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THE USE OF WRITTEN ASSIGNMENTS WITH DEADLINES TO
INCREASE THE COMPLETION OF NON-RECURRING TASKS

by

James S. Torrey

A Thesis
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in partial fulfillment
of the
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James S. Torrey

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INTRODUCTION

In any organization task completion is a primary concern. Consequently delegation is also of concern; but, like the weather, delegation is often talked about, but nothing is done about it. Therefore, the present study is a preliminary attempt to develop and validate a systematic procedure for effective task delegation.

Two general strategies dominate the literature on task completion; consequent control and antecedent control. Consequent control involves manipulating the stimulus conditions following the response. Common examples are procedures using feedback (Brethower, 1973; Komaki, Wadell, & Pearce, 1977; Welsch, Ludwig, Radiker, & Krapfl, 1973), contingent trading stamps (Hollander & Plutchik, 1972), and contingent pay (Komaki, et al., 1977; Pierce & Risley, 1974). This strategy has proven successful in most cases; however, in some settings it is difficult to apply because of philosophical objections on the part of the manager or the staff, union concerns, or lack of discretionary resources to use as incentives.

The other strategy, antecedent control, entails manipulating stimulus conditions preceding the response, stimulus conditions such as job descriptions (Pierce & Risley, 1974) and publicly posted assignment sheets (Pommer & Streedbeck, 1974).

Pommer and Streedbeck used antecedent and consequent control separately and together in an attempt to increase tasks completed and the number of procedures initiated by house parents in a residential facility. The authors used a publicly posted assignment

sheet (antecedent control) in one phase, monetary reward (consequent control) in another phase, and the two combined in a third phase. Both forms of control increased and maintained worker productivity over Baseline, but the combination of both proved to be the most effective.

These studies have focused mainly on recurring tasks, which are those completed on a routine basis. On the other hand, many jobs include non-recurring tasks, those done only once or infrequently. Such non-recurring tasks are often a major part of the job for supervisory personnel, yet they have rarely been considered in studies of task completion.

In this study, the researcher manipulated antecedent stimuli: the oral assignment of non-recurring tasks in Baseline compared with a system of written assignments with deadlines for task completion in intervention. Two components of the intervention which are likely to exert control over behavior are written task assignment and specification of deadlines. Written assignment provides the worker with a stimulus which is permanently available and, therefore, more likely to act as a cue to complete the task. With the transient oral assignment, the worker has no lasting stimulus to cue the completion of the task, hence the task may be "forgotten." A deadline may increase task completion because it, in a sense, provides more task specification. When a worker does not have deadlines, it is possible to indefinitely postpone completion of a task from day to day because no one day's postponement is clearly an error. However, if a worker passes the specified deadline, it is clearly an error, an error to be avoided by completing the task prior to the deadline.

METHOD

Subjects and Setting

Four course assistants, ranging in age from 20 to 23, served as the subjects. The researcher selected the subjects with the most work hours from the pool of undergraduate assistants. Three of the four subjects had worked in the Student Centered Education Project (SCEP) at least four months or more. Prior to data collection, the subjects signed an informed consent form (see Appendix A).

The setting, SCEP at Western Michigan University, involves the first four behavior analysis courses for psychology majors and minors. SCEP contains two separate but parallel systems, each responsible for two of the courses. Both have a hierarchical structure with graduate students (managers) at the top, undergraduate course assistants (subjects) next, followed by advanced teaching apprentices and teaching apprentices.

Each of the two managers worked in one of the systems in SCEP, and each had two supervisees who served as subjects. As standard procedure, these managers assigned tasks to the assistants who can either complete the tasks themselves or delegate them to their supervisees; the assistants were responsible for the delegated tasks in either case. The subjects' jobs allowed 10 to 20% of their time for completing or delegating non-recurring tasks.

SCEP was chosen as a setting for this study for two reasons. First, it was readily accessible for the purposes of this study and the managers were willing to accept the inconvenience that the extra data collection and shifting of experimental phases would generate. Second, SCEP seems typical of many organizations whether in education, business, government,

or the human services as it has an hierarchical structure, a well-trained and well-motivated staff, many recurring and non-recurring duties at all levels, and never quite enough staff or resources to do what needs to be done.

