The Effects of Daily and Weekly Supervisor Feedback on the Performance of University Clerical Staff

Christopher Benjamin Turla
Western Michigan University

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THE EFFECTS OF DAILY AND WEEKLY SUPERVISOR FEEDBACK ON THE PERFORMANCE OF UNIVERSITY CLERICAL STAFF

by

Christopher Benjamin Turla

A Thesis
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the requirements for the Degree of Master of Arts
Department of Psychology

Western Michigan University
Kalamazoo, Michigan
August 1991

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THE EFFECTS OF DAILY AND WEEKLY SUPERVISOR FEEDBACK ON THE PERFORMANCE OF UNIVERSITY CLERICAL STAFF

Christopher Benjamin Turla, M.A.
Western Michigan University, 1991

This study evaluated the effectiveness of a feedback system developed to increase the productivity and job satisfaction of clerical staff in a university unit that admitted and audited students. Weekly and daily feedback were compared. Employees self-recorded the quantity and type of tasks completed throughout the study. In feedback condition 1, the supervisor delivered feedback once a week to two employees and everyday to three employees. In feedback condition 2, feedback frequencies were switched such that employees who first received weekly feedback received daily feedback, and employees who first received daily feedback received weekly feedback. Job satisfaction was measured before feedback condition 1 and after feedback condition 2 using the Work Environment Scale (Moos, 1981). Results indicated that (a) performance during both feedback conditions increased over baseline performance, (b) performance was not differentially affected by the two feedback frequencies, and (c) job satisfaction increased following the implementation of the feedback system.
ACKNOWLEDGEMENTS

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I also extend many thank yous to Susan Goeters. Her help with this research was immeasurable and greatly appreciated. Her professionalism and friendship made this experience enjoyable, even in the hardest times.

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Most of all I would like to thank my parents Benjamin and Nancy, my sister Mila, and my brothers Carlos, Noel, and Rex. Their love and support are sources of motivation and admiration, as they have been and forever will be.

Christopher Benjamin Turla
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The effects of daily and weekly supervisor feedback on the performance of university clerical staff

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CHAPTER I

INTRODUCTION

Gilbert (1978) maintains that in order for an employee and an organization to be competent (i.e., productive and efficient), strong environmental supports are needed. One type of support, and often the most effective according to Gilbert, is feedback about accomplishments. Feedback is defined by Brethower (1972) as "Information about past performance which is used to guide future performance" (p. A-1). Prue and Fairbank (1981) define performance feedback as information provided to individuals about the quantity or quality of their past performance. Feedback as a management procedure for increasing employee performance has been utilized extensively (Balcazar, Hopkins & Suarez, 1985-86; Duncan & Bruwelheide, 1986; Emmert, 1978; Ford, 1980). Research has shown that specific characteristics of feedback stimuli differentially affect employee performance. These characteristics include source, privacy, participants, content, mechanism, and frequency (Balcazar et al., 1985-86).

Several studies of performance feedback have emphasized the productivity of clerical workers. The tasks of clerical employees generally involve repetitive processing of information such as applications, transcripts, billing statements, and other forms. In one study at Union National Bank in Little Rock, Arkansas, proof operators increased the rate of checks proved and deposited when a performance standard and feedback system were applied (Dierks & McNally, 1987). Feedback also was used successfully as part of a performance management package by the U.S. Department of Housing and Urban Development to improve the productivity,
accuracy and timeliness of clerical staff performance across a variety of tasks (Brand, Staelin, O'Brien and Dickinson, 1982). Similarly, Jones, Morris and Barnard (1985) demonstrated increased accuracy of information included in civil commitment forms filed by mental health workers when a performance management program including feedback was implemented.

Although many performance feedback interventions have been applied successfully to improve clerical workers' performances in various organizations, few have been attempted in university settings. This deficit exists in spite of the fact that universities thrive on clerical outputs and require extensive data processing across units and employees. A potentially fruitful area for application within a university is admissions processing. In admissions offices, clerical tasks include the processing of applications, calculation of grade point averages, admissions reviews and other brief repeated clerical functions. The work conducted in the admissions office (e.g., application processing and graduation audits) directly affects the number of students admitted to and graduating from the university. Therefore, these tasks must be done accurately and on a timely basis to increase enrollment and to graduate students as soon as requirements are met.

To date only a few studies have addressed staff management problems in admissions processing (Barnett, 1973; North Carolina University, 1988; Wilk & Redmon, 1990a). Wilk and Redmon (1990a) implemented a performance feedback system in an undergraduate admissions processing center in an effort to improve the speed of admissions reviews and related tasks. In this study, the operations supervisor met briefly with each employee each morning to set goals, and followed up by providing feedback twice each day to each employee in brief face-to-face contacts. This approach resulted in a dramatic increase in productivity and satisfaction, an effect which was sustained over several years.
The findings of Wilk and Redmon (1990a) were replicated and extended by a second study in a different university (Wilk & Redmon, 1990b). In the second study, daily goals and feedback were applied by supervisors and large increases in productivity were observed. Additionally, in a second phase, Wilk and Redmon added graphic feedback to the verbal feedback used by supervisors and observed even higher performance levels.

