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Effects of Informational Data upon Attendance in an Industrial Setting

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**EFFECTS OF INFORMATIONAL DATA UPON ATTENDANCE
IN AN INDUSTRIAL SETTING**

by

Karen T. Suarez

**A Thesis
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
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EFFECTS OF INFORMATIONAL DATA UPON ATTENDANCE
IN AN INDUSTRIAL SETTING

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Western Michigan University, 1981

The purpose of this study was to determine the effects of informational data on employee attendance in an industrial setting. It was believed that knowledge of attendance rates would encourage employees to improve their attendance. An average of 50 male employees ranging from 22 to 55 years of age were included in the study. The procedure involved the implementation of publicly posted graphs which displayed attendance rates for the total department and each shift according to an ABA reversal design. Attendance rates were calculated and graphs updated each week by the department's superintendent. In addition, a brief questionnaire was distributed to assess employee perceptions of absenteeism in the department. Results indicated that publicly posted informational data alone may not lead to significant increases in attendance.

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Karen T. Suarez

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CHAPTER I

INTRODUCTION

One of the many problems facing today's businesses and industries is excessive absenteeism. This is an important issue to examine since some of the consequences include the necessity for substitute staffing and its associated costs. In addition, recent estimates have placed the cost of sick benefits at approximately \$15 billion per year (Luthans & Martinko, 1976).

Since this is not a new situation within industry, a wealth of research concerning this topic exists. It has been posited that properly utilized informational feedback is a very cost effective method for increasing job performance (Ammons, 1956; Ilgen, 1979; Miller, 1978). One study suggested that feedback of attendance rates had a positive impact by motivating employees to attend work as a result of influencing their perceptions of the job situation (Steers & Rhodes, 1978).

The use of clear and comprehensible feedback regarding the effects of absenteeism on the organization to the employees has been suggested. Luthans and Martinko (1976) postulated that attendance behavior would then become self-reinforcing once the problem is known. The authors believed that when the employees became aware of the magnitude of the problem they would be encouraged to improve their attendance.

There have been frequent successful results in industry following

the implementation of feedback systems. Cook (1968) found that the use of feedback from performance reports increased the subsequent work performance of business managers. Similarly, Nadler (1976) showed that the use of employees' performance feedback in a large bank setting resulted in improved performance. Panyon, Boozer and Morris (1970) examined the reinforcing attributes of feedback which was used to increase the number of training sessions for patients conducted by attendants at a state mental institution.

In the business world, there is great need to improve performance at the least possible cost. Various organizations have done this by providing individuals with a graphic display relevant to their behavior to influence their efforts in achieving a desired performance level. Successful results in productivity were obtained by using visually posted feedback in the work area of an industrial setting (Emmert, 1978; McCarthy, 1978).

Although researchers have examined the effect of these feedback variables upon work performance, they have not attempted to study the employees' perceptions of their own importance to the organization or how these might be related to determining whether employees realize the impact of their absenteeism. Previous studies have found some evidence supporting the concept of the employee's responsibility to the job. A study by Ingham (1970) found that many employees in one industrial setting believed individuals should not stay away from work except for illness, giving reasons of duty and responsibility to the firm. They believed this would disrupt their

co-workers' schedules, since the latter would be responsible for assuming the absent workers' duties.

As the previous studies have shown, the provision of an inexpensive procedure such as publicly posted information has been related to an increase in employee performance. However, there has not been research that isolated publicly posted information and related it to attendance. It has only been studied in conjunction with other variables. The suggestions mentioned earlier which related feedback and attendance were not based on empirical studies of attendance.

The purpose of the present experiment was to determine whether publicly posted data that displayed group attendance percentages and specified a goal would result in increased attendance.

CHAPTER II

METHOD

Subjects and Setting

This study was conducted at a manufacturing plant which employed 1,100 people. The subject population consisted of approximately 50 male employees in one department who ranged from 22 to 55 years of age. The actual number of individuals who worked in the department fluctuated each week.

In the department where this study was conducted, supervisors believed they spent unnecessary time attempting to locate substitute workers. An increase in attendance rates would reduce the amount of overtime presently required, thus reducing their costs. In addition, employees would not be forced to substitute for other workers (who are often in different job positions).

