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ABSTRACT

This exploration of an analogic conception of classrooms as workplaces and teachers as executives is divided into five parts. The origin of the author's interest in executive and management skills in teaching is described first. This is followed by analysis of the unfortunate history of the relationship between business management and education. Presented thereafter is a description of current conceptions of management and the role of executives in today's business world. The fourth and largest section presents a review of recent research on teaching, with an emphasis on the similarities between a teacher's role and that of an executive. The compatibility of a conception of the teacher as executive with both educational thought and contemporary cognitive psychology is noted. The last section presents implications of this kind of analysis for the training and supervision of teachers. Despite the obvious dangers, it is concluded that the teaching profession could be enhanced by a serious examination of the conception of teachers as executives. (Author/TE)

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If Teachers Were Thought of as Executives --Implications for Teacher Preparation and Certification

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IF TEACHERS WERE THOUGHT OF AS EXECUTIVES---IMPLICATIONS FOR TEACHER PREPARATION AND CERTIFICATION

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The point of this paper is to remind everyone who forgot that classrooms are workplaces. Classrooms are complex and dynamic workplaces that require management by an executive of considerable talent. Teachers are not usually thought of as executives. Nevertheless, it is believed that a conception of classrooms as workplaces and teachers as executives has merit.

This paper is divided into five parts. The origins of the author's interest in executive and management skills in teaching is described first. This is followed by analysis of the unfortunate history of the relationship between business management and education. Presented next is a description of current conceptions of management and the role of executives in today's business world. The fourth and largest section of this paper presents a review of some recent research on teaching. An emphasis is placed on the similarities between a teacher's role and the role of an executive. The executive functions performed by teachers are highlighted. The compatibility of a conception of "the teacher as an executive" with both educational thought and contemporary cognitive psychology is noted. The last section of this paper presents the implications of this kind of an analysis of teaching for the training and supervision of teachers. Despite some dangers, it is concluded that the teaching profession could be enhanced by a serious examination of the conception of teachers as executives.

Origins of Interest

During a break while attending a meeting on reading instruction at a prominent hotel, it was discovered that a business management seminar was underway in an adjoining room. The seminar was conducted under the auspices of the American Management Association, the major professional association of management, akin to the American Educational Research Association. The seminar leader was overheard saying: "One of the most crucial skills in management is to state your objectives -- You have to have clearly stated objectives to know where you are going, to tell if you are on track, and to evaluate your performance and that of others." That sounded very familiar to an educational psychologist. I stayed to listen, eventually spending the day as a free-loader and spy at their meeting and abandoning my own.

This group of managers, receiving in-service training, spent an hour on the topic of management by objectives. The instructors quoted Mager and Popham, names familiar to almost everyone in education. Their second topic was the use of time. They called this the greatest single management problem. Again, the relevance of their concerns and the concerns of educators seemed clear. The third topic they dealt with was motivation. They had two subtopics: First was a presentation consisting of lecture and case histories on the benefits of positive reinforcement, the negative effects of criticism and punishment, the uses of graphing and the beneficial effects of contracts; the second part of the motivational program was introduced by a film featuring a person well known to educators and psychologists -- Robert Rosenthal.

Rosenthal told these executives about the positive effects of high expectations. The last topic of the day was evaluation. The parallels between the training provided to business and public executives and some of the knowledge and skill needed to run a classroom, particularly an elementary school classroom, seemed obvious.

Could the concepts and principles of management and executive training be useful to teachers? The answer to that question requires a careful examination of the history of the relationship between management practice and education. A review of that interesting history is presented next.

A Note on the History of the Relationship Between Business Management and Education

At the turn of the century the United States discovered that it had an educational problem. A cure was proposed: It failed. The history of this issue begins with descriptions of schools that may evoke a feeling of deja vu among educators.

The Saturday Evening Post of 1912 had a circulation in the millions. It ran an article entitled "Our Medieval High Schools -- Shall We Educate Children for the Twelfth or the Twentieth Century?" One week later "Medieval Methods for Modern Children " appeared in that popular journal. That article highlighted the inefficiency of the schools. Sensing a hot topic, the editors of the Ladies Home Journal carried the indictment forward by demanding, in the best American tradition, a bigger return for the large amount of public dollars that were being expended on the schools. The editorial attacks

were followed up with a so called "investigative" report of the schools titled "Is the Public School a Failure? It Is: The Most Momentous Failure in Our American Life Today" (Lynch, 1912). The author stated that "The American public-school system, as it is conducted, is an absolute and total failure." She asked her readers if they could:

> ...imagine a more grossly stupid, a more genuinely asinine system tenaciously persisted in to the fearful detriment of over seventeen million children and at a cost to you of over four-hundred and three million dollars each year -- a system that not only is absolutely ineffective in its results, but also actually harmful in that it throws every year ninety-three out of every one hundred children into the world of action absolutely unfitted for even the simplest tasks in life? Can you wonder that we have so many inefficient men and women; that in so many families there are so many failures; that our boys and girls can make so little money that in the one case they are driven into the saloons from discouragement, and in the other into the brothels to save themselves from starvation? Yet that is exactly what the public-school system is today doing, and has been doing.

The Journal continued their attack by calling schools "fool factories," and publishing reports of how schools destroyed youth, wasted resources and, in general, committed the unpardonable crime of industrial America, in-ef-fi-cien-cy!

These events early in our century are reminiscent of Spring 1981 when newspapers; the two large circulation weekly newsmagazines, Time and Newsweek; as well as dozens of less widely distributed journals, such as The New Republic; all carried major series on the public schools.

Public schooling, everyone finally noticed, was in crisis. The modern press was somewhat less flamboyant in their language than were their colleagues at the turn of the century, but the cries of large budgets, bureaucracy, inefficiency, bias, slipping morals and ineffectiveness were heard throughout the land.

We seem to have nothing but villains today. During the earlier period of public school criticism, however, there emerged a hero ideally suited for those times. For about 20 years an engineer named Fredrich W. Taylor had been piecing together some uniquely American business ideas. His packaging of these ideas, along with the his dedication and charisma, resulted in what was known as scientific management (Merkle, 1980). Taylor received great public attention with the report of his principles of management by the popular press during the 1910 hearings of the Interstate Commerce Commission on the railroad's petition to increase rates. Taylor's disciples told story after story of how they were able to increase efficiency and lower prices in many different settings. Taylor's own major treatise, Principles of Scientific Management, came out in 1911, and a dozen other similar books on scientific management in shop, home and church appeared almost simultaneously. Then, naturally, came the application of Taylorism to education. The attempt to apply scientific management to education was a monumental debacle. The pervasiveness of the disaster is literately and comprehensively described by Callahan (1962) in Education and the Cult of Efficiency. Dozens of things went wrong with the application of scientific business management to the schools. The descent into trivia, as Callahan called it, was widespread and real educational problems were ignored for decades. Among the issues that caused the debacle were five that might be in need of

re-examination today.

