of both older groups monitored their work in this way, only 67.5% of the 5th graders did so.

TABLE 12
AGE EFFECTS: MEASURE 12
REREAD SECTIONS OF ESSAY IN PROGRESS

GRADE	YES	NO	ROW TOTAL
5	27	13	40
	67.5	32.5	33.3
8	36	4	40
	90.0	10.0	33.3
11	36	4	40
	90.0	10.0	33.3
COLUMN	99	21	120
TOTAL	82.5	17.5	100.0

Ability Effects No differences were found between good and poor writers in any grade in rereading sections of their work in progress. At each age, similar numbers of writers in each group self-monitored their work in this way: in 5th grade, 65% of poor writers and 70% of good writers; in 8th grade, 95% of poor writers and 85% of good writers; in 11th

grade, 85% of poor writers and 95% of good writers.

MEASURE 13: Reread completed essay.

Age Effects No significant differences were found between groups on this factor, although a numerically greater number of 8th and 11th graders reread their essays. A relatively small number in all groups did so: only 17.5% of 5th graders; 32.5% of 8th graders; 35% of 11th graders.

Ability Effects Similarly increasing numbers of both good and poor writers reread their essays. In the youngest group, 20% of the poor writers and 15% of the good writers did so. In the 8th grade group, 20% of the poor writers but 45% of the good writers did so. In the oldest group, 30% of the poor writers and 40% of the good writers self-monitored their work in this way. These differences were not significant.

MEASURE 14: Edited the essay.

Age Effects Fifth and 11th graders were marginally more likely to make substantive editorial changes in their essays than 8th graders, chi square (2) = 5.7289, $p<.0570$. Only 27.5% of the 8th grade group edited their work, while 52.5% of the 5th graders and 47.5% of the 11th graders did so.

TABLE 13
AGE EFFECTS: MEASURE 14
EDITED THE ESSAY

GRADE	YES	NO	ROW TOTAL
5	21	19	40
	52.5	47.5	33.3
8	11	29	40
	27.5	72.5	33.3
11	19	21	40
	47.5	52.5	33.3
COLUMN	51	69	120
TOTAL	42.5	57.5	100.0

Ability Effects A marginally significant difference was found in the oldest group, chi square (1) = 3.6090, $p<.0575$. Among 5th graders, 45% of the good writers and 60% of the poor writers edited their work. Among 8th graders, 40% of the good writers and 15% of the poor writers did so. However, in the 11th grade group, 65% of the good writers but only 30% of the poor writers edited their essays.

TABLE 14
GRADE 11 ABILITY EFFECTS: MEASURE 14
EDITED THE ESSAY

ABILITY	YES	NO	ROW TOTAL
POOR	6	14	20
	30.0	70.0	50.0
GOOD	13	7	20
	65.0	35.0	50.0
COLUMN	19	21	40
TOTAL	47.5	52.5	100.0

MEASURE 15: Checked the time

Age Effects Fifth graders were significantly more likely to check the clock while they wrote than either of the other groups, chi square (2) = 13.0703, p<.0015. Almost 3/4 of the 5th graders monitored their time (72.5%), while only 37.5% of both older groups did so.

TABLE 15
AGE EFFECTS: MEASURE 15
CHECKED THE TIME

GRADE	YES	NO	ROW TOTAL
5	29	11	40
	72.5	27.5	33.3
8	15	25	40
	37.5	62.5	33.3
11	15	25	40
	37.5	62.5	33.3
COLUMN	59	61	120
TOTAL	49.2	50.8	100.0

Ability Effects In the 5th grade group, about equal numbers of good (70%) and poor (75%) writers checked the clock. In the 8th grade group, these numbers dropped to 45% of the good writers and 30% of the poor writers. In the 11th grade, however, 55% of the good writers but only 20% of the poor writers monitored the passing time. This difference was statistically significant, chi square (1) = 3.84, p<.05.

TABLE 16
GRADE 11 ABILITY EFFECTS: MEASURE 15
CHECKED THE TIME

ABILITY	YES	NO	ROW TOTAL
POOR	4	16	20
	20.0	80.0	50.0
GOOD	11	9	20
	55.0	45.0	50.0
COLUMN	15	25	40
TOTAL	37.5	62.5	100.0

Part IB: Additional Variables

Following the formal videotaped writing task, measures were taken of the following variables.

Variable 1: The writer's jogging experience

Age Effects: 11th graders were slightly less likely to themselves jog than younger students, an only marginally significant result, chi square (2) = 5.3620, p<.0685. More 5th graders (67.5%) and 8th graders (60%) acknowledged having jogging experience than 11th graders (42.5%).

TABLE 17
AGE EFFECTS: JOGGING EXPERIENCE

GRADE	YES	NO	ROW TOTAL
	27	13	40
	67.5	32.5	33.3
8	24	16	40
	60.0	40.0	33.3
11	17	23	40
	4^.5	57.5	33.3
COLUMN	68	52	20
TOTAL	56.7	43.3	100.0

Ability Effects: No significant differences were found between good and poor writers of any age regarding whether they participated in jogging as a recreational activity. In the youngest group, numerically more good writers (80%) than poor writers (55%) jogged; in the 8th grade group, numerically fewer good writers (55%) than poor writers (65%) jogged; in the oldest group, the number of good writers who jogged remained the same (55%), but the number of poor writers who did so dropped to 30%.

VARIABLE 2: Knowledge about jogging

Age Effects: Only 25% of the 5th grade group, but 47.5% of the 8th and 11th grade groups were able to answer three or more questions correctly of the six items on the questionnaire, thus obtaining a High score on this variable. This difference was marginally significant, chi square (2) = 5.625, $p<.0601$).

TABLE 18
AGE EFFECTS: JOGGING KNOWLEDGE

GRADE	LOW	HIGH	ROW TOTAL
5	30	10	40
	75.0	25.0	33.3
8	21	19	40
	52.5	47.5	33.3
11	21	19	40
	52.5	47.5	33.3
COLUMN	72	48	120
TOTAL	60.0	40.0	100.0

Ability Effects: Good and poor writers did not differ significantly on this factor in the 5th or 8th grade groups, although numerically more good writers were high in jogging knowledge in both of these groups. Among 5th graders, 35% of the good writers were high in jogging knowledge compared to 15% of the poor writers. Among 8th graders, 55% of the good writers were high in jogging knowledge compared to 40% of the poor writers. However, as may be seen in Table 19, in the 11th grade, the good writers were significantly more likely than the poor to be able to answer three or more questions about jogging correctly, chi square (1) = 10.025, $p<.0015$.

TABLE 19
GRADE 11 ABILITY EFFECTS: JOGGING KNOWLEDGE

ABILITY	LOW	HIGH	ROW TOTAL
POOR	16 80.0	4 20.0	20 50.0
GOOD	5 25.0	15 75.0	20 50.0
COLUMN TOTAL	21 52.5	19 47.5	40 100.0

VARIABLE 3: Total time on task

ANOVA procedures showed no significant main effects or interactions when time on task was considered with grade and ability.

Although 8th graders spent numerically less time attending to the task (685.5 seconds) than either 5th graders (716.25)

or 11th graders (769.5 seconds), this difference was not significant.

Good writers averaged 721 seconds on task; the mean for poor writers was similar (726 seconds).

VARIABLE 4: Time spent watching TV

Poor writers averaged 40.43 seconds watching TV, while good writers spent only 15.83 seconds attending to this distractor. This difference was statistically significant, $F(1,114)= 7.355$, $p<.008$. No grade effects or interactions were found, but fifth graders spent numerically more time watching TV (36.6 seconds) than 8th graders (28.85 seconds) or 11th graders (18.95 seconds).

VARIABLE 5: Number of words in essay

Significant differences were found in the number of words in the essays produced by students of different grades $F(2,114) = 7.605$, $p<.001$,and by students of different ability $F(1,114)= 24.147$, $p<.000$. Good writers produced essays which averaged 133.58 words, while poor writers' essays were 90.8 words. Fifth graders' essays averaged 99 words, similar to 8th graders' essays which averaged 101 words; however, 11th graders wrote much longer essays: 136 words.

No interaction effects were found.

PART IIA: THE EFFECTS OF SELF-REGULATION ON ESSAY QUALITY

Of the 120 essays produced in the writing task, 27 were subsequently judged to be Good, 64 were judged to be Average, and 29 to be of Poor quality. Table 20 below shows the distribution of essays produced by each grade level and proficiency level.

TABLE 20
DISTRIBUTION OF ESSAY RATINGS
BY EXPERIMENTAL GROUPS

WRITERS	ESSAY RATINGS GOOD	AVERAGE	POOR
POOR	0	35	25
GRADE 5	0	13	7
GRADE 8	0	9	11
GRADE 11	0	13	7
GOOD	27	29	4
GRADE 5	6	14	0
GRADE 8	9	8	3
GRADE 11	12	7	1

A statistical analysis of groups and essay ratings was highly significant, chi square (2) = 42.7694, $p < .0000$. No students rated Poor wrote a Good essay; no 5th grade Good writers wrote Poor essays, although four older Good writers did so. This phenomenon will be discussed further later.

The following results were obtained when the quality of essay produced by each student was considered with respect to

the presence or absence of each self-regulated writing behavior during the expository writing task.

MEASURE 1: Brought a writing instrument.

No significant relationship was found, at any grade level, between students' preparedness to perform a writing task and the essays they ultimately produced. Chi square significance levels were $p<.29$ in grade 5; $p<.77$ in grade 8; $p<.10$ in grade 11.

MEASURE 2: Adjusted the TV

No significant relationships were found between students of any age adjusting the TV as a distractor and the writing quality of their essays. Chi square significance levels were $p<.59$ in grade 5, $p<.43$ in grade 8, and $p<.24$ in grade 11.

MEASURE 3: Prepared to write

Students who took a brief period of time to organize their thoughts before they began the writing task were found to write better essays in 5th grade, chi square (2) = 15.98, $p<.0003$, and 8th grade, chi square (2) = 6.52, $p<.0385$, but not in 11th grade, chi square (2) = 3.64, $p<.1623$.

No 5th grader who prepared to write wrote a poor essay; no 5th grader who did not prepare to write wrote a good essay. No 8th or 11th grader who did not prepare to write produced a good essay, but seven 8th graders and six 11th graders who did

prepare to write still produced poor essays. This phenomenon will be discussed later.

TABLE 21A
GRADE 5 ESSAY QUALITY: MEASURE 3
PREPARED TO WRITE

	ESSAY RATING BEST	AVERAGE	POOR	
YES	6[a]	19	0	25
	24.0[b]	76.0	0.0	62.5
	100.0[c]	70.4	0.0	
NO	0	8	7	15
	0.0	53.3	46.7	37.5
	0.0	29.6	100.0	
	6	27	7	40
	15.0	67.5	17.5	100.0

a = count
b = row percent
c = column percent

TABLE 21B
PREPARED TO WRITE

	ESSAY RATING BEST	AVERAGE	POOR	
YES	9	10	7	26
	34.6	38.5	26.9	65.0
	100.0	58.8	50.0	
NO	0	7	7	14
	0.0	50.0	50.0	35.0
	.0	41.2	50.0	
	[illegible]	17	14	40
	22.5	42.5	35.0	100.0

MEASURE 4: Made preliminary notes

No relationships were found between 5th or 11th grade students students making preliminary notes and the quality of their final essays. Even among 8th graders, where this behavior was most visible, the relationship was not of statistical significance, chi square (2) = 3.5679, $p<.1680$.

MEASURE 5: Titled the essay

No relationships were found at any age between the presence or absence of this behavior and the quality of the essays produced.

MEASURE 6: Wrote a topic sentence

Among the youngest group of students, this measure was of only marginal significance, chi square (2) = 5.4944, p<.0641.

TABLE 22A
GRADE 5 ESSAY QUALITY: MEASURE 6
WROTE A TOPIC SENTENCE

	ESSAY QUALITY BEST	AVERAGE	POOR	
YES	5	25	4	34
	14.7	73.5	11.8	85.0
	83.3	92.6	57.1	
NO	1	2	3	6
	16.7	33.3	50.0	15.0
	16.7	7.4	42.9	
	6	27	7	40
	15.0	67.5	17.5	100.0

In the 8th grade group, where this relationship was highly significant, chi square (2) = 10.6122, p<.005, no students who did not write a topic sentence got higher than a poor rating on their essays.

TABLE 22B
GRADE 8 ESSAY QUALITY: MEASURE 6
WROTE A TOPIC SENTENCE

	ESSAY QUALITY			
	BEST	AVERAGE	POOR	
YES	9	17	9	35
	25.7	48.6	25.7	87.5
	100.0	100.0	64.3	
NO	0	0	5	5
	0.0	0.0	100.0	12.5
	0.0	0.0	35.7	
	9	17	5	40
	22.5	42.5	35.0	100.0

No relationship was found between these measures among 11th graders. All but two 11th graders did write a topic sentence; one of these individuals earned an Average essay rating, the other one earned a Poor essay rating.

MEASURE 7: Consulted the dictionary

No significant relationship was found between the presence or absence of students' use of the dictionary and the quality of essays produced at any age level. Chi square (2) results ranged from $p<.18$ for 5th graders to $p<.17$ for 8th graders to $p<.19$ for 11th graders.

MEASURE 8: Dictionary use

In the 5th grade group only, the tendency to look up the meaning of a target word when it was unknown to them did prove to be related to the composition of better essays, chi square (2) = 7.9564, $p<.0187$.

TABLE 23
GRADE 5 ESSAY QUALITY: MEASURE 8
DICTIONARY USE

	ESSAY QUALITY			
	BEST	AVERAGE	POOR	
YES	5	18	1	24
	20.8	75.0	4.2	60.0
	83.3	66.7	14.3	
NO	1	9	6	16
	6.3	56.3	37.5	40.0
	16.7	33.3	85.7	
	6	27	7	40
	15.0	67.5	17.5	100.0

This behavior did not prove to be related to essay quality in the 8th or 11th grade. However, in both of these groups, the few individuals who did not use the dictionary when they needed to do so earned Average or Poor essays scores only; all 8th and 11th graders who wrote the best essays had also used the dictionary when they needed to do so.

MEASURE 9: Consulted the reference book

No statistical relationship was found between using the reference book and writing good essays in any of the groups. However, in the 8th grade group, chi square (2) = 4.6397, $p<.0983$, 55.6% of those who wrote the best essays made use of this available resource.

MEASURE 10: Examined the model essays

No relationships were found between students of any age inspecting the model essays provided for them and their achievement on the writing task.