Company Policies and Attendance Rates

The attendance rate prior to the experiment was 94% for the entire company. The present department was selected because it was considered to have the greatest potential to produce improvement. That is, management believed these supervisors and the superintendent would be the most cooperative in agreeing to the use of the intervention. This department's attendance rate was slightly higher at 95%. Company policy stated that employees were allowed two absences per month and they received a discipline slip for the third absence.

When an employee was absent four days during a 30-day period, the employee was to be discharged. The accumulation of a fourth absence within a 30-day period resulted in a discharge. This period was counted in such a way that on the 31st day, for example, the first day of that time period was excluded and any absence on that day was discounted.

Dependent Variable

The dependent variable in this study was the weekly attendance rate that was based on the number of employees who reported to work as scheduled, divided by the number scheduled to report. This rate was sub-divided into two measures: the attendance rates for each of the three shifts and an overall departmental rate.

An absence was defined as an instance when an employee did not report to the job on a scheduled workday (vacation time was not included). Absences were recorded in six categories: employee illness, illness in the family, transportation problems, death in the immediate family, personal business and absences without advance notice. However, the experimenter made no distinction among these six types, since the department did not differentiate among them when employees were marked absent in the records.

Independent Variable

The intervention consisted of publicly posted graphs of weekly attendance rates. Included was a graph for each of the three shifts and one for the total department. Graphs for individual shifts were

used to make data more relevant to each shift. They were displayed on a bulletin board easily visible to the workers who had to frequent this area each week to find out which shift they were scheduled to work. Each included a goal line of 100% at the management's request. The superintendent was responsible for updating the graphs on Monday of each week.

Questionnaire

A brief questionnaire was distributed to employees during the intervention phase by the supervisors in order to assess employees' perceived importance to the department's functioning (see Appendix A). These surveys were also used to give the supervisors and the superintendent an idea of their employees' perception of the absence rate in the department. The questions attempted to ascertain their perceptions about the following: 1) the rate of absences considered excessive, 2) consequences for absenteeism, 3) amount of overtime employees worked, 4) willingness to work overtime, 5) supervisor problems due to absenteeism, and 6) employee problems upon returning to work.

Procedure

Prior to the study, the experimenter met with the industrial relations manager who had expressed an ongoing concern about the absenteeism problem in the company. This meeting focused on the overall problem within the company and approaches that might be employed to remedy the undesired absenteeism rate were discussed.

The department used in this study was selected by the industrial relations manager. A second meeting was then set up with the superintendent in which the problem of this department was discussed in further detail involving the types of intervention, duration and intent of the study, and what the expected outcome was. The purpose of the present study was described by the experimenter as an attempt to determine the degree of the problem's severity, to examine the contingencies in effect and to provide a solution to help reduce absenteeism.

An ABA reversal design was used to assess the effects of the experimental manipulation. The attendance rates were examined by the experimenter each week during the baseline, intervention and return to baseline phases.

During the intervention phase, a meeting was held by the experimenter to discuss the problem with the superintendent, the three supervisors and industrial relations manager. This meeting was intended to provide the departmental superiors with methods that might prove effective when dealing with employees and absenteeism. In particular, the experimenter pointed out the importance of using social consequences such as praise and approval for workers immediately upon their return to work. The major purpose was to provide the supervisors with reasons and ways to utilize a positive approach with their employees.

Baseline

Attendance rates were collected for a four-week period from the

departmental records prior to the intervention. Analysis revealed no upward or downward pattern in the data so the intervention was implemented immediately.

