The relationship between instruction of metacognitive strategies and student achievement.

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University of Windsor

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UMI
The Relationship Between Instruction of
Metacognitive Strategies
and Student Achievement

by
Patricia Breamon Oshar

A Thesis

Submitted to the Faculty of Graduate Studies and Research
through the
Faculty of Education in Partial Fulfilment
of the Requirements for the Master of Education Degree
at the University of Windsor

Windsor, Ontario, Canada
November, 1997
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0-612-52475-2
Abstract

The differences in the effectiveness of passive instruction and active instruction of study skills and time management were investigated. Students responded to two surveys on five-point Likert-type scales prior to and twice following the treatments. Marks were also gathered and analyzed. The results found that females scored significantly higher on all time management and study orientation sub-scales than did males. Work method and teacher approval mean scores for males in the two treatment groups improved from pretest to post-test #2. Grade 8 marks of students in the treatment groups receiving active and passive instruction did not improve significantly more than those of the students in the control group. The findings suggest more research is necessary before including formal instruction of metacognitive strategies in the Grade 8 curriculum.
I extend thanks to Dr. Larry Morton for his supervision and guidance throughout this endeavour. I also thank the teachers and students of the Essex County Board of Education who participated in this research. I am especially grateful to the staff at Belle River Public School for their ongoing support and encouragement and especially the Intermediate Division of 1995 for their contributions to the lesson plans used in this research. I thank Dr. Ian Crawford and Dr. Shelagh Towson for their contributions to this project. I also thank Delta Gamma Kappa Sorority for their research grant. Finally, I am indebted to my parents, Elizabeth and Jack Breaton, my husband, Paul and my children, Amanda and Matthew, for their endless reassurance, cooperation and patience as I continue to pursue my professional goals. This thesis is dedicated to my father, Jack Breaton, who has dedicated his life to education in Essex County and has taught me that "If I can conceive it and believe it, I can achieve it."
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Introduction

Students at the Grade 8 level and their parents frequently put considerable weight on the marks that appear on tests, assignments and report cards. Marks measure achievement; however, achievement is not necessarily a reflection of aptitude. Many variables such as effort, organization, time management, and attitudes interact with aptitude to determine marks. Some students are capable of more than their marks reflect.

Incomplete or late assignments have detrimental effects on some student marks at the Grade 8 level. This could be a result of lack of effort or poor time management skills. Time is a limited resource. Productive use of time helps guarantee success in school and carries over into other aspects of life. Effective time management is believed by many educators to be one of the most important elements in improved classroom learning.

Many students display ineffective time management strategies. They waste time, procrastinate, tackle large assignments head-on rather than breaking them into smaller sub-tasks and rely on their memory as a daily list of things to be done. They rarely set goals, develop weekly schedules, write daily task lists, set personal deadlines for sub-tasks
of large assignments, or maintain a calendar of important dates and deadlines. These students do not feel that they are in control of their time, and they experience stress as a result.

Tests can be another major stressor for students. Many factors determine the degree of success a student will experience on a test. An incomplete, poorly organized notebook does not provide the student with a solid record for study purposes. The result is that students spend considerable time completing and organizing their notebook at test time rather than studying. Many students study by rote rehearsal, which research indicates is an ineffective method for learning large quantities of information (e.g., Curley, Estrin, Thomas, & Rohwer, 1987). Students tend to study using the same approach over and over again even if it does not bring them desirable results. They rarely consider their learning style or employ strategies such as linking, mnemonics, and acronyms.

Some students suffer from test anxiety that could be a result of insufficient preparation or of poor test-taking strategies. Few Grade 8 students read over a test paper before beginning to answer the questions. Questions are usually answered in numerical sequence rather than from
easiest to most difficult. Ineffective study habits and poor
test-taking skills can have a detrimental effect on marks
and on the learning process.

Many teachers agree that effective goal setting, time
management, study and test-taking habits are essential tools
for success. Traditionally, very few Grade 9 teachers
actually provide formal instruction to students in these
skills. Some educators feel that such skills are a natural
result of maturation and schooling.

The literature related to this study falls into two
basic categories. Much anecdotal research has been reported
describing various tools for effective organization and
metacognition. Other research, more scientific in nature,
provides empirical evidence supporting the relationship
between the use of effective organizational and
metacognitive strategies and achievement. However, few
studies examine the effects of formal instruction of these
strategies on student achievement.

In the following section, empirical studies dealing
with time management, goal-setting, study strategies and
test-wiseness will be discussed with regard to their
relevance to the formal instruction of metacognitive
strategies/academic achievement relationship. Many of these
components have been incorporated in studies of self-regulated learning (SRL) (Lindner & Harris, 1992; McCombs, 1986; Zimmerman & Pons, 1986); however, they are studied in conjunction with other components such as self-evaluating, self-directing, and self-reinforcing. These studies do not provide solid evidence to support or refute the relationship of any one component of SRL independently, and therefore do not provide empirical evidence relevant to this study.

Macan, Shahani, Dipboye and Phillips (1990) investigated the relationship between self-reported time management behaviours of college students and their performance as reflected by their grade point average. It was hypothesized that a positive relationship would exist between self-reported time management behaviours of students and their performance, as well as between time management behaviours and reported satisfaction with work and life. A negative relationship between time management behaviours and stress was also predicted.

The subjects consisted of 288 university students. Two hundred and thirteen of the students were undergraduates who participated in the study for extra course credit; 51 were Masters of Business Administration students who completed the survey as part of an in-class demonstration,
and 24 were full-time teachers taking summer-school courses in the Department of Education at a large state university. The mean age for the subject sample was 24.77, with a range of 16 to 44 years. The majority of the subjects were White, single and female.

The Time Management Behaviour Scale (TMBS) consists of 76 items, each rated on a five-point Likert-type scale ranging from seldom true to very often true. Behaviours such as breaking down tasks, reviewing goals, setting deadlines, organizing paperwork, scheduling events, and setting priorities are measured by the TMBS. This questionnaire and a survey regarding experiences in school or work were completed by all 288 subjects. Of these subjects, 165 completed additional scales related to stress, role ambiguity, role overload, job tension, somatic tension, job satisfaction, life satisfaction and Type A-B behaviour pattern to further test the hypotheses. Grade point averages and self-reported performance ratings were also studied for those 165 subjects.

Previous research had indicated that time management is a multi-dimensional construct and the results of Macan et al. (1990) are consistent with that conclusion (Britton & Tesser, 1991; Wells, 1993). Time management was divided into
setting goals and priorities (Factor 1); mechanics— scheduling, planning (Factor 2); perception of control of time (Factor 3); and preference for disorganization (Factor 4). Relatively low but statistically significant positive correlations were found between the total TMBS score and Grade Point Average (.32); between planning and scheduling and GPA (.20); and between setting goals and priorities and GPA (.10). Subjects who used effective time management strategies were more clear about their roles and reported higher perceived performance. These subjects also reported lower levels of stress. Clear goals and roles were also related to greater job satisfaction and performance.

Students who attended a seminar on time management engaged in time management behaviours more frequently than those who had not (Macan et al., 1990). Similar results were found for setting goals and priorities, and planning and scheduling. Students did not experience the same result from reading books on time management.

One of the components of time management suggested by Macan et al. (1990) was goal-setting. Tollefson, Tracy, Johnsen and Chatman (1986) also studied the relationship between goal-setting and academic performance. This study attempted to determine if a relationship existed between
goal-setting and goal-implementation training and the rate of assignment completion in the resource room; and if goal-implementation skills would generalize to the regular classroom. Their subjects were eight learning disabled (LD) adolescents; seven males and one female. Six of these subjects were seventh graders and two were eighth graders; all the subjects were served in a resource room setting varying from one to three school periods per day, according to the needs of each student.

Resource room teachers as well as classroom teachers recorded the rate of assignment completion prior to, during and following the fifteen-week, goal-implementation training program. The training program involved contracts which required students to develop goal statements, a plan to achieve the goal and an evaluation section. The goal-implementation strategy used in this study increased the rates of assignment completion in the resource room for all but one student. Five regular classroom teachers maintained records of the LD students' rate of assignment completion for several in-class homework assignments. The rate of assignment completion increased for all but one student, the same student whose rate of completion did not increase in the resource setting. The researchers in this study
concluded that time spent teaching a goal-setting and goal-implementation strategy increased learning disabled students' rate of assignment completion and made students more confident of their ability to plan. This study also found that planning skills are not developed incidentally by learning disabled students. These students need to be taught to plan how they will complete their assignments.