MEASURE 11: Asked clarifying questions

No relationships were found between students' asking questions and their achievement on the writing task.

MEASURE 12: Reread sections of work in progress

Monitoring work in progress in this way proved to be related to successful writing only for the oldest group of students, chi square (2) = 8.6111, p<.0135. No 11th graders who failed to demonstrate this behavior wrote a good essay, and 84% of those who did demonstrate this behavior wrote better essays (Best or Average.) On the other hand, 75% of those who failed to demonstrate this behavior produced Poor essays.

TABLE 24
GRADE 11 ESSAY QUALITY: MEASURE 12
REREAD SECTIONS OF ESSAYS IN PROGRESS

	ESSAY QUALITY			
	BEST	AVERAGE	POOR	
YES	12	19	5	36
	33.3	52.8	13.9	90.0
	100.0	95.0	62.5	
NO	0	1	3	4
	0.0	25.0	75.0	10.0
	0.0	50.0	37.5	
	12	20	8	40
	30.0	50.0	20.0	100.0

MEASURE 13: Reread the completed essay

Rereading the completed essay was related to achievement only for the 11th graders, chi square (2) = 3.0369, p<.0428. In this group, not one student who reread his or her completed essay produced a poor essay.

TABLE 25
GRADE 11 ESSAY QUALITY: MEASURE 13
REREAD COMPLETED ESSAY

	ESSAY QUALITY BEST	AVERAGE	POOR	
YES	4	10	0	14
	28.6	71.4	0.0	35.0
	33.3	50.0	0.0	
NO	8	10	8	26
	30.8	38.5	30.8	65.0
	66.7	50.0	100.0	
	12	20	8	40
	30.0	50.0	20.0	100.0

MEASURE 14: Edited the essay

On all grade levels, no relatioship was found between students' editing behaviors and their writing achievement.

MEASURE 15: Checked the time during the task

Monitoring the temporal constraints of the task proved to be related to achievement only for 8th graders, chi square (2) = 8.1215, $p<.0172$. In this group, 46.7% of those who did check the time wrote the best essays, while 40% of those who did not check the time wrote poor essays.

TABLE 26
GRADE 8 ESSAY QUALITY: MEASURE 15
CHECKED THE TIME

	ESSAY QUALITY BEST	AVERAGE	POOR	
YES	2	13	10	25
	8.0	52.0	40.0	62.5
	22.2	76.5	71.4	
NO	7	4	4	15
	46.7	26.7	26.7	37.5
	77.8	23.5	28.6	
	9	17	14	40
	22.5	42.5	35.0	100.0

While this relationship was not statistically significant for 5th or 11th graders, in the latter group, (chi square (2) = 4.41, p<.1103), 46.7% of those who checked the time wrote the best essays.

PART IIB: Additional Variables

The following results were shown when the measures of students' jogging knowledge and experience, time on task, time on TV, and essay length were examined with respect to the quality of essay the students produced.

VARIABLE 1: The writer's jogging experience

In both younger groups, students' jogging experience proved to be unrelated to their writing achievement. However, a relationship between these variables was found for 11th graders, chi square (2) = 7.468, p<.0239. In this group, 52.9% of those who were themselves joggers wrote the best essays, while only 13% of those who did not jog wrote essays of this quality.

TABLE 27
GRADE 11 ESSAY QUALITY: VARIABLE 1
JOGGING EXPERIENCE

	ESSAY QUALITY: BEST	AVERAGE	POOR	
YES	9	6	2	17
	52.9	35.3	11.8	42.5
	75.0	30.0	25.0	
NO	3	14	6	23
	13.0	60.9	26.1	57.5
	25.0	70.0	75.0	
	12	20	8	40
	30.0	50.0	20.0	100.0

VARIABLE 2: Knowledge about jogging

Eleventh graders who knew more about jogging wrote the best essays, chi square (2) = 9.0560, p<.0108. Only 10.5% of those who knew most about the topic wrote poor essays. On the other hand, only 9.5% of those who knew little about jogging wrote good essays. This relationship was not present in 5th or 8th grade, however.

TABLE 28
GRADE 11 ESSAY QUALITY: VARIABLE 2
JOGGING KNOWLEDGE

	ESSAY QUALITY			
	BEST	AVERAGE	POOR	
LOW	2	13	6	19
	^.5	61.9	28.6	52.5
	16.7	65.0	75.0	
HIGH	10	7	2	19
	52.6	36.8	10.5	47.5
	83.3	35.0	25.0	
	12	20	8	40
	30.0	50.0	20.0	100.0

VARIABLE 3: Total time on task

ANOVA procedures showed no significant main effects or interactions when time on task was considered with essay ratings. The amount of time individual students spent attending to the writing task did not prove to make a real difference in determining the quality of essays they produced.

VARIABLE 4:Time spent watching TV

When the time students spent absorbed by the distractor, the TV set, was examined with ANOVA procedures, a main effect

for essay rating was found, $F(2,111) = 8.236$, $p<.000$, but no grade effects or interactions. Post hoc Scheffe analysis indicated that those who wrote the poor essays differed significantly from the authors of both good and average essays ($p<.05$). Students who wrote the best essays spent 11.85 seconds watching TV (sd = 26.68); the authors of average quality essays spent 21.12 seconds watching TV (sd = 36.45). However, those who wrote poor essays spent 58.79 seconds watching this distractor (sd = 78.29).

VARIABLE 5: Number of words in essay

Essay length proved to be highly correlated with essay quality. ANOVA analysis yielded main effects for both grade, $F(2,111) = 5.485$, $p<.005$, and essay rating, $F(2,111) = 16.300$, $p<.000$, but no interactions.

The best quality essays contained an average of 129 words in 5th grade, 142 words in 8th grade, and 178 words in 11th grade. The poorest quality essays contained 65 words in 5th grade, 64 words in 8th grade, and 126 words in 11th grade.

On an average, the 5th grade essays contained 99 words, the 8th grade essays contained 101 words, and the 11th grade essays contained 136 words.

PART III: Regarding the Hypotheses

The findings regarding hypothesized relationships between variables are summarized below.

Age Groups:

Hypothesis 1: The hypothesis that 8th graders would display significantly more Environmental, Cognitive, and Response self-control than 5th graders was confirmed, for the following variables:

Environmental Self-Control

Measure 1: Significantly more 8th graders brought a writing instrument to the task than 5th graders ($p<.0001$)

Cognitive Self-Control

Measure 4: Significantly more 8th graders made notes than 5th graders ($p<.0005$)

Measure 8: Significantly more 8th graders looked up the target word when it was not familiar than 5th graders ($p<.0050$)

Response Self-Control

Measure 12: Significantly more 8th graders reread parts of their essays while writing than 5th graders ($p<.0093$)

Hypothesis 2: The hypothesis that 11th graders would demonstrate more self-regulation in each of the three Self-Control areas was not confirmed.

Environmental Self-Control

No significant differences were found between 5th grade and 8th grade in either environmental measure.

Cognitive Self-Control

Measure 7: Only marginally more 11th graders consulted the dictionary than 8th graders ($p<.0717$).

Response Self-Control

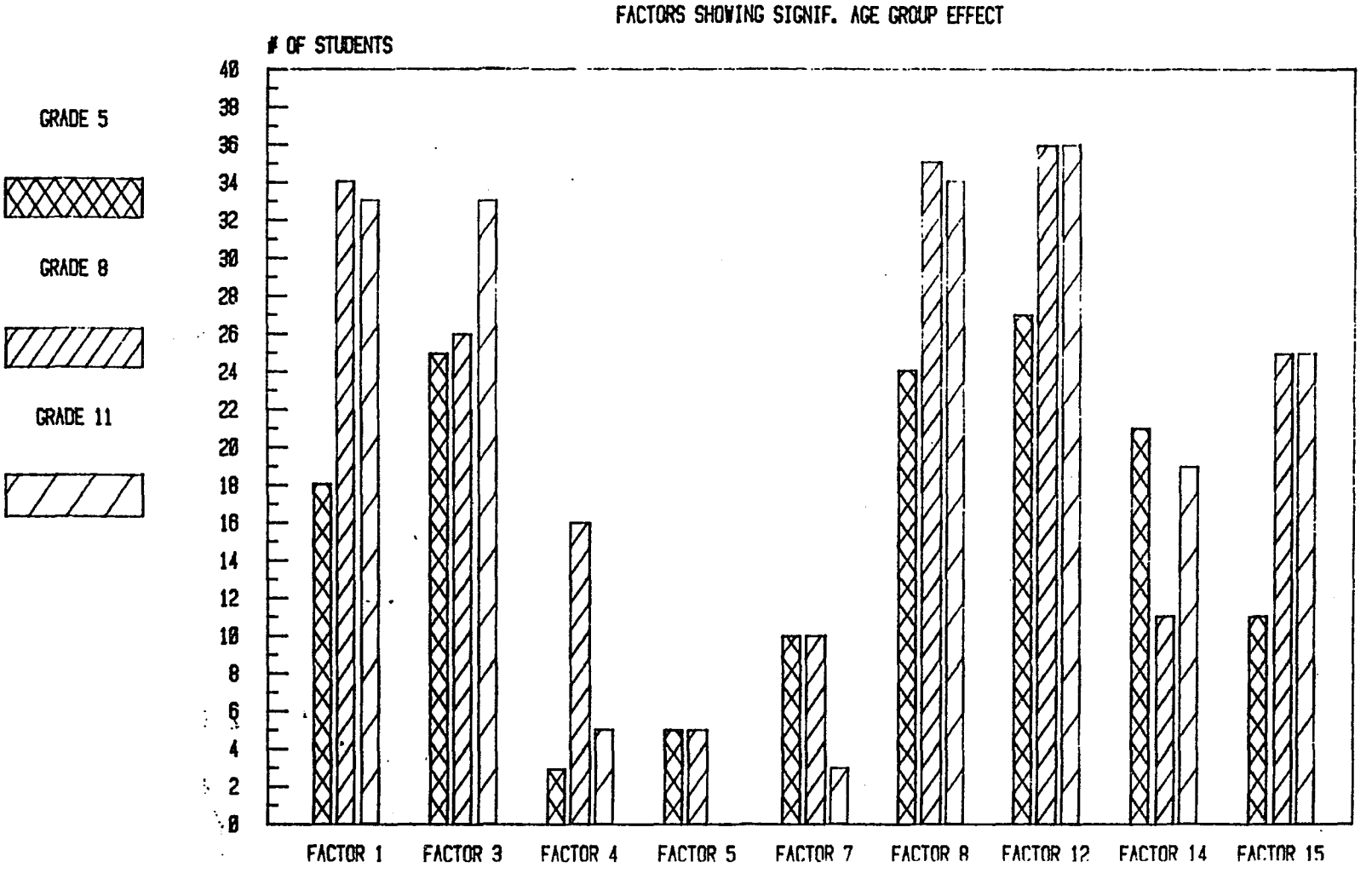
Measure 14: Only marginally more 11th graders did some kind of substantive editing than 8th graders ($p<.0570$).

Hypothesis 3: The hypothesized linear trend between the age of the child and each of the three classes of self-control responses was not reliably obtained, as summarized graphically in Figure 2, below. The self-regulation measures that showed significant age effects were sometimes not in the direction anticipated.

Ability Groups

Hypothesis 4: Although the differences that were found did occur in the direction anticipated, the students rated high in writing skills within each age group differed only marginally from those rated low, as summarized below.

FIGURE 2 - FREQUENCY OF SELF-REGULATION



5th Grade Ability Effects

Cognitive Self-Control

Measure 5: More 5th grade good writers put a title on their essays than 5th grade poor writers ($p<.0558$)

8th Grade Ability Effects

Cognitive Self-Control

Measure 6: More 8th grade good writers used a topic sentence than 8th grade poor writers ($p<.0558$)

Measure 8: More 8th grade good writers used the dictionary to find the meaning of an unknown word than 8th grade poor writers ($p<.0558$)

11th Grade Ability Effects

Environmental Self-Control

Measure 2: More 11th grade good writers adjusted the distracting TV than the poor writers ($p<.0550$).

Response Self-Control

Measure 14: More 11th grade good writers did substantive editing than 11th grade poor writers ($p<.0575$)

Measure 15: More 11th grade good writers monitored the time than 11th grade poor writers ($p<.0500$).

Essay Ratings

Hypothesis 5:Within each age group, students whose essays were -ated high did display, on some factors, more self-controlling responses as follows:

5th Grade Essay Effects

Cognitive Self-Control

Measure 3: 5th grade students who wrote the best essays had prepared to write ($p<.0003$)

Measure 6: 5th grade students who wrote the best essays used a topic sentence ($p<.0641$) (of marginal significance).

Measure 8: 5th grade students who wrote the best essays had used the dictionary when they didn't know what "colleagues" meant ($p<.0187$).

8th Grade Essay Effects

Cognitive Self-Control

Measure 3: 8th grade students who wrote the best essays had prepared to write ($p<.0385$).

Measure 6: 8th grade students who wrote the best essays wrote a topic sentence ($p<.0050$).

Response Self-Control

Measure 15: 8th grade students who wrote the best essays had monitored the time ($p<.0172$)

11th Grade Essay Effects

Response Self-Control

Measure 12: 11th grade students who wrote the best essays reread portions as they wrote p<.0135)

Measure 13: 11th grade students who wrote the best essays reread their completed essay (p<.0428).

Below are the results of measures of variables not considered in the original hypotheses:

Developmental Differences:

Eleventh graders were marginally less likely to jog than 5th or 8th graders (p<.0685).

Fifth graders were marginally less knowledgeable about jogging than 8th or 11th graders (p<.0601).

Eleventh graders wrote significantly longer essays than 5th or 8th graders (p<.05)

Ability Differences:

Good writers spent significantly less time watching the TV than poor writers (p<.05).

Good writers wrote significantly longer essays than poor writers (p<.05).

Additional Variables Related to Successful Essays

Eleventh graders who had more jogging experience wrote the best essays (p<.02).

Eleventh graders who knew more about jogging wrote the best essays ($p<.01$).

Those students who spent the most time watching the TV wrote the poorest essays ($p<.05$)

The longest essays were also judged to be the best essays ($p<.05$).

Summary of Findings

Thus, some of the variables looked at in this study yielded statistical relationships between children of different age groups as well as between levels of writing ability. These included: titling the essay (5,8 > 11, marginal; 5th grade good > poor, marginal); using the dictionary to find the meaning of a target word (8,11 > 5; 8th grade good > poor, marginal); edited the essay (5,11 > 8, marginal; 11th grade good > poor, marginal); monitored the time (5 > 8,11; 11th grade good > poor; jogging knowledge (8,11 > 5, marginal; 11th grade good > poor); number of words (11 > 5,8; good > poor).