First, the promulgators of Taylorism believed in a totally scientific, rigidly rational model of the actions of people in organizations. Second, the application of Taylorism in education required the development of a centralized authority, delegating to the teacher the role of assembly line worker. The goal of the worker/teacher was to produce a standardized product -- a child who would fit some kind of an industrial slot. Third, the measures of teacher efficiency and effectiveness on the job were so distorted by irrelevancies and social values as to be totally invalid. Teachers were rated on such things as their loyalty to the district, their moral influence on students, their industriousness, their cleanliness, and even on whether or not they kept bank accounts. Fourth, to parallel their success in industry, the efficiency experts needed educational outcome measures analagous to dollars or pieces of merchandise, the commonly used criteria in business. But the testing technology of the time was not up to the task. Finally, there is an issue that is often forgotten in discussions of this great failure. Taylor, for all his peculiarities and with all his class and racial biases, was really a first rate scientist. When he set out to find the optimum speed for cutting certain metals, he engaged in 25 years of study and left records of forty thousand experiments. Callahan (1962, p.40), in judging Taylor's contributions, noted that he had "the creative imagination, the persistence and the singleness of purpose of a scientist." Callahan also noted, however, that "when educational administrators attempted to bring his system into the schools, they showed no real interest in, or ability to carry out, such painstaking research." (1962, p.40).

What is now argued here is that management philosophy and practice is so vastly changed today as to hardly resemble the field as it was in Taylor's time. Management theory, as developed by March and Simon (1958), has brought us a more human model of the actions of people in organizations than the rigidly rational model of Taylor. The new model, much more compatible with life in educational organizations, is that people make decisions that are "satisfycing" -- not necessarily optimal. March and Simon argue that we are too limited in our information processing capability to do anything else in a complex and dynamic environment than to make satisfycing decisions -- decisions that are good enough to get on with the job. We can also abandon Taylor's view of the teacher as a non-thinking factory line worker. From a different perspective a compelling case can be made for conceptualizing classes as extremely complex and dynamic environments. Such environments can not be run by non-thinking individuals. Talented and experienced executives are needed to manage such environments. Another difference between our time and Taylor's time is that we now have a respectable body of knowledge about what teachers do that makes a difference in students' performance, thus solving the problem of judging teacher competency. The technology of the testing field is also different. Outcome measures can be created for judging whether, in fact, valued kinds of learning are taking place. And, furthermore, we now have a scientific community ready to engage in the painstaking research necessary to study education in order to overcome or confirm the practices of the field. Thus, although the marriage of education and management was, historically, an unfortunate one, it may be possible to now think of a rapprochement.

Current Conceptions of Management and Executive Behavior

As opposed to the fiercely profit-oriented, production model of management that ran rampantly and ludicrously through education at an earlier time, what is management like today? Some surprises may be in order.

Jean-Jacques Serven-Schreiber (quoted in Levinson, 1981) has said "management is, all things considered, the most creative of all arts. It is the art of arts because it is the organizer of talent." That statement is not incompatible with educational values. Expressing a similar belief, Peter Drucker, high priest of the corporate society, says of management "Your job is not to tell someone what to do, it is to enable him to perform well" (In Tarrant, 1976). That, also, is not in conflict with basic educational values.

Douglas McGregor, in two influential books (1960, 1967), described organizational management styles based on very different sets of assumptions about the nature of human beings. Theory X, the traditional view of direction and control assumes:

1. The average human being has an inherent dislike of work and will avoid it if he can.
2. Because of their dislike of work, most people must be coerced, controlled, directed, or threatened with punishment to get them to put forth the effort to achieve organizational objectives.

3. The average human being prefers to be directed, wishes to avoid responsibility, and has relatively little ambition (from Eilon, p. 46).

McGregor's unique contribution was an insight of great interest to corporations and educators alike. He speculated that these characteristics may be the results of a managerial strategy and may not be an accurate representation of human nature. Theory X, with its inherent belief about the mediocrity of the masses was contrasted by McGregor with Theory Y, which assumes of people that:

1. The expenditure of physical and mental effort in work is as natural as play or rest. The average human being does not inherently dislike work.
2. External control and the threat of punishment are not the only means for bringing about effort towards organizational objectives. People will exercise self-direction and self-control in the service of objectives to which they are committed.
3. Commitment to objectives is a function of the rewards associated with their achievement. The most significant of such rewards, e.g. the satisfaction of ego and self-actualization needs, can be direct products of effort directed toward organizational objectives.
4. The average human being learns, under proper conditions, not only to accept but to seek responsibility.

5. The capacity to exercise a relatively high degree of imagination, ingenuity, and creativity in the solution of organizational problems is widely, not narrowly, distributed in the population.
6. The intellectual potentialities of the average human being are only partially utilized (from Eilon, p. 47).

Theory Y contains no fearful set of concepts for educators, and, in fact, may be an enlightened model for developing management practices in classrooms.

Adherents of Theory X, so reminiscent of Taylor and the worst aspects of scientific management are fewer now. Perhaps this is, in part, the reflection of a humanistic renaissance, following the abuses of the industrial revolution. It is, however, also a functional response to changes in the business world. Large numbers of people are now employed in other than manufacturing settings. Millions of people work for various levels of government and fully thirty four percent of all private sector businesses are service businesses. Today only about five percent (5%) of non-farm businesses actually manufacture anything (Huse, 1979). Thus, the modern manager is not faced as continuously with making, moving and selling pig iron at a profit, as he was in Taylor's time. Rather, the modern manager combines worries about efficiency with worries about people -- their feelings of satisfaction, their growth, their contributions to the organization, and other personal issues that once were more characteristic of human service providers than business executives.

If, so far, we can agree that the values of management are not now inherently inappropriate for education, let us move on and ask what managers do, keeping an eye open for any parallels with the role of the classroom teacher.

Huse (1979), author of a current text on management, defines a manager as one who works to accomplish the goals of an organization and who directly supervises one or more people in a formal organization. Other texts define a manager or an executive as the person who does the planning, organizing, directing or leading and controlling (Flippo and Munsinger, 1978; Koontz, O'Donnell and Weihrich, 1980). Drucker (1977) adds another point. He says "The first criterion in identifying those people within an organization who have management responsibility is not command over people. It is responsibility for contribution" (p. 50). Teachers, by all of the definitions provided in the field of management, are clearly managers. Even the empirical study of business managers has a familiarity about it. A study of 160 private sector managers (Huse, 1979, pp. 12-13) revealed that they had:

> Little time alone to think. On the average, during the four weeks of the study, the managers were alone only nine (9) times for a half-hour or more without interruptions. True breaks were seldom taken. Coffee was drunk during meetings and lunch time was almost always devoted to formal or informal meetings.

It should also be noted that private sector managers and teachers share similar pathology. Both groups show high levels of stress and that most dreaded disease of the 1980's, burn-out. Thus, in terms of functions, responsibility, similarity in the demands of the job and even pathology, teachers and managers show a resemblance.

Kastens (1980) says of business what is true of classrooms:

> Let us have some plain talk about management. Management is 'running the place'. More elegantly, management is the assembly, disposition and exploitation of resources to produce a new value. The manager takes available resources and manipulates them in such a way as to create something of value that did not exist before. The more new value created by the commitment of a given store of resources, the better the management.

All teachers manage when they add value, that is, when they produce changes in the knowledge, skills, and attitudes of their students, in an acceptable way, using the available resources. Good teaching, like good management, is getting more or better work done under the same conditions.