Although the work by Wilk and Redmon provides a beginning for the development of a management model in a university setting, more research in the admissions environment is needed to examine the feedback features that would make such an intervention most efficient. One feature which may affect performance levels is the frequency with which feedback is delivered to employees (Adam, 1975; Chandler, 1977; Miller, 1977). Ilgen, Fisher and Taylor (1979) suggest that a positive relationship exists between frequency of feedback and performance. This position is supported by a review by Balcazar et al. (1985-86). These authors classified feedback frequency in terms of six intervals: (1) daily (one or more times in a period of 24 hours); (2) weekly (any frequency less than once per day and at least once per week); (3) monthly (any frequency less than once per week and at least once per month); and various combinations of intervals, such as (4) daily and weekly feedback; (5) monthly and weekly feedback; and (6) no feedback. Their review indicated that daily and weekly feedback have been consistently more effective than monthly feedback and revealed no differences between the consistency of effects of daily and weekly feedback.

In a study by Ford (1980), the effects of no feedback, weekly feedback and monthly feedback on the goal statement writing of nine mental health professionals were investigated. During a three-month baseline, the training project director reviewed and evaluated each professional’s goal statements in terms of conditions,
observable and measurable behaviors, and/or appropriate criteria for goal accomplishment. After baseline, the professionals received an eight-hour training session on how to develop and write goals. Furthermore, after the training session, the professionals were randomly assigned to the three different feedback conditions (i.e., no feedback, weekly feedback, and monthly feedback), during which the training project director delivered feedback to the professionals concerning their goal writing skill maintenance. Throughout the study, all other dimensions of feedback (e.g., individual, private, personal, etc.) were held constant. The results indicated that performance was maintained best in the weekly and monthly feedback conditions, with relatively little difference between the two conditions. Also, both of these conditions yielded significantly higher performance than the no-feedback condition.

In a study by Chhokar and Wallin (1984), similar results were found when varying frequencies of feedback were compared. They investigated the safety performance of employees in a heat exchanger manufacturing and repair plant as a function of bi-weekly feedback and weekly feedback along with training and goal setting. Feedback was delivered in the form of a publicly-posted graph which presented the average safety performance of the group each week. Their study revealed no significant safety performance differences between the weekly and bi-weekly feedback conditions. However, both feedback conditions were associated with considerable improvements in safety performance over baseline and training and goal setting conditions in which no feedback was delivered. In general, the available research shows that daily and weekly feedback are much more effective than monthly feedback; however it is unclear whether daily feedback provides an advantage over weekly feedback (Balcazar et al., 1985-86).

The purposes of the present study were to (a) compare the effects of daily and weekly performance feedback on the productivity of clerical workers, and (b) add
information to the recent literature on performance management in university departments that admitted and audited students. Specifically, clerical worker productivity was assessed during a self-recording baseline, and under weekly feedback and daily feedback conditions. This study also assessed employee job satisfaction prior to and following the implementation of the two feedback conditions.
CHAPTER II

METHOD

Subjects

Five employees in the graduate college of a large midwestern university served as subjects. The employees were part of the student services unit within the college. This unit consisted of one director, one supervisor/analyst, four academic analysts, and one receptionist. The four academic analysts and the receptionist served as the subjects of this study. All employees were females and had been employed in the department for at least three months. All the employees were made aware of the study through an announcement in a staff meeting and were required to sign a consent form so that the data collected could be used for scientific presentations and/or other research purposes (see Appendix A for a copy of the Subject Consent Form and the Human Subjects Institutional Review Board Approval Letter).

Setting

The main work area consisted of a reception station, analysts' cubicles, and the director's office. Each employee had a computer terminal at her desk; file cabinets containing student records were located throughout the department. This area also included other graduate college staff, who were neither part of the student services unit nor this study.
Dependent Variables

Performance of Academic Analysts

Analyst performance was measured by recording the number and type of tasks completed each day on a self-recording data sheet. The tasks are described below (each followed by a code assigned by the researcher):

1. **Entering a file (ENT FI)**. The employee loads and enters a student admissions application onto a computer file. The employee searches for the student file on the computer and updates the file to include the student admissions application.

2. **Calculating a Grade Point Average (CAL GPA)**. The employee mathematically calculates student grade point average, based on the student's junior and senior undergraduate and graduate coursework; the employee obtains this information from the transcript, records the GPA in the student's folder and enters it in the student's computer file.

3. **Sending file to department (TO DEPT)**. The employee duplicates the student's transcript and application and sends the information to the appropriate department; the employee places the hard folder in the "out to Department" file and codes it with a green tag.

