Introduction and Integration of Classroom Routines by Expert Teachers*

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ABSTRACT

Successful teachers use the first days of school to establish and rehearse routines which permit instruction to proceed fluidly and efficiently. Routines, shared socially scripted patterns of behavior, serve to reduce the cognitive complexity of the instructional environment. Identified routines were divided into three classes: management, instructional support, and teacher-student exchange. The establishment of routines was examined in the classrooms of six expert teachers, focusing on: (1) the role routines played in the evolving classroom structure; (2) the similarities and differences among teachers in the use of routines; (3) the retention of routines in each of the three identified classes by the teachers; and (4) a detailed look at the most pervasive routines. Teachers were observed to build on their simple routines to form more elaborate strings of action, thus increasing the variety and complexity in the classroom.

The purpose of this research was to learn how successful teachers establish the instructional structure in their classrooms at the beginning of the year and maintain it throughout the year. The presence of functioning activity structures and efficient supporting routines is one benchmark of a successful mathematics teacher (Leinhardt 1983). Activity structures are goal directed segments of teacher and student behavior that involve teachers and students in particular actions, for example, lesson presentation or boardwork. Routines are small cooperative scripts of behavior, used to support several activity structures, for example, choral response, or paper passing out. These structures and their supporting routines permit instruction to take place in a focused, predictable, and fluid way. Activity structures help to pattern and make predictable the normal flow of a lesson. Routines free up cognitive processing space for both teachers

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and students by making automatic a subset of the cognitive processing tasks that would confront teachers and students if the problems for which these are solutions had to be solved anew each time. For routines to become established they must be taught and rehearsed. The objective of this research is (a) to identify the content and configuration of critical activity structures and routines in well functioning classrooms; (b) to trace the origins of routines during the first four days of school; and (c) to identify the mechanisms used by expert teachers to teach students both the content, the cues, and the circumstances under which activity structures and routines are used.

THEORETICAL BACKGROUND

In the current study we examined the behavior of expert teachers during the first few days of school and at midyear. (Experts were identified by their students' unusual academic successes and by convergent nomination from principals and supervisors.) Further, we discuss the establishment of routines and patterns of behavior as a way of helping to reduce the cognitive demands for both students and teachers when content information is to be transmitted.

Studies of the beginning of the school year have noted the significance of the first few days in establishing rules and norms and in setting the tone for the year. The research in education has emphasized the development of rules and management routines in the context of contrasting successful and unsuccessful managers. It is important to distinguish between rules and routines. Although some rules are also routines, most rules are statements of what is not permitted or are explicit or implicit constraints. Routines, on the other hand, are fluid, paired, scripted segments of behavior that help movement toward a shared goal. Routines can have explicit descriptors, can be modeled or, more commonly, can simply evolve through a shared exchange of cues.

In studying how expert teachers go about establishing effective routines we have found it useful to break apart the math lesson into repeatable goal directed segments that are very similar to what Bossert (1978) calls activity structures and which can be modeled using the planning and script analyses from cognitive psychology. An activity structure perspective allowed us to examine the recurrent activities within a given lesson as they were shaped by the teacher and students. Berliner, King, Rubin, and Fisher (1981) specified the features which defined a number of common activity structures which increased student opportunity to learn.

There now exists a substantial number of studies that directly address the issues of how teachers establish themselves with their students in the first few days or weeks of school (Ball 1980; Buckley and Cooper 1978; Clark and Elmore 1979; Cornbleth, Korth, and Dorow 1983; Edelshy, Draper and Smith 1983; Emmer, Everton
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and Anderson 1980; Evertson and Anderson 1979; Pittman 1983; Sanford and Evertson 1980; Tikunoff and Ward 1978; McDermott 1977). The studies fall into two basic categories—those that address the issues of management and control, growing quite directly from process product research, and those that grow out of the ethnography of human relations and negotiations. For the most part, the studies focus on management of students or rules for conduct.*