Intervention

During this phase of the study, one large sheet of paper (18" x 24") which included four graphs was placed on a bulletin board located outside of the department office. The first graph displayed the attendance rates for the total department. Each of the three remaining graphs presented attendance rates for each shift. The abscissa depicted the week ending dates and the ordinate displayed the weekly attendance percentage. The experimenter collected and analyzed the data during the first week of the phase. Weekly data were plotted on each of the four graphs which had a goal line of 100% attendance. These attendance rates were computed by dividing the number of employees in attendance during each five-day period (Monday through Friday) by the number of employees scheduled to work these five days. The result was then multiplied by 100. This phase was in effect for a period of seven weeks. The length of this phase was extended from an original time period of four weeks as a result of a drop in attendance when the graphs were unintentionally lost. Three weeks were added to see what the trend would be. Since Monday through Friday were the only days classified as the regular workweek (40 hours) by the company, Saturday and Sunday absences were excluded from the study.

The supervisor was responsible for calculating the attendance

rate and charting it on the graph every Monday. Unexpected visits to the plant were made by the experimenter to make sure the graphs were updated on a weekly basis. In addition to the superintendent, calculations were also performed by the experimenter to assure accuracy of the data.

Return to baseline

When the attendance rates began to stabilize during the last three weeks of the intervention phase, the graphs were removed. Subsequent attendance rates were collected for four weeks during this phase.

CHAPTER III

RESULTS

Baseline

During this phase the mean attendance rate was 94.92% for the total department. The mean attendance rate for the first shift was 94.53%. For the second shift the mean rate was 94.79%. The mean for the third shift was 96.03% (see Table I).

Table I

Mean Attendance Percentages for the Total Department and for Individual Shifts

Group	Phase		
	Baseline	Intervention	Baseline
Total department	94.92	95.88	96.56
First shift	94.53	96.97	96.50
Second shift	94.79	93.31	96.67
Third shift	96.03	95.25	96.67

NOTE: Percentages were based on the average number of employees per workweek since the actual number of individuals fluctuated each week.

Intervention

The introduction of informational data was followed by a slight

increase to 95.88% for the overall department. During the first three weeks there was a consistent increase to 97.30% followed by a decrease in the fourth week which coincided with the inadvertant loss of the graph for that week. The graph was lost on July 31 and therefore was not posted to display the attendance rates for the week of July 27 to July 31. This decrement was also represented in a reduction for all three shifts for that week. Attendance rates stabilized for the last three weeks of the phase. An increase was produced for the first shift ($\bar{X} = 96.97\%$) while reductions were seen for the second shift ($\bar{X} = 93.31\%$) and the third shift ($\bar{X} = 95.25\%$) during this intervention. However, the latter two shifts showed an increase in attendance when the graphs were introduced again following their loss (see Figure 1).

Return to Baseline

After the intervention was discontinued the mean attendance rate for the total department was 96.56%. First shift employees had a mean attendance rate of 96.50%. The second shift's mean attendance rate was 96.67%, while the third shift's mean was equal at 96.67% (see Table I).

Employee Perceptions

Since the perceptions of absenteeism in the department were at issue, employee opinions were assessed from their responses to the questionnaire. Their responses (see Table II) revealed. 1. One absence per month was considered excessive. 2. No consequences for