Other studies have indicated that students who set goals and perceive their school results as being instrumental for success in attaining their goals show strong study motivation and higher academic performance (Bond & Feather, 1988; DeVolder & Lens, 1982; Van Calster, Lens & Nuttin, 1987). Bond and Feather (1988) studied the correlates of time structure defined by the degree to which individuals perceive their use of time to be structured and purposive. Their study involved students enrolled in an introductory psychology course at Flinders University in Australia in 1984 and 1985. The participants completed questionnaires that contained questions about time structure as well as other variables. The main instrument, a Time Structure questionnaire, was created by the researchers to measure the degree to which individuals perceive their use of time as structured or purposive. The results indicated
positive relationships between perceived use of time and efficient study habits, among other qualities.

DeVolder and Lens (1982) proposed a relationship between future time perspective (FTP) and academic achievement. Their study involved 251 Dutch-speaking Belgian 17 and 18-year-old boys from two different high schools (11th and 12th graders). The subjects responded on a four-point scale regarding the probability of reaching various goals if they studied hard. They also responded to a study behaviour questionnaire. Subjects' academic results in the first term were examined in order to group students into high- and low-achievement groups. As well, study persistence scores were used to divide the students into high and low-persistence groups using the median score as the dividing point. Results showed that students with high grade point averages and high study persistence attached greater value to long-term goals and perceived studying hard as more instrumental for reaching goals than did students with low grade point averages and low study persistence.

A similar study (Van Calster, Lens, & Nuttin, 1987) examined the interaction effect of a positive attitude about the future and the perceived instrumental value of performing well in high school on the motivation to study
and exam scores. This study involved 230 Dutch-speaking male senior high school students, aged 17 to 19 years old. Each subject completed the Study Orientation Test (SOT) and the Davis Reading Test (DRT). The SOT measured study habits, study motivation and study methods. Students also completed Nuttin's Time Attitude Scale which measured individual attitudes toward the personal past, present and future. Only the data for the sub-scale measuring attitudes toward the future were used for the purpose of the study by Van Calster et al. (1987). Academic achievement was measured based on exam scores during and at the end of the first semester. Exam scores one or more standard deviation lower or higher than predicted from the DRT were defined as under- or over-achievement. The researchers' hypotheses were confirmed. A positive attitude toward the future combined with high perceived instrumentality provided learners with the highest motivation to study and resulted in the best academic performances. This study highlighted the importance of providing students with some knowledge of the future importance of their present learning. Students need to be required to set goals and to link their learning to their goals.

Britton and Tesser (1991) hypothesized that grade point
averages would be higher the more effective the time-management practices were. Ninety male and female freshmen and sophomore undergraduates in an introductory psychology class at the University of Georgia completed a time management questionnaire that included 35 items on a five-point Likert-type scale consisting of the responses always, frequently, sometimes, infrequently and never. Questions measuring short-range planning asked about practices such as making lists of things to be completed each day, planning the day before it begins, writing a set of goals each day, and spending time each day planning. Time attitudes were measured by factors such as doing things that interfere with school-work because you hate saying "no" to people, feeling in charge of your own time, making constructive use of time, and having room for improvement in the way time is managed. Finally, long-range planning measured items such as having a set of long-term goals, regularly reviewing class notes, and doing a little bit of work on each of several assignments.

Self-reports of time management were found to be related to academic achievement. Grade point average was regressed on each of the time-management components and on Scholastic Achievement Test (SAT) scores. The results showed that short-range planning and GPA had a correlation of .25,
while time attitudes and GPA had a correlation of .39. Long-range planning did not seem to predict GPA (-.10). SAT scores accounted for an insignificant variance (4%).

Wells (1993) examined the relationship between time management and academic achievement. Eighty-eight subjects from the University of Windsor completed a time-management questionnaire (Britton & Tesser, 1991). The questionnaire consisted of 35 items assessing time management behaviours using a five-point scale consisting of the responses always, frequently, sometimes, infrequently and never. Questions measuring short-range planning asked about such things as making lists of things to be done each day, writing personal goals each day, and scheduling activities to be done on work days. Confidence in time decisions examined factors such as setting and honouring priorities, making constructive use of time, and feeling in charge of time. The verbal section of the Multi-Dimensional Aptitude Battery (MAB) and grade point averages for a single semester were also used for the purpose of this study. A data-determined stepwise procedure was used to analyse the effects of time management on academic achievement. Grade point average was regressed on each of the two time management components (short-range planning and confidence in time decisions) and on MAB-verbal
IQ scores. Short-range planning was found to be positively and significantly correlated with GPA (.29). Confidence in time decisions was also found to be positively and significantly correlated with GPA (.32). It was concluded that self-reports of time management were strongly related to academic achievement. Short-range planning and confidence in time decisions were strong predictors of academic achievement. Together, these factors (.61) were a stronger predictor of academic achievement (GPA) than aptitude (MAB = .36).

Keith (1982) compared the amount of time spent on homework by 20 364 high school seniors with their marks. It was found that study time contributed significantly to student grades. The amount of time spent on homework was found to be an important factor in determining student grades, even when race, family background, ability and the students' program of study were controlled for. The time spent on homework was an effective determiner of grades, second only to ability.

Allen, Lerner and Hinrichsen (1972) explored the relationship between the self-reported study behaviours, test anxiety and GPA of 122 undergraduate students in a university psychology course. Students were asked to record
study behaviours throughout a semester. Each student recorded the number of uninterrupted minutes spent studying for each course, the number of interruptions which occurred, minutes interrupted, and the type of study strategies used. Results of this study indicated that self-reported study behaviours were a good predictor of GPA. A negative relationship was found between the number of interruptions and GPA. As reported by Curley, Estrin, Thomas and Rohwer (1987), the results of the study by Allen et al. (1972) suggested that how study time is used is more important than how much time is spent studying.

Contrary to findings by Keith (1982) and Allen, Lerner and Hinrichsen (1972), Dickinson and O'Connell (1990) found only a weak relationship between test scores and total study time. One hundred and thirteen undergraduate psychology students with a GPA of at least 2.5 were asked to record their study times as well as classify each study period as either reading, reviewing or organizing. Reviewing was defined as a factual knowledge strategy while organizing was a comprehension strategy. Time spent organizing, that is writing answers to course objectives, summarizing, linking the materials to already learned information, and integrating lecture and reading notes, was found to be
strongly related to test scores. The results of this study reinforce the need for effective time management to allow for routine organization of materials.

This research, supporting a relationship between time management behaviours and academic achievement, may have implications for students and teachers, since evidence also supports the idea that time management skills can be taught (Hall & Hursch, 1982). Rees (1986) proposes that people are not born with the ability to manage time well and that the skills of planning and scheduling must be acquired so that all tasks, particularly the non-routine type, can be finished on time.

A study by Delucchi, Rohwer and Thomas (1987) focused on the quantity and format of students' study time relative to grades. Students from two universities, four senior high schools, and three junior high schools completed two versions of the Study Activity Survey: Form R (SAS-R) and Form T (SAS-T). The results suggested that there was no significant relationship between time spent studying and achievement. The researchers felt it was an oversimplification to consider study time without examining how the time was allocated to different study activities. At the junior high level, daydreaming and being distracted in
class were found to be negatively correlated with achievement, while doing written assignments, projects or papers outside the class correlated positively. The amount of time students spent catching up on old assignments also had a negative correlation with grades, as did spending time outside class time deciding what or how to study. This research has been supported by d'Ydewalle, Swerts and De Corte (1983) who believed the critical factor in success may be the effectiveness of the activities students engage in during the time spent studying rather than the length of time spent studying.

As students progress through the education system, test scores account for an increasing percent of their total course mark. Research has shown test-wiseness to be an important influence on test performance (Dreisback & Keogh, 1982; Rawl, 1984; Ritter & Idol-Maestas, 1986).

In the experimental research of Ritter and Idol-Maestas (1986), Grade 6 students were matched by standardized test scores and divided into control and experimental groups. The experimental group received twelve days of SCORER instruction. This instructional approach is an acronym that refers to the following:
S - schedule your time
C - clue words
O - omit difficult questions
R - read carefully
E - estimate your answer
R - review your work.