The last decade has seen a great increase in our knowledge base about teachers and teaching. We have studied the more effective teachers and the less effective teachers and the more effective and less effective schools. Among the scores of variables now thought to distinguish between the two groups are a dozen or so that are also basic management concerns. In our society these are the kinds of concerns that are ordinarily part of the scope of work for persons called executives. Let us look at both the research on teaching and descriptions of executive behavior next.

Research on Teaching: The Executive Functions

The sociological tradition in educational scholarship, from Willard Waller (1932) to Robert Dreeben (1968) and Dan Lortie (1975)

has always and clearly recognized that the school is a workplace. When schools do not appear to function as workplaces they tend to be viewed by the citizenry, at best, as places where learning takes place relatively haphazardly, as in most families and in most secular communities. At worst, when schools are not regarded as workplaces, they are viewed as custodial institutions, akin to prisons and hospitals, as adjustment centers for the pubescent, or as recreational providers for the community at large.

We need to always remember, of course, that schools and classrooms are not <u>just</u> workplaces. They are many other things as well, serving, in particular, social and socialization functions. But we should never be so overwhelmed by these other functions that we forget that school is a place where work is to be done -- where teachers are expected to add value to students.

In teaching or business, the person who runs the workplace must perform a number of executive functions. These executive functions include:

1. planning;
2. communicating goals;
3. regulating the activities of the workplace;
4. creating a pleasant environment for work;
5. educating new members of the work group;
6. articulating the work of the site with other units in the system;
7. supervising and working with other people;
8. motivating those being supervised; and
9. evaluating the performance of those being supervised.

In private sector or in government executive positions, as distinct from teaching, there is a tenth executive function that needs to be performed -- developing budgets and managing money. The other nine functions, however, are performed by teachers and corporate executives alike, although for vastly different rates of pay. Let me now comment on these nine executive functions as they pertain to teaching, in light of my experience and much of the current research on teaching.

Executive Function 1. Planning of Work

Teachers, like all executives, engage in planning. Yinger (1977) identified five time frames used by teachers as they engage in planning. First is the long range yearly plan, wherein the general framework of what will be covered is made explicit; second, slightly more focused is the term; third is the month, wherein basic units of instruction are specified and such things as movies and field trips can be arranged; fourth is the weekly plan, a more detailed description of what will occur, including, usually for the first time, the time allocations for activities. Finally, there is the daily plan, with its schedule, and its requirements for special materials or human resources. Researchers in this new area of study agree that the plans made by teachers early in the year have a profound effect on teaching and learning over the course of the year. It seems as if the planning of lessons or activities and the interactive decision making that occurs take place within the framework of the long term decisions that teachers make (Joyce, 1978-79).

The research on teacher planning is well documented in a recent article by Shavelson and Stern (1981). That research seems to rest on a very important assumption that has been supported by dozens of studies.

The assumption is that, for the most part, "teachers are rational professionals who, like other professionals such as physicians, make judgements and carry out decisions in an uncertain, complex environment" (Shavelson, 1982, p. 1). This assumption of rationality, Shavelson (1982) notes, holds for teachers' intentions rather than their behavior because interactive teaching requires immediate rather than reflective thought. Given the complexity of the teaching environment, the demands for immediate responses and the limited capacity each of us have for processing large amounts of information, researchers find that most teachers act reasonably, if not always rationally, in making their judgements and decisions.

Among the many long-term preactive managerial decisions that teachers must make four strike me as extremely important. These are the decisions about choosing content, scheduling time, forming groups and choosing activity structures. The decisions teachers make about these factors have been shown to affect student behavior, attitude and achievement. Unfortunately, not every teacher is aware of how powerful these managerial decisions can be in determining what is learned in classrooms.

Choosing content. There is a misconception in this country. Chief State school officers, superintendents of schools, school board members and principals often believe that they know what is taught in the classrooms of their state, district or school. They do not. The final arbiter of what is taught in classrooms is the classroom teacher. This is a problem because of what is now a clear, and rather common sensical, finding: Unless the congruence between what is taught and what is tested is high, schools and teachers will appear to be failures.

From recent research on teaching (Schwille, Porter, Belli, Floden, Freeman, Knappan, Kuhs, and Schmidt, 1981) we have learned that even if a text were slavishly adhered to, and finished completely by all students, the overlap between what was tested on a standardized test and what was taught would probably only be about fifty percent (50%). Within this set of constraints designed to dramatically underestimate the value that schools and teachers add, we find that many teachers do not slavishly follow the prescribed textbook. Sometimes those teachers introduce very useful or very interesting content in a curriculum area. Sometimes, however, their personal choices are indefensible.

In the Beginning Teacher Evaluation Study (Fisher, Filby, Marliave, Cahen, Dishaw, Moore and Berliner, 1978) we observed one elementary school teacher for over 90 days. During that period of time she taught nothing about fractions, despite the fact that the topic was mandated by the State for instruction at that grade. When the teacher was asked why she did not teach any fractions she said "I don't like fractions!" Now that is a very human response, illustrating two things. First, it illustrates the power that teachers have in deciding the content of the curriculum. Second, it illustrates the failure of our educational system to provide any useful feedback to teachers about what they do. Few of us do the things we dislike unless we are reminded that we need to do them. It appears, then, that teachers regularly act as curriculum content decision makers but that they are rarely informed about their performance in this crucial area.

What we have recently learned from the Michigan State research team is that the perceived effort required to teach a subject matter area, the perceived difficulty of the subject matter area for students, and the

teachers' personal feelings of enjoyment while teaching a subject matter area influence the teachers' choice of content. One striking example in their data illustrates this point. An elementary school teacher who enjoyed teaching science taught 28 times more science than one who said she did not enjoy teaching science. And from Carew and Lightfoot's (1979) intensive study of four classes we see how the content concerns of a teacher can come to dominate all aspects of classroom life. One of their teachers, Ms. Allen, made reading the central part of classroom life. Eighty-five percent (85%) of all interactions with her first grade students were in academic contexts and seventy-five percent (75%) of those were in reading contexts. For the students in her class all feelings of personal competency and self-concept as a learner derived from evaluations of their competency as readers. In that class the teachers' decisions about the importance of reading as the preeminent content area dominated all other aspects of classroom life.

The empirical data relating content coverage or content emphasis to achievement is clear (See the review by Berliner and Rosenshine, 1977). Walker and Schaffarzick (1974) wrote an insightful article on this issue a number of years ago. Even the summary of the International Evaluation of Achievement (Husen, 1967) noted that content emphasis was among the determining factors accounting for difference in achievement between countries. And, more recently, the empirical work of Cooley and Leinhardt (1980) resulted in their comment that the opportunity to learn a given content area was perhaps the most potent variable in accounting for student achievement in that area. With the evidence about the powerful effects of the content variable so clear, it is interesting to note the casualness with which such content decisions often get made. As Buchmann and Schmidt of

the Institute for Research on Teaching (pgs. 17-18, 1981) say:

> During the school day, elementary school teachers can be a law unto themselves, favoring certain subjects at their discretion. What is taught matters, hence arbitrariness in content decisions is clearly inappropriate. If personal feelings about teaching subject matters are not bounded by an impersonal conception of professional duties, children will suffer the consequences. Responsibility in content decision-making requires that teachers examine their own conduct, its main springs and potential effects on what is taught.