4. **Admissions decision (ADM DEC)**. The employee receives the student's file from the department and approves or does not approve admission; the employee records the decision in the student's hard folder and updates the student's computer file with the appropriate action code.

5. **Notifying student (NOT STU)**. The employee mails a certificate of admission to the student (if admitted) or mails a denial letter to the student (if not admitted); the employee duplicates these pieces of information and files copies of them in the student's hard folder.
6. **Completing terminal check (TER CHK).** The employee checks the computer file for the student's curriculum status and grades, and records the cumulative hours and GPA on the screen of the computer file; the employee files the student's application in a special file if he/she has not completed required credits.

7. **Candidacy delay (CAN DEL).** The employee mails a letter of delay to the student, indicating the reason(s) for the delay; the employee files a copy of the letter in the student's hard folder and sends a copy to the advisor; the employee codes the student's computer file with the appropriate action code.

8. **Candidacy approved (CAN APP).** The employee mails a letter of candidacy approval to the student and sends a copy to the advisor; the employee files a copy of the letter and the candidacy application in the student's hard folder; the employee codes the student's computer file with the appropriate action code.

9. **Entering graduation application (ENT APP).** The employee enters the graduation application information on to the student's computer file.

10. **Completing pre-audit (PRE-AUD).** The employee checks the student's status against his/her program using an audit checklist located in his or her hard folder.

11. **Notifying student (NOT STU).** The employee mails an audit letter to the student if it is possible for the student to graduate and files a copy of the letter in the student's hard folder; the employee mails a "No" letter, if it is impossible for the student to graduate, and files the letter in the student's hard folder; the employee mails a copy of the letter to the student's advisor.

**Performance of Receptionist**

The performance of the receptionist was measured by two separate tasks described below:
1. **Coding applications (COD APP).** The employee records the school code on the student's admissions application.

2. **Student paid (STU PA).** The employee stamps the student's admissions application PAID if the application fee is received by the employee.

Other Measures

Other dependent measures included overtime costs and absenteeism. Overtime costs were measured in terms of the dollar amount spent on hours worked in addition to regular work hours for all employees in the unit and amount spent on part-time help. Absenteeism was measured in terms of the number of work hours missed per pay period for all employees in the unit. Absenteeism measures did not include paid absences. These measures were obtained from the unit records and were tracked throughout the study.

Finally, job satisfaction was measured before and after the study using the Work Environment Scale (WES) (Moos, 1981). The WES is a 90-item true-false instrument which is designed to identify important areas for change in a work setting. The results are displayed in terms of 10 subscales which emphasize different aspects of the setting. These subscales are described below:

1. **Involvement** represents the extent to which staff are committed to and involved with their work.

2. **Peer Cohesion** portrays the kind and extent of relationship among workers in a setting.

3. **Supervisor Support** represents the type and extent of supervisor involvement with employees.

4. **Autonomy** reflects the level of independence and responsibility given to individual employees in performing their daily work.
5. **Task Orientation** assesses the extent to which attention is given to work tasks on a continuing basis.

6. **Work Pressure** assesses the level of stress placed on employees to get things done or to hurry their work.

7. **Clarity of Tasks** examines the extent to which work tasks are clearly described and understood by workers.

8. **Control** refers to the extent to which employees are expected to follow rules, policies and guidelines and how closely rules are enforced by the supervisory system.

9. **Innovation** assesses levels of variability and creativity that are tolerated within the organization.

10. **Physical Comfort** examines the level of comfort of the environment for everyday work.

### Reliability

Ten percent of all tasks that were reported as complete were selected randomly for reliability checks each week. Reliability was assessed by checking student folders and computer files for task products to confirm the data reported by employees on self-recording sheets. Percent agreement between employee reports and reliability samples was calculated as follows:

\[
\frac{\text{# of Agreements}}{\text{# of Agreements} + \text{Disagreements}} \times 100
\]

where (1) an agreement was scored when the employee’s self-recorded data were consistent with what the researcher found when checking the student’s folder or computer file, and (2) a disagreement was scored when there was a discrepancy between what the employee recorded and what the researcher found. Weekly agreement percentages ranged from 63% to 100% (mean of 92%).

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Independent Variable

The independent variable in this study consisted of a comparison of two different frequencies of performance feedback delivered by the supervisor. The two frequency conditions were (1) daily feedback and (2) weekly feedback. During the daily feedback condition feedback was delivered once during the first hour of each work day and consisted of a description of the previous day's performance. During the weekly feedback condition, feedback was delivered once during the first hour of work each Monday morning and described the previous week's performance.