Some variables yielded grade effects but not ability effects. These included: bringing an instrument to the task (8,11 > 5); making preliminary notes (8 > 5,11); consulting the dictionary (5,8 > 11, marginal); rereading sections of the essay (8,11 > 5); jogging experience (5,8 > 11); jogging knowledge (8,11 > 5, (marginal).

Other variables yielded ability effects only: adjusting the TV (11th grade good > poor); using a topic sentence (8th grade good > poor, marginal).

However, some of the variables examined showed no grade or ability effects whatever: preparing to write; using the reference book; examining the model essays; asking questions; rereading the completed essay; total time on task.

Similarly, some of the behaviors examined herein showed a strong relationship with essay quality: preparing to write (5th grade; 8th grade); using a topic sentence (5th grade, marginal; 8th grade); using the dictionary to find the meaning of an unknown target word (5th grade); rereading work in progress (11th grade); rereading the completed essay (11th grade); monitoring the time (8th grade); jogging experience (11th grade); jogging knowledge (11th grade); time on TV; number of words in essay.

Other behaviors showed no relationship to essay quality: bringing a writing instrument; adjusting the TV; making preliminary notes; titling the essay; consulting the dictionary; consulting the reference book; examining the model essays; asking questions; editing the essay; time on task.

CHAPTER FIVE

DISCUSSION

The present study, though exploratory in nature, does provide some empirical evidence for theoretical descriptions of students as self-regulated learners: initiators, planners, and observers of their own educational experiences. In their recent study of high school students' use of learning strategies, Zimmerman and Pons (1986), utilizing an a posteriori interview procedure, found that students' use of self-regulated learning strategies correlated substantially with their academic achievement. The current study, based on direct observations of students rather than on their self-reports, confirms students' use of self-regulating processes in a more natural context, while they are performing an academic task. The results of this study support the proposed model for examining self-regulation in expository writing.

Students of different ages have been shown to utilize a variety of self-regulated strategies during an expository writing assignment. Some behaviors relevant to the writing task have been shown to be more typical of particular ages or grades. Other behaviors have been shown to be more reflective of better writers than poorer writers. That is, both age and ability have been shown to affect self-regulation.

Self-regulation has also been shown to make a difference in producing successful essays. At each age, use of some of these strategies has been demonstrated to correlate with greater success on the writing task. As these self-regulated behavioral strategies are discrete and observable, it should be possible to organize and teach them within a classroom writing curriculum.

Thus, this study implies that instruction in the specific writing strategy skills involving environmental, cognitive, and response self-control which have been shown to be related to better writing could prove to be useful in helping students to become more effective writers.

Questions Regarding the Measures and Performances

In this exploratory study, some of the behaviors that were examined showed no significant relationship to effective writing; these may, in fact, bear no such relationship, but they may simply require more sophisticated measurement techniques and technology. Also, not all relevant behaviors have been included; a more finely delineated behavioral examination could provide a great deal of additional information. For example, equipment monitoring eye movements could provide tracking information relevant to environmental stimuli. How do the specific things people "do" while they are thinking, like scratching, rubbing, or stroking one's cheek or

forehead, chewing on one's pencil, or gazing off into space affect the writing process? Would particular kinds of lighting or furniture yield different effects, as reported by professional writers in the literature review? However, the current study has yielded some valuable pragmatic data in addition to some useful techniques.

Several aspects of the results emerged with surprising clarity. In the a priori grouping of students by writing ability, (See Table 24), not one student of any age who had been identified as a poor writer wrote a good essay, and all 5th and 8th graders identified as good writers wrote at least average essays. However, several of the older good writers, three 8th graders and one 11th grader, wrote essays that were evaluated as poor. This phenomenon can be explained in the following way. Since this task was not administered by their regular teachers, and since their participation in the study was voluntary, questions arise as to how seriously some of the students were taking the task. In fact, it was clear that a number of students viewed their participation primarily as an opportunity to be relieved of their classroom responsibilities, particularly once word began to circulate that a TV set was available to them during their participation.

The 8th grade group was unusual in this research, as it produced some discontinuous results: 8th graders were significantly more likely than either of the other groups to make notes before writing, but less likely to edit their essays. The possibility of a relationship between these two behaviors arises: did they edit less because they planned more? As note-taking behavior is in the 8th grade curriculum, this finding may be a result of classroom instruction. This suggests that direct instruction in self-regulation may have a significant impact on children's behaviors. Future research should consider a training study in self-regulation.

The essay topic itself, the value of jogging, was also an important limiting factor. This topic was selected because it seemed relevant to people of a variety of ages and it would be possible for everyone, even those with no athletic bent, to express a few thoughts about this activity. However, several older students did not appear to be stimulated by this topic; in fact, it offered very little challenge to any of the older youngsters.. Thus, some students may have demonstrated less self-regulation than they would have shown under more challenging conditions.

Another problem was the likelihood that students may have shared information about the essay topic with their classmates, thus giving them an opportunity to plan prior to

their videotaped participation. Although participating students were asked not to discuss their experience with others, there really was no effective control for this.

A fourth experimental limitation, and one which is probably related to each of the previous three, is the fact that more than half of the essays written (64 of 120) were rated as average. Besides being affected by questions about topic confidentiality, and student interest and motivation variables, the discrimination ability of the rating system itself could be refined; finer distinctions in evaluating the essays that were produced might have yielded more finely interpretable results.

The current findings may also have been limited by several specific procedural factors. The overseeing presence of the examiner during the writing task, in addition to the presence of the videocamera, may have distracted and inhibited the writers in the study. Although there is no current research evidence of this, future research designs should consider these elements carefully.

Also, when children were taken to the writing task, they may not have been given sufficiently strong cues as to where they were going and for what purpose. This could account for some of the students failing to bring a writing implement to

the task, for example. Clearer cues might have elicited greater self-regulation.

In addition, questions arise about the effects of temporal constraints on the writing task: the fact that students had only a fifteen minute work period may have inhibited them from perusing the reference book or model essays. Future research could address this question by eliminating temporal parameters to see whether different results would thus be obtained.

DEVELOPMENTAL DIFFERENCES IN SELF-REGULATING BEHAVIORS

ENVIRONMENTAL SELF-CONTROL

Young children are often not assumed to exercise much control over their educational environment and, in fact, are often given little opportunity to do so in elementary school. They usually are expected to come to school with a sharpened pencil, prepared to write.

This study found the 5th graders to be without a writing implement when the task began significantly more often than the older students. Eighth and 11th graders were almost twice as likely as 5th graders to have a writing implement at hand. However, it may be simplistic to conclude that these young writers are less responsible than their older counterparts. When a young child is asked to accompany an adult out of class for an interaction of some sort, that adult often does provide the child with any necessary materials. Thus, the ambiguity of the testing situation may have amplified the incidence of unprepared 5th graders.

No systematic differences were found among grades in students' management of the TV, although individual differences were extensive: in each grade, some students turned off this distractor, while others turned to an even more intrusive program and made the volume louder. No

differences were found in the amount of time children in each grade spent watching the TV, either.

COGNITIVE SELF-CONTROL

Some significant differences and some suggestive trends were found in the way young writers structured the cognitive aspects of their composition task at different ages.

Eighth graders were significantly more likely than either of the other groups to make notes or an outline before writing the actual essay. While many 8th graders had learned to do this kind of cognitive structuring, by the time they reached 11th grade, the behavior was no longer in evidence. This finding coincides with that of Stallard (1974.) It is again possible that a more complex composition topic could have caused it to reappear, however.

Eleventh graders were marginally less likely than the younger groups to give their essays a title: no 11th graders spontaneously titled their essays. However, relatively few in the younger groups used a title, either. While a title is perhaps considered a necessary statement of position in the younger grades, 95% of the 11th grade students may have accomplished the same thing by employing a position-stating topic sentence. Indeed, in all grades most students did write a position-stating topic sentence.

Eleventh graders were marginally less likely than both younger groups to use the dictionary: only 7.5% of the older children looked up any words in the dictionary, while 25% of both younger groups did so. One must, again, consider whether task issues were responsible for this trend.

When they did not know the meaning of the key word "colleagues", 5th graders were significantly more likely to ignore the word rather than look it up in the dictionary. This finding raised several important questions. Are younger children more likely to rely on context cues and ignore unknown words? Is the higher frequency of their exposure to new words related to this behavior? How much effect does facility with dictionaries have on this behavior? If a dictionary resource which did not require any facility with alphabetizing were available (on a computer, for example) would children respond differently? Certainly, it is intuitively reasonable to expect older children to be using dictionaries more reliably than younger children; this finding lends empirical credence to this expectation.

No grade effects were found for preparing to write, for use of the resource book on jogging, for examining the model essays, or for asking clarifying questions. Again, task complexity should be considered an important intervening

variable before concluding that these behaviors are not subject to differential management by different age groups.

RESPONSE SELF-CONTROL

Writers must learn to monitor their progress as they write. Not surprisingly, in this study the 5th graders were significantly less likely than both groups of older students to reread sections of their work as they wrote. Also, while the difference only approached significance, numerically fewer 5th graders reread their finished work than 8th graders or 11th graders.

However, one major purpose of rereading one's work is in order to make editorial changes. Interestingly, 5th graders, who reread least, did the most editing. Twenty-one 5th graders made significant editorial changes; nineteen 11th graders edited their papers; however, only eleven 8th graders did so. This difference nearly attained significance. It is likely that this writing task was sufficiently difficult for 5th graders to cause more than half of them to make editorial changes even as they wrote. The scant editing in the 8th grade (27.5%) may well reflect the limited investment these students had in the task. However, it may also reflect the generally impulsive style of the young adolescent, in general. For, in grade 11, almost half of the writers made some substantive editorial changes. This finding is very similar to that of

Crowhurst (1983) who found 7th grade students to make significantly fewer revisions than 5th or 11th grade students.

It would seem important to keep one's eye on the clock during a time-limited task. During this task, 5th graders were significantly more likely to check the time at least once than either 8th or 11th graders. Only about a third of both older groups, but almost three quarters of the 5th graders demonstrated this behavior. However, in fact, many 5th graders looked at the clock only when they were finished and as a way of seeking egress. Their clock-watching could not, strictly speaking, be seen as a task-facilitative self-monitoring behavior. The 15 minute essay period was, for 5th graders, a rather long time to spend writing.

ADDITIONAL AGE EFFECTS

While 5th graders and 8th graders claimed more jogging experience than 11th graders, they knew appreciably less about the activity than both older groups. These not unexpected but marginally significant findings suggest that the older groups may have had a slight advantage in having more information with which to fill their essays. Indeed, 11th graders also wrote significantly longer essays than those of the younger groups. It may be that older children have more to write by virtue of their additional life experience; perhaps, too, they have become more adept at writing tasks in general.

No significant differences were found among grades in the amount of time spent writing or watching TV. Of course, task variables may well have skewed these results, as well. It is certainly possible that more or less challenging topics and increased or decreased task value would have evoked different responses in these areas.

ABILITY DIFFERENCES IN SELF-REGULATING BEHAVIORS

When the self-regulating behaviors of the groups of good writers were compared with the behaviors of the groups of poor writers within each grade, only a few differences were statistically significant.

It appears that the good writers may not have been demonstrating these behaviors consistently because of experimental variables relating to task difficulty and student motivation. A number of marginally significant differences were found, and these were, without exception, in the direction of the good writers. Perhaps the writers of good essays may not have learned all of the self-regulating behaviors that can improve the writing of good essays.

Relationships were demonstrated between students' writing ability within each grade and their self-regulation during the essay task in each of the following areas.

Environmental Self-Control

Poor writers spent significantly more time watching the TV (40.43 secs.) than good writers (15.83 secs.) It is evident that their greater distractibility reflects their unease with the task. However, only in the most mature group of writers was there a marginally significant difference in adjusting this distractor.

In this 11th grade group, 60% of the good writers, but only 25% of the poor writers modified the intrusion of this environmental factor.

In the youngest group of writers, more poor writers (40%) than good writers (20%) made any adjustments. However, it appeared that these youngsters were rather reticent about effecting such changes, as a number of those who did adjust the TV sought reassurance that this was really acceptable. By 8th grade, 50% of the good writers but only 30% of the poor writers adjusted the TV. Thus, even the non-significant findings suggest that as they get older, better writers may become increasingly inclined to adjust their environment to facilitate their work.

Cognitive Self-Control

Although numerically more good than poor writers in all grades did take some time to plan their essays, these differences did not reach significance. This contrasts sharply

with Stallards's (1974) finding that better writers took significantly more time to plan their work. Again, the possibility remains that a more challenging task would have provoked a stronger planning effect.

Good 5th grade writers spontaneously titled their essays more often than poor 5th grade writers, a marginally significant effect. This feature was absent on 11th grade papers and appeared only on a few 8th grade papers. Apparently, the inclusion of essay titles, almost a sine qua non early in school, may be perceived to be unimportant beyond the elementary school years.

In the 5th grade group, even the good writers did not use a topic sentence in every case, but by the 8th grade, all of the good writers (100%) had learned to write topic sentences, compared to 75% of the poor writers, a finding which proved to be of marginal significance. By the 11th grade, moreover, 90% of the poor writers, too, had learned to write topic sentences. Apparently, their teachers' emphasis on the importance of this essay feature is quite effective.

Although about equal numbers of good and poor writers in each grade used the dictionary, more good than poor writers looked up the key work "colleagues" when they didn't know its meaning. However, this difference only approached significance in the 8th grade group, where 75% of the poor writers but 100%

of the good writers exercised this important form of self-control. It should be noted that one good 11th grade writer who failed to seek necessary information from the dictionary greatly affected the older group's results; otherwise, the groups could have been identical. That is, the self-regulating trend towards increased information-seeking did increase with age.

No significant ability differences were found in any of the other cognitive self-control factors: use of the reference book, use of the essays, or asking clarifying questions. Once again, the unchallenging nature of the theme may well have been responsible for these limited effects.

Response Self-Control

Significantly more 11th grade good writers checked the time. Although this finding suggests that this group regulated the temporal dimensions of the task more reliably, it may also reflect the relative ease and rapidity with which they completed the task, and their self-confirmation of this. In the youngest group, about equal numbers of good and poor writers demonstrated this behavior; numerically more 8th grade good writers did so. However, only the oldest good writers differed significantly from the poor writers in acknowledging their temporal parameters.

