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## Improving On-the-Job Performance of Restaurant Employees through Behavior Modification Techniques

Patricia A. Kershek

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**IMPROVING ON-THE-JOB PERFORMANCE OF  
RESTAURANT EMPLOYEES THROUGH BEHAVIOR MODIFICATION TECHNIQUES**

by

**Patricia A. Kershek**

**A Thesis  
Submitted to the  
Faculty of The Graduate College  
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IMPROVING ON-THE-JOB PERFORMANCE OF  
RESTAURANT EMPLOYEES THROUGH BEHAVIOR MODIFICATION TECHNIQUES

Patricia A. Kershek, M.A.

Western Michigan University, 1981

Behavior modification techniques were used to improve the performance of individual employees in a restaurant setting. Desired performance was defined in operational terms. Contingent upon observations of desired behavior, procedures involving praise, performance charts, and bonuses were implemented according to an ABCB design. After applying both praise and performance charts, bonuses were added so that all three techniques were in operation. Then, bonuses were discontinued. Results indicated that while employee performance (quality of performance and time spent on the job) improved when praise and performance charts were applied, the addition of a bonus led to even further improvement. Hence, bonuses can be an effective technique of economic reinforcement for use by managers interested in improving employee performance, and possibly more so than the use of feedback in conjunction with social reinforcement.

## ACKNOWLEDGEMENTS

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Patricia A. Kershek

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## CHAPTER I

### Introduction

It has been demonstrated that social reinforcement, when appropriately applied, leads to improved performance of group employees in industrial settings (Adams, 1975; Emmert, 1978; McCarthy, 1978) and individual employees in work settings (Brown, Malott, Dillon & Keeps, 1980; Chandler, 1977). Similarly, successful results have been obtained using economic reinforcement with group employees in industrial settings (Hermann, deMontes, Domingues, Montes & Hopkins, 1973; Orphen, 1978) and individual employees in work settings (Kent, Malott & Greening, 1977; Kreitner & Golab, 1978; Retting, 1975; Yukl, Latham & Purcell, 1976). In addition, it has been shown that social reinforcement used in conjunction with economic reinforcement procedures leads to improved performance of group employees (Bourdon, 1977; Kempen & Hall, 1977; Miller, 1977; Runnion, Johnson & McWhorter, 1978) and individual employees (Komaki, Waddell & Pearce, 1977).

Although each technique has been used to increase performance, no attempts have been made to determine whether the procedure employed was actually the most effective. That is, was there another technique which would have led to greater improvement in performance and greater reduction in the cost to management in terms of time, energy, and money? Was there another procedure available which would have been more beneficial for both employees and management?

The purpose of the present experiment was to determine whether an economic reinforcement procedure would result in improved busboy performance relative to the performance resulting from the use of feedback and a social reinforcement procedure. This study took the following approach: What would be the effect on busboy performance if, after the initial implementation of feedback (charts) and social reinforcement (praise), a bonus was added and later discontinued?

## CHAPTER II

### Method

#### Participants and Setting

The setting for this study was Holly's Bistro Restaurant in Portage, Michigan. The target participants were two males, ages 17 and 18, who worked as full-time busboys. In addition, the manager served a critical function in administering reinforcement.

#### Dependent Variable

The dependent variable was performance of busboys. Two aspects of employee performance were measured: quality of performance and time spent on the job.

The manager and experimenter compiled a job description (presented in Appendix A). This description covered three categories of work ("tables bussed," "stock maintained," and "salad bar maintained"), two of which ("tables bussed" and "stock maintained") were used in this study. Each category contained several accomplishments (e.g., the category "tables bussed" included accomplishments such as "tables cleared" and "tables prepared"), each subdivided into specific tasks or behaviors (Gilbert, 1978, pp. 19-25). The manager and experimenter discussed the job description with the busboys, explaining each task and the rationale for including it. Observers used the job description--in the form of a checklist--to rate the

busboys' quality of performance in carrying out the following jobs: "tables bussed" and "stock maintained." The checklist is presented in Appendix B.

Time spent on the job was defined as the amount of time taken to bus a table--from the moment the busboy approached the table and placed the bustray on it until the busboy recovered the filled bustray from the table.