After the instruction, both groups were given common social studies and science tests. The experimental group did significantly better (p<.001) than the control group on the social studies test. All members of the experimental group improved from pretest to post-test.

Crehan, Koehler and Slakter (1974) did a longitudinal study of test-wiseness. They found significant increases in test-wiseness over all grade levels except Grades 9 to 11. Males demonstrated higher test-wiseness than females for Grades 6 to 8. It does not appear to be possible to remove the effect of test-wiseness from test-taking situations, including standardized testing; therefore, consideration needs to be given to teaching test-wiseness to students lacking in this capacity.

The research of Lindner and Harris (1992) suggests that many students would benefit from instruction that focuses on the strategies included in self-regulated learning, such as
goal-setting, time management, study strategies and test-wiseness. They found that academic difficulty may largely be due to students not knowing how to take control of the learning process to a sufficient degree. Formal instruction of these metacognitive strategies becomes critical for maximizing student success, attitudes and achievement.

The present study investigates differences in the effectiveness of passive instruction and active instruction of study skills and time management. Ramsey (1993) found that classroom activities planned for the "active" rather than the "passive" learner appear to have greater potential for successful cognitive change. Kritch, Bostow and Dedrick (1995) examined the differences in recall between a passive-observation method and a more active constructed-response method. The results suggested that the active method improved recall in students of all ability levels. Tudor (1995) confirmed this finding with the study of the effects of active responding in computer-based instruction. Active responding was found to be related to greater achievement. Nance and Nance (1990) surveyed 116 undergraduates in a small state supported university in the southwest United States. The findings suggested that students who were taught using the discussion method were more likely to internalize
material and restate what they had learned than students taught using the lecture method.

Clements (1995) examined the effects of experiential-learning activities on achievement in undergraduate developmental psychology. Contrary to the findings of Tudor (1995), Kritch et al. (1995) and Nance and Nance (1990), achievement was not affected by the experiential-learning activities; however, student attitudes toward learning were more favourable after these activities.

The intention of the present investigation was to examine the relationship between formal instruction of metacognitive strategies such as those listed above and student achievement. The traditional approach to metacognitive skill development was compared to formal instruction of metacognitive strategies using both a passive method of a video and pamphlet as well as a more active method involving a video, pamphlet and related activities that the students completed. In the present study, it was proposed that formal instruction in metacognitive strategies would facilitate the use of such strategies and benefit habits, attitudes and achievement.

Hypothesis #1 - Time Management

Tollefson, Tracy, Johnsen and Chatman (1986) found
that instruction of goal-setting and planning skills increased the rate of assignment completion of LD students. Macan et al. (1990) also found a significant correlation between scores on time management and attending a seminar on time management. Therefore, it was expected that in the present study, student self-reported time-management behaviours would improve after formal instruction of effective time management strategies at the Grade 8 level. It was expected that students in the treatment group receiving passive instruction would demonstrate greater increases in self-reported time management behaviours than those students in the control group.

Moreover, based on studies by Ramsey (1993), Kritch et al. (1995), and Tudor (1995) which supported the effectiveness of active instruction over passive instruction and reported that activities planned for the active rather than the passive learner appeared to have greater potential for successful cognitive change, it was also expected that students receiving active instruction would demonstrate greater increases in self-reported time management behaviours than those students receiving passive instruction.
Hypothesis #2 - Study Habits and Attitudes

D'Ydewalle, Swerts and De Corte (1983) concluded from their research that the critical factor in success was the effectiveness of the study activities rather than the length of time spent studying. As well, Ritter and Idol-Maestas (1986), in their research on test-wiseness, found that formal instruction in test-taking strategies resulted in improved test scores. In the present study, it was expected that student self-reported study habits and attitudes would improve after formal instruction of effective study and test-taking habits at the Grade 8 level. Therefore, students in the passive treatment group were expected to demonstrate a greater increase in self-reported study habits and attitudes than students in the control group.

In addition, students in the treatment group receiving active instruction were expected to demonstrate a greater increase in self-reported study habits and attitudes than students in the treatment group receiving passive instruction.

Hypothesis #3 - Achievement

Based on the research by Ritter and Idol-Maestas (1986), it was predicted that student marks would improve after formal instruction of metacognitive strategies at the
Grade 8 level. It was expected that the marks of students in the treatment group receiving passive instruction would improve significantly more than the marks of students in the control group.

Marks of students in the treatment group receiving active instruction were expected to improve significantly more than the marks of students in the treatment group receiving passive instruction.
METHOD

Participants

The population for this study was all Grade 8 students within a board of education in rural southwestern Ontario. An island school was exempted from this population because of the small number of students in the school and the multi-grade classes. Students at another school were excluded because they had recently participated in the formal instruction of metacognitive strategies involved in this study. Convenience samples of six Grade 8 classes already established in six different schools in the school system were used. One hundred and sixteen Grade 8 students participated in this investigation. The participants were between 12 and 15 years of age. Sixty-three females and 53 males participated. They were from varied socio-economic backgrounds and possessed varied academic capabilities.

Six classes were selected using a random cluster method. Two classes were randomly selected to be in the control group. Two other classes were randomly assigned to the passive treatment group. The final two classes were assigned to the active treatment group. Forty-two students were in the control group; 41 in the passive treatment group and 33 in the active treatment group.
Test Battery

The Survey of Study Habits and Attitudes Form H (SSHA-Form H) (Brown & Holtzman, 1967) was used in the present study to measure the effectiveness of study habits and test-wiseness. This survey consists of 100 items that students respond to on five-point Likert-type scale (rarely, sometimes, frequently, generally and almost always). Brown and Holtzman (1967) administered the SSHA-Form H to 237 ninth-graders in San Marcos High School in Texas twice with an interval of four weeks between sessions. The test-retest reliability coefficients were .95, .93, .93 and .94, respectively for the delay avoidance, work methods, teacher approval and education acceptance sub-scales and .95 for SSHA total score (study orientation). These scores provide evidence of stability and justify the use of this instrument in assessing the degree of change in study habits and attitudes over a period of time.

SSHA-Form H has been validated in many junior and senior high schools in the United States. It was administered to 373 students from Grades 7 to 9 in Riley Junior High School, Livonia, Michigan (Brown & Holtzman, 1967). Correlations between SSHA scores and academic performance ratings were calculated. Eighty-eight percent of
the seventh grade A and B (as rated by their teachers) students scored above the 25th percentile on the Study Habits sub-scale, while only 31% of the D and E students scored above the 25th percentile. Similar relationships were found for the eighth and ninth grade students. In the Study Attitudes sub-scales, similar results were found.

The Time Management Behaviour Scale (TMBS) (Macan et al., 1990) was used in the present study to measure the effectiveness of goal-setting and time management. (Refer to Appendix A for sample questions and Appendix B for the letter of permission from the author.) This survey consists of 46 items that students respond to on five-point Likert-type scales (seldom true, occasionally true, true about as often as not, frequently true, and very often true). This instrument has been used in a study of college students' time management as it relates to academic performance and stress (Macan et al., 1990).

**Hypotheses**

A summary of the hypotheses for the present study can be found in Table 1.
### TABLE 1

**Summary of Hypotheses**

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<thead>
<tr>
<th>Hypothesis #1 - Passive Group TM &gt; Control Group TM</th>
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<td>Active Group TM &gt; Passive Group TM</td>
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<th>Hypothesis #2 - Passive Group SH &gt; Control Group SH</th>
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<td>Passive Group SA &gt; Control Group SA</td>
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<td>Active Group SH &gt; Passive Group SH</td>
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<td>Active Group SA &gt; Passive Group SA</td>
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<tr>
<th>Hypothesis #3 - Passive Group Achievement &gt; Control Group Achievement</th>
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<tr>
<td>Active Group Achievement &gt; Passive Group Achievement</td>
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- **TM** - Change in Self-Reported Time Management Behaviour Scores from Pretest to Post-test
- **SH** - Change in Self-Reported Study Habits Scores from Pretest to Post-test
- **SA** - Change in Self-Reported Study Attitudes Scores from Pretest to Post-test
- **Achievement** - Change in grades in Math, Language Arts and Science from Term 1 to Term 2 in Grade 8
- **Passive Group** - Intervention - Video and Pamphlet
- **Active Group** - Intervention - Video, Pamphlets and four follow-up lessons
- **Control Group** - Traditional Approach to time management and study skills instruction
Procedure

This investigation was initiated in September, 1996. Once parental consent was given, students were included in the study. (Refer to Appendix C for parent consent letters.) A pretest using SSHA - Form H (Brown & Holtzman, 1967) and the TMBS (Macan et al., 1990) was administered to assess the subjects' initial study habits, study attitudes and time management behaviours during the first week of November.

