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Performance feedback: its effectiveness in the management of job performance

David Matthew Harrison
Northeastern University

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Performance Feedback:
Its Effectiveness in the Management of Job Performance

David Harrison

Northeastern University

Abstract

The current study investigated the efficacy of performance feedback with or without consequences on the reduction of overtime used by house managers to staff residential programs at a local human services agency. The intervention involved the use of a novel report, the Financial Report, which listed the weekly amount of overtime over the course of the study and included a graphic depiction of overtime. The Financial Report was sent each week. Depending on the performance of the managers, a consequence was added to the treatment package. One manager received no consequences to determine if performance feedback alone would prove effective. Results showed a significant decrease in the amount of overtime used by all three participants. Results of a social validity questionnaire gave some anecdotal indication as to the behavioral function underlying each component of the intervention. Directions for future research were discussed and include clarifying the behavioral function of interventions involving performance feedback.

Performance Feedback:

Its Effectiveness in the Management of Job Performance

Performance feedback as an intervention to improve job performance is regularly used in a variety of settings including human service agencies, retail, industrial, and in hospital operating rooms. The efficacy of performance feedback as the lone intervention is only marginally supported in the literature even with its widespread use. Performance feedback has been implemented alone and in combination with other interventions. Still many questions as to the most effective combination of components with performance feedback and the behavioral function of performance feedback remain unanswered.

Balcazar, Hopkins, and Suarez (1985) surveyed ten years of research in four major journals: *Academy of Management Journal*, *Journal of Applied Behavior Analysis*, *Journal of Applied Psychology*, and *Journal of Organizational Behavior Management*. They examined studies that included applications of performance feedback in organizational settings. They evaluated the effectiveness of performance feedback with emphases on isolating the particular effect of feedback on performance from interventions including goal setting and behavioral consequences, and the differential effectiveness of feedback as a function of various feedback characteristics. Balcazar and colleagues (1985) found that feedback alone is not consistently effective. They found that feedback was more consistently effective when it was paired with goal setting and behavioral consequences. Also, feedback delivered by supervisors or managers was more consistently effective. Furthermore, feedback given in graphic format was consistently more effective as well as feedback provided daily or weekly.

Alvero, Bucklin, and Austin (2001) provided an updated review of the literature that experimentally tested the effectiveness of performance feedback (1985-1998). Their results generally corroborated the findings of Balcazar et al. (1985). One difference, however, was that Alvero and colleagues (2001) found that feedback was more consistently effective when combined with antecedents; whereas, Balcazar et al. (1985) found that performance feedback was more effective when paired with consequences provided contingent on performance. Alvero and colleagues (2001) found only general agreement between the reviews, particularly in the effectiveness of performance feedback. This might suggest, according to Alvero et al. (2001), that the characteristics of feedback may not be as important as the way in which it is implemented. Alvero et al. cite a quote from Balcazar et al. (1985) by way of clarification, "If the effects of most feedback characteristics are derived from their relationship with functional, differential consequences, little useful knowledge is likely to result from experimentally exploring the relative effectiveness of the different characteristics" (p. 85). Assessing the functional mechanisms of feedback, not studying their respective characteristics, would provide more valuable and useful information about an intervention's effectiveness. Little, however, is still known about the functional mechanisms of feedback.

In the literature, feedback as an intervention has been compared to other more traditional staff management techniques. For example, Quilitch (1975) conducted a study that compared the effects of three staff-management procedures in maintaining a daily recreational activity program for residents of an institution for individuals diagnosed with mental retardation. The three management procedures investigated were memos, activities workshop, and scheduling and feedback. The study demonstrated that memos

and workshops, which were considered traditional management techniques, did not effectively improve behavior; whereas, scheduling and feedback were effective in “motivating” ward staff to lead daily recreational activities.

Green, Rollyson, Passante, and Reid (2002) compared a traditional supervisory technique that involved indirect feedback, based on self-recorded performance, and a procedure that involved direct feedback based on direct observation of performance. This study focused on the performance of supervisors responsible for the work behavior of direct support employees of a human service agency. Traditional methods for managing the performance of supervisors include instructing supervisors in performing certain duties and then requiring them to document their completion of the duties. The documentation is then periodically reviewed by senior management. From a behavioral standpoint, this process can be considered as involving instructions, self-recording, and indirect feedback based on the self-record. This traditional approach was compared by Green et al. (2002) with a procedure that included direct feedback based on actual observations of supervisor performance. Supervisor performance showed greater improvement with direct feedback when compared to supervisors who received more traditional indirect feedback. Subsequent implementation of the direct feedback procedure to the latter participants facilitated improved performance.