At the end of each session, the manager calculated scores and awarded points for both quality of performance and time spent on the job. Point systems for both aspects of the dependent variable were based on a 10-point distribution scale (Appendix C).

#### Observations and Reliability

Observations occurred intermittently throughout the week from approximately 7:00 to 9:00 p.m., "rush hour." Individual observations took place at three different times throughout the evening. Observations were made for three tables of four customers each evening. Each evening constituted an experimental session.

Two primary observers participated in the study, and each observed on different evenings. Both were naive as to the purpose and phases of the experiment. During the sessions, the primary observer, posing as a customer, sat at a table and recorded data on busboy performance. Along with the time, the observer recorded the occurrence or non-occurrence of "tables bussed" and "stock maintained."

A secondary reliability observer recorded data in approximately 25% of the observation sessions. During each phase of the experiment, reliability checks were taken for each busboy and were conducted an equal number of times for the two primary observers. The reliability observer was naive as to the purposes and phases of the study.

Reliability figures consisted of the number of agreements on the occurrence and non-occurrence of busboy performance divided by the total number of agreements and disagreements and multiplied by 100. An agreement was defined as an instance when both observers agreed on either the occurrence or non-occurrence of desired behaviors. Eight reliability checks across the four phases of the experiment represented about 25% of the total number of observation sessions. Reliability for "stock maintained" ranged from 85.18% to 100% with a median of 94%. Reliability for "tables bussed" ranged from 82.45% to 100% with a median of 93.5%.

### Independent Variables

Before the study began, workers were trained in accordance with the job description (Appendix A). Busboys were shown the desired behaviors involved in bussing tables, for example, the proper sequence of tasks for clearing tables, the appropriate method for setting tables, and the method by which to clean chairs and spot-check floors. Workers then demonstrated each task until they had achieved the desired level of performance. Also discussed were the requirements established for the stock.

Three potentially reinforcing consequences were arranged for desired performance: feedback, a social reinforcement procedure, and an economic reinforcement procedure. Feedback consisted of charts displaying busboy performance. The social reinforcer was praise. And the economic reinforcer was a bonus. All three were contingent upon desired performance.

Feedback. Busboys received feedback in the form of charts displaying quality of performance ("tables bussed" and "stock maintained") and time spent on the job. The manager, who was responsible for displaying these data, placed the charts in an area where they were easily visible to busboys.

Praise. The social reinforcement procedure consisted of praise delivered by the manager and was based on quality of performance and time spent on the job. At the end of each session, the manager told each busboy the number of points earned that evening. If the busboy's performance had been maintained or had increased from previous observations, the manager praised the employee; if performance had decreased, the manager reported only the number of points earned.

Bonus. The economic reinforcement procedure entailed a bonus of \$5.00. The bonus was based on a percentage of average points awarded to busboys within a 1-week period for all three performance measures. The bonus was delivered by the manager to the busboys.

Thus, if a busboy earned an average of 8 points for "tables bussed," "stock maintained," and "time spent on the job," then the manager would give him \$4.00 (80% of \$5.00). If the average number of points was 10 for all three tasks for the week, the busboy received a bonus of \$5.00.

### Procedure

To assess the effects of experimental manipulation an ABCB design was employed. The busboys' performance was repeatedly monitored during each of the phases.

Baseline. Monitoring of the busboys' performance occurred during each day data were taken. Baseline lasted for a total of four observations for one busboy and five observations for the other.

Phase 1. Busboys then received job assignments. Each assignment had an explicit definition and included training. Feedback and a social reinforcement were employed and were contingent upon accurate and consistent demonstration of target behaviors. This phase lasted for a total of six observations for each busboy.

Phase 2. Busboys then received a bonus, in addition to the previous feedback and social reward. This, too, was contingent upon consistent and accurate demonstration of target behaviors. This phase lasted for a total of three observations for each busboy.

Phase 3. Economic reinforcement was discontinued by having the manager inform the busboys that "management could no longer afford giving bonuses." Praise and feedback were still continued during this phase. Observers continued taking data to determine whether eliminating the bonus while continuing the other two procedures would result in decreased employee performance. This phase lasted for a total of three observations for one busboy and four observations for the other.