Sixty-five percent of the 11th grade good writers made meaningful editorial changes in their essays compared with 30% of the 11th grade poor writers, a marginally significant finding. At the 5th grade level, numerically more poor writers made such changes (60% vs. 40%); this probably reflects considerable struggle by the youngest poor writers during the act of composition. By the 8th grade, however, numerically more good writers made such changes (40%) than poor writers (15%), although this disparity was not statistically significant. Only in the eldest group did editorial behaviors coincide with level of writing ability. The fact that these behaviors occurred even within the context of this easy assignment appears to add great impact to this finding.

Additional Ability Effects

Significantly more 11th grade good writers had a fund of factual knowledge about the topic, jogging. That is, those writers previously judged to be skilled at the craft in general, also possessd a broader base of specific content material than those writers with less skill. Only in this oldest group did the skill and knowledge factors coincide at a significant level, although even in the youngest groups, numerically more good writers than poor were able to answer three or more questions about jogging correctly. In this case,

at least, the good writers may have had more to say about the topic than the poor writers.

Clearly, these results confirm the presence of some developmental patterns and some differences between good and poor writers in self-regulating during the act of written composition. However, much additional study of these and other writing behaviors is necessary in order to understand the complex relationships between age, ability, and self-regulation in expository writing.

SELF-REGULATING BEHAVIORS AND ESSAY RATINGS

Developmental and ability-related data are of interest, but the information about self-regulated behaviors which is likely to be most useful to educational psychologists is that delineating those behaviors which relate closely to writing achievement.

While correlational data do not establish causation, the obtained results do indicate a possible connection. The most highly rated essays were composed by writers exercising some forms of environmental self-control, cognitive self-control, and response self-control. Further experimental research is required to determine if training in the specific self-regulating processes can improve student writing significantly.

Environmental Self-Regulation

Managing Distractions: the TV

Writing is an often onerous and highly frustrating task; susceptibility to distraction is bound to be great. In this study, a strong relationship was found between essay quality and time spent watching TV: the students of all ages who wrote the poorest essays were those who spent the most time watching the TV. Those who wrote the poorest essays spent five times as much time involved with the TV and those who wrote average essays spent three times as much time with the TV as those who wrote the best essays.

Although the most successful writers did not turn off or adjust the TV more than the less successful writers, they succumbed to its presence significantly less. No significant relationship was found between making TV adjustments and writing good essays; apparently, making such adjustments did not, in itself, really affect success.

Parents and teachers frequently rail against the apparently intrusive presence of the TV while students do their work. It seems clear to some that the two behaviors, writing and watching TV, are incompatible. Yet, students who work in front of the TV are often convinced that they are in control of their environment. The results of this study suggest that, particularly for poor writers, the reverse is true: not only were they significantly more susceptible to the

presence of the TV as a distractor, but also the quality of essays the students produced directly reflected this susceptibility.

It is unclear why the better writers were better able to resist being distracted. Are better writers more resistant to environmental distractors in general? As noted earlier, Bloom (1980) found that anxious college student writers were more easily distracted than non-anxious writers. Possibly, students who work in front of the TV are attempting to control their task anxieties. Or perhaps those who are less susceptible to environmental distractors have a general advantage in this kind of task. It is likely that the relatively uncomplicated nature of this writing task is a key issue; would a more challenging task provoke a higher level of susceptibility to distraction in the better writers? There is a need for more research in this area.

It does seem important for students who have difficulty performing expository writing tasks to exercise greater environmental self-control by removing such compelling distractions as the TV from their physical presence. In class, teachers may be cautioned about the presence of environmental distractors while the class is assigned a writing task. The advantages of providing individual study carrels could be considered, for example. It is well known that even the most

careful teachers are often plagued by unexpected interruptions: announcements on the public address system, monitors bearing messages, loud street noises. The relative effects of such distractions on students who have more difficulty with expository writing may be quite significant.

Cognitive Self-Control

Preparing to Write

A very strong relationship was found between essay quality and the variable "Prepares to Write": students of all ages who wrote the best quality essays took a period of time to consider and plan before beginning to write. These results were statistically significant on the 5th grade level and the 8th grade level but not for the 11th grade group.

Although no student who did not "prepare to write" wrote an essay rated good, and no 5th grade student who "prepared to write" wrote an essay rated below average, several older students, seven 8th graders and six 11th graders, did "prepare to write" and still produced poor essays. The latter phenomenon may have been the result of some of the older students' minimal commitment to the task; informed consent procedures in recruiting volunteers seemed to have reduced some of the more sophisticated students' personal investment in the task. That is, once their mild curiosity had been satisfied, they seemed unwilling to put any real effort or

concern into writing their essays: they knew they didn't have to take the task seriously because it wouldn't affect their school grades.

Nevertheless, the message seems clear: When given an essay assignment, students ought to first take a moment or two to organize their thoughts, or even a few moments to make some notes, before beginning their essays. This approach can be fostered in school settings relatively easily. In order to minimize thoughtless, impulsive composing, writing topics can be given to assembled students a few moments before theme paper is distributed. Some scrap paper should be available for those students who find it helpful to make notes or outlines. While this procedure would certainly not insure planning, it could help to encourage this form of behavioral self-control.

Using a Topic Sentence

Students are repeatedly taught to use a topic sentence in essay writing; the more successful student writers learn this lesson. The vast majority of good and average essays included this critical component, but poor essays differed from the others in that they lacked this vitally important feature.

Use of a topic sentence proved to be closely related to achievement for 8th graders and marginally so for 5th graders. Every 8th grade essay without a topic sentence was rated poor; every 8th grade essay rated good or average had a topic

sentence. In fact, all of the 11th grade essays rated good also had a topic sentence, although this group yielded no significant effect. This finding lends firm empirical support, then, to many educators' implicit belief in the importance of including topic sentences in expository writing. In this study, presumably as in other similar essay writing tasks, students' use of a topic sentence was a virtual sine qua non of successful student writing.

It is relatively unimportant whether professional writers do or do not include formal topic sentences in their writing, or whether the presence of this feature indeed improves the quality or clarity of student writing. It is clear that teachers do reinforce topic sentence writing behavior by rating such essays better. Thus, students should be encouraged and drilled in the regular use of topic sentences in their writing.

Using the Dictionary

It would seem important to understand an assignment thoroughly in order to fulfill it successfully. The essay topic given the participants in this study included a word which was anticipated to be unfamiliar to some: "colleagues." Thus, those who needed to do so should have looked up the unknown word in the dictionary.

Fifth graders were significantly less likely to look up this word when they did not know its meaning, and for 5th graders, regardless of ability level, exercising this form of self-control correlated highly with writing good essays. Only 14.3% of those who wrote the poorest essays utilized the dictionary when they needed it; 83.3% of those who wrote the best essays did so.

Although this relationship was not statistically significant in the upper grades, in both 8th and 11th grade groups, 100% of those who wrote the best essays had looked up the word if they did not know its meaning.

For the youngest writers, then, the importance of developing this form of self-control should be stressed. These writers must be discouraged from writing their way around words they don't know and encouraged to utilize the dictionary appropriately. The fact that no significant effects appeared in the upper grades does not, of course, mean that these groups do manifest this behavior reliably. The results were greatly affected by the fact that many fewer students in the older groups needed to look up the word.

Thus, this form of self-regulation proved to be related to good essay writing only in the youngest group of students, where it was also least likely to occur. Futher investigation of older students' dictionary-related self-regulation is

necessary to clarify its relation to the writing achievement of more mature students.

Consulting a Reference Book

Students who are self-regulated should make use of available information about an essay topic, if they lack it. This latter qualification appeared to affect the results of the current study. The topic may have been too easily manageable without outside information to evoke much of this form of self-regulation. Only a little more than 1/4 of the students in any grade looked at the reference book. A more technical or arcane topic might have elicited a higher frequency of this form of self-regulating behavior. However, additional research is necessary in order to learn about the role of this form of self-regulation.

Response Self-Regulation

Rereading

Only in the 11th grade group did this form of self-regulation closely relate to essay ratings. Every 11th grader who wrote a good essay reread essay sections during composition, and all but one 11th grader who wrote an average essay did so. Moreover, while only 25% of the entire 11th grade group reread their completed essays, every one of those who did wrote at least an average essay. This finding

corroborates Stallard's (1974) observations that better 12th grade writers reread and reviewed their work more often.

It is possible tha both of these phenomena are related and that the frequency of either or both might vary as a function of essay difficulty. Would a more complex topic require a higher frequency of either or both behaviors? Does the necessity for a terminal reread depend on the frequency of interim rereads?

Interim rereading occurred much more often than terminal rereading in all groups. Fifth graders were shown to be significantly less likely to reread than either of the other groups (67.5% of 5th graders reread portions compared to 90% of both older groups). Relatively few writers in any age group did terminal rereads. Moreover, rereading activities did not prove to be at all related to students' writing ability. Yet, rereading as an effective form of self-control in writing did prove uniquely related to essay quality in the oldest group of writers.

Monitoring Time

Although 5th graders were more likely to check the time than the older students, and good 11th grade writers were more likely to check the time than poor 11th grade writers, this behavior only showed a significant relation to essay quality in the 8th grade group. Here, more than three fourths of those

who wrote the best essays did check the time during the course of the task. Perhaps task variables may be suppressing some important differences. As noted earlier, the 5th graders' time-checking often occurred after they had finished writing. The 15 minute essay period was rather long for many of the youngest students, who finished writing all they had to say quickly. This simple essay was also hardly taxing for many of the oldest students, who were able to dash it off quickly and who may also be better able to monitor the time efficiently with their internal clocks.

Thus, the significant relationship obtained between 8th graders and essay rating should suggest the need for further exploration of this factor, rather than the presence of a uniquely important finding.

Additional Effects

Eleventh graders who knew more about jogging and who had more personal experience with the activity also wrote the best essays. No significant relationships were found between these factors and essay ratings among 5th graders or 8th graders. However, 75% of those 11th graders who wrote the best essays did themselves jog, and 83.3% of those 11th graders who wrote the best essays were able to answer three or more questions about the topic correctly. On the other hand, only 25% of those 11th graders who wrote the poor essays themselves jogged

and only 25% of those who wrote the poor essays were able to answer three or more questions about the topic.

For the oldest group, then, having more information about the topic was a definite advantage. However, it is also true that in this group only, an ability effect had been obtained; that is, the 11th graders selected to participate in the study as good writers had greater knowledge about the topic than those selected as poor writers. Thus, in this group, those who were better writers and who also knew most about the topic, wrote the best essays.

Questions arise, then, about the relationship between form and substance among the younger groups. Do younger students who know more about a topic not write better essays? Are variations in writing skills more important in the earlier grades, and obscure the effects of differences in substantive information?

Essay Length

At each age, the essays given the highest rating were the longest essays. As noted earlier, a significant age effect was found: the essays written by the 11th graders (136 words) were more than 1/3 longer than those written by the 5th graders (99 words) or 8th graders (101 words.) Moreover, a significant ability effect was found: good writers wrote longer essays than poor writers.

The implication of this finding to young writers is clear: keep writing. While quantity may not be synonymous with quality, more may, indeed, be better. Writers may add substance and extra credibility to their themes by fleshing out their skeletal theses. Or, perhaps there is some truth to the legend that teachers who grade papers are impressed by bulk, or at least less inclined to fail essays whose substance suggests copious labor.

EDUCATIONAL IMPLICATIONS

An examination of the literature on writing strongly suggests that the self-control processes play a key role. From the time they begin to do narrative writing, children must make many decisions on their own. Although teachers assume much of the responsibility for regulating chldren's writing in the early grades, students are asked to assume an increasing amount of responsibility as they advance in grade.

To date, our educational research has provided scant information about self-controlled behaviors in writing, and the categories explored have been limited. Moreover, most existing research has been anecdotal and informal; it has failed to make clear which self-control responses are most effective in facilitating the writing process. In addition, such issues as at what age children begin to display these behaviors and at what age they became effective have not yet been clarified.

The present study has provided some preliminary evidence bearing on these questions. Such evidence can be valuable to researchers because it suggests which self-control responses are most helpful and at which age they might be instructed.

Several specific behaviors have proven to correlate highly with the production of better essays. While correlation does not imply causation, teachers can safely assure their students

that behaving in the following ways could certainly do no harm in their attempts to produce good essays:

Environmental Self-Control

1. Control your environment.

The best essays were written by those students who spent the least time distracted by the TV.

Cognitive Self-Control

2. Gather information about your topic

Among the eldest writers, at least, those who had more information about the essay subject wrote the better essays.

3. Prepare to write

Take a few moments to plan before beginning to write. Making notes helps some people.

4. Write a topic sentence

Even the youngest writers who wrote topic sentences produced the better essays.

5. Use the dictionary if you need to

Don't tiptoe around words you don't understand if you can clarify your thinking.

Response Self-Control

6. Read as you write

Develop the more mature skills of rereading during composition. At least for the older writer, these self-monitoring skills helped produce the best essays.

7. Watch the time

It may be helpful to keep an eye on the clock as you write.

8. Keep writing

The essays given the highest rating were those that were the longest. Try to explain your ideas as fully as possible. While more is not necessarily better, less may be worse.

Certainly, many teachers of English composition have intuitively been encouraging their students to structure their writing tasks according to these guidelines. This study has provided a ground of research evidence which helps to validate the effects of such behavior.

SUGGESTIONS FOR FUTURE RESEARCH

Some of the categories of self-regulation postulated here have been shown to be useful in examining the task of writing an expository essay. These, like susceptibility to distractors and preparing to write, should be explored in detail to glean information about individual differences and means for fostering greater self-awareness as well as self-control.

Some of those categories which did not prove useful, like use of outside resources or revision techniques, may require a more careful look. In a longer essay of a more complex nature, the self-regulating processes would be likely to increase in importance and become more salient; their presence or absence would become more critical. Similarly, it seems evident that a writing topic that was more challenging and more relevant to the classroom activities within each grade level would be more likely to elicit a higher level of engagement from the students participating. It would be useful to look at students of a variety of ages and ability levels to determine the effects of changes in these independent variables.

Employing more sophisticated technology, like eye tracking devices, could yield valuable and precise data about students' behaviors, as well.

It is necessary to look more closely at these and other self-regulating processes when students are performing other kinds of writing tasks. How do they change when students are at home and free to structure the task completely independently? Do and how do they change when students are writing for other purposes, in and out of school? Do students employ these techniques spontaneously or are these behaviors the result of their teachers' efforts to shape their behaviors? When and how often should these skills be taught and retaught? Do the techniques students are taught in writing classes carry over to their performance on subject area essay examinations? How do parents and teachers foster more and better self-regulation in students? Indeed, can all of these processes be taught, or how best can they be taught?