The experimental intervention occurred the week following the pretest. Two interventions were used: a video/pamphlet and a video/pamphlet with follow-up. A video was used in order to allow for some consistency in the strategies being presented to various classes. The accompanying pamphlet served as a concrete reminder to students of the tips that were presented in the video.

Students in the passive treatment group viewed the video "Student Tune-Up Kit - Tools for Success" (prepared by the researcher) and received the pamphlets (also prepared by the researcher) to keep in their binders. (Refer to Appendix D for pamphlet.)

The video "Student Tune-Up Kit - Tools for Success" and the accompanying pamphlet begins by providing students with effective time management strategies. Viewers are introduced
to mission statements, vision statements and goal setting. Qualities of effective mission statements, vision statements and goals are given. Priority management is explained as an effective time management strategy and tips for the use of daily task lists and calendars are given.

The video continues with suggestions for an effective study area. Viewers are provided with a list of materials that should be easily accessible in a study area. The importance of a consistent study area, free from distractions, is stressed. The video also discusses the importance of a neat and organized study area.

Study strategies are provided in the next section of the video and pamphlet. Strategies such as rereading notes, summarizing notes on file cards, highlighting key words and phrases, and SQ3R (skim, questions, read, repeat, and review) are explained. Examples of memory triggers including rhymes or mnemonics, pictures, acronyms, and acrostics are given. The importance of studying in short chunks of time and not cramming is stressed.

The next section in the video and the pamphlet covers test-taking tips. Students are encouraged to read over the entire test before beginning, to jot down key words, begin with the easiest questions, spend more time on questions
that have a high mark value, read the questions carefully, and check the test over before submitting it.

Finally, the video and pamphlet introduce viewers to learning styles. The four learning modalities: auditory, visual, tactile and kinesthetic, are briefly explained and tips for study strategies effective for each style are given.

Students in the active treatment group viewed the video "Student Tune-Up Kit - Tools for Success", received the pamphlets and were involved in four forty-minute lessons that reinforced the skills covered in the video and pamphlet. These lessons provided immediate application opportunities and feedback. (Refer to Appendix E for lesson plans.) This application and feedback allowed students to become more comfortable with strategies and increased the chances of their putting the strategies into practice on their own.

Students in the control group proceeded through the year using only the traditional, incidental approaches to metacognitive instruction.

The SSHA - Form H (Brown & Holtzman, 1967) and the TMBS (Macan et al., 1990) were administered to the students during the first week of December as a post-test.
Prior to exams in the winter term, students in both treatment groups received an intervention for the second time. Students in these groups viewed the video "Student Tune-Up Kit - Tools for Success" and reviewed the accompanying pamphlet to reinforce these skills prior to exam preparation.

A second set of post-tests, SSHA - Form H (Brown & Holtzman, 1967) and the TMBS (Macan et al., 1990), was administered to all participants during the first week in April.

Marks from Grades 6, 7 and first and second terms of Grade 8 were gathered for Language Arts, Math and Science for all students involved in the study.
RESULTS

Initially, all scores were converted to Z-scores to facilitate analysis and comparison. One-way ANOVAs using Z-scores for the time management and study orientation subscales were used to determine if initial group differences existed among the three groups and to determine if gender differences existed. There were no significant differences between groups (See Table 2) at pretest for any of the scales. Female mean scores were higher than male mean scores for all sub-scales (See Table 3) at pretest.

Time Management Behaviours

A four-way multivariate analysis of covariance (MANCOVA) was conducted using group (passive treatment, active treatment and control), gender (male, female), time (pretest, post-test#1, and post-test#2), and scale (setting goals and priorities; mechanics - planning, scheduling; perceived control of time; and preference for disorganization) as the independent variables for the Z-scores of the four scales. Grade seven achievement levels were entered as covariates in an attempt to control for achievement differences. There was no treatment effect, $F(4, 166) = 1.03, p > .05$. Contrary to the researcher's hypothesis, students in the two treatment groups did not
**TABLE 2**

Means and Standard Deviations For Initial Group Differences

<table>
<thead>
<tr>
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TABLE 3
Means and Standard Deviations
For Initial Gender Differences

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<td>&amp; Priorities</td>
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<td>Preference for</td>
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<td>1.00</td>
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perform any better on the two post-tests than did students in the control group.

A significant main effect for gender, $F(1,16) = 4.03$, $p < .05$, and a time by gender interaction, $F(2, 82) = 5.05$, $p < .01$ were found. Females scored significantly higher on the time management behaviour scale than did males (See Table 3). The interaction effect indicates that the sex difference was more pronounced at the pretest and the post-test#2 levels (See Table 4).

**Study Orientation**

A four-way multivariate analysis of covariance (MANCOVA) was conducted using group (passive treatment, active treatment, and control), gender (male and female), time (pretest, post-test#1, and post-test#2), and scale (delay avoidance, work methods, teacher approval and education acceptance) as the independent variables, with academic achievement in Grade 7 Language Arts, Math and Science as covariates. There was a four-way interaction, (group by gender by time by scale), $F(12, 160) = 2.37$, $p < 0.01$. To explore this interaction effect, each scale was analysed separately using three-way ANCOVAs.

A main effect for gender was found for delay avoidance (See Table 5). Females scored significantly higher than
<table>
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<tr>
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<td>Mean</td>
<td>SD</td>
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### TABLE 5

Means and Standard Deviations of Z-scores for Delay Avoidance

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<td>0.28</td>
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</table>

<table>
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<tbody>
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<td>Passive Treatment</td>
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</tr>
<tr>
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<td>Gender</td>
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<tr>
<td></td>
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<td>Male</td>
<td></td>
</tr>
<tr>
<td>Pretest Mean</td>
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<td>-0.05</td>
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<td>0.78</td>
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<tr>
<td></td>
<td>Gender</td>
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<tr>
<td></td>
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<td>Male</td>
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</tr>
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<td>Pretest Mean</td>
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males on the delay avoidance sub-scale (See Figure 1).

A main effect for gender was also found for work methods (See Table 6). Again, females scored significantly higher than males on this sub-scale. In addition, there was a three-way (time by group by gender) interaction, $F(2, 41) = 4.90, p < 0.05$ (Table 6). Work methods mean scores for males in the two treatment groups improved from pretest to post-test #2 (See Figure 2). This pattern was not evident for females.

A main effect for gender was also found for teacher approval (See Table 7). Again, females scored significantly higher than males on this sub-scale. In addition, there was a three-way (time by group by gender) interaction, $F(2, 41) = 3.45, p < 0.05$ (See Table 7). Teacher approval mean scores for males in the two treatment groups improved significantly from pretest to post-test #2 (See Figure 3). This pattern was not evident for females.

Finally, a main effect for gender was also found for education acceptance (See Table 8) in that females scored significantly higher than males on this sub-scale (See Figure 4).