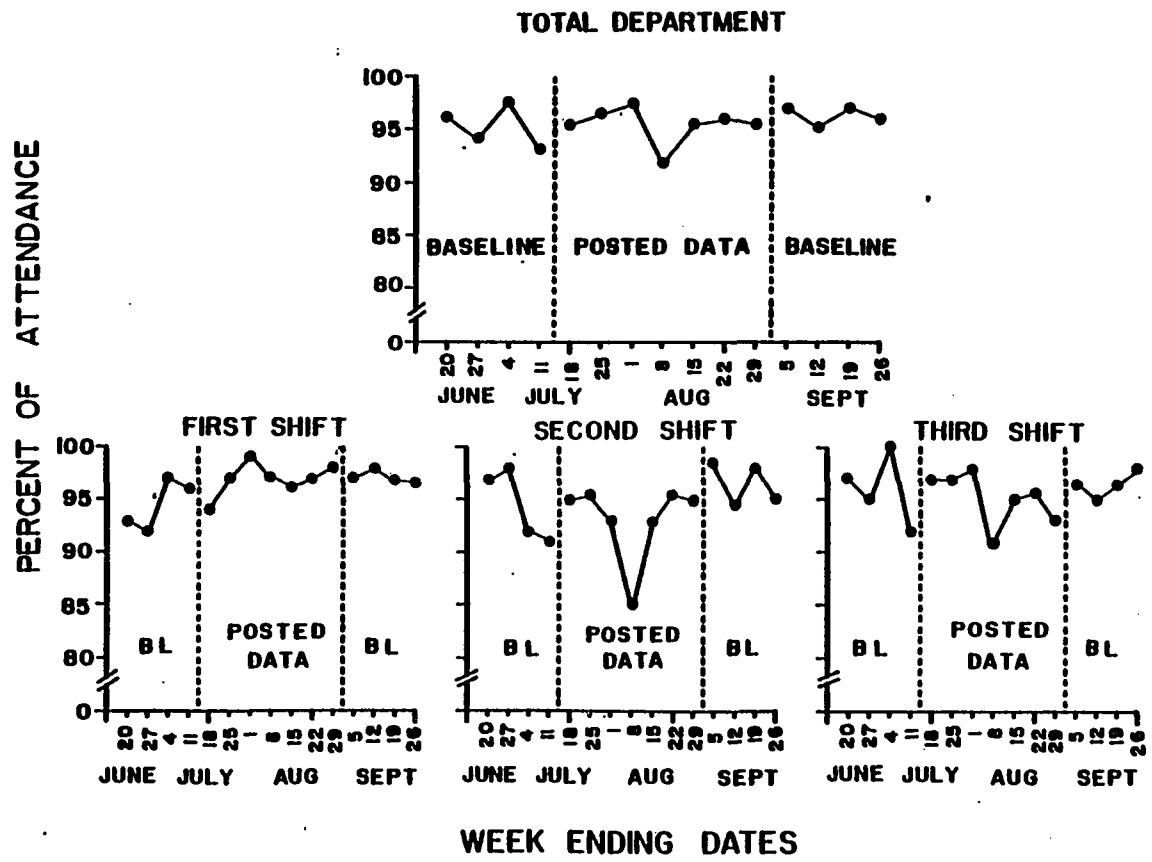


Figure 1. Percent of Attendance for the Total Department and Individual Shifts on a Weekly Basis

Table II

Frequency of Employee Responses to
Absenteeism Attitude Survey

1. What do you consider to be an excessive amount of absences in this department?
 - 10 - One per month
 - 7 - Two per month
 - 5 - Three per month
 - 5 - More than three per month
 - 0 - None

2. What are the consequences for you when you're absent from work?
 - 8 - Nothing
 - 5 - Discipline slip
 - 1 - Complaints from other workers
 - 3 - Complaints from your supervisor

3. How often have you filled in by working overtime for an absent employee?
 - 3 - Never
 - 3 - One time during a month
 - 8 - Two times during a month
 - 3 - Three times during a month
 - 10 - More than three times during a month

4. If you have ever filled in overtime for another employee, have you resented doing so?
 - 7 - Yes
 - 20 - No

5. What do you think are some of the problems your supervisor has when employees are absent?
 - 21 - Finding substitute workers
 - 4 - Less production
 - 2 - None

6. What are some of the problems facing you when you return to work after being absent?
 - 3 - More work
 - 24 - Same amount of work
 - 0 - Less work

absenteeism were believed to exist although there were organizational sanctions. 3. Employees filled in for absent workers by working overtime more than three times a month. 4. Overall, employees did not resent working overtime to replace absent workers. 5. The supervisors main problem that was related to absenteeism was finding substitute workers. 6. There were no problems (additional workload) facing employees upon their return to the job. However, 75% of the employees responsible for setting up the work area said they had more work following an absence. (This classification of employees is not replaced when they are absent as the other workers are.) Despite this, their attendance rate was approximately equal to the other employees' rate.

CHAPTER IV

DISCUSSION

The results suggest that publicly posted group data alone may not lead to increases in employee attendance. This study was an attempt to isolate informational data and relate it to attendance since there were no perceived consequences for the employees as shown from the questionnaire.