It would also be useful to explore the self-regulating processes students employ in other natural settings, like directed or independent reading programs, or math problem-solving sessions or when they are trying to learn spelling words or learn vocabulary words? What processes do the most successful students employ that the less successful students could learn?

The importance of acknowledging and addressing individual differences in students is undeniable. However, the results of this study provide clear evidence that the ability to

self-regulate is separate from traditional ability measures and is closely related to achievement when students are asked to perform expository writing tasks. Thus, in writing a good essay, it appears that it is not whether students are "intrinsically" good or poor writers which makes the critical difference, but whether they are able to self-regulate environmental, cognitive, and response factors of the task.

APPENDICES

APPENDIX A

LETTER TO PARENTS REQUESTING STUDENT PARTICIPATION

Date:

Dear Parents:

Our school is cooperating with the Department of Educational Psychology of the CUNY Graduate Center in conducting a study of the way children learn to write.

A number of our students will be asked to participate in this study. Maxine Marcus, our school psychologist, will be working with them individually. Students will be asked to spend fifteen minutes writing an essay. Then they will be asked some simple questions to determine their understanding of the writing process. We would like your permission to allow your child to be included in this study.

The names of students and their essays will be coded; students will not be identified by name, and all results will remain confidential. The essays will not be counted as part of their school grades.

In order to encourage participation in this project, small prizes will be awarded to all students who participate.

We would appreciate your completing the tear-off below and returning it to your child's teacher as soon as possible. If you have any further questions about the project, please call Mrs. Marcus at 520-5220.

Sincerely yours,

Principal (or Dept. Head)

APPENDIX B

NEW YORK STATE WRITING TESTS

WRITING TEST

For New York State Elementary Schools

Grade 5 **Spring 1984**

Manual for Administrators and Teachers

The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Albany, New York 12234

Foreword

The Regents Competency Testing Program has two basic purposes: (1) to assure the early identification of students who need help in developing reading, writing, and mathematics skills and (2) to assure that students have acquired adequate competency in these skills before receiving a high school diploma.

To help accomplish the first purpose, schools administer the New York State Pupil Evaluation Program reading and mathematics tests in grades 3 and 6 and a writing test in grade 5. In addition, the administration of preliminary competency tests in reading and writing is required, with certain exceptions, for students in grade 8 or 9.

To help accomplish the second purpose, the Regents Competency Testing Program requires remedial instruction for those students who score below defined points on the Pupil Evaluation Program tests and the preliminary competency tests. Through well-organized, appropriate, and systematic remediation at the early stages of the elementary and secondary school experience, students will be provided with the opportunity to acquire the skills they need to meet the high school graduation standards established by the Board of Regents.

Contents

Description of the Test

Purpose of the Test

The Writing Test for New York State Elementary Schools is designed to measure a student's ability to communicate effectively in writing at the end of grade 5. Scores obtained on the test can be used for (1) evaluating students' current level of achievement in writing, (2) determining trends in students' ability to write, (3) indicating the extent of compensatory or remedial help, if any, that a student may need in order to achieve success on the preliminary competency test in writing, and (4) providing a basis for the termination of remediation. The test is administered each spring as part of the Pupil Evaluation Program.

General Features of the Test

The Writing Test for New York State Elementary Schools is a direct measure of a student's ability to communicate in writing. The test consists of two writing tasks. One task encourages writing that is generally related to the actual experiences of elementary school students; the other task encourages writing that is more creative or imaginative. The types of writing required are selected from five categories: personal expression, personal narrative, description, process essay, and story starter.

Each task requires a relatively brief piece of writing, about 150 words. The word count is merely a suggestion for the benefit of the students. The emphasis is on the quality of the response and not on the number of words. For each task, there is a structured prewriting component. After completing the prewriting activity, students are directed to prepare first drafts and to edit and revise these drafts before producing their final answers. Thus, students are given the opportunity to follow the process of planning, drafting, and revising normally used in preparing a piece of writing.

As a general rule, each task requires approximately 2 hours to administer. It is recommended that each of the two tasks on the test be administered on a different day within a period of five school days, but preferably not on two consecutive days. Administration of both tasks on the same day or on two consecutive days is not recommended because of the possible detrimental effect of fatigue on student performance.

The method of rating the students' responses is holistic. Specific criteria have been established for each of four score levels and also for a zero paper. Keeping these criteria in mind, the rater makes a single judgment about the overall quality of the piece of writing, rather than making separate judgments about content, organization, syntax, mechanics, etc.

Administering the Test

Test Materials

The test materials provided by the Department for the spring 1984 administration of the Writing Test for New York State Elementary Schools, Grade 5, include (1) separate test booklets for Part 1 and for Part 2, (2) the manual for administrators and teachers, (3) a rating guide and analyses of sample student responses, and (4) a Class Record Sheet. The rating guide and analyses of sample student responses are for use by teachers in the rating of the test papers and in the planning of remedial instruction and should not be distributed to the teachers before the test administration. Additional information on the use of the test results in the development of instructional programs in writing is contained in the new Department publication, *Helping Student Writers, K–6.*

The test materials to be provided by the school include lined essay answer paper and scrap paper. Each student will need at least two sheets of essay answer paper and two sheets of scrap paper for each part of the test. The scrap paper should be readily distinguishable from the essay answer paper. Students should not be allowed to use dictionaries or other reference materials during the test.

Because it was necessary to modify the task for Part 2 of the spring 1984 test for students who are blind, deaf, or hard of hearing, two special editions of the Part 2 test booklets are also being provided. The edition for students who are blind is in braille and also in a booklet labeled "Printed Copy of the Braille Edition" for teachers who may need to read the information in the test booklet to the students. The edition for students who are deaf or hard of hearing is in a booklet labeled "Special Edition for the Deaf and Hard of Hearing."

Since a new form of the Writing Test for New York State Elementary Schools will be provided for use in the Pupil Evaluation Program each year, schools may wish to retain any unused test booklets for later use in their instructional programs. Teachers may wish to keep the used test booklets on file for use in discussions with students about their test performance.

Special Considerations for Assuring Optimal Student Performance

If the test results are to provide an accurate measure of each student's writing ability, the directions for administering the test should be followed carefully. Because the prewriting component is a unique feature of this test, it is most important that the teacher who is to administer the test review the directions beforehand to become thoroughly familiar with them. Since the purpose of the test is to obtain the most accurate estimate possible of a student's writing ability, it is essential that students be given an opportunity for fair assessment.

The teacher should give students all the assistance required in the mechanics of taking the test, such as filling out the heading of the essay answer paper. Students also should be given special guidance in following the directions to prepare first drafts on scrap paper, and then to edit and to revise the drafts before writing their final responses on the essay answer paper. However, during the prewriting component, students should make their own notes without being given any specific suggestions for their answers and without any group discussion of the notes.

Test Administration Time

Each of the two parts of the Writing Test for New York State Elementary Schools should be administered on a different day within a period of five school days, but preferably not on two consecutive days. Schools should schedule at least two hours for the administration of each part of the test. As a general rule, most students will need about 1½ hours of working time for each part; in addition, approximately 30 minutes will be needed for the teacher to give directions and to administer the prewriting component. Some students, however, may need additional time for the test, and schools should make provisions to accommodate such students.

Preparations for Testing

Arrangements for administering the test should interfere as little as possible with the normal school routine. It is recommended that the test be administered in the students' regular classroom. However, classes may be merged into larger groups, at the convenience of the school.

A number of points should be taken into consideration when making arrangements for the testing sessions.

1. **Selecting the Testing Room.** If a room other than the regular classroom is to be used, it should be adequately lighted and ventilated, and free from noise and other distractions. There should be a chalkboard in the room.
2. **Scheduling the Test.** If possible, it would be best to avoid scheduling a testing session on either a Monday or a Friday. A testing session should also not be scheduled immediately after a period of strenuous physical exercise.

3. **Orientation of Students.** The students should be informed about the test a few days before the test administration. Announcements should be made in such a way as to increase the students' interest in the test but, at the same time, not cause them to become overly anxious and tense. They should be told that no special preparation is necessary and that the test measures writing skills used every day, in and out of school.
4. **Orientation of Teachers.** Prior to the testing date, each teacher who will be administering the test should become familiar with the detailed directions for administering the test provided in this test manual.
5. **Assembling the Test Materials.** The materials should be assembled at least one day before the test administration. The following materials are needed for *each* part of the test.

   For each student:
   - Test booklet (Part 1 *or* Part 2)
   - Lined essay answer paper (at least two sheets of paper)
   - Scrap paper (two sheets of paper different from the essay answer paper)
   - Pen (Pencil may be used for the prewriting notes and for first drafts. Pencils may also be used for writing the final copy if using pens would present problems for the students.)

   For the teacher:
   - Detailed directions for administering the test (pages 3 through 6 in this manual)
   - Test booklet (for reading the task, administering the prewriting component, and for demonstration purposes)
   - Essay answer paper and scrap paper (for demonstration purposes)
   - Extra essay answer paper, scrap paper, pens, and pencils

Detailed Directions for Administering the Test

Before each test session begins, a sample heading for the essay answer paper should be written on the chalkboard. This information should include the student's name, the testing date, the part number, the school name, and the name of the student's teacher.

Make sure that sufficient quantities of all test materials are on hand. After the desks are cleared of books and papers, distribute the essay answer paper and the scrap paper.

If students are to be allowed to use pencils for writing their final copies, the directions that follow should be modified accordingly. Any necessary changes should be made *before* the test is administered.

To administer Part 1, follow the directions below. To administer Part 2, follow the directions on pages 4 through 6.

Part 1

When the students are ready to begin, say:

> Today you will be taking the first part of a test to find out how well you write. The test has two parts. You will take the first part today and the second part on (*indicate day*).
>
> On your desk, you should have two kinds of paper: scrap paper and answer paper. (show) At the top of each sheet of your answer paper, write your name, today's date, the words *Part 1*, the name of the school, and your teacher's name. I have written a sample on the chalkboard for you. (show) You should use pen to write this information.

After the students have completed the headings on the essay answer paper, distribute the test booklets for Part 1, face up, one to each student, and say:

> Please leave the test booklet face up on your desk. Do not open the booklet until I tell you to do so.

After each student has received a test booklet, say:

> Look at the cover of your test booklet. Check to make sure that the words *Spring 1984* and *Part 1* are shown on the cover. (show)
>
> Then in the spaces provided on the cover of your test booklet, write your name and today's date. (pause) Now read the section called "To the Student" to yourself while I read it aloud.
>
> "To the Student
>
> This is a test to find out how well you write. The test has two parts. Today you will take Part 1. Take your time and work carefully. You will have about two hours, which should be enough time for you to prepare your composition. You must hand in the test booklet and scrap paper along with the final copy of your composition."
>
> Now open your test booklet to page 2. Read the directions and the topic at the top of page 2 to yourself while I read them aloud.

Read aloud the directions and the topic on the top of page 2 of the test booklet. Then say:

Now before you begin writing, you should take time to think about and plan your composition. The section on pages 2 and 3 called NOTES will help you do this. (show) As I read this section aloud, I will give you time to write down your ideas. You do not need to use complete sentences for your notes; a word or a few words are usually enough. You may use either a pen or pencil to write these notes.

Read aloud each statement or question under NOTES on pages 2 and 3 of the test booklet. Pause after reading *each* statement or question until most of the students have finished writing. You may need to remind students to write their notes after you have read each statement or question. Students should make their own notes without being given any specific suggestions for their answers and without any group discussion of the notes. This part of the test, the prewriting component, should take about 10–15 minutes to administer.

After approximately 15 minutes, say:

You may take more time to write your notes *or* you may begin to write your first draft on your scrap paper. (show) In writing your first draft, be sure to keep in mind the topic in the box at the top of page 2. You may want to use all or only some of the notes you made on pages 2 and 3. You also may think of some other ideas that you will want to include in your composition. You may use either a pen or pencil to write your first draft.

When you have finished your first draft, read carefully what you have written. Make any changes that will improve your first draft. Then write your final copy on the answer paper. (show) Use a pen to write your final copy. Draw a line through any mistake you may make when you are writing your final copy in ink. Make the correction and continue writing your final copy. You do not need to begin a new final copy. Read your final copy before you hand it in to make sure you have not made any copying mistakes. All this information about the steps you should take to prepare your composition is printed on page 3 of your test booklet. (show)

Do you have any questions about what you are to do?

If the question is asked, students should be told that they may or may not use a title for their composition as they so desire. After all questions concerning the directions have been answered, say:

Look at the topic in the box at the top of page 2 while I read it aloud again.

Read aloud the topic in the box at the top of page 2 of the test booklet again. Then say:

You do not have to count the number of words you have written. The number of words mentioned in the topic is *only* a suggestion. Your composition may have more than or fewer than 150 words.

You will be allowed about two hours for this part of the test. When you have finished writing your final copy on your answer paper, close your test booklet and place it on top of your answer paper and your scrap paper. You may now begin work.

If the test is administered in a regular classroom situation, students should remain quietly at their desks and be allowed to work on other assignments when they have finished their final copies. The test materials may be collected either as students complete their final copies or when most of the students have finished.

If the test is administered in a large-group situation, schools may prefer to allow students to hand in their test materials as they finish and then leave the room. If so, care should be taken that students leave the room as quietly as possible so as not to disturb those students who are still working on the test. All test materials (test booklets, essay answer paper, and scrap paper) should be collected from each student.

****

Part 2

When the students are ready to begin, say:

Today you will be taking Part 2 of the writing test. On your desk, you should have two kinds of paper: scrap paper and answer paper. (show) At the top of each sheet of your answer paper, write your name, today's date, the words *Part 2*, the name of the school, and your teacher's name. I have written a sample on the chalkboard for you. (show) You should use pen to write this information.

After the students have completed the headings on the essay answer paper, distribute the test booklets for Part 2, face up, one to each student, and say:

Please leave the test booklet face up on your desk. Do not open the booklet until I tell you to do so.

After each student has received a test booklet, say:

Look at the cover of your test booklet. Check to make sure that the words *Spring 1984* and *Part 2* are shown on the cover. (show)

Then in the spaces provided on the cover of your test booklet, write your name and today's date. (pause) Now read the section called "To the Student" to yourself while I read it aloud.

"To the Student

Today you will take Part 2 of the writing test. Take your time and work carefully. You will have about two hours, which should be enough time for you to prepare your story. You must hand in the test booklet and scrap paper along with the final copy of your story."

Now open your test booklet and read the directions and the topic at the top of page 2 to yourself while I read them aloud.

