

Discipline and the Expert System

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Abstract

This paper recounts a research project dealing with the problem of administering discipline in the work place, and providing available technology to supervisors to assist them in their decision making processes. Most importantly, the Supervisor Assistance System (SAS) established in the Florida Department of Highway Safety and Motor Vehicles (DHSMV) is described. A review of existing literature regarding this subject, and the methodology used to collect the data are incorporated.

Introduction/Overview

The Department of Highway Safety and Motor Vehicles (DHSMV) is a state agency responsible for enforcement of highway safety laws, licensing of drivers, motor vehicle registration and titling, and related activities. To accomplish these activities, the department has 1,700 employees assigned to Tallahassee headquarters and another 3,400 employees in field locations ranging from Pensacola to Key West.

Maintenance of high conduct standards among employees is critical to the department in order to sustain the respect and cooperation of the public. A major problem DHSMV executive management has found in the department's disciplinary program is that actions taken by managers and supervisors frequently do not follow the appropriate course of action or include the important elements of "proof." An additional problem is that the recommended course of action varies among managers.

In the past, methods such as training, publication of written policies and procedures manuals, meetings, and studies have been used to communicate standards of conduct to department employees. These means have had limited effectiveness because of the time span between a supervisor's exposure to this information and its application. Also, the complexity of career service personnel rules, collective bargaining contracts, statutory provisions, and department policies and procedures have made many supervisors unsure how to proceed when dealing with disciplinary matters. This situation led supervisors to resort to a "best guess" approach to handling many disciplinary problems. Frequently, this approach resulted in incomplete and inconsistent actions being taken, leaving the supervisor frustrated and the employee resentful, suspicious and less productive. One solution to this problem would be to place experienced advisors in all field offices to assist managers and supervisors in addressing disciplinary situations. Of course, the cost of this effort would be prohibitive.

As an alternative, expert system technology was investigated to determine if the knowledge of the "experts" could be placed in computers located in offices in Tallahassee and throughout the state to guide supervisors in the disciplinary process. Dr. Stephen Foster and other consultants from the Florida State University Center for Public Management who are experienced in knowledge-based systems were awarded a contract in August, 1990 to design such a system for the department. A small task force, comprised of Department of Highway Safety and Motor Vehicles managers and supervisors, was selected to assist the consultants in the development of the expert

system. The task force determined that several factors must be considered throughout the development of the system to make it "user friendly", i.e., it must be installed on the system accessible to the most users (managers and supervisors) throughout the department; it must be open to all users (not password protected); and it must be simple to operate and easy to update.

The department decided to develop the system to operate on Honeywell DPS-6 miniprocessors which drive the department's office automation system and driver license terminals. This would provide system entry to over 240 terminal sites throughout the state.

During the time this system was being developed, the department's rule on discipline was revised to provide more direction to employees by providing concise definitions of each of the 44 disciplinary offenses.

Problem Statement and Review of Literature

Based upon the department's role in law enforcement and its other regulatory responsibilities, a heavy emphasis has been placed on very rigid and sometimes unforgiving military disciplinary processes. Although this may have been effective through the seventies, changes in work ethics, loyalties and general awareness of employee rights, have made it necessary for managers and supervisors, especially in the public sector, more than ever, to be more knowledgeable in sound supervisory practices and statutory and rule requirements. The need for prompt, consistent and proven guidance for managers and supervisors manifested itself in the disciplinary process many times during the eighties.

Consistency in the application of discipline has also been a focal point for some time. The failure to maintain a high degree of uniformity has resulted in reversals of disciplinary action and modification to proposed discipline by those bodies having appeal review, such as the Department of Management Services (formerly the Department of Administration) or the Public Employee Relations Commission (PERC).

An expert system was selected to solve the problems identified because these systems have been used for some time to assist the corporate community in achieving a higher quality of performance. Established companies such as DuPont, Nippon-Kokan Steel, Lend Lease, and others have captured this "artificial intelligence, for use by management in day to day operations" (Fernbaum, McCorduck & Nii, 1988).