Although Balcazar and colleagues (1985) and Alvero et al. (2001) found in their respective reviews of the literature that performance feedback is only marginally effective, it has demonstrable value as an intervention to improve staff performance, albeit more so when implemented as part of a treatment package. Performance feedback has exhibited success when implemented alone and as part of a treatment package in a

variety of organizational settings. Performance feedback has been implemented with behavioral consequences in industrial settings. For example, Sulzer-Azaroff and Santamaria (1980) investigated the effects of performance feedback with supervisor approval or suggestions for improvement. The study was conducted in the main factory of a private industrial organization. The study sought to reduce industrial hazards by providing written and verbal feedback about observed hazards and to provide suggestions for improvement or praise for improvement. The feedback package that included behavioral consequences decreased the number of industrial hazards.

In addition to being paired with consequent events, performance feedback has exhibited success when combined with antecedent events. A study conducted by Therrien, Wilder, Rodriguez, and Wine (2005) attempted to improve the customer greeting behavior of staff at sandwich restaurant chain. A pre-intervention analysis was conducted to determine under which antecedent conditions the staff were most likely to appropriately respond to customers entering the restaurant. The study found that a door chime plus the presence of the restaurant manager were the antecedent stimuli that evoked that greatest amount of greeting behavior; however, responding improved to satisfactory levels only when the manager also provided verbal and graphic feedback.

Smith and Ward (2006) attempted to investigate the relative effects of three interventions that included performance feedback with both antecedent and consequent components. The three interventions used in this study included: (a) goal setting plus verbal feedback, (b) public posting plus verbal feedback, and (c) goal setting, public posting, and verbal feedback together. The interventions were implemented to improve the performance of three wide receivers of a college football team. No definitive

conclusions about the relative effectiveness of each intervention could be drawn from the data since the participants had high initial baselines; however, it was clear that performance was better during the public posting, goal setting, and feedback condition.

Cunningham and Austin (2007) also studied a treatment package that included a combination of intervention components. They wanted to reduce the risk presented by sharps exposure in a hospital operating room. The risk of injury was increased in operating rooms when sharp operating instruments were passed directly between the nurses and doctors. The sharps exposure was minimized by the use of a “neutral field”, which is an area where sharp surgical instruments can be set down by one person and retrieved by another. The intervention package included goal setting, task clarification, and feedback. The intervention resulted in significant increases in the use of the “neutral area”, thereby minimizing sharps exposures.

Squires et al. (2007) attempted to improve customer greeting and up-selling in a restaurant through the use of an intervention consisting of task clarification, visual prompts, and graphic feedback. The authors were interested in investigating the individual effects of each component of the intervention. The results suggested that both of the antecedent interventions, task clarification and visual prompts, were less effective than the consequent intervention, graphic feedback. Some limitations of the study limit the confidence with which one can draw conclusions. The research design did not exhibit adequate control. Additionally, a large amount of variability in the data was a limitation.

Loewy and Bailey (2007) studied the effects of graphic feedback, goal setting, and manager praise on customer service behaviors in a large retail setting. The customer service behaviors, or dependent variables, in this study were customer greeting, eye

contact, and smiling. There was slight improvement in customer service behaviors of staff at both stores. One possible limitation of the study that might have accounted for the non-impressive improvement was the lack of treatment integrity assessment. It is possible that, because of the large number of participants ($n = 300$), store managers may not have provided adequate praise.

Tittlebach, Fields, and Alvero (2007) sought to examine the effect of performance feedback as a function of the source of the feedback. They studied the effects of performance feedback on the quantity and quality of typing skills. They found that there was not a significant difference in the effect produced from feedback given by a “supervisor” as compared with feedback provided by a peer. Still, feedback produced significant improvement in both speed and accuracy. The failure to produce differential results in the sources of feedback may have been due to the fact that the “supervisor” role was played by an experimenter. This was probably not an accurate representation of the effects produced by an employee’s actual supervisor.

The literature has demonstrated that performance feedback is effective in the improvement of staff performance. It is most frequently presented as an intervention in combination with other intervention components, such as task clarification and goal setting. In fact, according to Balcazar and colleagues (1985) and Alvero, Bucklin, and Austin (2001), performance feedback alone is only marginally effective. It is clear that performance feedback alone is not sufficient; however, the addition of performance feedback to intervention packages consisting of antecedent and consequent components improves the efficacy of the treatment, as seen in Therrien et al. (2005).