Read aloud the directions and the topic on the top of page 2 of the test booklet. Then say:

Now take one of the sheets of answer paper on your desk. Starting on a line near the top of the paper, copy the sentence that is underlined in the box. (show)

Read aloud the sentence that is underlined in the box containing the topic. After all students have finished copying this sentence onto their essay paper, say:

Now before you begin writing, you should take time to think about and plan your story. The section on pages 2 and 3 called NOTES will help you do this. (show) As I read this section aloud, I will give you time to write down your ideas. You do not need to use complete sentences for your notes; a word or a few words are usually enough. You may use either a pen or pencil to write these notes.

Read aloud each statement or question under NOTES on pages 2 and 3 of the test booklet. Pause after reading *each* statement or question until most of the students have finished writing. You may need to remind students to write their notes after you have read each statement or question. Students should make their own notes without being given any specific suggestions for their answers and without any group discussion of the notes. This part of the test should take about 10–15 minutes to administer.

After approximately 15 minutes, say:

You may take more time to write your notes *or* you may begin to write your first draft on your scrap paper. (show) In writing your first draft, be sure to keep in mind the topic in the box at the top of page 2. You may want to use all or only some of the notes you made on pages 2 and 3. You may also think of some other ideas that you want to include in your story. You may use either a pen or pencil to write your first draft.

When you have finished your first draft, read carefully what you have written. Make any changes that will improve your first draft. Then write your final copy on the answer paper. (show) Use a pen to write your final answer. Draw a line through any mistake you may make when you are writing your final copy in ink. Make the correction and continue writing your final copy. You do not need to begin a new final copy. Read your final copy before you hand it in to make sure you have not made any copying mistakes. All this information about the steps you should take to prepare your story is printed on page 3 of your test booklet. (show)

Do you have any questions about what you are to do?

If the question is asked, students should be told that they may or may not use a title for their story as they so desire. After all questions concerning the directions have been answered, say:

Look at the topic in the box at the top of page 2 while I read it aloud again.

Read aloud the topic in the box at the top of page 2 of the test booklet again. Then say:

You do not have to count the number of words you have written. The number of words mentioned in the topic is *only* a suggestion. Your story may have more than or fewer than 150 words.

You will be allowed about two hours for this part of the test. When you have finished writing

> your final copy on your answer paper, close your test booklet and place it on top of your answer paper and scrap paper. You may now begin work.

If the test is administered in a regular classroom situation, students should remain quietly at their desks and be allowed to work on other assignments when they have finished their final copies. The test materials may be collected either as students complete their final copies or when most of the students have finished.

If the test is administered in a large-group situation, schools may prefer to allow students to hand in their test materials as they finish and then leave the room. If so, care should be taken that students leave the room as quietly as possible so as not to disturb those students who are still working on the test. All test materials (test booklet, essay answer paper, and scrap paper) should be collected from each student.

Rating the Test

Rating Method

The reliability of the test score is a fundamental concern in the measurement of students' writing ability. The method of rating established for the Writing Test for New York State Elementary Schools has been designed to increase the reliability of the test scores as much as possible.

The rating method utilizes a cooperative holistic approach for the rating of large numbers of writing samples. The procedure is cooperative in that at least two raters are involved in rating each writing sample. The procedure is holistic in that the score assigned to each writing sample is arrived at quickly, usually on a first reading to obtain a general impression of the quality of the piece of writing. Rather than making separate judgments about content, organization, syntax, mechanics, etc., the rater is required to make a single judgment about the overall quality of the writing.

The holistic method of rating is based on the assumption that the whole is greater than the sum of the parts. In holistic scoring, the rater looks at a piece of writing as an indication of how well the writer has used the English language to accomplish a task, i.e., how well the writer has communicated. Three features are included in the holistic scoring approach:

1. a common writing assignment for all students
2. a common writing time for all students
3. the uniform application of a detailed rating guide by which all student responses are judged

For the Writing Test for New York State Elementary Schools, a four-point rating scale is used, with 4 being the upper limit of the scale. Specific criteria have been established for each of the four score levels and for a zero paper. The rater must clearly understand these criteria and keep them firmly in mind in order to make realistic and consistent judgments in the evaluation of the students' responses. Each student's response is to be judged solely on the basis of the established criteria and not in comparison with the other responses in the group being evaluated.

Evaluation of writing samples is not an entirely objective process. To increase the reliability of the scores, multiple scoring is necessary. The minimum requirement for the Writing Test for New York State Elementary Schools is that each of the two pieces written by a student must be rated independently by two teachers. The four scores obtained from these two independent ratings of each of the student's two responses are then summed to determine a student's test score. Any wide discrepancy between the two scores given a student's response must be resolved by obtaining a third independent rating of that response by another teacher.

Organizing the Rating and Recording Process

Before the answer papers can be read and rated, each school must set up a procedure for collecting, arranging, and processing the answer papers, and for maintaining records of the test results. The procedure used in a particular school should be designed to produce a reliable score for each student and to facilitate maintenance of the school's records of each student's score.

A suggested procedure for managing the mechanics of the rating process is described in Appendix I. A sample of a rating sheet for recording the scores is also included in Appendix I.

The rating should be completed as soon as possible after the test administration, but only after the teachers have been trained in the rating method. Each teacher who will be a rater should be provided with a rating guide, which contains a copy of the following section, "Detailed Directions for Rating the Answer Papers," and the chart entitled "Criteria for Rating Student Responses." The raters should meet for a group discussion of the writing tasks and the rating criteria prior to rating the answer papers. Selection of a set of student responses for use as a training exercise with the raters is also recommended.

Detailed Directions for Rating the Answer Papers

In rating the students' answer papers, follow the procedure outlined below:

1. Familiarize yourself with the system your school is using for processing the answer papers and recording the test scores.
2. Have a test booklet for Part 1 and for Part 2 on hand. Read both tasks carefully. Note exactly what is required. You may want to write your own response for each of the tasks.
3. Carefully review the criteria established for each of the four score levels of the rating scale and for a zero paper. These criteria are given on the chart entitled, "Criteria for Rating Student Responses" on page 8. Note that each of the four score levels represents a wide range of writing ability.
4. Meet with the other raters to discuss the tasks and the criteria. (It would be helpful to use a set of student responses as a training exercise in this meeting.) When you are sure that you clearly understand the tasks and the rating criteria, you are ready to begin to rate the students' answer papers.
5. For each part of the test that you rate, read each student's response quickly, keeping in mind the task and the criteria for each score level of the rating scale. *No more than two minutes should be needed to read a student's response.*
6. Decide what score level is appropriate: 4, 3, 2, 1, or 0.
7. Record the score in the appropriate place on a separate rating sheet. *Do not record the score on the student's answer paper.*

The reading and rating of the students' responses should be done quickly, once the task and the criteria established for the rating scale have been internalized. You should not spend time agonizing over a student's response. After reading and rating a number of responses, you will find it helpful to stop and review the criteria on the chart before continuing with the rating.

Resolving Discrepancies Between Scores

Because of differences in raters' judgments, the two scores given a student's response to a part of the test may not agree. A difference of only one point between the two scores does not require resolution. However, a difference of two or more points between the two scores is questionable and must be resolved. Also, if one of the two scores is a zero and the other is not, such a discrepancy must be resolved. As indicated in the rating criteria, a zero is not an indicator of quality; it is therefore impossible for a student's response to be given a zero by one rater and a qualitative score of 1–4 by the other rater. The minimum requirement for resolving these discrepancies between the scores is to obtain a third independent rating of the response by another rater. The method for using a third rating (and if necessary, a fourth rating) to resolve discrepant scores is described in Appendix I.

Wide discrepancies in the scores given the two parts of a student's answer paper do not require resolution. However, schools may wish to review those answer papers to determine possible reasons for the differences in the scores. Such information could be of help in developing an instructional program to improve the student's writing skills. Possible reasons for a wide discrepancy between the student's scores for the two parts of the test might include differences in the student's reactions toward the two writing tasks, a change in the student's attitude toward the test as a whole, student illness, a change in the testing situation or the rating situation, or a real difference in the student's writing ability on the two writing tasks.

Criteria for Rating Student Responses

Level 4	Level 3	Level 2	Level 1
Develops the assigned topic in an interesting and imaginative way			
Demonstrates a logical plan of organization and coherence in the development of ideas	Develops the assigned topic using an acceptable plan of organization	Attempts to develop the assigned topic but demonstrates weakness in organization and may include digressions	Minimally addresses the assigned topic but lacks a plan of organization
Develops ideas fully through the use of support material (examples, reasons, details, explanations, etc.) that is relevant and appropriate	Demonstrates satisfactory development of ideas through the use of adequate support material	Demonstrates weakness in the development of ideas with little use of support material	Does not use support material in the development of ideas or uses irrelevant material
Shows skillful use of sentence variety	Uses some sentence variety	Demonstrates sentence sense but has little sentence variety	Demonstrates a lack of sentence sense
Uses specific, vivid language	Uses appropriate language	Occasionally uses inappropriate or incorrect language	Frequently uses inappropriate or incorrect language
Makes few or no mechanical errors	Makes mechanical errors which do not interfere with communication	Makes mechanical errors which interfere with communication	Makes mechanical errors which seriously interfere with communication

Zero Paper

Is totally unrelated to the topic

or

Is illegible, i.e., includes so many indecipherable words that no sense can be made of the response

or

Is incoherent, i.e., words are legible but syntax is so garbled that no sense can be made of the response

or

Is a blank paper

The State Reference Point and Remediation Requirements

The *Regulations of the Commissioner of Education* require schools to provide appropriate remedial instruction to students obtaining scores below a certain point on any of the Pupil Evaluation Program tests. Accordingly, a State Reference Point (SRP) of 8 has been established for the Writing Test for New York State Elementary Schools used in the Pupil Evaluation Program.

To aid schools in planning instruction, four groups have been described in relation to the State Reference Point. Table 1 lists the four groups according to the score on the Writing Test for New York State Elementary Schools and indicates the recommended action that should be taken with respect to each group.

The *Regulations of the Commissioner of Education* also require that the parent or guardian of the student be notified in writing, by the principal, of the test results and the plan for remedial instruction. As a minimum, information similar to that which appears in letter A in Appendix II must be given to the parents or guardians of students with total scores of 5, 6, or 7. For those students whose total scores are 4 or below, information similar to that which appears in letter B in Appendix II should be provided. The remedial instruction provided as a result of a student's performance on the test should begin no later than the semester following the test administration.

Required Records

Schools are required to maintain individual records for students requiring special assistance, that is, those students scoring below the State Reference Point. These records should indicate the assistance provided over a specified time and should document progress in the ability to write. It is prudent to keep on file copies of all correspondence sent to each student's parents or guardians.

TABLE 1

Recommendations for Remediation Based on the Writing Test for New York State Elementary Schools Grade 5

Total Score	Comment	Recommendation
14–16	Well above the State Reference Point	Increase sophistication of writing tasks in regular instructional program. Assign writing tasks that challenge the student's ability and encourage the student to become an independent writer.
8–13	At or above the State Reference Point	Emphasize writing and increase demands of writing tasks in the regular instructional program.
5–7	Below the State Reference Point	Provide remediation within the regular instructional program.
0, 2–4	Far below the State Reference Point	Provide intense individualized or small-group remediation within the regular instructional program.

Recommendations: Students Scoring Below the State Reference Point

For purposes of planning appropriate instructional programs, students whose total scores on the Writing Test for New York State Elementary Schools are below 8, the State Reference Point, may be divided into two groups.

1. **Students whose total scores are 5, 6, or 7.** Students in this group, if given consistent remedial instruction in writing within their regular instructional program, will probably develop adequate writing skills after a period of several years. Different strategies which can be used for these students include (1) using students' own pieces of writing as a basis for instruction rather than assigning only mass drill in unrelated materials, (2) grouping students within the classroom according to their needs, (3) using individual instruction and differentiated assignments, (4) using interviewing techniques with students, (5) encouraging peer discussion about their pieces of writing, and (6) providing time for prewriting activities including group discussion and practice in editing and revising. Such strategies assume that class sizes are manageable, curriculum materials are appropriate, and in-service training is available. This training should focus on knowledge about the composing process, strategies for teaching the process, diagnosis of writing samples, and techniques for remediation.

2. **Students whose total scores are 4 or below.** Students in this group will need intensive assistance typical of remediation on a very small group or individualized basis. This remediation should take place within the regular instructional program as much as possible, since it is important for these students to continue to feel part of the community of writers within their classroom. These students need instruction in all phases of the composing process, but attention should be concentrated on the prewriting stage. It is in this stage that students gain verbal power, learn to observe and describe, and develop a positive attitude toward themselves and their work. It is only after this important part of the composing process begins to take hold that such students can begin to improve the product phase of the process.

Recommendations: Students Scoring Above the State Reference Point

Although no special remedial instruction is required for students whose scores are at or above the State Reference Point, attention should be given in the regular instructional program to the development of the writing ability of these students also. For this purpose, grade 5 students whose total score is 8 or above may be divided into the following two groups:

1. **Students whose total scores are 8 through 13.** Special attention should be given to these students to assure continued development and retention of their writing skills. Many of the strategies indicated for students whose total scores are 5, 6, or 7 are also appropriate for this group of students.

2. **Students whose total scores are 14 or above.** These students should be given ample opportunity to write in various discourse modes within the regular instructional program, in keeping with the goal of improving and refining the writing abilities of all students. In the assignment of writing tasks, emphasis should be placed on the purpose for the piece of writing and the audience for whom it is intended. Attention should also be given to the organization of the piece of writing and to the effective use of pertinent reasons, details, explanations and examples to support generalizations and/or conclusions. These students should be encouraged to become independent writers.