Both daily and weekly feedback were delivered privately by the immediate supervisor in face-to-face interactions with each employee. The content of the feedback consisted of a verbal statement of the number of tasks completed (e.g., "You completed 98 tasks yesterday"), and a verbal statement about the appropriateness of the previous performance (e.g., "The graduation tasks you completed are exactly what we needed to work on"). In determining the appropriateness of the employee's performance, the supervisor considered the needs and seasonal demands of the unit. For example, prior to graduation ceremonies each semester, it is necessary to focus more work time on auditing graduation files as compared to other candidacy or admissions tasks.

In addition to feedback, verbal praise was given if performance met the unit's needs and seasonal demands (e.g., "Good job, keep up the good work!"). However, if performance did not meet the demands, a verbal statement of redirection was given; and the supervisor asked if there was any problem with which she could help (e.g., "We need to work more on admissions tasks. Is there anything that I can do to help?").
Procedures

Baseline

During this phase each employee self-recorded the number and type of tasks they completed on Work Measurement System (WMS) data sheets (see Appendix B). The WMS data sheets were turned in to the supervisor at the end of each work day and data were summarized by the supervisor on a data summary sheet. The supervisor provided no "specific" feedback to the employees during this condition; she did, however, continue to provide regular supervisory direction (e.g., staff meetings, problem solving, training, project assignments).

Feedback Intervention

Prior to the intervention, the researcher trained the supervisor to analyze performance trends and to identify problems using the data sheets. The supervisor also was trained to implement the feedback intervention during a two-hour session in which the researcher described the type of feedback to be delivered, analyzed data sheets, and modeled a feedback situation. The training also required that the supervisor practice data analysis and feedback delivery.

When adequate baseline data were collected, the supervisor told the employees, on an individual basis, that she would begin meeting with them each morning (if the employee was in the daily feedback condition), or every Monday morning (if the employee was in the weekly feedback condition) to provide performance feedback. The implementation of the feedback procedure was described as an extension of the ongoing management system.

During the first hour of work each morning (or Monday morning in the weekly condition), the supervisor reviewed the data summary sheets and determined each
employee's previous performance. The supervisor then determined the appropriateness of the employee's performance based on the unit's needs and seasonal demands, constructed an appropriate verbal consequence and delivered the consequence to each employee. Also, within the first hour of work each morning (or Monday morning in the weekly condition), the supervisor met with the appropriate employees and provided feedback and the verbal consequence. When this procedure was completed, both the supervisor and the employee initialed the verification section on that day's WMS data sheet to indicate that the feedback episode had occurred.

Experimental Design

A counterbalanced ABC/ACB design with five employees was used. The conditions are described below.

Baseline/Condition A

Employees self-recorded their tasks on the data sheets and turned in their WMS data sheets at the end of each day. No "specific" feedback was delivered during this condition.

Daily Feedback/Condition B

The supervisor provided each employee with an explanation of the daily feedback procedure the morning the intervention with that employee began. During this condition the supervisor delivered feedback on a daily basis.
Weekly feedback/Condition C

The supervisor provided each employee with an explanation of the weekly feedback procedure the morning the intervention with that employee began. During this condition the supervisor delivered feedback once each week on Monday morning.

The employees were assigned randomly to two experimental groups, one with three subjects and the other with two subjects. Group 1 received feedback in the following order: Baseline (A), daily feedback (B), weekly feedback (C). Group 2 received feedback in the following order: Baseline (A), weekly feedback (C), daily feedback (B). Experimental conditions were changed when visual analysis indicated that performance data were stable.

Verification of the Intervention

The researcher verified the supervisor's intervention with the employees by examining the verification section of the WMS data sheet for the supervisor and employee initials. Any instance of disagreement as indicated by the absence of initials on the data sheet was brought to the attention of the supervisor and counted as a "disagreement." Percent agreement between planned supervisor contact and the reported number of contacts was calculated to indicate the degree of success in implementing the independent variable. Data indicative of the reliability of the supervisor in providing feedback are presented in Table 1. Checks on the integrity of feedback implementation indicated that the feedback was provided in 76% of the planned opportunities. In most cases where a disagreement was recorded the employee did not initial her data sheet to indicate that feedback was provided. This, however, does not necessarily indicate that feedback was not given. On all planned occasions, the supervisor recorded her initials on the employee's data sheet.
Table 1
Percent Agreement Between Planned Supervisor Feedback and Completed Supervisor Feedback for Each Employee in Each Feedback Condition

<table>
<thead>
<tr>
<th>Employee</th>
<th>Percent Agreement of Supervisor Feedback Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Weekly</td>
</tr>
<tr>
<td>#1</td>
<td>100%</td>
</tr>
<tr>
<td>#2</td>
<td>50%</td>
</tr>
<tr>
<td>#3</td>
<td>100%</td>
</tr>
<tr>
<td>#4</td>
<td>40%</td>
</tr>
<tr>
<td>#5</td>
<td>100%</td>
</tr>
</tbody>
</table>

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CHAPTER III

RESULTS

Employee Performance

Performance was measured for baseline and both feedback conditions on a daily basis throughout the study for a total of 105 days (21 weeks). Data were analyzed for each employee by dividing the total number of completed tasks per week by the number of days worked for that week. This resulted in one score per week. Using these weekly data points, the means and standard deviations were calculated for each experimental condition. Table 2 presents the means and standard deviations of all tasks completed per day for each week across baseline and both feedback conditions for Employees 1 through 4. Employee 5's data are provided separately in Table 3.