Some major questions about performance feedback remain unanswered. For instance, what function does it serve? It has been proposed that performance feedback may act as a discriminative stimulus, as it signals that a particular response (e.g., improved performance) will result in reinforcement delivery or the delivery of a punisher. On the other hand, it is possible that performance feedback serves as either a conditioned reinforcer or punisher. This explanation seems viable if we assume that the feedback (graphic or verbal) has acquired reinforcing or punishing qualities because it has been paired with an appropriate reinforcer or punisher (e.g., salary raise, bonuses, or disciplinary action).

Finally, what can be said about performance feedback when it is ineffective presented alone? Must we assume that, as a discriminative stimulus, it has weak control over the controlled response? If we agree that performance feedback is a conditioned reinforcer or punisher, is its ineffectiveness due to insufficient pairings with the back-up reinforcer or punisher? It is possible that performance feedback serves some other behavioral function not yet clarified in the literature.

The current study attempted to use performance feedback as an intervention to change the behavior of managers of residential programs providing support to individuals diagnosed with mental retardation, physical disabilities and mental health diagnoses. The intervention was designed to improve managers' job performance as it pertains to the use of overtime to staff the residential programs. The study sought to show the efficacy of performance feedback alone as well as part of a treatment package including consequences for performance. Also, a social validity survey was administered following

the completion of the study. The survey was intended to determine the function of the various components of the treatment package.

Overtime is a costly expense in human services settings since it is money paid to staff that is not included in program budgets and is wasted resources for an organization that has limited resources to begin with. Statistics gathered by the *Bureau of Labor Statistics* show that overtime pay accounts for 1.88% of total cash compensation for jobs in community and social services (Bishow, 2009). The agency that provided the setting for the current study paid \$1,197,141.96 in overtime during approximately the first three quarters of fiscal year 2009. Of the overtime paid, the Developmental Disabilities Services division paid the highest amount, \$505,493.15. This amount accounts for 42.30% of the total amount of overtime paid by the agency. It is essential, therefore, for program managers to use as little overtime as possible. A secondary aim of this study was to develop an effective intervention for supervisors to lower the amount of overtime used by program managers that was also both cost effective and time efficient. Supervisors have relatively little time to commit given the severity of the problem of excessive overtime.

Method

Participants and Setting

Three residential program managers participated in the current study. The residential programs served as the residence for adults diagnosed with mental retardation and in many cases a mental illness. All of the residences were located in the Boston area. Program managers were identified as participants based upon the amount of overtime

they paid to staff. The amount of overtime paid by the managers was ranked amongst the highest in the Development Disabilities Services division of the agency.

Participant A managed a group home in which eight individuals diagnosed with a more severe form of mental retardation lived. The diminished safety skills of the individuals required at least three staff on each shift. Individuals living at this group home required near total care, thus staff working a shift at this program were required to spend the majority of their time providing care for the individuals.

Participant B managed a group in which seven dually-diagnosed individuals lived. The residents' functional level required at least one staff on every shift; however, one or more individuals engaged in disruptive or aggressive behaviors which necessitated a second staff on all "awake"-hours shifts.

Participant C managed a group in which eight individuals diagnosed with severe to profound mental retardation lived. These individuals required total care from staff. This residence was staffed with at least three staff at all times, but because of the medically compromised condition of many individuals, four staff was scheduled on most "awake"-hour shifts.

Dependent Variable

The dependent variable targeted in this study was the amount of overtime in dollars authorized by the participants during weekly pay periods. Although a certain amount of overtime is expected and accounted for in the program budgets, for the purposes of this study, any overtime paid was considered the target behavior with the goal being to decrease overtime. It was the assumption of the experimenter that the use of overtime constituted a deficiency in the participants' management skills and, therefore,

required some improvement in job performance. Still, it was not realistic to expect the amount of overtime paid to reach zero; therefore, success was demonstrated when the average amount of overtime decreased by 25%. The acceptable amount of reduction of overtime paid was established through consultation with the agency's Assistant Director of Budget Contracts.

Data Collection and Interobserver Agreement

Data were collected from copies of payroll reports compiled and distributed weekly by the agency. These reports listed the amount of overtime paid by each program to specific staff. The experimenter added these amounts together to determine the total amount of overtime paid by each program manager for each payroll period. Payroll periods constituted one week. Payroll reports were published with a one week lag. This meant that amounts were calculated and reported for the week just prior to the week the report was received.