Scheduling time. Related to the issues involved in content decisions are those decisions about time allocations for subject matter areas. The elementary teacher, as opposed to the junior or senior high school teacher, allocates that most precious of scarce resources -- time. The Beginning Teacher Evaluation Study (Fisher, et al., 1978; Denham and Leiberman, 1980) is one of many sources for empirical evidence relating allocated time to achievement. Both Carroll's model of school learning (Carroll, 1963) and my father's common sense support that assertion. That is not the news worth reporting. What is important to bring to everyone's attention is the incredible variation in the time allocations that are made by different teachers. While observing fifth grade teachers, we noticed that one teacher could find only 68 minutes a day for instruction in reading and language arts, while another teacher was able to find 137 minutes a day. At second grade one teacher allocated 47 minutes a day for reading and language arts, another teacher managed to find 118 minutes a day, or 2½ times more time per day to teach reading and language arts. In mathematics the same variability was shown. One second grade teacher allocated 16 minutes a day to instruction in mathematics, another teacher constrained by the same length of the school day somehow found 51 minutes a day to allocate to mathematics. From such data it is not difficult to infer why this is a management issue of great consequence.

Another time management issue has to do with the way time within a curriculum area is scheduled. One of our fifth grade teachers, observed for 87 days, found 5,646 minutes to allocate to comprehension activities such as drawing inferences, identifying main ideas, and paraphrasing. Another fifth grade teacher, observed for 97 days, only managed to allocate 917 minutes to those kinds of comprehension activities.

The management decisions of teachers that result in marked variability in the time that is allocated to particular content areas of the curriculum are causally related to achievement in those content areas. This is as true of achievement in music, art and physical education as it is of science, mathematics and reading. Teacher decisions involving such a powerful variable can not be made in a casual manner.

Forming groups. Like other executives who are responsible for supervising more than just a few people, teachers form work groups. They decide on the size and the composition of the groups. These decisions are very important because they affect student achievement and student attitude. Researchers such as Webb (1980) have taught us that the range of ability among the members of the work group affects the achievement of some of the members of the group, but not others. The complex, but apparently stable interactions that she found rarely enter into the decision making process. Qualitative research by Rist (1973) poignantly taught us that irrelevant criteria can be used as the basis for group assignment, and that such assignments can be of long duration. Rist described how one teacher formed three work groups on the eighth day of kindergarten. It appeared that what she used as the basis of assignment were those well known correlates of academic ability -- clothing, cleanliness and body

odor. The assignments made at the beginning of kindergarten, to what was obviously the group expected to be lowest in achievement, were, in general, still in force three years later when second grade groups were observed.

Shavelson and Borko (1979), after reviewing teachers' decision-making about grouping in reading found that once students are grouped; the group became the unit for planning instruction, and not the student. More important, however, was that the plans teachers made for high and low groups differed. Shavelson (1982, pgs. 36-37) noted that:

> Procedures, decoding skills (reading aloud) and highly structured assignments were planned and carried out for low groups while flexibility in procedures and assignments and emphasis on comprehension skills were planned and carried out for high groups. During interactive teaching, the high groups were paced as much as 15 times faster than the low groups. And student achievement in the high groups was correspondingly higher than in the low groups.

Students are well aware of the ways classrooms groups differ. As Weinstein (1982) has shown, students have no difficulty describing the nature of the differential treatment of individuals and groups in classrooms.

Grouping is a very rational response to what Dreeben (1978) pointed out as one of the most salient characteristics of classrooms -- their collective nature. The evidence suggests that the assignment of students to work groups is occasionally like a life-long sentence and always results in students in different groups learning different things while in school. Calfee and Brown (1979; also see Calfee and Piontkowski, in press), after reviewing the literature on grouping, note that the biggest issue to face in this area is: Who makes these decisions and on what grounds? These very important decisions should be made cautiously and need to be re-evaluated regularly. The person making such important decisions must be very skillful. Teachers, say Calfee and Brown (1979,

p. 181) "deserve the training in techniques for rational analysis of this problem that would provide greater clarity and direction."

Choosing Activity Structures. Bossert (1979) noted that the structural characteristics of a curriculum can be conceived in terms of the temporal ordering of different forms of activity. That is, the building blocks of the curriculum are found in the activity structures. These activity or task structures, such as reading circle, or seatwork or recitation, Doyle (1977) noted, each have functions and operations (rules or norms), associated with them. The activity structures that are characteristically used by a teacher determines teacher behavior, as well as student behavior, attitudes and achievement. For example, Bossert (1978, p. 46) noted that:

> Teachers who relied on recitation were less able to establish close social ties with their students than were teachers who primarily utilized small group and individualized projects. Recitation places teachers at the center of control. It forces them to rely on equitable, impersonal sanctions (usually short verbal desists) and on the authority of office rather than on more personalized influence mechanisms. By contrast, small group and individualized instruction increases opportunities for teachers to convertly "bend" classroom rules to handle individual problems and facilitates teacher involvement in, rather than simply teacher direction of, the activity.

The difference in rapport between teachers and students is clearly noticeable in the recitation oriented versus the individualized instruction oriented classrooms. Different activity structures in these different classrooms give rise to differences in the behavior and the attitudes of the participants in the activity. Again, as Bossert noted (1978, pp.46-47):

> It was not that the teachers who used recitation were less concerned or less empathic, but rather that recitation precludes the individualization and involvement allowed by other activities.

Last year, with colleagues at the University of Arizona and the Far West Laboratory (Berliner, DeWitt, Rubin and Fisher, 1981), we coded 1200 activity structures in 75 classrooms from kindergarten to sixth grade. We were trying to learn the normal operating characteristics of about a dozen activity structures, such as reading circle, silent reading, seatwork and lecture.

We tried to determine for each activity structure how long it lasted; the number of students in the activity; whether the group remained stable over the time it was together or whether students moved in and out of the group; and the percent of time students were attending. We also tried to describe the role of the teacher in each activity structure, asking what teachers do differently in, say, silent reading versus reading circle. The students role in each activity structure was also examined. We also looked at whether or not there was an opportunity for teachers to evaluate students in the activity structure and whether such evaluations were public or private in nature, as in the difference between recitation and seatwork. And we also analyzed each activity structure in terms of whether or not there were provisions for feedback from teachers to students and whether or not such feedback could be immediate or had to be delayed.

What was most intriguing about this project was that we discovered that teachers, who make choices about activity structures everyday, had almost no ability to describe the different activity structures they used in terms like these. They were unable to do the analysis, and, therefore, they were unable to compare the relative costs and benefits of one form of instruction over another for different pedagogical purposes or for

different kinds of students (Berliner, in press). That is the point of this discussion. It means that many teachers may not have the skills to be successful managers in this area, though they must make choices like these every day. This deficit in ability to analyze activities in terms of functions and operations, and in terms of costs and benefits, probably accounts for why teachers seem to adhere to a few familiar activity structures and do not often change their classroom routines.