Marks were standardized for comparison purposes. A value between 3 and 9 was assigned to each grade with an A+
FIGURE 1
Delay Avoidance Scores Over Time Between Groups
<table>
<thead>
<tr>
<th>Gender</th>
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<th>Active</th>
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</table>
FIGURE 2

Work Methods Scores Over Time Between Groups

[Graph showing changes in mean Z scores over time for different groups: Male Control, Female Control, Male Expt’1 A, Female Expt’1 A, Male Expt’1 B, Female Expt’1 B.]
TABLE 7
Means and Standard Deviations of Z-scores for Teacher Approval

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<tr>
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<td>0.11</td>
<td>0.14</td>
<td>-0.23</td>
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<td>-0.34</td>
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<tr>
<td>SD</td>
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<td>0.96</td>
<td>0.82</td>
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<td>1.16</td>
<td>0.89</td>
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<tr>
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<td>-0.13</td>
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<tr>
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<td>0.98</td>
<td>0.92</td>
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</table>
FIGURE 3

Teacher Approval Scores Over Time
Between Groups

[Graph depicting Teacher Approval Scores Over Time between different groups. The graph shows the mean Z score over time for Male Control, Female Control, Male Expt'l A, Female Expt'l A, Male Expt'l B, and Female Expt'l B.]
TABLE 8
Means and Standard Deviations of Z-scores for Educational Acceptance

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<tr>
<td>Pretest</td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td>0.20</td>
<td>1.07</td>
<td></td>
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<tr>
<td></td>
<td>-0.02</td>
<td>0.88</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.40</td>
<td>1.04</td>
<td>-0.39</td>
</tr>
<tr>
<td></td>
<td>0.08</td>
<td>0.96</td>
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<td>Mean</td>
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<td>1.09</td>
<td>0.13</td>
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<td></td>
<td>0.43</td>
<td>0.86</td>
<td>-0.29</td>
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<td>0.11</td>
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</tr>
<tr>
<td></td>
<td>0.10</td>
<td>1.05</td>
<td>-0.40</td>
</tr>
</tbody>
</table>
FIGURE 4

Educational Acceptance Scores Over Time Between Groups
receiving a 9, an A receiving an 8, a B receiving 7 and so on. No significant difference in marks resulted from the intervention (See Table 9). Contrary to the researcher’s hypothesis, the Grade 8 marks of students in the treatment groups receiving active and passive instruction did not improve significantly more than those of the students in the control group.
TABLE 9
Means and Standard Deviations of
Grade 8 Marks

<table>
<thead>
<tr>
<th>Group</th>
<th>Control</th>
<th>Passive Treatment</th>
<th>Active Treatment</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>LANGUAGE1</td>
<td>6.80</td>
<td>1.04</td>
<td>6.95</td>
</tr>
<tr>
<td>MATH1</td>
<td>7.28</td>
<td>1.22</td>
<td>6.83</td>
</tr>
<tr>
<td>SCIENCE1</td>
<td>6.71</td>
<td>1.29</td>
<td>6.73</td>
</tr>
<tr>
<td>LANGUAGE2</td>
<td>6.80</td>
<td>0.97</td>
<td>7.02</td>
</tr>
<tr>
<td>MATH2</td>
<td>7.50</td>
<td>1.30</td>
<td>6.76</td>
</tr>
<tr>
<td>SCIENCE2</td>
<td>7.00</td>
<td>1.32</td>
<td>7.00</td>
</tr>
</tbody>
</table>

LANGUAGE1 - Grade 8 Term 1 Standardized Language Arts Marks
MATH1 - Grade 8 Term 1 Standardized Mathematics Marks
SCIENCE1 - Grade 8 Term 1 Standardized Science Marks
LANGUAGE2 - Grade 8 Term 2 Standardized Language Arts Marks
MATH2 - Grade 8 Term 2 Standardized Mathematics Marks
SCIENCE2 - Grade 8 Term 2 Standardized Science Marks
DISCUSSION

Time Management

The present study found no treatment effect for time management. No significant differences between the pretest scores and post-test scores of the control group, the passive treatment group and the active treatment group on any of the time management sub-scales were detected.

Tollefson et al. (1986) attempted to determine if a relationship existed between goal-setting and goal-implementation training and the rate of assignment completion in the resource room; and if goal-implementation skills would generalize to the regular classroom. They found that time spent teaching goal-setting and goal-implementation strategies increased students' rate of assignment completion and made students more confident in their planning abilities. The study by Tollefson et al. (1986) involved a fifteen-week training program on goal-setting and goal-implementation strategies. Students were expected to develop and commit to achievement contracts, design a study plan to meet their goal, and evaluate successes and failures as related to their study plan. Participants in the study by Tollefson et al. (1986) were given frequent, on-going feedback and reinforcement on
their goal-setting strategies.

The design of the present study restricted the level of expectations that could be placed on the teachers of the treatment groups. Participants in the passive treatment group received a pamphlet and viewed a sixteen-minute video twice during the research period. Participants in the active treatment group received the same treatments as the participants in the passive treatment group as well as four, forty-minute lessons with activities to reinforce the lessons provided in the video and pamphlet.

The treatment in the present study was not nearly as intense as the treatment given in the study by Tollefson et al. (1986). More consistent and on-going treatment may be necessary to improve time management behaviours.

Macan et al. (1990) investigated the relationship between self-reported time management behaviours of college students and their performance as reflected by their grade point average. They found that students who attended a seminar on time management engaged in time management behaviours more frequently than those who did not. Students in the study by Macan et al. (1990) did not experience the same result from reading books on time management. This would suggest that more consistent and meaningful follow-
through and reinforcement of the skills covered in the video may have been necessary in order to improve the results of the students in the treatment groups. Perhaps individual counselling for students with weak scores on any of the scales would have been beneficial.

Britton and Tesser (1991) found that short-range planning, which involved such practices as making lists of things to be completed each day, and spending time each day planning, and grade point average had a correlation of .25. Students may need to be required to participate in daily activities in order for a significant change in behaviours, attitudes and achievement to occur.

Even though there was no treatment effect, there was a significant sex difference, with females scoring consistently higher than males on all time management behaviour sub-scales. These results could be linked to the idea that, on the average, girls tend to be more task-oriented and are more eager to please than are boys.

The study by Tollefson et al. (1986), which involved eight learning-disabled students, found that time spent teaching a goal-setting and goal-implementation strategy increased the participants’ rate of assignment completion and made students more confident in their planning.
abilities. Seven of the participants in the study were males. The gender make-up of the participants in the present study was more balanced with 63 females and 53 males involved. This may have had an impact on the difference in results found in the two studies.

**Study Orientation**

There was also a treatment effect on the study orientation sub-scales for males. No significant differences were detected between the scores of the females in the control group, the passive treatment group and the active treatment group on any of the study orientation sub-scales; however, males in the passive treatment group and the active treatment group showed an improvement from the pretest to post-test #2 in two sub-scales: work methods and teacher approval. No significant differences were detected between the scores of the males in the control group, the passive treatment group and the active treatment group in two sub-scales: education acceptance and delay avoidance.

In a study by Ritter and Idol-Maestas (1986), the effect of a twelve-day study skills training program on the achievement of Grade 6 students was examined. Students who participated in the twelve days of instruction on study habits performed significantly better on a science test and
a social studies test than did students who did no receive the instruction.

Again, it appears by the fact that the training program in the study by Ritter et al. (1986) was twelve days in length, that more consistent and meaningful follow-through and reinforcement of the skills covered in the video may have been necessary to improve the results of the students in the treatment groups. Individual counselling may have been beneficial.

Lindner and Harris (1992) suggested that many students would benefit from instruction that focuses on the strategies such as goal-setting, time management, study strategies and test-wiseness. They found that formal instruction was critical in maximizing student attitudes and achievement.

Participants in the present study were not given many meaningful opportunities to put into practice the study habits that they were provided with in the video. In addition, the activities to reinforce the skills presented in the video were not linked to what the students were learning in other classes. Students may have had difficulty transferring these skills to other areas of their studies.

As with time management, there was a significant sex
difference in study orientation, with females scoring consistently higher than males on all sub-scales of study orientation.

Achievement


The Grade 8 marks of students in the passive and active treatment groups did not improve significantly more than those of the students in the control group. Due to the nature of the marks in the board of education used for this study, a rating scale was used to place a numerical value on marks. As a result of this rounding, a considerable change of marks would be necessary to show up in this statistical analysis. In addition, cumulative marks as found on report cards include a variety of marks that would not be representative of the skills investigated in this study, such as class participation and notebooks. Perhaps a
more comprehensive study of specific marks more representative of the skills in question, such as reports and tests; or an analysis of the number of late assignments pre-treatment and post-treatment would have provided different results.

Implications

The transition years are when young people develop new skills that are needed in high school and later in life. Previous research studies have found a relationship between effective time management strategies and student achievement (Macan, Shahani, Dipboye & Phillips, 1990; Bond & Feather, 1988; DeVolder & Lens, 1982; VanCalster, Lens & Nuttin, 1987; Britton & Tesser, 1991). Other research supports the relationship between effective study habits, test-wiseness and achievement (Estrin, Thoms, Rohwer, 1987; Dreisback & Keogh, 1982; Rawl, 1984; Ritter & Idol-Maestas, 1986).