Interobserver agreement measurements were taken on 31% of baseline data and 43% of intervention data. Reliability measurements were completed by comparing calculations made by the experimenter and one other individual uninvolved in the current study. Calculations were completed by dividing the total amount of agreements by the total number of agreements and disagreements. Interobserver agreement during baseline was 100% and 90% during intervention phases.

Procedure

Experimental design. Baseline and intervention procedures were introduced utilizing a multiple baseline across participants design. The order within which each participant was exposed to the intervention was determined both by the amount of

overtime the participant paid per week and the overall stability of the data. Participants who used the most overtime were presented with the intervention first based on the Developmental Disability Division director's expressed desire to see a decrease in the highest amounts first. The second criterion for order of participant was the overall stability of the data. If data patterns trended down, further baseline sessions were completed.

Baseline. Participants were not made aware of their participation in the study until completion of the study. The decision to withhold this information was necessary because of the likely effect knowledge of the study would have on the outcome. Furthermore, withholding information about the study had no potentially dangerous effect on the participants. The procedures and the goal of the study dealt directly with each participant's job performance. Baseline data was calculated and graphed. Baseline conditions were simply sessions in the absence of the intervention. No instructions were given by the experimenter to the participants and no special information was provided about the use of overtime. It is important to point out, however, that program managers were aware of the agency's expectation that overtime use should be kept to a minimal. Furthermore, program managers were periodically and unsystematically reminded by their supervisors of the expectation during baseline and treatment conditions.

Visual performance feedback. Visual performance feedback was provided to the first participant once baseline data was stable or on an upward trend. Visual feedback was administered via email to the participant within the "Financial Report" (see Appendix A). The "Financial Report" was a novel report that listed the weekly amount of overtime the program manager had paid over the previous 4-6 weeks (baseline period). The total

amount of overtime was posted at the bottom of the report as well as the average weekly amount paid in overtime. A graph depicting this information occupied the top quarter of the report. A standard letter (see Appendix B) was sent in the body of the email to which the report was attached. The letter stated the purpose of the attached report and gave a brief explanation of how to read the report. It should be pointed out that the letter stated that the Division Director had asked the experimenter to address the issue of overtime. This was included to lend credibility to the report. The day after the “Financial Report” was sent to the participant, a follow-up email was sent. This email asked for confirmation that the program manager had received the report and whether the manager had any questions. This helped to limit the possibility that that the program manager did not understand the information presented on the report.

Consequences. Visual feedback was presented to the participants for at least two weeks, or pay periods, regardless of whether the amount of overtime paid had increased or decreased. The two week period was necessary to account for the lag in the publishing of agency payroll reports. Information provided by the “Financial Report” was two weeks old; therefore, the information had to be provided for two weeks before assessing whether visual feedback had any effect on the behavior of the participant. After the two-week period, the experimenter determined whether the program manager’s overtime usage had increased or decreased. If the amount of overtime had decreased, the experimenter called the participant and provided verbal praise for having lowered the amount of overtime used. A follow-up email of commendation was sent to the participant and copied to the Division Director.

On the other hand, if the participant's overtime usage had increased, the experimenter telephoned the participant and scheduled a meeting with the participant to discuss their excessive use of overtime. The experimenter asked that the program manager to come to the meeting prepared with a justification for the amount of overtime paid and to have at least three ideas of how the amount of overtime could be lowered. Following the meeting, the experimenter prepared a brief synopsis of the meeting, including the justification and plan of action, and sent it via email to both the program manager and the division director. After three consecutive pay periods showing a decrease in the amount of overtime paid, the intervention was implemented for the next participant using the same procedures.

Participant C served as an exception to the consequent conditions of the study. In an attempt to determine if visual performance feedback alone could effectively lower overtime use, the consequence portion of the study was withheld for participant C. In other words, no consequences were provided for increases and decreases in weekly overtime use.

Social validity questionnaire. An eighteen-question, social validity questionnaire (see Appendix C) was administered to the participants and the division director following the completion of data collection. The first fifteen questions addressed the perception evoked by the intervention. Questions targeted participant's opinions of how aversive or reinforcing various components of the intervention were. Participants answered the questions using a five-point Likert scale. The answers were tallied and averaged. The averaged scores gave some indication as to the behavioral function underlying each of the

components of the intervention. The remaining three questions were open-ended narratives. These questions intended to establish the socially validity of the intervention.