All employees, in both weekly and daily feedback conditions, exhibited large increases in their average daily performances after the first feedback condition was implemented. Also, each employee maintained a higher performance level during the second feedback condition than during baseline.

The performance data for Employees 1 through 4 also are displayed in Figure 1. This figure shows the total number of tasks completed each week by all employees for all tasks combined, admissions tasks, candidacy tasks, and graduation tasks across Baseline and both feedback conditions. Experimental condition changes are indicated by a dotted, vertical line. All subjects were told that the intervention was going to be implemented at the beginning of Week 11; however, only those two employees in the daily feedback condition received feedback during Week 11. The other two
employees in the weekly feedback condition started receiving feedback on Monday morning of Week 12.

Table 2
Mean Tasks Completed per Day and Standard Deviations (SD) per Week by Employees 1-4 During Baseline, Weekly (W) and Daily (D) Feedback Conditions

<table>
<thead>
<tr>
<th>Employee</th>
<th>Baseline Mean (SD)</th>
<th>Feedback 1 Mean (W) SD (D)</th>
<th>Feedback 2 Mean (W) SD (D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>37.0 (W) 6.6</td>
<td>44.0 (D) 13.4</td>
<td></td>
</tr>
<tr>
<td>#2</td>
<td>19.9 (D) 9.5</td>
<td>37.0 (W) 15.6</td>
<td></td>
</tr>
<tr>
<td>#3</td>
<td>26.9 (D) 17.0</td>
<td>38.6 (W) 8.1</td>
<td></td>
</tr>
<tr>
<td>#4</td>
<td>21.0 (W) 10.9</td>
<td>37.0 (D) 7.2</td>
<td>37.7 21.3</td>
</tr>
</tbody>
</table>

The total number of tasks completed each week by all employees in the unit increased above the baseline level at the start of the intervention. This increased performance level was maintained throughout the study. During Week 17, total unit performance decreased below baseline levels, but increased significantly the following week.

Individual performance data are presented in Figure 2, which shows the average number of tasks completed per day by each employee for each week during baseline and both feedback conditions. These data show similar trends across employee performances.
Employee 1 averaged 37 tasks during baseline, 58 tasks during the weekly feedback condition, and 44 tasks during the daily feedback condition. Employee 2 averaged 20 tasks during baseline, 47 tasks during the daily feedback condition, and 37 tasks during the weekly condition. Employee 3 showed similar performance trends averaging 23 tasks during baseline, 41 tasks during the daily feedback condition, and 39 tasks during the weekly feedback condition. Employee 4 is the only individual whose performance did not decrease during the second feedback condition. She averaged 22 tasks during baseline, 37 tasks during weekly feedback, and 38 tasks during the daily feedback condition. For most employees, it appears that performance was more stable during the weekly feedback condition than in the daily feedback condition, but no systematic differences in performance were noted across the two conditions.
Performance data for Employee 5 were analyzed separately since the tasks she performed differed from those done by other employees in the unit. Table 3 displays means and standard deviations for employee 5 for all tasks completed during baseline, daily and weekly feedback conditions.

Table 3

<table>
<thead>
<tr>
<th>Employee</th>
<th>Baseline Mean</th>
<th>Baseline SD</th>
<th>Daily Mean</th>
<th>Daily SD</th>
<th>Weekly Mean</th>
<th>Weekly SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>#5</td>
<td>45.0</td>
<td>9.5</td>
<td>55.6</td>
<td>7.2</td>
<td>58.4</td>
<td>35.5</td>
</tr>
</tbody>
</table>

Similar to the other employees, the performance of Employee 5 increased above baseline levels during the daily feedback condition and the weekly feedback condition. Furthermore, her performance was not significantly different during daily versus weekly feedback conditions. Performance data for employee 5 also are displayed in Figure 3.
Figure 2. Average Number of Tasks Completed per Day for Each Week During Baseline, Daily and Weekly Feedback Conditions.
Overtime Costs

Overtime costs were calculated for each bi-weekly pay period six months prior to the study and for each condition during the study. This measure is described as (a) hours that the employees worked over the 40 hour work week, and (b) any money spent on additional part time staff to help complete the unit's tasks. Table 4 shows the mean dollar amount spent per pay period and standard deviation for six months prior to the study, baseline, and both feedback conditions. The data indicate an upward trend in the amount of money spent prior to and throughout the study. Money spent on overtime ranged from an average of $120.50 per pay period during the six months prior to the study, to $132.22 per pay period during baseline, to $371.23 per pay period during both feedback conditions. Historical data on overtime indicated an upward trend in the average dollar amount spent per pay period. In 1987-88 an average of $79.82 per pay period was spent on overtime costs; in 1988-89 an average
of $73.00 per pay period was spent; and in 1989-90 an average of $152.88 was spent on overtime costs (an average of $264.95 per pay period was spent during this study).