This intervention did not prove to be effective. An analysis of several relevant factors appears to account for this finding. Company policy allowed two absences per month (without loss of salary) which conflicted with the goal of 100% requested by management. Therefore, employees had no reason to meet this goal if they were able to take two absences each month without negative consequences. According to employees, no social consequences such as praise or approval were perceived to exist. The only negative consequences were delayed verbal reprimands delivered on an infrequent basis.

Since there was not a marked absenteeism problem at the beginning, a "ceiling effect" may have existed. With absenteeism at only 5%, the potential for improvement was significantly limited. In many similar types of industries where higher absence rates exist, it would probably be easier to obtain positive results. However, Gaudet (Note 1) stated that absence rates could reasonably be reduced to 2% or less.

It was not possible to determine whether attendance would have

continued its steady increase because of the accidental loss of the graph during the week ending August 8. Perhaps it would have reached a higher rate (since it did increase steadily during the first three weeks) and then stabilized later during this phase.

When the graphs were initially posted, the employees may not have paid any attention to them. The superintendent claimed to have explained the graphs to the employees but perhaps they believed this was simply unimportant information. In addition, if they were indeed recognized, the graphs may have started to blend in with the other notices and become overlooked.

In considering the shift rates, management believed the first shift employees would have had better attendance as they had seniority and were considered the "better" workers in the department. Interestingly, however, the data did not support this since the first shift had the lowest attendance.

It might have been the case that the attendance rates during the months of this intervention were actually an improvement compared to the same period for previous years. However, the department records for those years included employees from another branch who occasionally worked at the present location on a temporary basis. These types of employees were not used in calculations for this study, therefore, including these persons in the computation of attendance rates for other years would not have yielded comparable percentages. Records for the "regular" employees were kept in the personnel department. However, an examination of the raw number of absences for the previous two years suggested that any further investigation would not have

found anything significant, since the attendance rates did not appear to be lower.

Future experimentation could apply the use of individual attendance graphs instead of group attendance graphs. It was shown by Emmert (1978) that individual feedback had a more significant effect on employee performance relative to group feedback. In order to be effective, such informational data (which was not associated with increased attendance) may be effective when used in conjunction with social reinforcement. Contingencies from the supervisors might be successfully utilized when employees with significant problems have been identified. The supervisors could speak with them on an individual basis in a positive instead of an aversive manner to determine what the problems are. Then, those employees could be positively reinforced contingent upon their return to work following an absence. Supervisors could take an interest in the employees by saying something to the effect that, "It's nice to have you back" or "We missed you yesterday". These types of statements could be used on a continuous basis for a short period of time and later be applied intermittently to maintain the desired attendance rates in the future.

It could be beneficial to inform them that they are indeed important to the efficient functioning of the department, especially since the survey showed that the majority of the workers has no burden of additional work when they are absent. Perhaps informational data is effective only when appropriate contingencies of reinforcement are also present, or are more likely to be present when data are being monitored.

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APPENDIX

IN-LINE PRINTING EMPLOYEES

ABSENTEEISM ATTITUDE SURVEY

General Information:

Shift: 1st _____ 2nd _____ 3rd _____

Job Classification: _____ Pressman
_____ Assistant Pressman
_____ Utility
_____ Helper
_____ Baler
_____ Pre-Make Ready

Please check one response for each of the following questions.

1. What do you consider to be an excessive amount of absences in this department?

- _____ one per month
- _____ two per month
- _____ three per month
- _____ more than three per month
- _____ none

2. What are the consequences for you when you're absent from work?

- _____ nothing
- _____ discipline slip
- _____ complaints from other workers
- _____ complaints from your supervisor

3. How often have you filled in by working overtime for an absent employee?

- _____ never
- _____ one time during a month
- _____ two times during a month
- _____ three times during a month
- _____ more than three times during a month

4. If you have ever filled in overtime for another employee, have you resented doing so?

- _____ Yes
- _____ No

5. What do you think are some of the problems your supervisor has when employees are absent?

- finding substitute workers
- less production
- none

6. What are some of the problems facing you when you return to work after being absent?

- more work
- same amount of work
- less work

Please check to see that you have checked one response for each question and then return the completed form to your supervisor or Gene Budrow.

Thank you for your cooperation and time.

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