Results

The results for the study are displayed in Figure 1. The data for both baseline and intervention phases are quite variable. Because of the variability, the mean weekly amount of overtime during baseline was compared to the mean weekly amount used during the intervention phases. For manager A, the average weekly amount of overtime used during baseline was \$1,819.23. The average amount used during the intervention phase dropped to \$1,079.73. This constitutes a decrease of 40.65%. This convincingly exceeds the success criterion of 25%. The average weekly amount of overtime for Manager B during baseline was \$726.59. The average amount of weekly overtime used during the intervention phase was \$441.10. This is a drop of 39.29%. The decrease in the amount of overtime used by manager B also exceeds the 25% success-criterion. The weekly average amount of overtime used by manager C during baseline was \$923.91. The average weekly amount of overtime used by manager C during the intervention phase was \$544.17. This constitutes a decrease of 41.10%. Again, this far exceeds the established success-criterion of a 25% decrease.

The results of the social validity questionnaire are as follows: For questions attempting to determine whether participants found the visual feedback in the form of the Financial Report aversive, participants responded at an average score of 1.6, where numbers 1-3 ranged from “Not at all [aversive]” to “Mildly negative”, respectively (see Table 1). Participants answered questions designed to determine whether receiving the Financial Report was a reinforcing event at an average rating of 4.5, where numbers 3-5

ranged from “Mildly [rewarding]” to “Extremely positive”, respectively (see Table 1). This suggests that the visual feedback component functioned as a reinforcer, or was at least a rewarding event whether or not the data depicted was positive or negative. As expected, participants found receiving the “thank you” email reinforcing. On the other hand, participants found meeting with the experimenter only mildly aversive. Likewise, participants agreed that knowing that an email regarding their poor performance being courtesy-copied to the division director was only slightly aversive. On the other hand, if an email contained information about improved job performance, courtesy-copied emails to the division director were reinforcing to the participants.

Discussion

The current study attempted to assess the effects of performance feedback and consequences on the behavior of managers of residential programs providing support to individuals diagnosed with mental retardation, physical disabilities and mental health diagnoses. The intervention was designed to improve manager’s job performance as it pertains to the use of overtime to staff the residential programs. The study sought to show the efficacy of performance feedback alone as well as part of a treatment package including consequences for performance. Also, a social validity survey was administered following the completion of the study. The survey was intended to determine the function of the various components of the treatment package.

Overtime was targeted during this study because it is a costly expense in human services settings. Since overtime is generally not included in program budgets, it is wasted resources for an organization that has limited resources to begin with. The agency that provided the setting for the current study paid \$1,197,141.96 in overtime during

approximately the first three quarters of fiscal year 2009. Of the overtime paid, the Developmental Disabilities Services division paid the highest amount, \$505,493.15. This amount accounted for 42.30% of the total amount of overtime paid by the agency. It was important, therefore, to develop an effective intervention for supervisors to lower the amount of overtime used by program managers that was both cost effective and time efficient.

Results demonstrated that the implementation of the intervention brought about a sizable decrease in the amount of overtime used. In fact, two of the three participants had increasing data trends during baseline. The data pattern for all participants trended down during intervention. The established success criterion of a 25% decrease was convincingly surpassed by all participants. The decrease in the average weekly amount of overtime ranged from 39.25%-41.10%. Manager A, who showed a decrease of 40.65%, received a total of three consequences. She received three emails expressing gratitude for lowering the amount of overtime used and three meetings/emails expressing concern about an increase in the amount of overtime. Manager A was required to develop an action plan to lower the overtime in her program. This was likely aversive, but was not definitively determined. Likewise, receiving emails expressing gratitude was likely reinforcing, but was not determined in the study. Manager B received five emails expressing gratitude and was required to meet with the experimenter once to discuss an increase in overtime. Manager B lowered overtime use by 39.25%. Manager C received no consequences and lowered the average amount of weekly overtime by 41.10%. The fact that the amount of overtime used by manager C decreased by the greatest margin suggests that the intervention utilizing visual performance feedback alone was sufficient

to improve job performance. Results from the social validity questionnaire showed that participants in the study agreed that receiving the Financial Report was a rewarding event. Also, participants who received consequences felt that the emails of gratitude were reinforcing, especially with the knowledge that the division director received a courtesy copy. On the other hand, participants who were required to meet with the experimenter to develop an action plan after an increase in overtime found the meetings only slightly aversive, even with the knowledge that the division director received a record of the meeting. All participants, including the division director, felt that receiving the Financial Report was an easy and effective way to “keep them on their toes.” The division director expressed interest in permanently implementing the intervention division-wide.