In studying the development of classroom routines, we are more interested in the system of exchanges that are set up in order for instruction to take place than in the system of rules to limit behavior, although rules may be used to help establish routines (Good 1983; Good and Hinkel 1982). Because the precise analytic framework for studies of teachers that goes beyond a list of their action types has not been developed fully, the field still searches for a metaphor—teacher as decision maker, problem solver, executive, etc. The metaphor helps both reader and author fill in the empty pieces of conceptualization. For this particular study we use the notion of teacher as choreographer or lead dancer. Verbal and movement behaviors must be assembled so they can be danced out. Selecting the steps to be combined and rehearsing them becomes a task of the teacher with the participation of the students.

Further, we assume that students have a well developed school schema in place by fourth grade. Second graders have a school

*There is considerable diversity in methodology from retrospective interviews conducted seven weeks after school starts (Clark and Elmore 1979) to daily observational logs collected for the entire school day (Tikunoff and Ward 1978; Buckley and Cooper 1978). It seems fairly clear that in order to get a good picture of the emergence of the educational dance of school, interviews and observations must be conducted before and during the first few days of school. A consistent finding is that for good teachers, the regulation system is in place very, very quickly (Edelsky, Draper, and Smith 1983; Pittman 1983; Emmer, Evertson, and Anderson 1979). This is true whether the research is addressing the issue of teacher as manager (Emmer, Evertson, and Anderson 1980) or teacher as negotiator (Cornbleth, Korth, and Dorow 1983), or teacher as rule establisher (Tikunoff and Ward 1978; Buckley and Cooper 1978). In some contrast to the Buckley and Cooper findings that teachers determine all the rules, several researchers find considerable negotiation which influences the way a classroom emerges (see especially Ball 1980; Cornbleth, Korth, and Dorow 1983; Pittman 1983; and Edelsky, Draper, and Smith 1983; McDermott 1973). Perhaps it is really a matter of semantics as there is no question of where the power is in the system, just some question as to its use. We consider that the effective teacher at the beginning of the year has an objective of setting up an efficient and smoothly running classroom where instruction, not management, is the major thrust. The first few days involve explicit statements of the teacher's expectations (Buckley and Cooper 1978; Clark and Elmore 1979; Emmer, Evertson, and Anderson 1980; Evertson and Anderson 1979) and rehearsals of the routines. As these expectations and routines become internalized, the teacher can call up these routines with minimal cues to the students. By mapping the routines as they are explicitly stated at the beginning of the year onto the midyear version, we can specify how these routines serve to reduce the processing load carried by teacher and student.
schema to a lesser extent. This schema is much more than a rule list. It anticipates the information that will come from other students, the teachers, parents, principal, lunch aide, etc. in the first few days of school. If no information is forthcoming, the student puts information in from previous experience, including the information of how to interpret no information.

A Perspective

In cognitive psychology, the work on planning shows how one can move through a sequence of actions and decisions efficiently. Thus, one can build a skeletal sequence of actions that has embedded in it the schemata for collecting information, storing it, and then using it in a different (later) location in the sequence (Greeno, Glaser, and Newell 1983; Hayes-Roth and Hayes-Roth 1978; Joyce 1978-1979; Sacerdoti 1977; Stefik 1980; Leinhardt and Greeno 1986). In order to do this not only must the teacher's repertoire contain action and content schemata, but the teacher/student team must also have a set of established routines to facilitate information collection, storage, and retrieval. The combination of these elements constitute a lesson agenda or plan.

Teachers who function well have agendas (Leinhardt 1983; Leinhardt and Greeno 1986). Agendas consist of the working lesson plans and they contain major segments within each lesson that can be modeled, for example, homework check, presentation, and guided practice. An agenda is not the lesson plan. However, it contains the topic of the lesson and all of the goals and supporting actions that permit a teacher to execute a segment of instruction. Elsewhere we have described in some depth the content of these agendas (Leinhardt 1983; Leinhardt and Greeno 1986). For the purpose of this study, planning nets (Greeno, Riley, and Gelman 1984) are used to represent segments of the agenda. Plans, or agendas in the psychological sense, can be considered ways of systematically ordering action strings, each of which calls up a familiar knowledge schema that enables the action to take place (Hayes-Roth and Hayes Roth 1978). In a socially dynamic setting, planning must incorporate estimates of what the other members of the group will do. Planning in this context is further facilitated if the execution can draw upon shared action schemata, namely routines. The instruction to "pass your papers in" results in all actors understanding the expected actions and executing them in a routine way.