Table 4

Mean Amount of Dollars Spent per Pay Period and Standard Deviations for Overtime and Part-Time Staff Six Months Prior to the Study (Pre-Study), Baseline, and Both Feedback Conditions

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Study</td>
<td>$120.50</td>
<td>$128.51</td>
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<td>Baseline</td>
<td>$132.22</td>
<td>$120.41</td>
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<tr>
<td>Feedback Conditions</td>
<td>$371.23</td>
<td>$154.88</td>
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Absenteeism

Absenteeism was determined by the number of work hours missed by the employees per bi-weekly pay period. Paid absences (e.g., vacation) were not included in this analysis. These data are presented in Table 5. The average number of hours missed by all employees shows an increasing trend throughout the study. Prior to the study an average of 7.96 hours per pay period were missed by all employees. During baseline an average of 8.53 hours per pay period were missed. The average increased significantly to 15.10 hours missed per pay period during both feedback conditions. It is not clear whether the large increase in hours missed during the feedback conditions was a result of the implementation of the feedback system.
### Table 5
Mean Number of Hours Missed per Pay Period and Standard Deviations for Six Months Prior to the Study (Pre-Study), Baseline, and Both Feedback Conditions

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<th>Mean</th>
<th>Standard Deviation</th>
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<tr>
<td>Pre-Study</td>
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<td>8.21</td>
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<tr>
<td>Baseline</td>
<td>8.53</td>
<td>6.89</td>
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<tr>
<td>Feedback Conditions</td>
<td>15.10</td>
<td>16.23</td>
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</table>

However, it is clear that even though an average of 15.10 hours per pay period were missed during the feedback conditions, performance was still significantly higher than during baseline. It is more likely that the increase in absences during the feedback conditions were due to factors such as pregnancies (two employees) and illnesses (one employee was experiencing high blood pressure problems).

**Job Satisfaction**

Job satisfaction results were derived from the Work Environment Scale (Moos, 1981). The results are displayed in terms of 10 subscales which emphasize different aspects of the work setting. Each subscale score is presented in terms of "T" scores where 50 is average and 10 above or below (i.e., less than 40 or greater than 60) is considered to indicate significant deviation from the average. Thus, a score of 70 on work pressure would indicate that pressure is significantly greater than the average. Normative scores are based on samples taken from employees in many different work environments.

The Work Environment Scale post-intervention test results indicated that job satisfaction improved slightly after the implementation of the feedback system. Pre-
and post-intervention scores are displayed in Table 6. There were small positive changes in Involvement, Peer Cohesion, Supervisor Support, Task Orientation, Control, and Innovation. The only significant improvements occurred in Autonomy and Physical Comfort. The pre-intervention score for Autonomy was 50 and the post-intervention score was 60. The Physical Comfort pre-intervention score was 33 and the post-intervention score was 56. Although the changes in Work Pressure were not considered significant, an increase in this area was reported. Work Pressure scores changed from a pre-intervention score of 69 to a post-intervention score of 74.

Table 6

Work Environment Scale Results: Pre- and Post-Intervention Scores for WES Subscales

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Pre-Intervention</th>
<th>Post-Intervention</th>
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<td>Peer Cohesion</td>
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<td>Autonomy</td>
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<td>Task Orientation</td>
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<td>Work Pressure</td>
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<td>Clarity of Tasks</td>
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<td>Control</td>
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<td>66</td>
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<tr>
<td>Innovation</td>
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<td>59</td>
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<tr>
<td>Physical Comfort</td>
<td>33</td>
<td>56</td>
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</table>
CHAPTER IV

DISCUSSION

The results of the present study provide evidence that supervisor feedback can be used effectively to increase the productivity and job satisfaction of employees who perform clerical tasks in a university unit that admits and audits students. The results of this study also indicated that weekly and daily feedback delivery do not yield significantly different effects on individual performance levels.

The findings of this study suggest that the performance feedback system was responsible for the observed improvements in employee performance. During the feedback conditions, the number of tasks completed per day for each employee increased immediately over self-recorded baseline rates. Also, the increased performance rates were maintained over time throughout both feedback conditions.