John Martin (1991) illustrated some of the ways that expert technology is being used in the law enforcement community. One application is in the area of solving residential burglaries through the collection of previous case information and sifting out common or similar circumstances. REBES (REsidential Burglary Expert System) can provide a profile on possible perpetrators. Martin (1991) also noted, "Expert systems aren't just for law enforcement. Managers in the Florida highway department are using one to help them deal evenhandedly with employee misconduct" (p. 25). However, the use of expert systems in the area of human resources is fairly limited at this point in time (Briggs & Downey, 1990). According to Dr. Foster (personal communication, August 12, 1992), "Separately, the issues of discipline and computer technology have received a good amount of literary comment -- however, collectively, they have not previously been dealt with."

This research study is intended to provide an understanding that certain decision

making processes can be preestablished and used by managers at all levels for the benefit of all in an agency. Consistency and uniformity within the discipline application phase, along with thorough and accurate investigative reporting, are the emphasis in the establishment of such a program.

The Florida Highway Patrol's disciplinary process has been established for some time, and consequently tends to influence the department's overall philosophy concerning disciplinary issues. For that reason, this study focuses on the Florida Highway Patrol's disciplinary practices and the expert system.

The Florida Highway Patrol Policy Manual is used by the agency to inform and direct sworn employees in the area of job performance and personal conduct. Failure of an employee to comply with the established standards often results in a recommendation for disciplinary action. A primary consideration during the subsequent disciplinary review process is to ensure that, even though each case may indeed be different, the disciplinary action proposed (or taken) is uniform and consistent with actions taken in the past for similar cases.

In reviewing past disciplinary issues, management's observation was that access to a readily accessible "on site" advisor would facilitate supervisors in reviewing employee behavior cases. There was no doubt that some managers would be skeptical of using a "machine" to find answers to issues that are quite subjective in nature. It was also conjectured that such a system might be an intrusion into their discretionary domain. However, the opportunity to develop a better equipped supervisor, reduce the instances of discipline, as well as create a better supervisor/subordinate working relationship, was certainly worth pursuing.

Study Methodology

Prior to completing development of the system, a demonstration to first line supervisors provided a preview of how the system would function. The supervisors completed a written survey document on problems typically encountered by supervisors in disciplinary situations. Survey results were used by the development team to assist in the design of the system.

Six months following implementation of the system, a comprehensive study was conducted of supervision and management personnel regarding the system. The purpose of this study was twofold: 1) to evaluate the effectiveness of the system which had been in place for eight months; and 2) to review the foundation of the system for possible expansion to other personnel processes. This study was done in cooperation with the Florida Center for Public Management at Florida State University. It involved two components: (1) a written questionnaire which was sent to all supervisors in the department; and (2) in-depth telephone interviews with selected supervisors.

The written questionnaire of 59 fixed-choice items was developed jointly by the Center for Public Management and the Department of Highway Safety and Motor Vehicles. The questionnaire was not pretested for reliability or validity, although it was reviewed by research methodologists at the Center, as well as by senior management personnel in the department before being finalized. The survey was divided into four parts: (a) demographic information; including job classification, length of tenure with the department, level of education, gender, race, etc.; (b) respondent attitudes regarding information technology, in general;

(c) respondent attitudes regarding the Supervisor Assistance System; (d) respondent attitudes and experience in handling disciplinary matters.

The questionnaire was sent through interdepartmental mail to approximately 800 supervisors in the department. As stated earlier, this study focused on the Florida Highway Patrol; we concentrated on sworn and nonsworn Florida Highway Patrol supervisors. The supervisors were asked to record their responses on computerized scan sheets. No names or any other identifying information was kept in order to insure confidentiality. After a period of 10 business days, the scan sheets were collected in

The SAS helps me insure that I don't overlook some important factor when handling a disciplinary matter.	68%
The SAS helps me determine when disciplinary action is appropriate.	62%
The SAS helps insure consistency in handling disciplinary matters.	59%
The SAS helps me determine when it is more appropriate to counsel an employee than to take disciplinary action.	59%
I generally agree with the recommendations provided by the SAS.	58%

each work unit and returned to the Office of Employee Relations in Tallahassee. From there, the scan sheets were turned over to the Center for processing and tabulation. A total of 636 responses were received, or roughly 80% of all supervisors in the Department of Highway Safety and Motor Vehicles. This included 204 responses from the Florida Highway Patrol.