Although the study presented some promising results, there were a few limitations that should be discussed. First, agency payroll reports were sent out with a one-week lag. This meant that information presented on the Financial Report was nearly two weeks old. Feedback given about a participant’s behavior was not given for current behavior, but behavior exhibited over a week ago. This limitation confounds interpretation of the data patterns. For instance, for all three participants, overtime decreased immediately upon implementation of the intervention; however, the first data point of the intervention was at least a week old. This initial decrease, therefore, could not be attributed to the intervention but some other variable. It is assumed, however, that persistently low amounts of overtime, or a continued decrease, can be attributed to the intervention. This assumption is acceptable given the high variability of the data across the baseline phase.

Another limitation of the study was that manager A was out on Family Medical Leave Act (FMLA) for approximately five weeks shortly after the implementation of the

intervention. In her absence, a shift leader was given the responsibility of scheduling shifts. It is likely that instructions were given to the shift leader about the scheduling of shifts. Therefore, the shift leader was likely aware that increased scrutiny was being placed on the use of overtime in the program.

A third limitation of the study was that more time was not given to determine the effectiveness of performance feedback alone for all subjects. Few definitive conclusions about the effectiveness of performance feedback as the lone intervention can be drawn from the data due to this limitation. Had the consequence portion of the treatment package been withheld for all participants, more could be said about the effectiveness of performance feedback as the lone intervention. Consequences could have been added to the treatment package contingent on a specific trend in the data. In other words, performance feedback would have been the sole intervention unless the amount of overtime used by a participant increased during three consecutive pay periods.

A fourth limitation of the study was that it is not clear whether the experimental design can be called a true multiple baseline. Typically, a multiple baseline design includes a change in only one variable (e.g., topography of behavior, participants, or settings) while the intervention remains the same for each leg. The intervention for participant C, however, was altered slightly in the current study. The alteration may confound conclusions that may be drawn about control exhibited by the intervention for all participants.

A final potential limitation of the study was that it was not clear whether the contingent face-to-face meeting with the experimenter was actually an aversive consequence or merely another form of performance feedback; verbal feedback in this

case. Teasing out the behavioral function of the individual components of interventions designed to change performance behavior remains a difficult task.

The current study attempted to address some major questions about performance feedback that remain unanswered. For instance, what function does feedback serve? It has been proposed that feedback may act as a discriminative stimulus, as it signals that a particular response (e.g., improved performance) will result in reinforcement delivery or the delivery of a punisher. On the other hand, it is possible that performance feedback serves as either a conditioned reinforcer or punisher. This explanation seems viable if we assume that the feedback (graphic or verbal) has acquired reinforcing or punishing qualities because it has been paired with an appropriate reinforcer or punisher (e.g., salary raise, bonuses, or disciplinary action). If we take into consideration the responses given on the social validity questionnaire, it appears more probable that the Financial Report functioned as a conditioned reinforcer not a discriminative stimulus. Participants stated that they found receiving the Financial Report a positive event even though it showed that the amount of overtime they used had increased. This suggests, therefore, that receiving the Financial Report itself, not the information displayed on it, was the reinforcing variable. One can only speculate as to what served as the primary reinforcer, but it may have simply been attention from their supervisor, pay, or some other unknown variable. On the other hand, it is not likely that the Financial Report served as a discriminative stimulus. If it did function as such, participants would likely have found it aversive when overtime increased and rewarding when overtime decreased as the discriminative properties set the occasion for reinforcement or punishment from their supervisor. However, it is difficult to draw any such conclusions from the current study

since two of the three participants received consequences for performance, an aversive or a reinforcer.

These results of the current study do corroborate the findings of Balcazar and colleagues (1985) and Alvero and colleagues' (2001) surveys in that a treatment package containing both feedback and a consequence proved quite effective. On the other hand, one of the three participants received no consequence, yet showed the greatest improvement. These results suggest that whether performance feedback serves as a discriminative stimuli or conditioned reinforcer or punisher, it is clear that it is effective. It appears that the added consequence may not have been necessary in the current study had the data been left to "play out". Perhaps, ineffective performance feedback is not effective in much of the same way as a reinforcer that is not effective because the subject does not find that item or stimulus reinforcing. It is in fact possible that ineffective performance feedback, as a discriminative stimulus, has weak control over the controlled response. If performance feedback is, on the other hand, a conditioned reinforcer or punisher, its ineffectiveness is due to insufficient pairings with the back-up reinforcer or punisher. Still, it is possible that performance feedback serves some other behavioral function not yet clarified in the literature. Future research should attempt to determine the function of performance feedback. The clarification of the behavioral processes involved in performance feedback and a better understanding of its function will improve the efficacy with which it is implemented as part of intervention packages to improve staff performance in the field of organizational behavior management.