In the discussion of teacher planning and decision making, thus far, what has been highlighted is how teachers influence the ways that students feel the effects of four powerful variables. These variables are powerful because they are known to affect the classroom behavior, attitudes and achievement of students. But the responsibility for making reasonable decisions about instruction does not end at the preactive stage. Teachers, of course, also must eventually carry out interactive instruction with their students. During those interactions other kinds of decisions must be made. The few extant studies of teachers' mental lives during interactive teaching reveals that teachers tend to follow mental "scripts" or lesson "schemas", while they try to maintain the flow of an activity. During the lesson, teachers use information about students' participation and involvement for self-evaluation about how good or poorly the lesson is going (Peterson and Clark, 1978). Teachers seem to make conscious decisions during the enactment of a lesson script only when something unusual happens or things go poorly. McKay and Marland (1978) estimated that the number of non-trivial decisions that teachers make is at least 10 per hour. Both McKay and Marland (1978) and Morine and Vallance (1975) reported that these kinds of interactive decisions usually involve only two alternatives at a time, as might be expected in the complex and dynamic environment of an

interactive lesson. The sensitivity of teachers to important dimensions of that complex environment is remarkable. Marland (1977) interpreted his data as showing that teachers' interactive classroom behavior is often guided by five (5) teaching principles. Teachers use the compensation principle, to favor the shy, the quiet, the dull, or the culturally different. They follow the principle of strategic leniency, so that they ignore some of the inappropriate behavior of special children. (This strategy is best described by the teacher, Ms. Allen [in Carew and Lightfood, 1979, p. 119], who said the best advice she ever got was to "see but don't notice everything."). Another guiding principle used is power sharing, whereby the teacher selectively reinforces certain students in order to enlist their aid in sharing responsibility. A fourth principle Marland called progressive checking, wherein the teacher makes a special effort to check the problems and progress of low ability students. Finally, we see teachers following the principle of suppressing emotions. Marland's teachers felt that emotion during teaching was inappropriate. Their reasoning was that it could lead to a higher level of emotionality among the students, which creates management problems. Thus, interactive teaching, like preactive teaching, is seen to make considerable cognitive demands on the teacher.

The goal of this lengthy discussion of the planning and decision making of teachers has been to insure that the complexity of the job is made explicit and that the power of the variables under the command of a teacher during planning and interacting is recognized. Compared to feeding children, keeping order, correcting papers or ordering chalk, planning and decision making is high status behavior. That is why it was

selected to make the first point about executive functions in teaching. The other executive functions, mentioned above, will not be discussed in as much detail. Each of them however, could be elaborated on and used to illustrate the same point, namely, that the job of classroom teachers calls for executive level skill.

Executive Function 2. Communicating Goals.

Managers in any setting need to communicate their goals to those they supervise. There are two important ways that teachers can fulfill this executive function, by structuring and by communicating performance expectations. Empirical research has confirmed that these variables affect achievement.

Structuring. During an enthonographic study of more and less effective teachers, conducted as part of the Beginning Teacher Evaluation Study (Tikunoff, Berliner and Rist, 1975), the importance of this variable was made manifest. While analyzing protocols of reading and mathematics lessons, we found that we sometimes could not infer the teacher's intent. That is, we did not have a clue about why the lesson was occurring, where it fit in the scheme of things, or what students needed to focus on for success at the task. Almost invariably, the teachers we judged to be unclear about communicating their goals and giving directions were less effective in promoting academic achievement. Through additional data collection (Fisher, Berliner, Filby, Marliave, Cahen and Dishaw, 1980), we concluded (p. 26) that students:

> ...pay attention more when the teacher spends time discussing the goals or structures of the lesson and/or giving directions about what students are to do.

Further, we noted that both success rate and attention were improved when

teachers spent more time structuring the lesson and giving directions.

Structuring is especially important in classes where seatwork is used frequently. In those classes children work alone a good deal of the time. Therefore, it is not surprising that children who do not have a clear handle on what they are to do easily find ways to do nothing. Jerome Bruner (1981) has just reached a similar conclusion. In visits to schools he had seen many children unable to figure out what was expected of them. He felt that some simple attention to this basic management function would easily improve achievement in classrooms.

Structuring affects attention and success rate: It is sometimes not done at all, sometimes it is done only minimally, and sometimes it is overdone. The case of too much structuring was reported by Hassenpflug (1981), of Wisconsin. Her field notes documented how the directions given for many of the worksheet assignments in third grade actually lasted longer than the amount of time needed by most of the children to finish the assignment! In any case, what is worth noting is that structuring is the responsibility of those who would run the place, it affects performance, and it can be taught to people.

Communicating expectancies. A second way that teachers or other executives fulfill the function of communicating goals is through their communication of expectancies about performance to those they supervise. This voluminous literature in education has been reviewed by Brophy and Good (1974) and more recently by Cooper (1979) and by Good (in press). Suffice it to say that the expectation literature in both industry and education is consistently interpreted. It is concluded that there are effects on performance when supervisors and teachers communicate their goals for performance to those they are supervising. If supervisors or teachers set high but attainable goals for performance, performance usually increases. If supervisors

or teachers set goals for performance that are low, performance usually decreases.

The evidence on the differential treatment accorded to high and low ability students is believed to provide clues to the mechanism by which expectancies about performance are communicated. Good (in press) summarized this literature as follows: In comparison to students for whom teachers hold high expectations about performance, the students perceived to be low performers are more often seated further away from the teacher; treated as groups, not individuals; smiled at less; made eye contact with less; called on less to answer questions; are given less time to answer those questions; have their answers followed up less frequently; are praised more often for marginal and inadequate answers; are praised less frequently for successful public responses; interrupted in their work more often; and so forth. This kind of treatment differential between students for whom teachers hold high and low expectations appears to influence their performance in predictable ways.

Such expectations are not restricted to classrooms. They can also permeate a school. The work of Rutter, Maughan, Mortimore and Ouston (1979), as well as others (Brookover and Lezotte, 1977; Edmonds, 1979; Vanezky and Winfield, 1979), makes this point. Rutter et al. (1979) found marked differences in the outcomes of secondary schools attributable to school level variables such as expectations. Their data revealed that "Children had better academic success in schools... where the teachers expressed expectations that a high proportion of the children would do well in national examinations" (p. 188). Furthermore, the beneficial effects of high expectations is felt in areas other than academic achievement. Again, from Rutter et al. (1979, p. 188):

> The findings showed that schools which expected children to care for their own resources had better behavior, better attendance and less delinquency. In a similar way, giving children posts or tasks of responsibility was associated with better pupil behavior. The message of confidence that the pupils can be trusted to act with maturity and responsibility is likely to encourage pupils to fulfill those expectations.

Once again in fulfilling a standard executive function, communicating goals, we see that teachers have powerful variables to work with. Both structuring and the communication of expectations are variables that affect the achievement and attitude of students. Some teachers and some schools have these variables under their control in the service of their students. Other teachers and schools do not. But such management skills can be learned.

Executive Function 3. Regulating the Activities of the Workplace.

The person who runs the place -- the executive in charge -- regulates the activities of the workplace. It is true, of course, that what happens in workplaces, within organizations, is never independent of the other activities of the organization. Thus, everything that happens in classes is affected by and affects what happens within schools, within districts and within states, because classes are nested in larger systems (see Barr and Dreeben, 1981). But it is also true that schools and classes appear to be only "loosely coupled systems" (Weick, 1976) in which the teacher is subject to the bare minimum of organizational control from the superintendent or principal. Therefore, it is appropriate to point out that control of many factors known to affect student achievement and student attitude in the classroom resides with the teacher. At least six of these factors are worth noting, although only briefly. These factors

are pacing the learners, sequencing events, monitoring success rate, controlling time, running an orderly/academically focused workplace, and preventing or controlling behavior problems.