These metacognitive skills will provide students with a solid base for life-long learning. Many of these skills, including goal-setting, have been identified by the Conference Board of Canada Work Force 2000 as entry level skills for new employers in the labour force.

The transition years curriculum is very full and many
educators will argue that it should be reduced, not expanded. As well, the development and implementation of new curriculum is often difficult, expensive and time-consuming. It is important to investigate the value of including formal instruction of metacognitive strategies in the curriculum. Although the present study does not provide strong support for this recommendation, it does suggest that training in some areas of metacognitive development is effective in improving behaviours of some groups of students, in particular, males.

Limitations

Although it would appear from the results of this investigation that formal instruction has little impact on student behaviours and attitudes, further investigation into this area is needed. Due to the design of the study and the limitations of the teachers participating in the study, the present investigation was based mainly on self-reported data. It is possible that students in the two treatment groups became more critical self-evaluators after viewing the video and realizing the expectations being placed on them. Perhaps a future study could involve students maintaining a daily diary of their time management and study behaviours. This would make the self-reporting
more immediate and based less on recollection. Evaluation of the students’ time management and study behaviours done by the teachers may have provided different results.

The time limitation of this study may have restricted the results. A study of these students over a longer period of time may have changed the result of this investigation. By Grade 8, many of the habits of students may be quite ingrained. More exposure to these skills may be necessary before students feel comfortable selecting "very often true" or "frequently true" on the behaviour scales.

Conclusions

It is obvious that further research in the area of formal instruction of metacognitive studies at the Grade 8 level and the impact of this instruction on student achievement is necessary. If it is found that formal instruction of these strategies improves time management behaviours, study habits and attitudes, and marks at the Grade 8 level, then suggestions could be made to incorporate such instruction into the Grade 8 curriculum. Teachers could be supplied with guidelines and resources, such as the video used in this study, to assist them in implementing such instruction.
REFERENCES


APPENDIX A

Time Management Behaviour Scale

NAME: _______________________

School: _______________________

Teacher: _______________________

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seldom</td>
<td>Occasionally</td>
<td>True About As Often</td>
<td>Frequently</td>
<td>Very Often As Not</td>
</tr>
</tbody>
</table>

___ I find myself taking on too many tasks/responsibilities at one time.

___ I find myself overwhelmed by trivial and unimportant tasks.

___ I underestimate the time that it will take to accomplish tasks.

___ I feel in control of my time.

___ I take responsibility for tasks that I could give to others.

___ I am unable to say no when others ask me to take on additional responsibilities.

___ I must spend a lot of time on unimportant tasks.

___ At the end of the day, I leave a clear, well-organized desk.

___ I find myself socializing too much at school.

___ I find myself so involved in small details that I lose sight of the overall objective.

___ I find it difficult to keep a schedule because others take me away from my work.

___ I can find the things I need for my work more easily when my desk is messy and disorganized than when it is neat and organized.
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<th>C</th>
<th>D</th>
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<td></td>
<td>Seldom</td>
<td>Occasionally</td>
<td>True About</td>
<td>Frequently</td>
<td>Very Often</td>
</tr>
<tr>
<td></td>
<td></td>
<td>As Often</td>
<td>As Not</td>
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</table>

___ When I decide on what I will try to accomplish in the short term, I keep in mind my long-term objectives.

___ I review my goals to determine if they need revising.

___ I break complex, difficult projects down into smaller manageable tasks.

___ I set short-term goals for what I want to accomplish in a few days or weeks.

___ I set deadlines for myself when I set out to accomplish a task.

___ I look for ways to increase the efficiency with which I perform my work.

___ I finish top priority tasks before going on to less important ones.

___ I review my daily activities to see where I am wasting time.

___ During a day, I evaluate how well I am following the schedule I have set down for myself.

___ I set priorities to determine the order in which I will perform tasks each day.

___ I carry a notebook to jot down notes and ideas.

___ I schedule activities at least a week in advance.

___ I block out time in my daily schedule for regularly scheduled events.

___ I write notes to remind myself of what I need to do.

___ When I make a things-to-do list, it is forgotten or set aside by the end of the day.

___ I make a list of things to do each day and check off each task as it is accomplished.
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<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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</thead>
<tbody>
<tr>
<td>Seldom</td>
<td>Occasionally</td>
<td>True About As Often As Not</td>
<td>Frequently</td>
<td>Very Often</td>
</tr>
</tbody>
</table>

___ I carry a calendar or planner with me.

___ I keep a daily log of my activities.

___ The time I spend scheduling and organizing my day is time wasted.

___ Before going to bed, I decide on the clothes I will wear the next day.

___ My days are too unpredictable for me to plan and manage my time to any great extent.

___ I find myself losing sight of the ultimate objective when working on the various parts of a long-term project.

___ I find myself acting before thinking through the consequences of my actions.

___ I find places to work that will allow me to avoid interruptions and distractions.

___ If I know I will have to spend time waiting, I bring along something I can work on.

___ I find that the best way to solve problems is simply to start working on them without thinking too much about them in the beginning.

___ I find that I can do a better job if I put off tasks that I don’t feel like doing than if I try to get them done in order of their importance.
October 20, 1995

Ms. Patricia R. Oshar
Belle River Public School
260 St. Peter Street
Belle River, Ontario  N0R 1A0

Dear Ms. Oshar,

I have enclosed a copy of the Time Management Behavior scale per your request. I appreciate your interest in my research.

Please note that the scale is copyrighted. My colleagues and I are glad to grant you permission to use the scale for your research only. I have also enclosed another article of mine on time management that has been recently accepted in the Journal of Psychology. If you should have any questions, please call me at (314) 553-5416.

Sincerely,

Therese Hoff Macan, Ph.D.
APPENDIX C

Dear Grade 8 Parents/Guardians:

I am a teacher at Belle River Public School. As partial fulfilment of the requirements of the Master of Education degree, I will be conducting a research study on the effects of formal instruction of time management, study skills, test-taking skills, organization, self-checking and goal-setting on student marks. It is my hope that the results of this study will provide information that will benefit programming in the Essex County Board of Education. Permission from the Board of Education has already been granted to conduct this research in Essex County. Your son/daughter’s teacher has agreed to be involved in this study. Your permission is being requested for your son/daughter to participate in the study.

Students will receive the Survey of Study Habits and Attitudes (Brown and Holtzman) and the Time Management Behaviour Scale (Macan et al.). These surveys look at the effectiveness of time management, study habits, test-taking skills, and goal-setting. Students’ marks from grades 4 – 8 will also be gathered for part of the analysis.

Student participation is voluntary and students will be free to withdraw at any point. All data collected will be treated anonymously. The results of this study will be available upon request.

If you have any questions or concerns about this study, please contact me at 728-1310. My advisor is Dr. Larry Morton at the University of Windsor, Faculty of Education (253-4232 ext. 3835). Thank you for your participation in this study.

Please complete the attached permission form and return it to the school by November 1st. Thank you for your support.

Sincerely,

Patricia R. Oshar
Teacher
Belle River Public School
CONSENT FORM
FOR PARTICIPATION IN
RESEARCH STUDY

I give permission for my son/daughter/ward ______________________ to participate in the research study outlined in the attached letter.

__________________________________
Parent/Guardian's Signature

_______________________________
Date

I do not wish for my son/daughter/ward ______________________ to participate in the research study outlined in the attached letter.

__________________________________
Parent/Guardian's Signature

_______________________________
Date
**TIME** is a limited resource. We need to plan how we are going to use our time in order to meet our goals!

**QUADRANT I:** Urgent and Important activities including crises and pressing problems. This could be tomorrow’s exam that you haven’t started studying for yet or routines homework.

**QUADRANT II:** Important but not urgent activities such as chores, family events, needed sleep, long-term assignments and studying.

**QUADRANT III:** Urgent but not important activities such as chores, family events, needed sleep, long-term assignments and studying.

**QUADRANT IV:** Not urgent and not important activities. These are your time wasters.

**TO BE EFFECTIVE, MOST OF OUR TIME SHOULD BE SPENT IN QUADRANT II.** This allows us to work at a reasonable pace because the activities are not urgent but it also means that we spend most of our time doing things that are important and moving us closer to meeting our goals and values.