Procedures

Oral assignment of tasks

The managers would covertly record each task assignment on a personal assignment sheet (see Appendix B). Then, during the subject's office hours, they would approach the subject and assign the tasks. Examples of such task assignments are: "Could you write a review quiz over Chapter Two?", "Graph last semester's cumulative mean scores." The types of tasks were similar for each subject. Each day the manager would determine which tasks were completed. When a task was completed, he would write down the date of its completion on the personal assignment sheet. The managers did not specify any deadlines in the oral phase; if the subject asked when the task was due, the manager would respond by saying: "as soon as possible".

Written assignment of tasks with deadlines and follow-up

During intervention, the managers used a written memo form to assign tasks (see Figure 1). The form prompted the manager to specify the task, the criteria for completion, and the deadline. After writing out a task memo, he placed it in the particular subject's mailbox. The instructions on the form directed the subject to complete the task, record its completion on the memo, and return it to the manager's mailbox.

The manager kept a carbon copy of each memo in a notebook arranged chronologically according to deadline. He monitored the notebook daily

Figure 1: Task Assignment Form

Figure 1

TO: _____ DATE DUE: _____

FROM: _____ TIME DUE: _____

DATE ASSIGNED: _____

TASK SPECIFICATION:

CRITERIA FOR COMPLETION:

Quality (content): _____

Quantity: _____

Other: _____

NOTE: _____

Recipient. Please complete the section below the dotted line and turn this form into the assigner's mailbox when this task is completed.

Who actually completed this task? Name: _____

Date Completed: _____ Action Taken: _____

for tasks due that day, and then checked the subject's mailbox to see if the appropriate form had been turned in, indicating task completion. The managers sent a follow-up form if they did not receive a task form by the deadline. This form simply stated that a particular task was past due and it should be completed.

Importance and difficulty of the task

Managers recorded two characteristics of the task before they assigned it: the estimated importance of the task to the system and the expected difficulty in completing the task. The importance of the tasks were broken into three categories. First, tasks which were not critical to maintain the system, but completion was desirable. Second, tasks which were important to the maintenance of the system and, if not completed, would harm the system in a small way; this is, it would result in a small crisis which the manager would have to handle. Third, tasks which must be completed in order for the system to function correctly; failure to complete this type of task would precipitate a crisis which would directly affect the students (i.e., a quiz not being ready to distribute to the students). The difficulty of a task was categorized as a task which could be delegated, a task which should take less than one hour to complete, or a task which should take more than one hour to complete. Only the researcher and the managers knew the ratings assigned to the tasks (see Appendix C).

Natural deadlines

Only three tasks were assigned with natural deadlines and these tasks were omitted from the data analysis. A natural deadline is one not specified by the manager, but resulting from the relationship of the task to a relevant event. The event would terminate the opportunity

to complete the task at some point during the study. An example would be the assignment to write an evaluation form for an audience to evaluate a guest speaker who was scheduled for the next day. For each task, the researcher noted whether or not it had a natural deadline.

Reliability

Reliability data were collected for the delivery of the independent variables (task assignment) as well as the dependent variables. As in many behavior modification experiments, it seemed as important to ascertain that the independent variable was correctly applied as that the dependent variable was correctly recorded. Therefore, the manager acted as the primary observer and the researcher as the secondary observer on the application of the independent variable.

The managers could make two errors with regard to the delivery of the independent variable: they could fail to specify the task in sufficient detail and they could inadvertently specify the deadline, which was inappropriate during the oral, no-deadline phase. The reliability of the independent variable was 80% in the oral, no-deadline phase and 91% in the written, deadline phase. Both types of errors occurred with roughly equal frequency in both phases.