Pacing. The evidence for the power of the pacing variable keeps mounting. The more a teacher covers, the more students seem to learn. This is hardly shocking news. But again, it is the variability across classes that is most impressive. One teacher adjusts the pace in the workplace and covers half the text in a semester, another finishes it all. One teacher has 20 practice problems covered in a lesson, another manages to cover only 10. One teacher has students who develop a sight vocabulary of 100 words before Christmas, another teacher's students learn only 50. Barr (1980), who has completed a number of studies of pacing, recently found that eighty percent (80%) of the variance in measures of basal reading achievement could be accounted for by the pace of instruction. The plain fact is that we may often be mismanaging the pace at which instruction takes place.

Sequencing events. When regulating the workplace some sequences of events, some standard routines, seem to be more conducive to learning than others. We have learned that the sequencing of positive and negative examples in concept teaching has an effect on learning and that a sequence such as rule-example-rule may have value when principles are to be learned. Beck and McCaslin (1978) have shown how the sequence by which one learns to read letters can influence learning. Good and Grouws (1979) have shown the positive effects of an instructional sequence in mathematics that starts, daily, with a review and then moves to a stage called the development of new material. This is followed by a stage of prompted

practice, then seatwork, then a homework assignment. Special reviews are recommended weekly and again monthly. Good and Grouws provide explicit instructions and time allocations for each step in the sequence. This sequence was derived from a number of different studies of classroom instruction. It has been shown to work. Mathematics achievement in classes where teachers use this pattern exceeds the achievement of students in classes that do not use this sequence.

The nature of sequences for conducting efficient junior high school lessons is discussed by Emmer, Evertson, Clements, Sanford and Worsham (1981). Each element of the opening, the stage of checking or of recitation, the stage of content development, the seatwork stage, and the closing of the lesson is discussed in detail, from the point of view of running a class free of behavior and management problems.

The sequencing of activities is a way that executives and teachers control activities in the workplace. It is not a well understood variable in schools, but it appears to affect achievement and can probably be done in more sensible ways than it is now being done.

Monitoring success rate. The Beginning Teacher Evaluation Study provided more evidence in a convincing body of knowledge about the relationship between high success rates and achievement. For younger students and for the academically least able, almost errorless performance during learning tasks results in higher test performance and greater student satisfaction (Marliave and Filby, in press). Rosenshine (1982) has reviewed the data from a number of studies and concluded that during the initial phases of learning, during recitation or small group work, success rate in reading should be at about the 70-80 percent level.

When students are reviewing or practicing, as in seatwork, engaging in drill activities, or working on homework, student responses should be rapid, smooth and almost always correct. Brophy's (1982) recent comments on this issue are relevant:

> Bear in mind that we are talking about independent seatwork and homework assignments that students must be able to progress through on their own, and that these assignments demand application of hierarchically organized knowledge and skills that must be not merely learned but mastered to the point of overlearning if they are going to be retained and applied to still more complex material. Confusion about what to do or lack of even a single important concept or skill will frustrate students' progress, and lead to both management and instructional problems for teachers. Yet, this happens frequently. Observational study suggests that, to the extent that students are given inappropriate tasks, the tasks are much more likely to be too difficult than too easy.

From some of the classes of the Beginning Teacher Evaluation Study, we have data to support Brophy's assertion. Students were coded in some classes as making almost 100 percent errors in their workbooks or during their group work, as much as fourteen percent (14%) of the time that we observed. That is, students in some classes were observed to experience total failure in their learning activities for many consecutive minutes of the school day. As might be expected, the percent of time students spent in activities in which they had high error rates was correlated negatively with achievement.

In summary, we find that success rate appears to be another powerful variable with known effects on achievement. Like other such variables in the workplace, it needs to be monitored, evaluated and often modified. Skillful management is necessary.

Controlling time. There must be a thousand books or chapters in management on controlling time. There are few in education. Time must be controlled after it is allocated or it is lost. Once time is lost, it is gone. And it is easy to lose. For example, transition times, the time between activities (the start up time and time needed to put things away) can mount up rapidly. This results in large losses of the allocated time in reading as well as, say, physical education. In one of the classes we studied, where the school day was around 300 minutes, we had coded transition time at 76 minutes. The teacher had a listening center, a math facts table, a career education table, a silent reading table, a science center, a cooking station and more. Students in this class moved in and out of these stations at a rapid rate throughout the day, according to a complex schedule. While trying to be very creative, this teacher actually was losing one fourth of the school day to commuting!

The management of classroom time has also been affected by law and governmental regulations. Recent changes in the law have resulted in a return of children with special needs into regular classrooms. This has caused time management problems of an enormous magnitude. And in the last few decades, the shift to the "pull out" program has also required time management capabilities that would tax any manager of any work place. It is hard to manage when those you supervise enter and leave classes at odd times on an odd schedule to visit reading specialists, speech pathologists, school psychologists, and even band directors.

In the classroom, the lack of advanced preparation of materials by teachers is a common cause of time loss. Another cause of time loss is a lack of coordination between the teacher and other members of the school, such that the school office makes announcements or schedules special events

during time the teacher has allocated to, say, reading.

Simple management hints have often been found to make a big difference in controlling time. We asked a teacher to write the language arts assignments of her different reading groups on the board, at the start of recess, so that the first student into the classroom after recess can start work and the teacher does not have to wait until the last student wanders in to give oral instructions. Savings of six minutes a day in this class occurred with that simple advice. This is not trivial. That adds about 180 student learning minutes a day. It provides a half-hour more of instruction a week, and, potentially, it adds 18 hours of instructional time per year.

Controlling time is considered one of the major management problems in business and in education. Fortunately techniques for managing time effectively are becoming available in education. The excellent and very new manuals for elementary teachers, done by Evertson, Emmer, Clements, Sanford, Worsham and Williams (1981), provide dozens of helpful hints on management. Stallings (1981) has also provided guides for the management of time at the high school level. Field trials show remarkably improved efficiency in classes whose teachers used these procedures, without any apparent decrease in students' attitudes toward school. In fact, one district used these techniques to reduce the amount of time spent on non-instructional activities. They estimated that they added the equivalent of 10-16 days of instructional time per school year. Such time was worth 2-3 million dollars if it had to be purchased.

Running an orderly and academically focused workplace. The evidence on effective classrooms and effective schools is amazingly congruent. There is always an indication of higher achievement in classes or schools where there is present an orderly safe environment, a business-like manner among the teachers, and a school-wide system that reflects thoughtfulness in promulgating academic programs, focuses on achievement, holds students accountable for achievement, and rewards achievement. Where such evidence of order and focus are missing, achievement is lower. The case studies of our unusually effective classes in the Beginning Teacher Evaluation Study (Fisher et al., 1978) showed this rather clearly. And Rutter and his colleagues (1979) found similar variables related to achievement when they looked between schools, rather than between classes. Purkey and Smith (1982, p.41), after reviewing the effective schools literature, comment as follows:

> The seriousness and purposefulness with which the school approaches its task is communicated by the order and discipline it maintains in its building ...evidence exists indicating that clear, reasonable rules, fairly and consistently enforced, not only can reduce behavior problems that interfere with learning but also can promote feelings of pride and responsibility in the school community.