**DAILY “To Do” LISTS need to be used to keep track of things that need to be done.**

**CALENDARS need to be used for long-term planning.** **QUADRANT I** activities should be scheduled least since they are urgent and important. **Next, QUADRANT II** activities should be scheduled. Large assignments need to be broken down into smaller tasks. With effective planning, most of the activities will be from **QUADRANT II**.

**AVOID QUADRANT IV** activities. They are the time wasters and should not be scheduled.

---

**AUDITORY LEARNERS** learn best through talking and listening. Tape recording notes and orally repeating things are good study strategies.

**VISUAL LEARNERS** learn by watching, visualizing and observing. Making lists, charts and diagrams are good ways to study.

**TACTILE LEARNERS** learn through handling, touching and manipulating. Building models and drawing diagrams are effective study strategies.

**KINESTHETIC LEARNERS** learn through doing and moving. Practicing through writing, dramatizing or building are effective strategies for learning new things.
Study Area
- The place where you study should be the same every night.
- It needs to be away from distractions such as a den or your bedroom.
- Your study area needs to be equipped with everything you need: a desk, a chair, a lamp, writing supplies, and a waste paper basket.
- Your study area needs to be kept neat and organized.
- A clock in your study area allows you to schedule breaks and monitor time spent on tasks.
- Make a sign for your study area that might say "Genius at Work" or "I am Studying... Please Do Not Disturb."

Study Strategies
- Reread your notes frequently. Review today's notes tonight.
- Summarize your notes on file cards in point form.
- Sort file cards according to categories. Concentrate on one pile at a time. When you know the material, set that card aside and go on. After all cards in one pile are learned, take a break. Tackle the next pile.
- Highlight key words and phrases. Underline main ideas and themes.
- Use a study method such as SQ3R:
  - S: Skim the material slowly. Highlight key points.
  - Q: Make up possible test QUESTIONS.
  - R: READ over the notes, one section at a time.
  - R: REPEAT points to yourself until you know them. When you have learned them, go to the next section and repeat step C.
  - R: REVIEW key points you learned. (The next night before beginning to study new material, take five minutes to review last night's work again.)

Test-Taking Tips
- Read the whole test over before you start. This will help you relax.
- Jot down key words, phrases and dates beside the questions on the test paper.
- Begin with the easiest questions first. This will build your confidence and will guarantee that you don't run out of time before you answer the questions you know the answers to.
- Spend more time on questions that have a high mark value. The amount of time you spend on a question should be proportionate to the value of the question.
- Read the questions carefully to make sure you are answering what is being asked of you. Underline or highlight key words.
- If you have time at the end of the test, use that time to check your work.
- Hand in your test with confidence!

Memory Triggers
- Use rhymes or mnemonics: i.e.: "In 1492, Columbus sailed the ocean blue"
- Draw a picture to represent an idea: i.e.: a comic strip illustrating the stages of Confederation
- Use acronyms: i.e.: "HOMES" to remember the Great Lakes: Huron, Ontario, Michigan, Erie, Superior
- Use acrostics: i.e.: "Every Good Boy Deserves Fudge" to remember the notes in the music scale
- Study in short chunks of time: i.e.: (20 minutes)

DON'T CRAM!
APPENDIX E

Day #1
Time Management Workshop

TIME: 40 minutes

MATERIALS: Blueprint for the Future Worksheet: T-1 (optional)
Personal Blueprint Overhead: T-2
Sample Mission and Vision Statements: T-3
Personal Blueprint Handout: T-4 (optional)

LESSON OBJECTIVE:
Students will use reflective thinking to visualize the person that they would like to be and to identify the principles and values that they desire to live by. Students will be able to differentiate between mission statements and vision statements. Students will develop and evaluate personal mission statements and vision statements.

LESSON:

1. Discuss various professions that require an end in mind before starting a project (ie. a blueprint for a construction worker or brainstorming for a writer).

2. Have students identify a person in their life who has greatly influenced them. This person could be a family member, teacher, coach, or a neighbour. Students are to decide on the qualities that they admire about their role model and list these qualities on Worksheet T-1.

3. Students are to list five or six roles that they fill in life such as student, family member, babysitter, football player. Next, they are to look forward in time and write a brief statement of how they would like to be described and remembered in that particular role.

4. Explain to students what a mission statement is using Personal Blueprint Overhead T-2 and share some examples with them.

5. Students are to develop a two or three sentence mission statement. This can be recorded on the Personal Blueprint Handout T-4.
6. Explain to students what a vision statement is using Personal Blueprint Overhead T-2 and share some examples with them.

7. Have students develop a personal vision statement that is in line with their mission statement.

OPTIONAL LESSON APPLICATIONS:

1. Have students bring three items to class that represent what they truly value in life. Students should be invited to share these items with the class either as a whole group or in small groups.

2. Have students compose letters of reference that they would like to receive from someone such as a teacher, sibling, parent, coach.

3. Have students publish their personal mission statements in poster-like format. Encourage them to display these statements in a highly visible, frequently-visited location such as a locker door or a bedroom mirror. This visual reminder should help to keep them on track.

4. Have students create a collage of pictures, words, etc. that represent their vision statements.
T-1 TIME MANAGEMENT WORKSHEET

BLUEPRINT FOR THE FUTURE

Qualities of my role model that I admire:

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

My Life Roles: How I would like to be described and remembered in that role:

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
Mission Statements are:
* brief but clear.
* what you stand for.
* what you are passionate about and committed to.
* the focus of your beliefs.

Vision Statements state:
* what you want to know.
* what you want to be able to do.
* what you want to be like as a person.

Goals need to be:
* clear but specific.
* measurable.
* reasonable but challenging.
T-3 TIME MANAGEMENT WORKSHEET

Sample Mission and Vision Statements

MISSION STATEMENTS:
(a) I shall not fear anyone on earth.
   I shall fear only God.
   I shall not bear ill toward anyone.
   I shall not submit to injustice from anyone.
   I shall conquer untruth by truth.
   And in resisting untruth I shall put up with all
   suffering.
   - Mahatma Gandhi

(b) Promise Yourself:
To be so strong that nothing can disturb your peace of
   mind.
To talk health, happiness, and prosperity to every
   person you meet.
To make all your friends feel that there is something
   in them.
To look at the sunny side of everything and make your
   optimism come true.
To think only the best, to work only for the best, and
   to expect only the best.
To be just as enthusiastic about the success of others
   as you are about your own.
To forgive the mistakes of the past and press on to
   the greater achievements of the future.
To wear a cheerful countenance at all times and give
   every living creature you meet a smile.
To give so much time to the improvement of yourself
   that you have no time to criticize others.
To be too large for worry, too noble for anger, too
   strong for fear, and too happy to permit troubles.
   - Optimist International

VISION STATEMENT:
Belle River Buccaneers ...
1. Have healthy minds and bodies.
2. Speak politely.
3. Use good manners.
4. Care about others.
5. Protect the environment.
Personal Blueprint Handout

Personal Mission Statement:


Day #2
Time Management Workshop

TIME: 40 minutes
MATERIALS: Personal Blueprint Overhead: T-2
Personal Blueprint Handout: T-4
Priority Management Overhead - T-5

LESSON OBJECTIVE:
Students will be able to develop personal goals that are clear, measurable and reasonable. Students will be able to explain the priority management approach to time management. Students will be able to describe effective planning strategies.

LESSON:
1. Students should begin by reviewing their mission and vision statements.
2. Discuss the importance of clear, measurable and reasonable goals.
   using Personal Blueprint Overhead (T-2).
   ie. A goal must be clear so that it is not misinterpreted. Setting the goal to be a good student or to get good grades is not clear because it means different things to different people.
   A goal must be measurable. If you set a goal to try hard to get all your work done, at the end of the term there will be no way to measure whether or not you have accomplished your goal.
   A goal must also be reasonable. If you worked very hard last term and only got a C in Math, it is probably not reasonable to set the goal of getting an A in Math this term.
3. Based on their mission and vision statements, have students develop three personal goals for this term. These goals should put them closer to their vision. You may want to encourage them to make one or two of them academic.
4. Have students brainstorm time wasters.
5. Use the Priority Management Overhead (T-5) to explain to students that we spend our time in four ways. Go over each quadrant explaining the types of activities that would be found in each quadrant.
6. Explain to students that priority management means spending your time only on what is important. The importance of a task is determined by the beliefs and vision of the individual. Students need to know that their goal is to spend most of their time in Quadrant II (fire prevention) and not in Quadrant I (fire fighting).
7. Discuss how to use a planner/calendar for weekly and long-term scheduling. Discuss the importance of breaking large tasks into smaller chunks (eating an elephant one bite at a time) and setting personal deadlines for the smaller chunks. Discuss daily schedules. Explain how to prioritize tasks and to estimate the amount of time that each task will take.
OPTIONAL LESSON APPLICATIONS:

1. Have students record their goals, steps to help them reach these goals, and how they'll know when they've accomplished their goals on T-4.