The managers could make three errors in recording the dependent variables: (1) say a task was completed when it was not; (2) fail to record a task's completion; or (3) fail to record the correct date of completion. The reliability of the dependent variable was 77% in the oral, no-deadline phase and 100% in the written, deadline phase. The main source of unreliability in the oral, no-deadline phase was the manager's failure to specify the correct date of completion. However,

this low reliability will not affect the primary independent variable, which was the number of tasks completed in each of the two phases.

The secondary observer also rated tasks on importance and difficulty. These ratings were compared to the manager's ratings to determine their reliability. The reliability was 90% for importance and 100% for difficulty. The measure of reliability in all cases was the number of agreements divided by the number of agreements plus disagreements and multiplied by 100.

Design

The oral, no-deadline phase lasted approximately seven weeks, while the written, deadline phase was implemented for five weeks until the end of the study. A reversal design or a multiple baseline design was not used due to the time constraints and the relatively small number of tasks involved.

RESULTS AND DISCUSSION

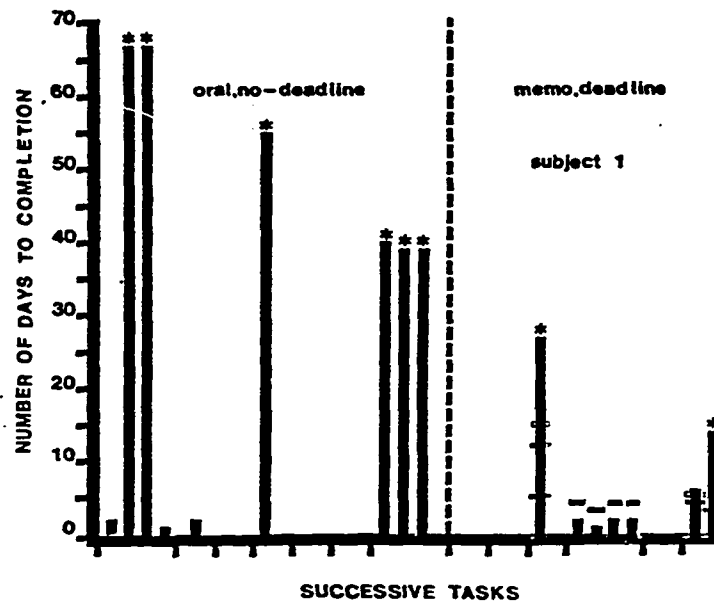
The task memo system clearly increased the completion of the assigned tasks for all the subjects except Subject 2 (see Figure 2). The four subjects completed an average of 53% of the 42 tasks assigned in the oral, no-deadline phase; while in the written, deadline phase, they completed 76% of the 29 tasks assigned. For the three subjects who showed an effect, performance improved from 50% to 90%.