The findings about order and academic focus do constitute a real and present danger to individuals. These findings can lead to overcontrol and to such a strict academic focus that it denies the arts or produces debilitating levels of anxiety. But a lack of order and a lack of an academic focus have been empirically determined to lead to low levels of achievement and may, therefore, constitute an equally serious threat to the nation.

The power of these variables is clear. The ability to balance

forces (to know, for example, that playfulness and order are not incompatible, and that individual and societal needs must both be kept in perspective) requires considerable executive level skill from teachers.

Preventing or Controlling Behavior Problems. We should note, at the outset, that there really are few totally out of control classes, though the media would sometimes have us believe otherwise. There are lots of classes, however, where behavior problems occur frequently enough to cause teacher's stress, a loss of significant amounts of time and a break in the orderliness and flow of life in the classroom.

Jacob Kounin, in an enormously influential work (1970) has given us a set of concepts that help us understand the process of maintaining a workplace free from deviance and in which students attend to their assignments. He gave us withitness, describing how effective managers nip behavioral problems in the bud; overlappingness, describing how effective classroom managers handle more than one thing at a time; he also described the need for signals for academic work; the effects of momentum and smoothness in lessons on student behavior; and the positive effects on attention of group alerting, accountability and variety in teaching. These variables have, for the most part, been verified or appropriately qualified in the work of Brophy and Evertson (1976) and Anderson, Evertson and Brophy (1979), among others. Borg and Ascione (1982) have modified and developed these concepts into teacher training materials. Borg's work provides clear evidence of changed teacher and student behavior as a function of this kind of training. The students in classes where teachers had been taught management skills were markedly more on task and showed less deviant behavior.

In just the last few years we have learned to reduce the frequency and severity of behavior problems via the management of classroom environments. These classroom management training materials for teachers are available, now, through Borg and the Texas team.

In summary of this section we note that the regulation of the workplace requires the intelligent handling, simultaneously, of such variables as pacing, sequencing, success rate, and time, as well as the ability to create an orderly and academically focused workplace, and the ability to prevent or control behavior problems. These are powerful variables. They are known to affect classroom behavior, student attitudes and student achievement. It should be obvious that it takes an extraordinary person to do a good job of attending to all these variables at once.

Executive Function 4. Creating a Pleasant Environment for Work

It is the function of every executive to create a convivial atmosphere for work. In teaching, as in business, this means a workplace characterized by politeness, cooperation, mutual respect among the classroom members, shared responsibility, humor, and a number of other easily named dimensions that we value in human social life. From a number of research studies we learn that this managerial function is not incompatible with a belief in schools and classes as workplaces. On the contrary, in a number of studies field workers have characterized the most effective classrooms as convivial places to be (Fisher et al., 1978).

Moreover, in the last few years, we have developed technology to help teachers enhance the interpersonal relationships between members of different social classes, races, sexes, or different ability groups.

Slavin's (1980) Teams - Games - Tournaments, E. Cohen's classroom tasks to enhance the status of individuals (Cohen and Roper, 1972) and Aronson's (1979) jigsaw techniques are all available and all provide some evidence of success in creating more cooperation and interdependency among the students in a class. Slavin's technique also appears to lead to achievement gains. This technology has already spread to over 2000 schools. Thus, a set of techniques now appears to be available for managers of workplaces who are interested in creating a pleasant work environment.

Executive Function 5. Educating New Members of the Workgroup

This managerial function is done very systematically in some business settings but is virtually ignored in education. New students in a classroom literally enter a new culture. They need to be socialized to that culture. Such socialization, however, does not happen in a day or even a month. Three managerial issues in the induction of a new class member stand out. First is the issue of assessment of entering ability. Everyone recognizes that entering ability is one of the strongest indicators of achievement and a necessary condition for any diagnostic-prescriptive model of instruction. Yet when a new student enters a class in, say, February, assessment of entering ability is, routinely, uninformative to the classroom teacher.

A second issue is also an assessment issue -- assessing meta-cognitive functioning. The basic question is: Does the student know how to think about what he or she does in the tasks that are required for success in a particular class? Meta-cognitive awareness is a higher level cognitive skill needed for efficient learning. Without such

awareness, real learning may not occur. For example, a very logical sixth grade girl described how she did word problems in mathematics:

> If there is lots of numbers, I add. If there are only 2 numbers with lots of parts, I subtract. But, if there is just 2 numbers, and one is a little harder than the other, than it is a hard problem, so I divide if they come out even, but if they don't, I multiply (Learning, 1981).

A third issue about induction to classes involves the teaching of rules. Most rule setting takes place during the first few days of the school year (Tikunoff and Ward, 1978). That poses no problems when students remain in class for a school year. In contemporary society, however, many classes have large turnover rates -- sometimes exceeding 100 percent. Who then is responsible for communicating the rules to the new members of the class? Furthermore, rules may be communicated in subtle ways. Judith Green (1982), reviewing the sociolinguistic studies of classrooms, notes how the rules for speaking in class are both explicit and tacit. The tacit dimension of the rule structures may require considerable time to learn. And Morine-Dershimer and Tenenberg (1981) found the same to be true about the rules for classroom questions. They reported how students have to watch other students to learn how to play the questioning game -- a sophisticated game with rules that shift as contexts change.

The induction of new members to the classroom workplace, particularly in a society as mobile as ours, appears to be a managerial area that has been neglected. Skill and sensitivity in assessing entering ability, in probing metacognitive ability, and in teaching classroom rules are needed.

Executive Function 6. Articulating the Work of the Site with Other Units in the System

All workplaces that exist in organizations are nested. They fit within other structures of the system. They affect and are affected by what happens elsewhere. In education, the articulation function takes on meaning in two ways. First, a teacher needs to find ways to have the classroom processes match the priorities of the school and district. When classroom processes (e.g. homogenous grouping) do not match district goals (e.g. racial equity in access to school subjects), the articulation function is not met.

Second, teachers must articulate the present curriculum of the students with the previous and the subsequent curriculum. The difficulties in providing a coherent curriculum often show up during interviews with classroom teachers. Many teachers have little knowledge about what is taught in the grades below and above them. Therefore, even within one district or one school, curriculum areas are sometimes repeated or completely missed. This occurs because the management of the workplace is done with relative autonomy of the site from the system. This need not be so.

Executive Function 7. Supervising and Working with Other People

This common executive function, stressed heavily in schools of management, is not very well addressed in either pre-service or in-service teacher-preparation programs. Usually without any formal training, teachers must learn ways to either govern or share responsibility with such diverse visitors to the classroom as: Parent volunteers, para-professionals, tutors, school psychologists, itinerant music and art teachers, speech pathologists, school nurses, probation officers and dozens of others.

Because teachers are the executives charged with the responsibility to run the workplace, those teachers who have mastered the problems that accompany the supervision of others have life a good deal easier than those who have not.

Executive Function 8. Motivating and Executive Funtion 9. Evaluating

Motivation and evaluation are both topics of importance in education as well as management. Each topic has associated with it a rich literature. Because of their familiarity, comments about how these executive functions are fulfilled by teachers in classrooms will be skipped.