The increased performance rates of the employees also indicate that a performance feedback system can be an effective management device in university admissions departments. This finding supports research conducted by Wilk and Redmon (1990a, 1990b) in similar settings. In addition to increasing performance, this type of system has other useful management characteristics from which admissions departments can benefit. It allows the supervisor to monitor employee performance consistently and accurately and respond to it effectively. Furthermore, this approach ensures the accuracy of self-reported performance data in that verification checks are built into the measurement system. These features have been lacking in other approaches to performance improvement in admissions management (Wilk & Redmon, 1990b).
In general, the results of this study are consistent with other studies on feedback (Balcazar et al., 1985-86) in that they demonstrated performance increases when a supervisory feedback system was used, and in that weekly and daily feedback did not affect performance differentially. Several factors, however, which may have influenced the performance levels in this study should be considered. First of all, self-recording was used to measure and track employee performance. This method of measurement automatically provides an employee with immediate information regarding his or her past performance; thus, employee performance may have been inflated in baseline. However, large improvements in employee performances when the feedback conditions were implemented indicate that the effects of the self-recorded feedback did not have a significant impact on performance. Second, the main source of feedback in this study was the supervisor. As Balcazar et al. (1985-86) point out, supervisory feedback has been shown to be more effective than other forms of feedback. It is important to note that in this study the source of feedback during the first three weeks of the first feedback condition was the director of the support staff. This was the case because the regular supervisor took her annual vacation and circumstances would not permit the delay of the implementation of the feedback until her return. While it was not the intention of the researchers to study the effects of feedback provided by different levels of management (i.e., director versus supervisor) an informal opportunity for such a comparison was present; employee performance levels did not seem to be affected significantly by feedback from the two different levels. Third, in order to prevent employee performances from being affected significantly by competition and/or other social influences, supervisor feedback was delivered privately to each employee. It is not known whether or not the employees discussed their performance levels with each other or if this had an effect on their performance. Fourth, part of each feedback episode contained a verbal consequence
contingent on previous performance; in this statement direction towards future work was given in a general way; however, no specific goals were set. The extent to which these statements served as goals and affected performance is unclear.

A fifth possible cause for the improved performance across feedback conditions involves the effects of seasonal demands. In admissions, task requirements change throughout the year thus requiring shifts of time and resources from one area to another. For example, prior to the beginning of each semester employees must focus on admissions tasks. This demand occurred around week 13 for the spring semester and week 18 for the summer semester in the present study. Similarly, during December and April, emphasis is placed on graduation tasks. This occurred around week 3 for winter graduation and week 13 for spring graduation. The results show that employee performance on admission tasks and graduation tasks increased during these periods. Seasonal demands for admission tasks did not occur during the baseline condition; therefore the increased performance levels observed during the feedback conditions could have been differentially affected by this factor. The extent to which changes in demands contributed to the performance changes observed during the feedback phases is not clear. Future research in this area should consider the performance of such a department throughout an entire year so that the seasonal changes could be controlled more directly.

Of special interest to this study was the frequency of feedback delivery. The results indicated that the delivery of daily feedback provided no clear advantage in performance over weekly feedback. Similar performance levels across both feedback conditions suggested that daily feedback did not provide new and relevant information or motivation necessary to improve employee performance any more than weekly feedback. This outcome is consistent with the results of other studies which indicated that the use of performance feedback is clearly more effective than no feedback at all.
and that daily and weekly feedback do not affect performance differentially (Chhokar et al., 1984; Ford, 1980).

One possible explanation for the lack of differences observed across feedback frequencies involves the type of work being done. The usual tasks performed by employees in the present study did not change much from day to day. And the seasonal changes described above occurred only infrequently. It may be that frequent feedback is most effective when tasks are more complex or are changed more often, making frequent information on task requirements or confirmation of performance pattern more useful.

Overall, the noted changes in performance appear to be caused by the implementation of the feedback system. However, it is important to note that such an inference about the study's internal validity should be made with caution because of the type of design used (i.e., a counterbalanced ABC/ACB design). Without the use of reversal phases (e.g., ABCBCA) or the staggered implementation of the independent variables (i.e., multiple baseline) across subjects, a conclusion that increased performance levels were caused solely by the feedback system must be tentative. The applied nature of this study did not allow the researcher to reverse conditions back to baseline nor stagger the implementation of the feedback conditions. These shortcomings in experimental control were caused by variables beyond the control of the researcher (e.g., project budget, unit deadlines, lack of consent to withdraw feedback because of possible decline in performance, threat of employee burn-out during extended baseline). While the internal validity of the study may be threatened, the study's external validity appears to be strong in that similar results have been found in other studies which used feedback as a performance management tool in university admissions departments (Wilk & Redmon, 1990a, 1990b).
The data indicated that as the study progressed the unit spent an increasing amount of money for overtime and hired temporary help. This appeared to be the result of increases in the number of applications and files to be processed by the unit and not the management system. Even though the unit demonstrated improved performance levels during both feedback conditions, it was not enough to handle the growing number of tasks to be completed; thus, it became necessary to work overtime and hire temporary help. Data on work input showed that the number of admission applications submitted the year prior to this study was 9,523 and increased to 10,925 during the year that this study was conducted. The increase of 1,402 applications reflects current trends in enrollment and increases the need for staff. These figures represent only admissions applications and do not include the other tasks involved in the candidacy and graduation categories. It is assumed that tasks in other categories also increased. Given these trends, it is possible that without the implementation of the supervisory feedback system the amount of money spent on overtime and temporary help would have been greater.