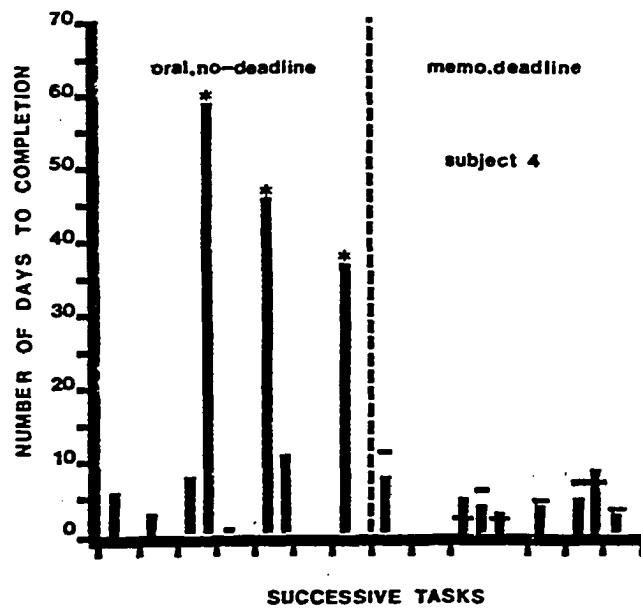
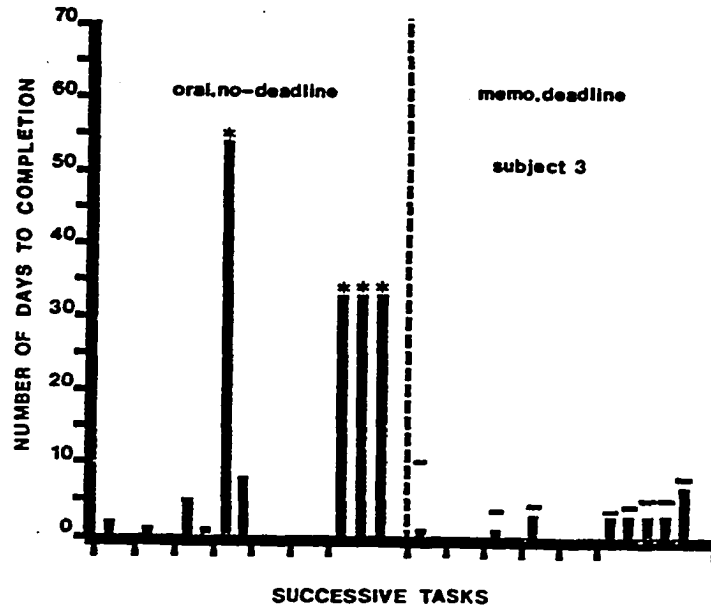
Subject 2 was the only one who failed to increase the percent of task completion from the oral, no-deadline to the written, deadline phase. This might be related to the manager's report of several instances of this subject making statements of discontent with school and home life and of considering dropping out of school and, therefore, the work setting.

There was essentially no difference in the number of days to the completion of a task; for those tasks actually completed, there was a median of 2 days per task during the oral, no-deadline phase and 3 during the written, deadline phase. The data suggest that generally the subjects either completed the task within a week or they failed to complete it at all. The memo system functioned to increase the number of tasks completed within a week, but not to decrease the time for task completion (see Appendix D).

For all types of tasks (i.e., importance and difficulty), there was an increase in task completion from the oral, no-deadline phase to the written, deadline phase (see Table 1). There was no evidence to indicate that the importance or difficulty of a task had any effect

Figure 2: The bars indicate the number of days from assignment to completion. Asterisks signify a task not completed and the end of the semester. Different heights of asterisks within the same week are due to different days of assignment. The dashes on the bottom of the ordinate signify weeks. Weekends and vacation days were not counted in the days to completion. Spring vacation was the second week in the written memo, deadline phase.





on its completion, except that the data do suggest a lower completion rate of delegated tasks which may be due to the subjects' inability to effectively delegate tasks. The fact that the subjects completed important tasks no more reliably than unimportant tasks is somewhat counter-intuitive, strengthening the need for the memo system for important tasks as well as less important ones.

The improvement in performance may be interpreted as a result of the implementation of the memo system rather than as a gradual change in the subjects' performances or as a result of some artifact correlated with the implementation of the system. For two of the three subjects that showed an increase in performance, the increase was immediate. For the other subject, it was immediate with the exception of the first task not being completed. Furthermore, we were unable to detect any changes in the work setting that might have been artifactually correlated with the implementation of the memo system.

A procedural problem concerned timely presentation of the follow-up for tasks not completed by the deadline. Of the 10 opportunities to present follow-up, only once was it presented on time, 4 times it was presented late, and 5 times it was not presented at all. Follow-up resulted in a completed task only once; hence, follow-up had no obvious effect in this situation.

The follow-up data also suggest an analysis of the factors controlling managerial behavior. The follow-up procedure required timely monitoring and minimal effort on the part of the managers. The main discriminative stimuli for follow-up were task assignment sheets, indicating tasks due, along with the absence of task feedback from the supervisee. Given the low frequency of tasks assigned, these follow-up behaviors were required

Table 1

Percent of Tasks Completed in Terms of Importance and Difficulty

Importance of Task	Oral, No-Deadline	Written, Deadline
Least Important	52% (11/21)	70% (7/10)
Important	56% (5/9)	92% (11/12)
Most Important	50% (6/12)	71% (5/7)
Difficulty of Task		
Delegated	48% (12/25)	67% (8/12)
Less than one hour	56% (5/9)	92% (11/12)
More than one hour	62% (5/8)	80% (4/5)
Total	52% (22/42)	79% (23/29)

on only a small number of occasions; therefore, following up on tasks may not have become a regular part of the manager's routine. Furthermore, although completion of a task by a worker helped the setting in general, it might not have been sufficiently rewarding for the manager. Thus, future research with this follow-up procedure is likely to be more successful if immediate consequences or additional prompts are included for the managers.