## CHAPTER III

### Results

Figure 1 (page 10) shows the mean number of quality points and the mean times of employee performance for each day observations were taken during baseline and intervention periods.

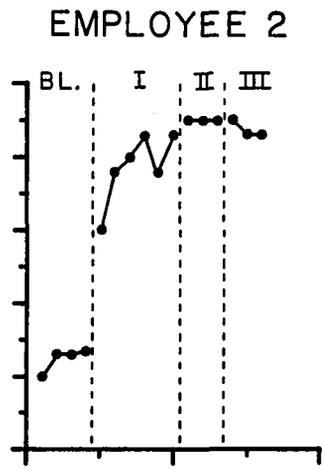
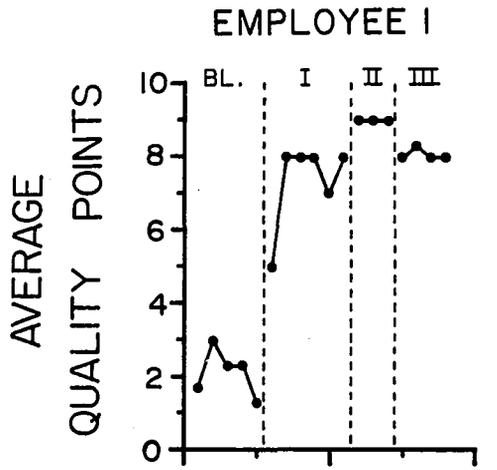
#### Baseline

During baseline the mean number of quality points for Employee 1 was 2.12 for "tables bussed" and 6.7 for "stock maintained." For Employee 2 the mean number of quality points for "tables bussed" was 2.5 and was 7.85 for "stock maintained." Mean times consisted of 48.52 seconds for Employee 1 and 50.67 seconds for Employee 2.

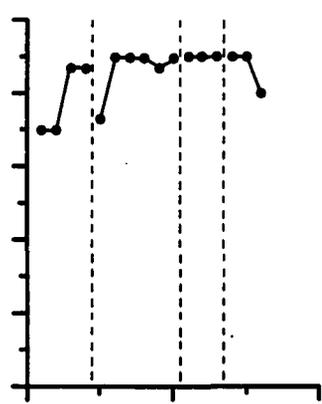
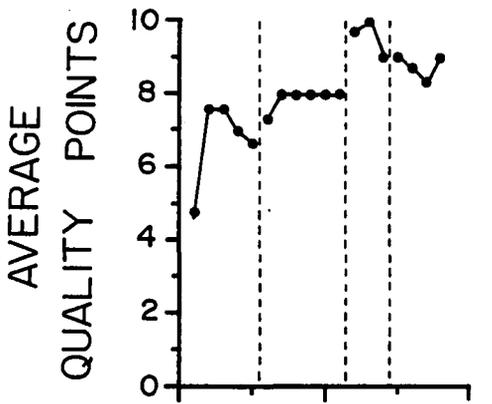
#### Phase 1

During Phase 1 quality measures for both employees improved immediately. Duration measures decreased greatly for one employee but fell only slightly for the other. For Employee 1, mean quality points increased from 2.12 to 7.33 points for "tables bussed" and from 6.7 to 7.88 points for "stock maintained." Mean time for this employee decreased from 48.52 seconds to 43.1 seconds. For Employee 2, mean quality points increased from 2.5 to 7.7 for "tables bussed" and from 7.9 to 8.7 for "stock maintained." Mean time for Employee 2 decreased from 50.68 to 49.08 seconds.