The average number of hours missed per pay period seemed to remain stable throughout most of the study and six months before the study. However, during the feedback conditions absenteeism nearly doubled. Two of the employees were pregnant during the study and one employee experienced significant health problems which accounted for a large proportion of the hours missed. It is important to note that even though a large number of hours were missed during the feedback conditions, overall performance still increased significantly above baseline. It appears as though the extraneous variables mentioned above (i.e., increased applications, pregnancies, and health problems) caused the noted differences in overtime costs and absenteeism. Additionally, it is unclear to what extent the daily and weekly feedback procedures differentially affected these two measures; no
comparisons of absenteeism and overtime during the two feedback conditions were made. Instead, data were consolidated across time for the two feedback conditions and were assessed only during feedback versus no feedback conditions.

In general, data from the Work Environment Scale (Moos, 1981) indicated that the employees were more satisfied with their work environment after the implementation of the feedback system as compared to before its implementation. The WES subscales showed that the only large improvements (difference of ten or more points) occurred in Autonomy and Physical Comfort subscales. The change in the Autonomy subscale suggests that the employees experienced more independence and responsibility while performing their daily work. The improvement in Physical Comfort can be attributed to the renovation of the work area which was taking place during the study. Small positive changes also were noted on the following subscales: Involvement, Peer Cohesion, Supervisor Support, Task Orientation, Control, and Innovation.

The use of performance feedback in this study, as well as in other studies (Balcazar et al., 1985-86; Chhokar & Wallin, 1984; Ford, 1980; Wilk & Redmon, 1990a, 1990b), has demonstrated that it can be an effective management device for improving employee performance and job satisfaction. However, the application of an effective feedback system requires a thorough analysis of the feedback characteristics and the work environment in which it is being implemented. Certainly, these findings add evidence that feedback works well as a general management strategy and as a day-to-day management technique in admissions processing.
APPENDICES
Appendix A

Subject Consent Form and Western Michigan University Human Subjects
Institutional Review Board Approval Letter
INFORMED CONSENT FOR PARTICIPATION IN A RESEARCH INVESTIGATION

This letter is being sent to ask for your permission to use data from the ongoing performance management project in a thesis research study. The thesis study is entitled "THE EFFECTS OF DAILY AND WEEKLY SUPERVISOR FEEDBACK ON THE PERFORMANCE OF UNIVERSITY CLERICAL STAFF" and is being conducted by Chris Turla of the Department of Psychology as part of the requirements for a Master's Degree at Western Michigan University. The purpose of the research is to test the effectiveness of various frequencies of performance feedback on the number of tasks completed by the support staff in the Student Services Unit of The Graduate College.

The research will be conducted as part of the Performance Management project now in progress in your office. Your participation in the ongoing project is required as a condition of your employment. However, you have the option of withholding permission for the use of the data collected regarding your performance as part of the research study. Thus, by signing this document you will be giving us permission to use the data collected in a scientific study and as part of presentations or publications of the research results. In all cases your identity will remain confidential. No names will be used in any research information. Furthermore, we have received assurances from your supervisors that neither the data nor your decision to participate will affect your employment status in any way.

The use of your performance data as part of this research study poses no risk to you and your decision to allow or disallow use of your data is strictly voluntary. You may choose not to have your data used or choose to withdraw permission to use your data at any time during the study.

If you have any questions now or at any time, please contact Chris Turla at 385-2081 or Dr. William K. Redmon, Department of Psychology at 387-4485.

Your signature indicates that you have read and understood the above information and that you agree to the use of your data in the study described above.

Signature_________________________________________ Date_______________

Signature of Researcher________________________________Date_______________

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Date: February 16, 1990
To: Christopher Turia
From: Mary Anne Bunda, Chair

This letter will serve as confirmation that your research protocol, "The Effects of Supervisory Feedback on the Performance of Academic Auditors in a University Setting", has been approved as expedited by the HSIRB. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the approval application.

You must seek reapproval for any change in this design. You must also seek reapproval if the project extends beyond the termination date.

The Board wishes you success in the pursuit of your research goals.

xc: W. Redmon, Psychology

HSIRB Project Number 90-01-19

Approval Termination February 16, 1991
Appendix B

Work Measurement System Data Sheet
### WORK MEASUREMENT SYSTEM

**NAME:**

**Phone Calls**

**DATE:**

**Consultations**

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BIBLIOGRAPHY