Another possible avenue of future research could be component analyses to establish which factors were most effective in exerting control over worker behavior (i.e., written assignment, deadlines).

The cost of this system is minimal; typically, managers have to assign tasks, although in this system it takes more time to write out tasks. Furthermore, the time spent monitoring task completion is slight; all the managers have to do is check their mailboxes daily.

The benefit of the system is not only a 52% increase in task completion, but the manager now has a systematic procedure in which to assign and monitor tasks. This results in management information which reflects the performance of subordinates and the performance of the setting as well.

Finally, the task memo system can be implemented in any setting. Presumably, the system of task assignment used in a setting is partly a function of the frequency of manager and employee contact. In a setting of high-frequency contact, many systems of vocal or written task assignment procedures are possible to implement. However, if a setting has a low-frequency of contact, the choice of task assignment systems becomes limited. For example, a district sales manager may seldom come into contact with subordinates, and tasks must either be

assigned vocally (i.e., by telephone) or with some form of written communication. The task memo system does not depend on direct contact and, therefore, applies even to these settings.

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APPENDIX A

CONSENT FORM

I am conducting research in staff management concerned with how to manage staff behavior effectively. I would like to use the SCEP system and request permission to collect data on your daily behavior.

You will not be required to do anything beyond the normal requirements of your job if you participate. My purpose is to validate procedures that we have developed, but have not yet been empirically tested. By signing this form, you agree to permit me to record certain aspects of your behavior for data collection purposes. If the results are later presented in my Master's thesis, or publicly presented either in written or verbal form, your anonymity will be maintained. Furthermore, no one other than the Graduate Assistants or I will have access to the identity of any subjects during the course of the research.

In the event that the data are used for research purposes, all subjects will be debriefed as to the details of the study, and retain their right to withdraw their data from the study at any time, by requesting it in writing from me.

Raw data (subject identification) will be destroyed at the termination of the study.

There are no particular risks for participation, as I will agree to omit any data from this study for use in later assessment or recommendations if subjects withdraw consent. There are potential benefits for participating if the research is successful, SCEP may be able to improve its management techniques.

Thank you very much for your time,

Jim Torrey

I hereby agree to participate in the research. I have read and understood the above conditions and was given an opportunity to ask questions.

(date)

(signature)

APPENDIX B

TASK ASSIGNMENT SHEET

Manager _____

Date Completed	Date Assigned	Natural Deadline	Importance Rating	Difficulty Rating	Task Number	TASK

APPENDIX C

RATING SYSTEM

Importance Rating

- #1 = Least Important: Not critical to the system that this task is completed, but it would be nice if it was.
- #2 = Important: It is important to the maintenance of the system that this task is completed. If not completed, the system will be harmed in some small way.
- #3 = Most Important: These tasks must be completed in order for the system to function correctly. Failure to complete this type of task would harm the system visibly.

Difficulty Rating

- #1 = A task that the Course Assistant delegates.
- #2 = The task takes less than one hour to complete.
- #3 = The task takes more than one hour to complete.

Natural Deadline

If you believe that a task you assign has a natural deadline, put a mark in the pertinent column on the task form. An example would be the task of writing a review quiz which is targeted for a certain date.

APPENDIX D

Median of Days from Assignment to Completion

	Oral, No-Deadline	Written, Deadline
Subject 1	1.75	2.00
Subject 2	1.50	1.00
Subject 3	2.00	2.50
Subject 4	6.00	4.50
Total	2.00	3.00