Telephone interviews were conducted by the Florida Center for Public Management. A list of names of supervisors was provided by the department's Office of Employee Relations. These names were drawn at random from a list of supervisors who had initiated at least one disciplinary action between March 1 and September 15, 1992. A total of

15 telephone interviews were completed over a two-day period, September 22-23, 1992. The purpose of these interviews was to gather anecdotal data regarding individual supervisor's experience with the SAS. This information was used to determine how well the SAS performed in actual instances involving disciplinary action, as reported by the supervisor who initiated the action. The interview format was essentially unstructured, although several questions were asked of each respondent:

- (1) Did you use the SAS prior to initiating disciplinary action?
- (2) What course of action did the SAS recommend?
- (3) Did you agree to follow the recommendations provided by the SAS or did you overrule it and why?
- (4) What do you see are the primary benefits to using the SAS?
- (5) Did you experience any difficulty when using the SAS?

(6) Do you have any suggestions for improving the SAS?

These interviews averaged approximately ten minutes in length. Notes of each interview were made on note pad, then transcribed to the computer as soon as possible, in most cases immediately following the interview.

Attitudes toward the SAS

The survey results demonstrated that supervisors in the Florida Highway Patrol view the SAS very favorably. Approximately 76% of respondents agreed that the SAS is a useful tool. Almost 36% said they strongly agreed; only 4% disagreed. Several reasons were cited for their enthusiasm for the system. At left is a list of statements from the questionnaire, along with the percent of respondents in the Florida Highway Patrol indicating they agreed or strongly agreed.

The results of the telephone interviews corroborated the information gleaned from the written questionnaires. Out of 15 interviews completed, 13 respondents reported having taken disciplinary action within the past six months. All 13 said they used the SAS system prior to making their recommendation to management, and all 13 reported they followed the recommendation provided by the SAS. Two respondents said they have deviated from the SAS results from time to time, but indicated these were exceptions rather than the rule.

The overall reaction of the telephone respondents was very positive, as reflected in their comments. Most expressed the view that the SAS helps clarify their thinking prior to making a decision involving disciplinary action. One respondent reported, as a result of the SAS, she took a different course of action than she had initially planned. None reported having any mechanical difficulty using the system, and all said the questions posed by the SAS are clear and unambiguous. Most of the complaints seemed to be directed more at the disciplinary process and issue of policy than toward the SAS. The complaints about the system seemed to vary. One respondent expressed a need to print the results; another said the system is not updated frequently enough.

Criteria for effectiveness

Although the responses indicated favorable opinions regarding the SAS, the actual use of the SAS is rather negligible. The respondents were asked if they used the SAS when faced with a disciplinary problem. Approximately 33% reported "every time"; 15% said "most of the time"; 16% said "some of the time"; and 20% said "hardly ever." Sixteen percent did not know the SAS was available. The respondents were also asked whether their recommendations for disciplinary matters were more likely to be upheld by management if they used the SAS. Whereas only 13% disagreed, a large percentage (41%) indicated they were neutral. A series of statistical correlations were performed to determine those factors that might influence an individual supervisor to use the system and to find it effective. Four factors emerged.

First, the access and use of computers for other job-related purposes were found to be positively correlated with the use of the system. If the supervisor has ready access to a computer or terminal and routinely uses it in the course of his or her duties, that individual is more likely to use the SAS. Although this result should come as no

surprise, it does not appear to account for a large portion of the results because 44% of Florida Highway Patrol supervisors said they regularly use a computer or terminal in their daily work. About 57% said they have a computer or terminal at their desk or work station. Still, for those supervisors who do not have ready access to a computer or terminal, they are less likely to use the SAS system.

Second, there was a correlation between use of the system and the respondent's feeling of being adequately trained. If the supervisor indicated he or she had been adequately trained on how to use the SAS, it was more likely the SAS was actually used when faced with a disciplinary matter. Once again the matter of training appeared to have some, but not significant impact, on overall use. About 55% of all respondents agreed they had been adequately trained on how to use the SAS. This is somewhat higher than their level of satisfaction with computer training in general. However, training has been shown to be a criteria for successful implementation of computer systems many times before, and this study once again confirmed it as a factor.