Implications and Conclusions

A description of how the teacher functions in a way analagous to an executive has been provided. The fulfillment of the executive functions that have been discussed thus far should be thought of as necessary, though not sufficient conditions, for effective teaching. Subject matter knowledge is also of great importance. Mastery of the requisite subject matter areas, together with the managerial skill to meet the demands of complex and dynamic classroom environments, may constitute both the necessary and sufficient conditions for effective teaching to take place.

Though almost interchangeable, the term executive is preferred over the term manager for two reasons. First, in education, the term management often refers to classroom control and the techniques for control of deviancy. Although the term is really much broader than that, this narrow connotation is prevalent in education. Second, the term executive is compatible with views of how expert problem solvers in various fields go

about their work. For some reason, conceptions about the executive functioning of chess players, architects, bridge masters, or physics problem solvers are easily accepted. The notion of executive functions and processes in teaching seems much harder to accept. Apparently it is not yet obvious to many that the work on management theory, problem solving and decision-making by the Nobel Laureate Herb Simon, for example, is as applicable to the teaching profession as it is to any other profession. Business, more than education has seen the utility of such studies.

The business community takes the notion of executive skills very seriously. They honor and pay well for such skills. They have also worked hard at building instructional programs that provide those skills to trainees.

Appropriately modified, such training could be an important part of a teacher education program. Future teachers, like future executives in departments of management and in schools of business and public administration, could profit from formal training for an executive role. Teachers need to learn how to make decisions in dynamic environments; develop long range and short-term plans; keep records; supervise other; manipulate bureaucracies; survive in organizational settings; evaluate performance; manage by objectives; and particularly, how to manage time. Teachers might also profit from learning Japanese management styles, currently described as Theory Z (Ouchi, 1981). Schlechty and Vance (1982) point out that Theory Z may not be as good a management strategy for American business as it is for American schools. American schools, as opposed to American business, have some of the same characteristics as the Japanese corporations described by Theory Z. For example, like the Japanese worker,

tenure provides virtually any teacher who wants its with a life time job; principals and superintendents, like Japanese managers, usually come from within -- from the classroom or the shop; and, like the Japanese corporations, principals and teachers often use the metaphor of a family to describe their schools. Furthermore, certain elements of Theory Z, such as quality circles, shared decision making, and shared responsibility by staff may improve the teaching profession by increasing job satisfaction.

Borrowing technology from other fields is admittedly dangerous. When faced with a similar problem in 1887, Woodrow Wilson had this to say:

> If I see a murderous fellow sharpening a knife cleverly, I can borrow his way of sharpening the knife without borrowing his probable intention to commit murder with it; and so, if I see a monarchist dyed in the wool managing a public business well, I can learn his business methods without changing one of my republican stripes!

Perhaps management, in its modern form, can be the source of useful ideas and technology for education. We can take what we need and like Woodrow Wilson, leave behind the ideology we do not like. But we should note, also, that the ideology of modern management is not always incompatible with educational philosophy. When Drucker (1979) discusses fields of practice, such as education, he shows enormous respect for the practitioner:

> There is "management science" and there is "art" in management. But management itself is a "practice" just as is law and medicine. In every practice, it is the practitioner rather than the scholar who develops the discipline, who synthesizes experience into testable concepts, that is into theory, who codifies, who finds and tests new knowledge, and who teaches and sets the example. In every practice, it is the practitioner who leads the profession and who has responsibility, both for the advancement of its capacity to perform and its ethics.

On those ethical issues, Drucker (1977) says:

> It may be argued that every occupation - the doctor, the lawyer, the grocer - requires integrity. But there is a difference. The manager lives with the people he or she manages, the manager decides what their work is to be; the manager directs their work, trains them for it, appraises it and, often, decides their future. The relationship of merchant and customer, professional and client requires honorable dealings. Being a manager, though, is more like being a parent, or a teacher. And in these relationships honorable dealings are not enough; personal integrity is of the essence.
>
> We can now answer the question: Does it require genius or at least a special talent, to be a manager? Is being a manager an art or an intuition? The answer is: "No.". What a manager does can be analyzed systematically. What a manager has to be able to do can be learned (though perhaps not always taught). Yet there is one quality that cannot be learned, one qualification that the manager cannot acquire but must bring with him. It is not genius: it is character (pp. 58-59).

Despite the fact that classrooms are not the same kind of workplaces that one finds in business and industry, Drucker's writing suggests an ideology of modern management that is very compatible with some cherished values in education. The apparently useful technology of management, coupled with an ideology of management that is compatible with certain educational values, suggests that the correspondences between management and teaching are worth pursuing, especially from the viewpoint of the teacher as executive.

Root Metaphors and the Profession of Teaching. Root metaphors are powerful forces in shaping human perception. They tend to dominate the way we think about a particular set of operations, skills or functions. For example, it has been observed that when IBM saw itself primarily as manufacturing business machinery, it was only an ordinary company. When IBM discovered, one day, that it was in the business of managing information,

it soon became a giant in the industry.

What is now being advocated is a root metaphor that is both more considerate of the management roles that teachers play and more encompassing of those roles. Philip Jackson, in his provocative Life in Classrooms (1968), clearly recognized the complexity and dynamic qualities of classrooms. But he chose a set of inconsiderate, somewhat authoritarian metaphors to describe his teachers. They became "supply sergeants," "time keepers" and "traffic cops." Unfortunately, when such metaphors take hold in the minds of the public, they diminish rather than enhance our perceptions of teachers.

With teaching, there are several metaphors at the root of peoples' perceptions of what teaching actually is. For example, teachers have often been characterized as mother (or father) earth, or as information-givers. Each label channels our perceptions of what teachers do in some very limiting ways. For example, the notion of teacher-as-mother-(or father) earth connotes behavior that is nurturing and loving, something very desirable. Unfortunately, the metaphor also carries the notion of custodial care, and, to our shame, custodians of children in our society are not accorded either high status or remuneration. The mother earth metaphor may be particularly pernicious for another reason. It may influence the thinking of the predominantly male managers in education, the principals and superintendents, and thereby prevent elementary classroom teachers, who are predominantly female, from thinking of themselves as members of a managerial class.

Teachers are also thought of as information givers. Here, unfortunately, there are connotations associated with the division of the people in classrooms into two groups - those who possess knowledge and

those who do not. Implied by this metaphor is the limiting notion that only teachers teach, and in doing so they should not rely on movies, educational television or computer technology. With this metaphor teaching becomes not the managing of information but the providing of it.

From the teaching and managerial functions that were described above emerges a much more considerate and encompassing image of the teacher, namely, that of executive. Thinking of the teacher as an executive conveys a more considerate view of the teacher than is prevalent among the general public or within the teacher education community. Most important, perhaps, is that it implies a person who thinks, and one whose behavior is guided by a set of flexible operating principles. The metaphor suggests a person who manages information, and, therefore, finds such things as microcomputers to be aides, not enemies. The metaphor also implies a person who can reasonably, if not optimally, allocate such scarce resources as time and nurturing behavior - both scarce resources in classrooms.

We should begin to train teachers to think of themselves as executives, the first step toward rooting a new metaphor for teaching. Perhaps then we can get for teachers the prestige and pay accorded other skilled executives in the society.

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