Although the study did not determine the function of the performance feedback, it did show that the intervention designed was "socially acceptable" as demonstrated by the

responses on the Social Validity questionnaire. All participants, including the division director, stated that they found the Financial Report useful and hoped that they would continue to receive them. This suggests that the social acceptability of an intervention designed to improve staff performance as well as the behavioral processes involved are key components to the success of the intervention.

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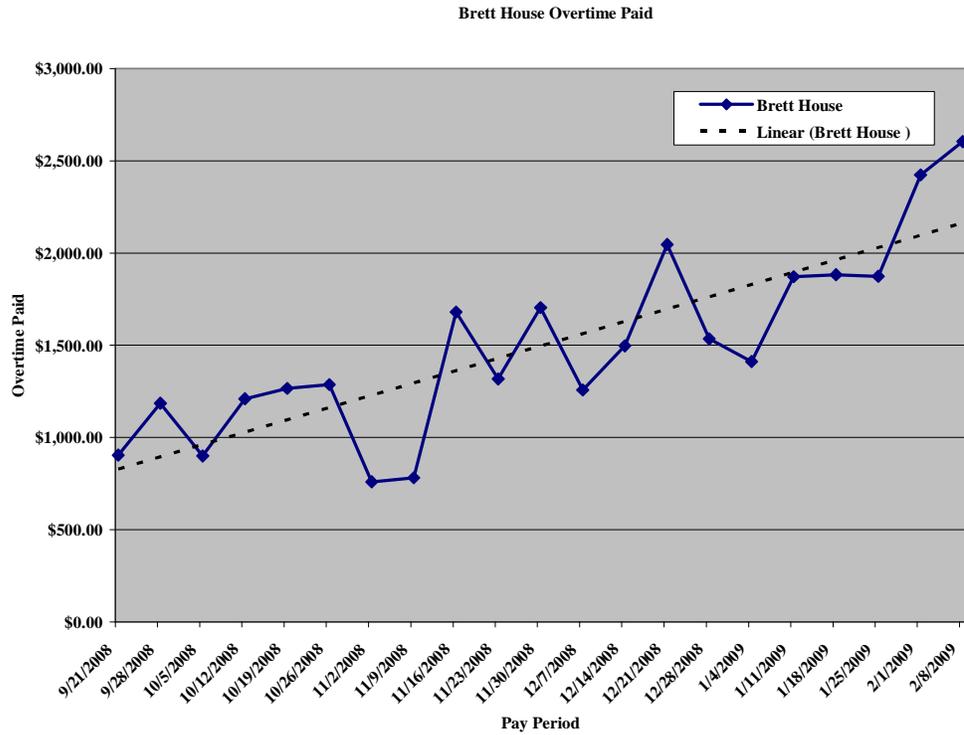
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Appendix A

Financial Report FY09

Weekly Overtime Paid



Payroll Period	Amount
09/21/08	\$904.22
09/28/08	\$1,186.09
10/05/08	\$899.78
10/12/08	\$1,210.15
10/19/08	\$1,266.32
10/26/08	\$1,287.43
11/02/08	\$759.97
11/09/08	\$781.31
11/16/08	\$1,680.40
11/23/08	\$1,316.91
11/30/08	\$1,703.82
12/07/08	\$1,257.76
12/14/08	\$1,496.42
12/21/08	\$2,046.88
12/28/08	\$1,534.59
01/04/09	\$1,412.24
01/11/09	\$1,871.92
01/18/09	\$1,882.63
01/25/09	\$1,874.05
02/01/09	\$2,424.41
02/08/09	\$2,604.66
Total Overtime Paid	\$31,401.96
Average Weekly Overtime Paid	\$1,495.33

Appendix B

Letter accompanying the Financial Report

February 17, 2009

_____,

The Division Director has asked me to address the problem of excessive overtime use in the division. For this reason, I have put together a report that shows the amount of overtime you have authorized over the past several months. The report is attached.