Third, the use of the SAS was correlated positively with the perceived ease of use. Overall, 72% of the respondents agreed that the SAS is easy to use. The few who disagreed were more likely to report they do not use it on a regular basis.

Finally, the perceived encouragement and support on the part of management positively correlated with use of the SAS. When asked if their supervisor considers it important that they consult with the SAS before initiating disciplinary action, 54% agreed and 33% were neutral. When asked if their recommendations for disciplinary matters were more likely to be upheld by management if they used the SAS, 46% agreed, 41% were neutral, and 13% actually disagreed. These high number of neutral responses throughout the survey may have indicated several things. They may mean respondents were ambivalent about the SAS, or they do not consider the SAS or disciplinary matters to be particularly important. Additionally, they may be uncertain about the level of support and commitment to the SAS on the part of management.

Although the survey did not provide sufficient data to determine conclusively what prompted a high number of individuals to be so neutral on these matters, it is assumed that the perceived encouragement and support on the part of management is an important factor. Results also indicated that using the system tends to encourage further use. These findings suggest that supervisors need to be strongly encouraged to use the system. Clearly expressed management incentives may prompt more individuals to use the system for the first time. Once these individuals gain some experience and confidence with the system, the survey results suggest that they will continue to use the system, even after management incentives have been reduced.

Future Plans for the SAS

The results of this study tended to validate the knowledge base of the SAS. There was no evidence to suggest that the system produces bizarre or unpredictable recommendations. On the contrary, most respondents indicated they generally agree with the recommendations provided by the system. A few minor modifications are needed to update the system and keep it current with written policies and procedures. These modifications are part of an ongoing maintenance effort which is normally expected with an expert system. In addition, several enhancements are planned which will further improve the ease of use and functionality of the SAS. For example, a module

will be added to help determine whether a particular employee problem is a disciplinary matter or a job performance problem. Further experience with the SAS will help to identify additional features needed to ensure its effectiveness.

A recommendation has been forwarded to Fred Dickinson, Executive Director, Department of Highway Safety and Motor Vehicles, to further develop guidance to supervisors in order to help them deal with disciplinary situations and to broaden the use of the system to address such areas as substandard performance of job duties, job abandonment and other related issues.

As new supervisors are hired or promoted, they will be trained on the use of SAS. In addition, periodic updates to the system will be made as refinements are developed on changes internal or external to the department. The Department of Highway Safety and Motor Vehicles' management anticipate the administration of discipline will be fair, consistent and uniform, which will promote a more harmonious and productive work environment for employees.

Colonel Hall is currently Chief, Bureau of Special Operations with the Florida Highway Patrol. A 27-year FHP veteran, he has served in numerous positions throughout the Division, which is within the Department of Highway Safety and Motor Vehicles. He received his A.S. degree from Pasco-Hernando Community College and a B.S. degree from Florida State University. In addition, he was a member of the Charter Class of the Florida Criminal Justice Executive Institute's Senior Leadership Program.

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A Computer Application for Supervisors

The Supervisor Assistance System is a computer-based "advisor" on supervisory matters. The system contains current departmental policies and procedures for handling instances of behavioral problems and employee misconduct.

How the System Works

The system allows supervisors in the Department of engage in a "consultation" with the system about how to handle a specific situation involving a subordinate. The system asks questions about the incident and other factors, such as the employee's past history and work record and past practices in the work unit. Then, based upon the responses to the questions, the system makes a recommendation on how to proceed. The system may recommend that disciplinary action be taken or may recommend some other type of corrective action such as counseling, Employee Assistance Program referral or better management practices. If disciplinary action seem appropriate, the system provides a recommended penalty.

Who should Use the System?

All supervisors with direct-reporting subordinates should be using the system. Often, handling subordinate conflict can be complex. The experienced manager is flexible in accommodating individual needs, yet firm and decisive when an employee's behavior becomes unacceptable. The Supervisor Assistance System can improve the supervisor's performance in several ways:

- Guides the supervisor through complex situations;
- Helps insure that important questions haven't been overlooked during the data-gathering stage;
- Insures that supervisory action is in compliance with departmental policies and procedures; and
- Provides a "second opinion" on the supervisor's judgment.

Who Makes the Decision?