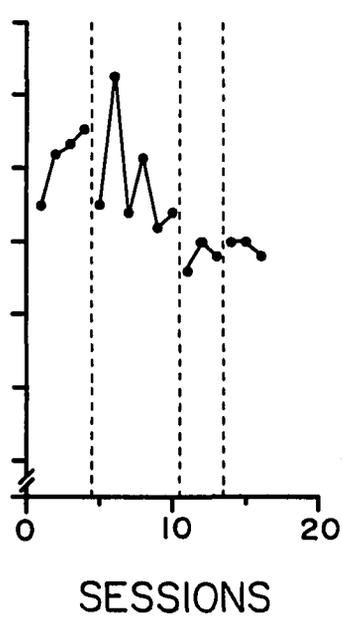
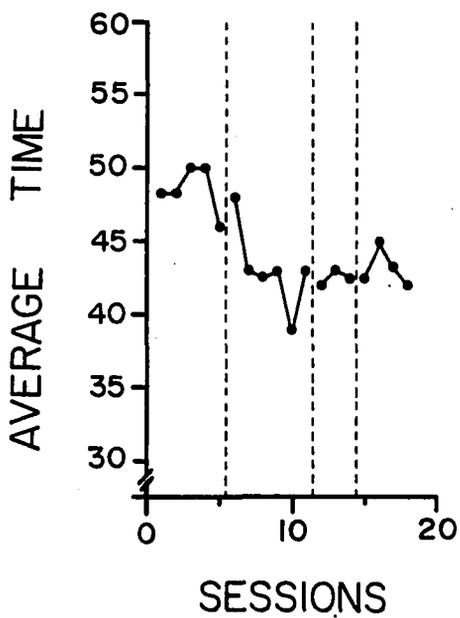
Figure 1. Mean average quality points and mean average times for quality of performance and time spent on the job



TABLES  
BUSSED



STOCK  
MAINTAINED



TIME SPENT  
ON-THE-JOB

### Phase 2

Following the initiation of the economic reinforcement procedure, quality measures improved for both busboys. Duration measures decreased somewhat for Employee 2 but stabilized from the previous phase for Employee 1. Mean quality points for Employee 1 increased from 7.33 to 9 for "tables bussed" and from 7.88 to 9.56 points for "stock maintained." Mean time stabilized at approximately 43 seconds for Employee 1. For Employee 2, mean quality points for "tables bussed" increased from 7.73 to 9 points and from 8.65 to 9 points for "stock maintained." Mean time decreased from 49.08 to 44 seconds.

### Phase 3

After the discontinuation of the economic reinforcer, quality measures decreased slightly and duration measures remained stable for both employees. For Employee 1, mean quality points for "tables bussed" decreased from 9 points to 8.08 points and from 9.56 to 8.8 points for "stock maintained." Mean time maintained at approximately 43 seconds. For Employee 2, mean quality points for "tables bussed" decreased from 9 points to 8.73 points and from 9 to 8.66 points for "stock maintained." Mean time stabilized at approximately 44 seconds.

## CHAPTER IV

### Discussion

The results suggest that an economic reinforcement procedure may be critical for achieving maximum performance. Consistent with previous research (Brown et al., 1980; Emmert, 1978), social reinforcement and feedback were effective in improving employee performance. This study showed that a combination of feedback in the form of charts and social reinforcement in the form of praise improved busboy performance over baseline performance. When the economic reinforcer was applied, however, even greater improvement resulted.

In this study, two aspects of performance improved for both busboys; specifically, quality of performance increased and time spent on the job decreased. Moreover, both the quality and quantity measures of employee performance improved simultaneously. That is, as employees exhibited greater speed in completing their routine tasks, they also displayed greater effectiveness in performing those tasks. This result is of interest because, as managers and others would generally agree, increased speed may well be accompanied by a decrement (or, at best, maintenance) in quality of performance.

Another point of interest was the lack of a significant change in busboy performance in Phase 3. One possible explanation is that the duration of Phase 3 may not have been adequate to produce

significant results. Perhaps by extending the study a deterioration in performance would have resulted.

In summary, the results of this study suggest that the addition of a bonus led to further improvement in employee performance relative to the improved performance found when social reinforcement and feedback were incorporated after baseline. Economic reinforcement therefore appears to be an effective technique for managers interested in improving employee performance.