Suggested Rating Procedure

The following procedure is recommended for managing the mechanics of the rating process:

1. Designate one person as the coordinator of the rating process.
2. Set aside one room as a central rating room for collecting, sorting, circulating, and storing answer papers and for preparing and maintaining records.
3. Provide a suitable location for the rating of the answer papers.
4. Provide adequate time for rating during the school day, preferably not after 3:00 p.m. when rater fatigue could become a factor.
5. Allow time to provide training in the holistic method of scoring for all raters immediately before the rating of the students' responses. If possible, select at random 10-15 student responses for each part of the test and duplicate these responses for use as a "warm-up" exercise with the raters, for discussion of the criteria and the parts of the test they are to evaluate. Allow enough time for raters to internalize the rating scale.
6. Divide the raters into two-person teams. Designate one team member as Rater 1 and the other as Rater 2. Each team should rate both parts of the test for the same students.
7. After both parts of the test have been administered, separate the answer papers into two groups, one with the students' responses for Part 1 and the other with the students' responses for Part 2.
8. Arrange the answer papers in each group according to a sequence, using whatever order is most convenient, e.g., classroom, alphabetical, or local identification number order. Be sure the same sequence is used for each group of answer papers. Beginning with the first paper in the sequence, enter each student's name on a Class Record Sheet provided by the Department.
9. Divide each group of answer papers into bundles of 25-30 papers each. Make sure that for each bundle of Part 1 responses there is a corresponding bundle of Part 2 responses for the same students.
10. Prepare two rating sheets for each bundle (see sample rating sheet on page 15). After recording the students' names on a rating sheet, make three photocopies of the rating sheet and designate a copy for each rater and each part of the test: e.g., Part 1, Rater 1; Part 1, Rater 2; Part 2, Rater 1; and Part 2, Rater 2. Each team of two raters will need separate rating sheets for each bundle of answer papers they rate.
11. Distribute the bundles of answer papers to the rating teams, making sure that each rating team receives the corresponding bundles of Part 1 and Part 2 responses for the same students. (If the answer papers are kept in classroom bundles, care must be taken that teachers do not rate their own students' answer papers.) Each rater on a team should rate one of the bundles. Then, the two raters should exchange bundles so that each rates both Part 1 and Part 2 for the same students.
12. Have the raters record the scores on the appropriate rating sheet. *No scores or corrections should be indicated on the answer papers.* (When rating the students' responses, the raters should follow the "Detailed Directions for Rating the Answer Papers" given in the separate rating guide and on page 7 of this manual.)
13. After each team has completed rating both parts of the test for the same students, have the team return the two bundles of answer papers for those students to the central rating room. Remove the rating sheets completed by each rater from the bundles and then post the scores on the Class Record Sheet. Make sure there are two independent ratings for each of the student's two responses.
14. Review the four scores for each student to determine if the student's scores for one or both parts of the test are discrepant, i.e., a difference of two or more points between the two scores for a part or a zero paired with any score that is not a zero. Separate the students' responses with discrepant scores into two bundles, one for the Part 1 responses and the other for the Part 2 responses. Prepare a separate rating sheet for the Part 1 responses with discrepant scores and for the Part 2 responses with discrepant scores. List the names of the students on the appropriate rating sheet(s) and attach each rating sheet to the corresponding bundle of student responses. Assign each of these bundles to a rater to obtain a third independent rating of the students' responses. Make sure that the third rater is not one of the original two raters of a student's response.
15. After all the necessary third ratings have been obtained, remove the rating sheets from the bundles of student responses and determine the resolved scores by using the method for resolving discrepant scores described on page 13. Post the resolved scores in the appropriate columns on the Class Record Sheet. Then sum the appropriate four scores for each student to arrive at a total score and enter the total score in the Total Score column on the Class Record Sheet. (See examples of entries on the Class Record Sheet on page 14).

Method for Using Third Rating to Resolve Discrepant Scores

Steps:

a. Compare the three ratings.

b. If two of the three scores agree, drop the discrepant score.

c. If two of the scores are contiguous, drop the most discrepant score.

d. If the third rating is the middle score, double the third rating and drop the two divergent scores.

Examples:

Rater 1	Rater 2	Rater 3	Resolved scores for response	Reason
1	3	If 1, then	1–1	Agreement (2 of the 3 scores agree, discrepant score dropped)
		If 2, then	2–2	Middle score doubled (score between divergent scores dropped)
		If 3, then	3–3	Agreement (2 of the 3 scores agree, discrepant score dropped)
		If 4, then	3–4	Contiguous (2 closest scores used, most discrepant score dropped)
1	4	If 1, then	1–1	Agreement
		If 2, then	1–2	Contiguous
		If 3, then	3–4	Contiguous
		If 4, then	4–4	Agreement
0	1	If 0, then	0–0	Agreement
		If 1, then	1–1	Agreement (drop zero)
		If 2, then	1–2	Contiguous (drop zero)
		If 3 or 4, then to fourth rater		

If the fourth rating is 1–4, drop the zero and follow the steps in the chart above. If the fourth rating is a zero, at least two of the raters, one who gave it a zero and one who gave it a score of 1–4, should review the criteria for the zero paper and reach consensus as to whether or not the response fits any of those criteria. Then proceed using the chart above, if necessary.

Below are examples of how students scores should be recorded on the Class Record Sheet.

Examples of Entries on the Class Record Sheet

Pupil Name	Part 1 Scores		Part 1 Resolved Scores (if necessary)	Part 2 Scores		Part 2 Resolved Scores (if necessary)	Total Score (Sum of Part 1 and Part 2 Scores)
	Rater 1	Rater 2		Rater 1	Rater 2		
1. *Student A*	1	3	2-2	2	2	X	8
2. *Student B*	0	1	1-1	1	4	1-2	5
3.							
4							

Student A: The original two scores for Part 1 were discrepant. The score for the third rating was a 2. Therefore, the resolved scores for Part 1 are 2–2 (middle score doubled). The total score is obtained by adding the two scores in the Part 1 Resolved Scores column and the scores in the Part 2 Rater 1 and Rater 2 columns: 2 + 2 + 2 + 2 = 8.

Student B: One of the original two scores for Part 1 was a zero. The score for the third rating was a 1. Therefore, the resolved scores for Part 1 are 1–1 (agreement). The original two scores for Part 2 were discrepant. The score for the third rating was a 2. Therefore, the resolved scores for Part 2 are 1–2 (contiguous). The total score is obtained by adding the two scores in the Part 1 Resolved Scores column and the two scores in the Part 2 Resolved Scores column: 1 + 1 + 1 + 2 = 5.

Below are examples of how students scores should be recorded on the Class Record Sheet.

Examples of Entries on the Class Record Sheet

Pupil Name	Part 1 Scores		Part 1 Resolved Scores (if necessary)	Part 2 Scores		Part 2 Resolved Scores (if necessary)	Total Score (Sum of Part 1 and Part 2 Scores)
	Rater 1	Rater 2		Rater 1	Rater 2		
1. *Student A*	1	3	2-2	2	2	X	8
2. *Student B*	0	1	1-1	1	4	1-2	5
3.							
4							

Student A: The original two scores for Part 1 were discrepant. The score for the third rating was a 2. Therefore, the resolved scores for Part 1 are 2–2 (middle score doubled). The total score is obtained by adding the two scores in the Part 1 Resolved Scores column and the scores in the Part 2 Rater 1 and Rater 2 columns: 2 + 2 + 2 + 2 = 8.

Student B: One of the original two scores for Part 1 was a zero. The score for the third rating was a 1. Therefore, the resolved scores for Part 1 are 1–1 (agreement). The original two scores for Part 2 were discrepant. The score for the third rating was a 2. Therefore, the resolved scores for Part 2 are 1–2 (contiguous). The total score is obtained by adding the two scores in the Part 1 Resolved Scores column and the two scores in the Part 2 Resolved Scores column: 1 + 1 + 1 + 2 = 5.

NEW YORK STATE PRELIMINARY COMPETENCY TEST IN

WRITING

FORMS A and B

Directions for Administering and Scoring

DET 371 (9-80-25,000)
80-7297

Contents

DESCRIPTION OF THE TEST

Purpose of the Test

The New York State Preliminary Competency Test in Writing is designed to measure a student's ability to communicate effectively in writing. Scores obtained on the test can be used to (1) evaluate students' current level of achievement in writing; (2) indicate the extent of remedial help, if any, that a student may need in order to achieve success on the Regents competency test in writing; and (3) provide a basis for the termination of remediation.

Required Use

The preliminary competency test in writing must be administered to students in grades 8 or 9. However, students who meet any one of the criteria listed below may be exempted from taking the test:

- obtained a score of 35 or above on the New York State Test in Reading, Beginning Grade 6, Form C. (This is the Pupil Evaluation Program reading test administered to grade 6 students through the fall of 1978.)
- obtained a score of 73 or above on Form A1 or a score of 49 or above on Form A2 of the Reading Test for New York State Elementary Schools. (This is the Pupil Evaluation Program reading test administered to grade 6 students beginning in the fall of 1979.)
- obtained a score at or above the nationwide median (50th percentile) on a nationally standardized test in reading administered to them in grades 8 or 9.

Schools must record on each student's permanent record the names of the tests administered, the dates of administration, and the scores obtained. In addition, schools will be asked to report preliminary competency test results to the Department.

General Features of the Test

The preliminary competency test in writing is a direct measure of students' writing ability. Each form of the test consists of three separate writing tasks: a business letter, a report based on information given, and a piece of persuasive discourse (composition). These writing tasks require persuasion and explanation, each identified as distinctly different major discourse types. Although the letter is not a true discourse type, it is a common kind of explanatory writing which can also contain persuasive elements.

Each of the three tasks requires a relatively brief piece of writing, about 100-200 words. The topic for each task is presented in a context that is related to the experiences of students and clearly indicates the purpose of the piece of writing and the audience for whom it is intended. These are the essential elements in any writing task. For each task, the students are directed to prepare first drafts and then to edit and revise the drafts before producing their final answers. Students, thus, are given the opportunity to follow the process of planning, drafting, and revising normally used in preparing a piece of writing.

A unique feature of the preliminary competency test in writing is the rating method. Using the holistic method of scoring, or scoring for total effect, the rater judges the level of writing shown by the student's answer in comparison to the level of performance evidenced by a set of exemplary model answers provided for that task.

General Procedures

In terms of test security and administration procedures, the preliminary competency test is similar to commercially published standardized tests and the tests used in the New York State Pupil Evaluation Program. The test booklets are reusable and the test may be administered at the school's convenience. It is recommended that the preliminary competency test be given as early in the school year as possible so that identification and remediation of deficiencies may begin at the earliest possible time.

The Test Materials

The test materials provided by the Department for the preliminary competency test in writing include: (1) two forms (A and B) of the test, (2) a set of model answers for each form for use in the rating process, and (3) directions for administering and scoring.

The test materials to be provided by the schools include the essay answer paper and scrap paper. Each student will need at least 3 sheets of essay answer paper and 3 sheets of scrap paper. The scrap paper should be readily distinguishable from the essay answer paper.

Special Considerations for Assuring Optimal Student Performance

If the test results are to provide an accurate measure of each student's writing ability, the directions for administering the test should be followed carefully. The person administering the test should review the directions beforehand and become thoroughly familiar with them.

The tasks on the preliminary competency test in writing will vary in difficulty for different students. Since the purpose of the test is to obtain an accurate estimate of a student's writing ability, it is essential that the students approach the test in such a manner as to assure optimal performance. It is not necessary, therefore, that the students work on the three writing tasks in the same order as they are presented in the test booklet. Students should be allowed to prepare their answers to the tasks in whichever order seems most comfortable for them. Students should also be given special guidance in following the directions to prepare first drafts on scrap paper, and then to edit and to revise the drafts before writing their final responses on the essay answer paper.

Of course, students should be given no help in understanding the test questions. They should be advised to prepare their responses using their own best judgment.

However, the proctor should give students all the assistance required in the mechanics of taking the test, such as filling out the heading of their essay answer papers.

Test Administration Time

The preliminary competency test in writing is untimed, and students are to be given as much time as they need to prepare their responses. As a general rule, most students will need about 3 hours of working time to complete the test, approximately 1 hour for each writing task. Some students, however, may need more working time for the test, and schools should make provisions to accommodate such students. All students will probably need a minimum of 2 hours of working time to complete the test in order to have sufficient time to prepare first drafts of the answers on scrap paper and then to edit and to revise the drafts before writing their final responses.

The simplest procedure would be to administer the test in a single 3-hour session. The directions in the test booklet and the detailed directions for administering the test in this publication are designed for such a test administration. Where conditions make this procedure impracticable, the test can be administered either in two separate sessions (2 hours for two of the writing tasks and 1 hour for the remaining task) or in three separate 1-hour sessions. In no case, of course, should one of the writing tasks be started at one session and completed at another session. If the test is administered in more than one session, schools must be sure that each student takes all three parts and that some system is established to insure that the three parts of a student's test paper are kept together.

Preparations for Testing

Although special arrangements may be needed for administering the test to large groups of students, these arrangements should interfere as little as possible with the normal school routine. A number of points should be taken into consideration when making arrangements for the testing session.

1. Selecting the Testing Room. If a room other than the regular classroom is to be used, attention should be given to lighting, ventilation, and the absence of noise and other distractions. There should be a chalkboard in the room.
2. Scheduling the Test. The test should be scheduled, if possible, on Tuesday, Wednesday, or Thursday. The test should not be scheduled immediately after a period of strenuous physical exercise.
3. Orientation of Students. Any announcements informing students about the test before the test administration should be made in such a way

as to increase the students' interest in the test but not to cause them to become overly anxious and tense. They should be told that no special preparation is necessary and that the test measures writing skills which they use every day in and out of school.

4. Assembling the Test Materials. The materials should be assembled at least 1 day before the test administration. The following materials are needed for this test:

For each student:

- test booklet
- essay answer paper (at least 3 sheets of paper or a four-page booklet)
- scrap paper (3 sheets of paper different from the essay answer paper)
- pen (pencil may be used for first drafts)

For the proctor:

- detailed directions for administering the test (pages 5-7 in this publication)
- test booklet (for demonstration purposes)
- essay answer paper and scrap paper (for demonstration purposes)
- extra essay answer paper, scrap paper, pens, and pencils

Detailed Directions for Administering the Test

These detailed directions apply to both forms of the test. They are designed for use when the entire test is administered in a single 3-hour session. If the test is administered in more than one session, the directions should be modified accordingly.

Before the test session begins, a sample essay answer paper heading should be written on the chalkboard. This heading should include the student's name, the testing date, the test form, the school name, and the English teacher's name.

Make sure that sufficient quantities of all test materials are at hand. Each student should have a pen for writing the final answers. (Pencils may be used for writing first drafts.) After the desks are cleared of books and papers, distribute the essay answer paper and the scrap paper. When the students are ready to begin the test, say:

> The test you are going to take today is a writing test. It is not a timed test. You will be given as much time as you need.
>
> On your desk, you should have two kinds of paper: scrap paper (show) and essay answer paper (show). At the top of

each sheet of your essay answer paper, write your name, today's date, the word Form, the name of the school, and your English teacher's name. I have written a sample on the chalkboard for you (show).

After the students have completed the headings on the essay answer paper, distribute the test booklets, face up, one to each student and say:

Please leave the test booklet face up on your desk. Do not open the booklet until I tell you to do so.