2. Prior to the class, have students maintain a record of how they spend their time from the end of the school day until bedtime for one day. They need to record at fifteen minute intervals. You may want to have them develop a key of activities that may take up much of their time to make this task less time consuming. (i.e. h - homework, t - television viewing, e - eating)

Have students divide a piece of paper into four quadrants. Using their completed time records, students are to place each activity that they spent time on in the appropriate quadrant. Have students total each quadrant to determine how much time they spent on each type of activity.
T-5 - Time Management Worksheet

DATE: ______________________

TIME RECORD FOR ______________________

c - eating  t - television viewing
h - homework  s - sleeping
ch - chores  p - telephone

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Day #3
Study Skills and Test-Taking Workshop

TIME: 40 minutes

MATERIALS:
- Map for Study Area: S-2
- Time Management and Study Skills Questionnaire: S-3
- Weekly planner for After School: S-4

LESSON OBJECTIVES:
Students will design and evaluate their study areas.
Students will become aware of managing time for homework and tests.

LESSON:
1. Have students write down five things that the word "study" means to them.
2. Have students list all suggestions under the headings of "Positive Suggestions" and "Negative Suggestions".
3. Discuss the importance of having a homework/study area.
4. Brainstorm things needed in a study area. Have students record these items on S-2 Study Skills Worksheet. Briefly discuss the things selected.
5. Have students complete the questionnaire on time management (S-3). Have the students answer YES or NO on each blank following the questions.
6. Discuss each point following the questionnaire.
7. Make a daily To-Do List and prioritize the items from most important to least important.
8. Go over lists with students asking importance of each student's list.

OPTIONAL LESSON APPLICATIONS:
1. Have students design a study area including the necessary items and other things needed using S-2 Map of My Study Area.
2. Have students use bristol board to design study signs such as "Genius at work" or "I'm studying, please be quiet".
3. Have students fill out weekly chart (S-4) with personal commitments for one week. Mark in things where applicable like supper, soccer practice, newspaper delivery, homework, science test, book report.
ITEMS NEEDED:

Really Important (Necessary):

________________________  ______________________
________________________  ______________________

Somewhat Important:

________________________  ______________________
________________________  ______________________

Not Necessary But Important:

________________________  ______________________
Time Management and Study Skills Questionnaire

1. Do you have a set time each day for completing homework? _____

2. Do you have a set place to study where it is quiet and away from distractions? _____

3. Do you review class notes regularly? _____

4. Do you take the time to write down all class assignments? _____

5. Do you study for a test well in advance of the test? _____

6. Do you only study the night before a test? _____

7. Do you plan homework/study around other commitments? _____

8. Do you set aside a certain amount of time for each subject when doing homework or studying? _____

9. Do you make summary notes for tests? _____

10. Do you study things you already know? _____

11. Do you have a study buddy you can rely on? _____

12. Do you keep your planner up-to-date? _____

13. Do you plan a weekly/monthly calendar to help keep you on track? _____

14. Do you keep summary notes with you to review during spare time? _____

15. When you study, do you take short breaks every 20-30 minutes? _____
S-4 STUDY SKILLS WORKSHEET

WEEKLY PLANNER FOR AFTER SCHOOL

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Additional Notes:
Day #4
Study Skills and Test Taking Workshop

TIME: 40 minutes

MATERIALS:
Memory Triggers: S-5
Test / Assignment Checklist: S-6

LESSON OBJECTIVES:
Students will be able to use the different memory triggers to help reinforce material for tests and quizzes. Students will know how to study for a test effectively and prepare properly for tests and major assignments.

LESSON:
1. Begin by asking students how they study for tests.
2. Give students various memory triggers to use when studying for tests. (S-5)
   (a) Dates and Rhymes
   (b) Pictures
   (c) Number Codes
   (d) Abbreviation Codes
3. Have the students work through the examples for each using S-5.
4. Go through the Test / Assignment Checklist so that students know how to use it.
MEMORY TRIGGERS

1. **Dates and Rhymes:**
   ie. 1. In 1492, Columbus sailed the ocean blue.
       2. The year was 323 BC. Alexander died at 33.

   Now make up your own rhyme for the following:
   1949 - Newfoundland becomes a province
   1903 - the Wright brothers flew an airplane for the first time

2. **Picture Memory:**
   Sometimes a picture will help trigger a memory.
   ie. 1895 - x-rays were discovered by Roentgen
   Draw a quick picture. Then look at it carefully, memorizing the details.

   Now try these picture triggers.

   1. Giant sequoia trees have lived for as long as 4000 years.

   2. Cabot discovered the Grand Banks in 1497.
3. **Number Code:**
   Here's another trigger to help you to remember dates.
   Follow these steps:
   1. Write down the number you need to memorize.
   2. How many numerals are there?
   3. Make up a sentence with the same number of words as numerals.
   4. Each word must have the same number of letters as the corresponding numeral.

   ie. 1. 1275 - Marco Polo reached China.
       2. 4 numerals
       3. Number code sentence: I am totally tired.
       4. Notice that each word has the same number of letters as its corresponding numeral.

   Try these:
   1. 1939 - the beginning of World War II
      Sentence: 
   2. 1876 - the Indian Act passed
      Sentence: 

4. **Secret Code:**
   Often you need to memorize a list of names or words.
   1. Write down the list of words you must memorize.
   2. Write down the first letter of each word.
   3. Make up a silly sentence using the first letter of each word.

   ie. You want to remember the names of the continents:
   1. Asia, Africa, North America, Antarctica, South America, Australia, Europe
   2. A A N A S A E
   3. An alligator nearly ate Sally's Aunt Edith.

   Try these:

   1. Africa's five longest rivers
      First initials: 
      Sentence: 
   2. South America's five smallest countries
      First initials: 
      Sentence: 
S-6 - STUDY SKILLS WORKSHEET

Test / Assignment Checklist

PART I - Important Dates to Remember

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Question Type:

Essay ____  True/False ____  Matching ____
Short Answer ____  Multiple Choice ____

Since I am a ______________ (fill in your learning style) learner, I should check the appropriate boxes for Parts II and III.

PART II - Study Session: Preparation

1. Put out "Do Not Disturb" sign.
2. Turn off radio, TV, stereo.
3. Move to designated study area.
4. Unplug phone, or no phone calls accepted during study time.
5. Get out study materials.
6. Set a specific time to study.
7. Switch on a positive attitude and get ready to succeed.

PART III - Studying

1. Use memory triggers.
2. Summarize notes - key words, phrases.
3. Highlight most important words.
4. Make flash cards with study material.
5. Read material aloud.
6. Record material on a tape recorder.
7. Study with a reliable buddy.
8. Don't spend much time on material you already know.
9. Take short breaks between subjects or sessions.
10. Get a good night's sleep.
11. Have a good breakfast!
PART IV - Test-Taking Tips

1. Take two minutes to read your test over. (This helps to relax you.)
2. Put your name on your paper.
3. Jot down key words, phrases, dates beside questions on test paper.
4. Start answering the easy questions first.
5. Spend more time on questions that have a high mark value.
6. Read the questions carefully to make sure you are answering what is being asked of you.
7. If you have time at the end of the test, use that time to thoroughly check your work for things like:
   (a) spelling
   (b) punctuation
   (c) proper sentences
   (d) indenting paragraphs
   (e) logical order
8. Finally, if you have prepared properly, this test should be a breeze.
VITA AUCTORIS

PATRICIA BREATON OSHAR

Honours Bachelor of Commerce

University of Windsor

Spring, 1987

Bachelor of Education

University of Windsor

Spring, 1988

Master of Education

University of Windsor

Fall, 1997