The system does not make decisions - only people make decisions. The system is to be used as a guide in decision making, just as written policies and procedures serve as a guide. While the system provides guidance, the supervisor is held accountable for his or her actions and therefore, must exercise good professional judgment.

Supervisors are not required to use the system, but are strongly urged to do so whenever appropriate, since it reflects the department's disciplinary policies.

When to Use the System

You should consult with the system whenever you believe an instance of employee

misconduct may have occurred or when you simply want to learn more about the department's disciplinary policies and procedures. The system can help during the investigation stage, as well as during decision making. Supervisors will continue to make recommendations to management on disciplinary matters, as before. The only difference is that supervisors now have a computerized "advisor" to help provide information whenever it is wanted.

How to Log On to the System

The Supervisor Assistance System is available through the office Automation System. At the log on banner, type L SIS and the program will start automatically. You will see an opening screen welcoming you to the system and asking whether you want to engage in a consultation (seek advice on a given employee situation) or simply look up information. Make a selection by entering The appropriate number and pressing the RETURN key.

If you select the information section, you will see a list of various policies and procedures you can read. Make a selection from the menu and follow the on-screen instruction. At the end of the information item, the system will return you to the opening screen again. From there, you may make another selection or exit the system.

How to Engage in a Consultation

Step 1. Select "1. Consultation" by entering the number and pressing the RETURN key. The system displays some general information about the system, followed by the department's policy on discipline.

Step 2. Follow the instruction on the screen, pressing the RETURN key when requested. You will be asked to furnish the name and sex of the employee who may have committed a disciplinary offense. (The employee's sex is needed to determine if such things as pregnancy leave apply. It also makes the system friendlier to use.)

Step 3. The system will then provide a list of disciplinary offenses. Select the offense that seems appropriate, based upon what you know about the situation. Enter the appropriate number and the press the RETURN key. if you do not see the appropriate disciplinary offense on the first screen, select "15" to see more offenses. There are three screens of disciplinary offenses. For each screen, you may press "14" and the RETURN key to go back to the opening screen.

Step 4. Simply answer the questions as they are posed; the system will guide you through the consultation. For YES-NO questions, you may simply type "y" or "n." If you don't know the answer you may type in "unknown" at any time. For entering any response, you may use either upper or lower case letters.

Once you have begun a consultation, follow it to the end. Each consultation ends with a recommendation screen. The message will state whether disciplinary action seems appropriate at this time, based upon your responses. If disciplinary action is called for, a

suggested penalty will be recommended. An explanation will also be provided explaining how the system arrived at its conclusion and other helpful advice on how to proceed. The name and telephone number of additional contact persons are also provided where needed.

You may run the consultation as many times as you wish.

What to do with the Results

After engaging in a consultation, make whatever notes you wish from the recommendation screen and incorporate these in your file. Your consultation with the system is private, just as it would be with a human advisor. Only YOU see the results of the consultation. The data you entered is not kept anywhere by the system and no reports are printed.

In making your recommendations to management, you should indicate that you have consulted with the Supervisor Assistance System and report the results. If you disagree with the system's recommendation, indicate clearly in your written recommendation should you feel a different action is appropriate in this case. Then, make your recommendation to management according to standard procedures.

If asked, you may explain to your subordinates that the system has been provided to all supervisors as a tool to be used in decision making. The purpose of the system is to insure fairness and consistency in carrying out the department's disciplinary policies. Be sure to explain that the results are not stored anywhere in the system and that management makes the final decision regarding any personnel action. Feel free to share the system with department employees; in fact, you may even engage in a consultation with the subordinate present, if appropriate.

What if I need Help?

If, during a consultation, you find a question that is unclear or if you have any comments or suggestions regarding the content of the system, contact the Office of Employee Relations at (904)488-4146, Suncom 278-4146.

If the system malfunctions or you have trouble with the computer, contact the Office of Automation, (904)487-4211, Suncom 277-4211.

For further information contact:

Office of Employee Relations
Neil Kirkman Building
Tallahassee, Florida 32399-0525
(904) 488-4146

State of Florida
DEPARTMENT OF HIGHWAY SAFETY AND MOTOR VEHICLES
THE SUPERVISOR ASSISTANCE SYSTEM