The graph at the top of the report is a visual representation of the individual amounts for the pay periods listed on the lower half of the report. The black dashed line is a mathematical calculation that shows any trends in the amounts of overtime paid. If the dashed line moves from the lower left corner towards the upper right corner of the graph, this shows that the average amount of overtime you are paying is increasing over the weeks. If the dashed line is moving from upper left to lower right, the average amount is decreasing from week to week. The average amount of weekly overtime is also included on the lower portion of the report.

Please use this report as a guide to help you limit the amount of overtime you use when scheduling shifts.

Thanks,

David

Appendix C

Social validity questionnaire

Bay Cove Human Services, Inc.

Overtime Use Feedback Program: Satisfaction Questionnaire

Circle the number that best represents your response to the questions about the overtime-use feedback program in which you participated.

1. Prior to the study, how often did you think about the overtime you use to staff your program?

1-----2-----3-----4-----5
Once a year Twice a year Quarterly Monthly Weekly

2. Did you find receiving the report showing your overtime use was a negative event?

1-----2-----3-----4-----5
Not at all Slightly negative Mildly negative Quite negative Extremely negative

3. Did it seem that you were being punished for your overtime use when you received the weekly payroll report?

1-----2-----3-----4-----5
Not at all Slightly Somewhat Quite a lot Severely

4. Did you feel like you were being unfairly targeted for your overtime use?

1-----2-----3-----4-----5
Not at all Slightly Somewhat Quite a lot Definitely

5. Did the fact that your payroll report was also sent to Mary Jo make receiving the report a negative event?

1-----2-----3-----4-----5
Not at all Slightly negative Mildly negative Quite negative Extremely negative

6. If you had to meet or talk with the experimenter (David) about your excessive overtime use and how you can lower the amount of overtime you use, was it a negative/uncomfortable situation for you?

1-----2-----3-----4-----5
Not at all Slightly negative Mildly negative Quite negative Extremely negative

7. Did you find the Financial Report was a useful tool in managing your overtime usage?

1-----2-----3-----4-----5
Not at all Somewhat Mildly helpful Quite helpful Extremely Helpful

8. Was the payroll report rewarding when you saw that your overtime had decreased?

1-----2-----3-----4-----5
Not at all Somewhat Mildly Quite rewarding Extremely rewarding

9. Was it a rewarding feeling to know that Mary Jo would see that your overtime was decreasing?

1-----2-----3-----4-----5
Not at all Somewhat Mildly Quite rewarding Extremely rewarding

10. Even if your overtime use was high or had increased, did you find that the feedback given in the Payroll Report was a positive thing?

1-----2-----3-----4-----5
Not at all Somewhat Mildly Quite positive Extremely positive

11. Did you find it rewarding if you received a “thank you” email from David?

1-----2-----3-----4-----5
Not at all Somewhat Mildly Quite rewarding Extremely rewarding

12. Did receiving the “Financial Report”, which gave you feedback about your overtime use, make you want to work harder at lowering the amount of overtime you use in your program?

1-----2-----3-----4-----5
Not at all Maybe a little To put more effort To work harder To make it a priority

13. Did receiving the overtime report make you want to work less hard at lowering the overtime you use?

1-----2-----3-----4-----5
Not at all Maybe a little To put less effort To work less To forget about it

14. Would you like to continue receiving the Financial Reports?

1-----2-----3-----4-----5
Not at all Not really No opinion Maybe a little Definitely

15. Would you prefer not to continue receiving the Financial Reports?

1-----2-----3-----4-----5
Not at all Not really No opinion Maybe a little Please, never again!

16. Briefly explain what aspects of the Financial Report you found most useful.

17. What aspects of the Financial Report did you not find useful or did not like?

18. Give a brief explanation of why you liked or disliked receiving weekly Financial Reports.

Table 1

Social validity scores and averages categorized by behavioral function

Aversive

Participants	A	B	C	MJ
Question	Score			
2		1	1	3
3		1	1	3
4		1	1	1
5		1	2	
6		1	1	1
13		1	1	1
15		2	1	1
Total		8	8	10
Averages		1.142857	1.142857	1.666667
Group Average:		1.6		

Positive Reinforcement

Participants	A	B	C	MJ
Question	Score			
7		5	4	4
8		5	4	5
10		5	3	3
12		5	4	5
14		5	5	5
Total		25	20	22
Averages		5	4	4.4
Group Average:		4.5		

Figure Caption

Figure 1. Amount of overtime in dollars paid by program managers during baseline and intervention phases.

The Cost of Overtime per Pay Period