After each student has received a test booklet, say:

Look at the cover of your test booklet. The form of the test you will be taking is shown by the letter ___ on the cover. Write this letter after the word Form at the top of each sheet of your essay answer paper. (Pause) Now read the section called "To the Student" on the cover of your test booklet to yourself while I read it aloud.

"To the Student .

This is a test to find out how well you write. The test has three parts: a letter, a report, and a composition. In preparing your answer for <u>each</u> part, you must take the following steps:

1. Read <u>all</u> the information.
2. Carefully plan your answer before you write.
3. Write your answer on scrap paper first.
4. Carefully read what you have written.
5. Make any changes that will improve your answer.
6. Check your paragraphing, sentence structure, spelling, punctuation, capitalization, and usage and make any necessary corrections.
7. Write your final answer on the essay answer paper given to you by the teacher.

You will be given as much time as you need to answer the three parts. You may answer the three parts in whichever order you choose. Work carefully. Double check everything you have written on your final copy. You must hand in the scrap paper along with your final answer paper for each part of the test."

Are there any questions about what you are to do?

After all questions concerning the directions have been answered, say:

> Remember to write your first answer for each part on scrap paper. You may use a pencil for this, but you must use a pen to write your final answer on the essay answer paper. You may answer the three parts in whichever order you choose, but be sure to answer all three parts.
>
> You will be allowed as much time as you need to finish the test. When you have finished, close your test booklet and place it on top of your essay answer paper and your scrap paper.
>
> Do you have any questions?

After any questions have been answered, say:

> Now turn the page and begin work.

If the test is administered in a regular classroom situation, students should remain quietly at their desks and be allowed to work on other assignments when they finish their tests. The proctor may collect the test materials either as students complete the test or when most of the students have finished.

If the test is administered in a large group situation, schools may prefer to allow students to hand in their test materials as they finish and then leave the room. If so, care should be taken that students leave the room as quietly as possible so as not to disturb the students who are still working on the test.

In either situation, when the test materials are collected, the proctor should check to make sure that the student has answered all three parts of the test. All test materials (test booklet, essay answer paper, and scrap paper) should be collected from each student.

RATING THE TEST

Organizing the Rating and Recording Process

Before the answer papers can be read and rated, each school must set up a procedure for collecting, arranging, and processing the answer papers and for maintaining records of the test results. The procedure used in a particular school should be designed to accomplish the following: (1) produce a reliable score for each student, (2) facilitate maintenance of the school's records of each student's score, and (3) identify those students who are likely to need special help in order to pass the Regents competency test in writing. A suggested procedure for managing the mechanics of the rating process is described in Appendix I. A sample format of a rating sheet for recording scores on the parts of the test and an example of a form for summarizing the scores obtained by a group of students are included in Appendix II and Appendix III respectively.

The rating should be completed as soon as possible after the test administration, but only after teachers have had sufficient time to become familiar with the rating method, which is described in the following section: "Detailed Directions for Rating the Answer Papers." Each rater should be provided with a copy of this section.

The student's score on the preliminary competency test in writing is the average of the percentage scores given for the student's answers to each of the three parts of the test. A State Reference Point (SRP) has been established for the preliminary competency test in writing. This State Reference Point is a test score of 65% based upon a comparison of the student's performance on the three writing tasks in the test with the performance shown by the exemplary model answers. Schools are required to provide students who score below this State Reference Point with specially designed programs addressed to their needs.

Detailed Directions for Rating the Answer Papers

In rating the students' answer papers, you should follow the procedure outlined below.

1. Familiarize yourself with the system your school is using for processing the answer papers and recording the test scores.
2. Have a test booklet on hand. Read carefully the question you will be rating. Note exactly what is required in the answer, and then write your own answer to the question.

3. Read carefully the exemplary model answers for the question you will be rating. In the set of model answers provided for each form of the test, there are three models for the business letter (Part I), three models for the report (Part II), and four models for the composition (Part III).
4. Discuss with other raters those characteristics which make these models exemplary. For each model answer, make a list of these characteristics. If you are the only person responsible for rating the answers for a particular part of the test, you should make a list of these characteristics after you have written your answer to the question and examined the model answers.

   A list of the characteristics of an exemplary model is likely to include the following:

   a. Has an accurate perception of the writing task
   b. Has a consistent point of view
   c. Has a consistent temporal point of view (past, present)
   d. Demonstrates a sense of audience
   e. Demonstrates a general plan of organization or logical sequencing
   f. Demonstrates coherence in paragraphs and smaller units
   g. Uses appropriate transition
   h. Includes the appropriate level of generalization and excludes irrelevant details
   i. Has no problems with syntax, vocabulary, and mechanics
   j. Is error free

   Two additional characteristics for the business letter would be:

   k. Follows an acceptable business letter form
   l. Provides enough information so that the order may be filled

   Other characteristics can be added to the above list depending on the particular question and the given models.
5. Carefully note the differences among the model answers, keeping in mind that each model answer represents 100%. After completing these steps, you are ready to begin to rate the students' answer papers.
6. Read each student's answer quickly, keeping in mind the exemplary models for that question and their characteristics.

   <u>No more than two minutes should be needed to read a student's answer.</u>
7. Decide what percent of an exemplary model the student's answer represents. Is it 100%? 90%? 80%? 75%? 65%? 50%? 40%?, etc.
8. Record the percentage score in the appropriate place on a separate rating sheet. <u>Do not record the score on the student's answer paper.</u>

The reading and rating of the papers should be done quickly once the models have been examined, discussed, and their characteristics noted. You should not spend time agonizing over a paper, but rather read it quickly and assign a percentage score. You should, of course, continually refer to the model answers and the lists of their characteristics. After reading and rating a certain number of papers, you will find it helpful to stop and review the exemplary models and their characteristics before continuing with the rating.

APPENDIX I

SUGGESTED RATING PROCEDURE

The following procedure is recommended for managing the mechanics of the rating process.

1. Designate one person as the coordinator for the rating process.
2. Set aside one room as a central rating room for collecting, sorting, circulating, and storing answer papers and for preparing and maintaining records.
3. After the test is administered, have the proctors arrange the answer papers (including scrap paper) in alphabetical order and deliver the bundles to the central rating room. (If answers are written on loose sheets of paper, the sheets should be stapled together to form a packet for each student.) The printed test booklets are reusable, if in good condition, and should be counted and stored in a secure location.
4. Compile all the answer papers into one, schoolwide, alphabetical sequence. Beginning with the first paper in the sequence, enter each student's name on a summary sheet (see sample on page 14).
5. Keeping the papers in alphabetical order, separate them into bundles for distribution to the raters. Each of the three parts of the test must be rated by a different teacher. Therefore, to help expedite the rating process, each bundle should contain 1/3 or the total number of papers a teacher will be expected to rate. (For example, if a teacher will be rating 114 papers, each bundle should contain 38 papers.)
6. Prepare three rating sheets for each bundle (see sample on page 13). One rating sheet should be designated for Part I, one for Part II, and the other for Part III. The students' names for the answer papers in that bundle should be entered on each rating sheet. Attach the three rating sheets on the top of the bundle.
7. Distribute the bundles of answer papers to the teachers who will be rating them first. Each teacher will be responsible for rating a designated number of papers, and will rate only one part of the test. Thus, three teachers will share in the rating of each student's test paper, each teacher scoring a different part. As much as possible, avoid giving a teacher bundles of answer papers written mostly by students from that teacher's own classes.
8. Have the teacher record the scores on the appropriate rating sheet. No scores or corrections should be indicated on the answer papers. (When

rating the answer papers, the teachers should follow the "Detailed Directions for Rating the Answer Papers" given on page 8.)

9. Have the teacher return each bundle of answer papers to the central rating room as soon as the teacher has finished rating one of the parts of the test. The rating coordinator should detach from the bundle the rating sheet completed by the teacher and have those scores posted on the summary sheet. The bundle should then be forwarded to another teacher for the rating of another part. This process should be repeated until all three parts of each answer paper have been rated.
10. After all the answer papers have been rated and the data from all the rating sheets have been posted on the summary sheet, calculate the test score (the average of the scores on the three parts of the test) for each student and enter it on the summary sheet.
11. Place a check-mark on the summary sheet before the name of each student whose test score is less than 65%. These students will require special help in improving their writing if they are to be successful on the Regents competency test in writing in grade 11 or grade 12. Any wide discrepancies in the part scores for a student should also be noted. The answer papers for these students may need additional ratings before a final test score is determined.

APPENDIX C

PRELIMINARY SCORING SYSTEM

I. Planning and organizing

Y N A. Student takes a period of time for planning before beginning to write.

Y N B. Student uses scrap paper to make notes or outline.

Y N C. Student titles essay spontaneously.

II. Self-Evaluation

Y N A. Student stops writing to read sections already written.

Y N B. Student reads essay over when finished.

Y N C. Student makes changes or corrections.

III. Goal and Procedure Setting

Y N A. Student writes an opening sentence related to the topic.

Y N B. Student looks up at the clock to relate behavior to time constraints.

IV. Information Seeking

Y N A. Student uses dictionary.

Y N B. Student asks examiner questions.

Y N C. Student looks at model essays.

V. Environmental Structuring

Y N A. Student shuts television

Y N B. Student makes any other environmental adjustment (lighting, seating, etc.)

APPENDIX D

FINAL SCORING SYSTEM

Student number: Tape begins: Tape ends:

ENVIRONMENTAL SELF-CONTROL

Y N 1. Brings a writing instrument.

Y N 2. Adjusts the television. (How?)

Y N 3. Makes any other environmental change. (What?)

COGNITIVE SELF-CONTROL

Y N 4. Takes a period of time to plan first. (Doing what?)

Y N 5. Makes notes or outline on scrap paper.

Y N 6. Titles essay spontaneously.

Y N 7. Writes direction-setting opening sentence.

Y N 8. Uses the dictionary. (For what?)

Y N 9. Uses the resource book.

Y N 10. Examines model essays.

Y N 11. Asks examiner questions: LIST:

RESPONSE SELF-CONTROL

Y N 12. Stops to read sections of work done.

Y N 13. Reads essay over when finished

Y N 14. Makes changes or corrections:
Mechanical Substantive

Y N 15. Checks the clock for time constraints

Q: What does "colleague" mean?

Q: Why did you...(look up word? read model essay?)

APPENDIX E

STUDENT QUESTIONNAIRE

STUDENT'S NAME:

SCHOOL:

1. Do you jog? If yes:
   a) How often? b) How far?

2. What is the distance of a marathon race?

3. About how long do the winners of marathon races take to run the race?

4. Where is the most famous marathon held in the U. S.?

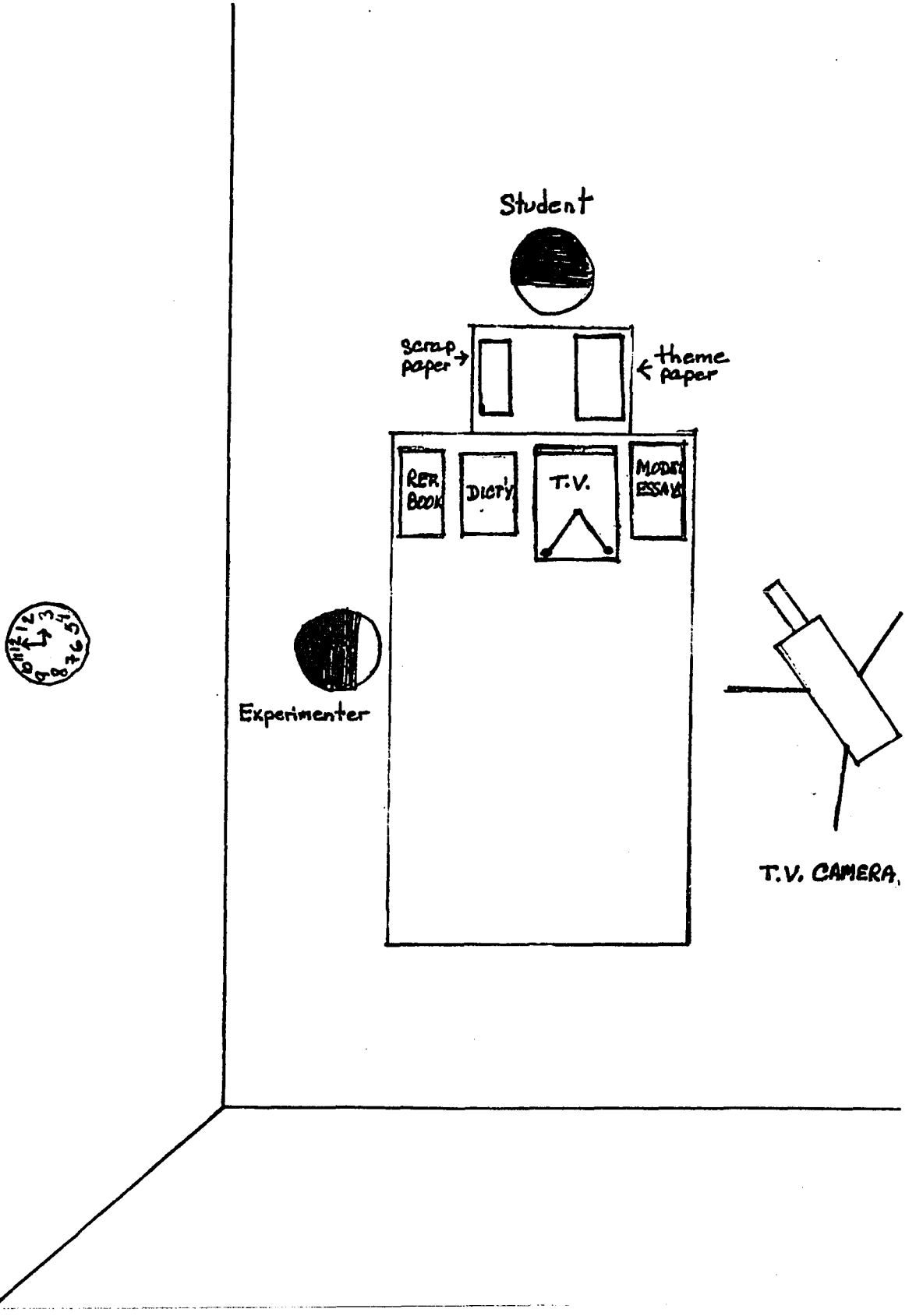
5. Where do the runners do their running in marathon races?

6. What kinds of equipment do runners need?

7. What kinds of health problems do runners have?

APPENDIX F

PHYSICAL ARRANGEMENT OF EXPERIMENTAL MATERIALS



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