## APPENDIX A: JOB DESCRIPTION FOR BUS-PERSONNEL

Tables Bussed

- I. Tables cleared: 100% completion and accuracy
    - A. Utensils removed
    - B. Ashtray cleaned
    - C. Napkin and paper removed
    - D. Glasses removed
    - E. Large plates removed
    - F. Small plates and bowls removed
    - G. Anything else remaining removed
  - II. Tables prepared: 100% completion and accuracy
    - A. Tables wiped off
    - B. Salt and pepper cleaned and positioned
    - C. Sugar cleaned and positioned
    - \*D. Candles positioned
  - III. Floors cleaned: 100% completion and accuracy
    - A. Napkin and paper removed
  - IV. Chairs cleaned and positioned: 100% completion and accuracy
    - A. All four chairs
  - V. Bus station cleaned: 100% completion and accuracy
    - A. Tray emptied
- \*Wednesday night only

Stock Maintained

- I. Wine station maintained: 100% completion and accuracy
  - A. 24 wine glasses
  - B. 24  $\frac{1}{4}$  liters
  - C. 12  $\frac{1}{2}$  liters
  - D. 12 full liters
- II. Bar station maintained: 100% completion and accuracy
  - A. 2 full racks highball glasses
  - B. 2 full racks rock glasses
- III. Counters stocked: 100% completion and accuracy
  - A. 2 full racks glasses
  - B. 2 full racks cups
  - \*C. 10 or 20 silverware wrapped

\*10 Sunday through Thursday, 20 Friday and Saturday

Salad Bar Maintained

- I. Salad bar stocked: one third full
  - A. Include the following items: celery, carrots, radishes, macaroni, corn, white onions, green onions, tomatoes, cucumbers, sauerkraut, bacon bits, alpha sprouts, garbanzo beans, sunflower seeds, potatoes, cheese, croutons, butter
- II. Salad dressing stocked: one third full
  - A. Include the following items: French, 1000 island, bleu cheese, oil and vinegar, hot bacon

III. Breads stocked: one loaf

A. Include the following: rye, wheat, whole wheat

IV. Salad plates stocked: 20 plates

V. Salad bar cleaned: once every 20 minutes

## APPENDIX B: CHECKLIST FOR BUS-PERSONNEL

Tables Bussed

	YES	NO
I. Tray placed .....	_____	_____
II. Tables cleared		
Utensils removed .....	_____	_____
Ashtray cleaned .....	_____	_____
Napkin and paper removed .....	_____	_____
Glasses removed .....	_____	_____
Large plates removed .....	_____	_____
Small plates and bowls removed ....	_____	_____
Anything else remaining removed ...	_____	_____
III. Tables prepared		
Tables wiped off .....	_____	_____
Salt and pepper cleaned and positioned .....	_____	_____
Sugar cleaned and positioned .....	_____	_____
*Candles positioned .....	_____	_____
IV. Floors cleaned		
Napkin and paper removed .....	_____	_____
V. Chairs cleaned and positioned .....	1 _____	2 _____ 3 _____ 4 _____
VI. Bus station cleaned		
Tray removed .....	_____	_____
VII. Order maintained		
Within I .....	_____	_____
Within I - VI .....	_____	_____

\*Wednesday night only

Stock Maintained

I. Wine station stocked		
24 wine glasses .....	_____	_____
24 ½ liters .....	_____	_____
12 ½ liters .....	_____	_____
12 full liters .....	_____	_____
II. Bar station stocked		
2 full highball glasses .....	_____	_____
2 full rock glasses .....	_____	_____
III. Counters stocked		
2 full racks glasses .....	_____	_____
2 full racks cups .....	_____	_____
*10 or 20 silverware wrapped .....	_____	_____

\*10 Sunday through Thursday, 20 Friday and Saturday

## APPENDIX C: POINT SYSTEMS FOR PERFORMANCE

Point System for  
Time Spent on the Job

Seconds	Points
Less than 43	10
44 - 47	9
48 - 51	8
52 - 55	7
56 - 59	6
60 - 63	5
64 - 67	4
68 - 71	3
72 - 75	2
76 - 79	1
More than 79	0

Point System for Quality of Work

Omissions	Points
0	10
1	9
2	8
3	7
4	6
5	5
6	4
7	3
8	2
9	1
10 or more	0

Note. This point system is based on the number of omissions from the checklist (Appendix B).

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