Using planning nets to analyze some of the activity segments of expert teachers, we have focused on the presentation segment of a lesson. Lesson presentation integrates several sub-segments, each of which has its own planning net. The planning net is the formal representation of a plan or agenda segment. (Planning nets have nodes and links. The nodes can be either goals or actions. Actions represent bundles of knowledge that can have pre-, post- and co-requisite states [goals] attached. Links connect goals and actions.)
Figure 1 (and 2) starts with oral presentation. Presentation of lesson material is accomplished by achieving several goal states. Goals appear in hexagons (nodes), and actions in rectangles. In Figure 1, the first goal state is to have the terms defined. One action, which has as its consequence the definition of terms, is for the teacher to state the definition. A second action, which has as an indirect consequence achieving that goal, is to call on a student; but calling the student also has the consequence that the student is then in the goal state of being a responder who states the definition. A test for correctness is attached to the terminal student action. The point of this
elaboration of a small bit of teacher action is both to display the complexity of a simple action and to locate the role and consequence of student/teacher routines. If the routine for selecting a student and having the student respond is not clearly established, the lesson can falter or even fail.

In examining a planning net for a lesson segment, we can see the function of a routine. Routines can be thought of as pieces of socially scripted behavior or they can be shown in their role as supporting actions for achieving some goal. For example, one of the first goals in this lesson is to define the terms of the algorithm. In Figure 1 this goal state is shown as the consequence of two actions: the teacher stating the definitions or the student(s) stating them. The effect (link) of having the teacher state the definitions is that the lesson moves along quickly. The effect of having the student(s) state the definitions is that student interest is maintained. However, in order for the teacher to get the student to respond, the teacher relinquishes control of a portion of the lesson, as can be seen by the absence of direct connections between the teacher’s actions and student actions in Figure 1. Student response routines are what allow this segment of the lesson to proceed successfully.

Another goal which follows the presentation of the algorithm and
which rests on multiple routines is that the algorithm is learned by a group (see Figure 2). When the algorithm is being learned, there is generally some public restatement of it by one or more of the following routine actions: Students solve problems at the board, students chorally state the problem and answer it, students chorally recite the rule, a series of individuals work out examples publicly, or the teacher repeats the demonstration. Board work is itself a routine that is composed of several smaller routines: getting out of one’s seat, walking to the board, finding chalk, finding an eraser, selecting a space, listening for directions, and acting. For older children, only board placement and directions are usually made explicit. For second graders, getting out of the chair and finding a place at the board and a piece of chalk may also need to be made explicit.

During a lesson, teachers are often in a position in which they have to surrender control of the execution of a portion of a plan. Whenever a teacher calls on a student s/he runs the risk that the student’s verbal productions or actions may not produce exactly what is needed. The probability of achieving the goal is reduced by some amount. The student’s potential action is linked to a goal in the teachers’ plan by the teacher’s causal knowledge. One might ask why the teacher gives up this control. The answer lies with another goal—that of keeping students active, interested participants in their own learning.

Assuming that the teacher wants to be as certain as possible that the expected action (an appropriate response) occurs, s/he teaches in advance the elements of verbal exchange and a system to indicate receipt of the message (routines for responding). There are many situations in which communication and subsequent action are important, but in which the surrounding circumstances tend to interfere with clear communication. This interference requires the installation of devices that insure complete communication. In schools, this lays the groundwork for a unique “contract of communication” for the classroom. (See Rommetveit 1968, 1972; Grice 1975, and Green 1983, for more elaborate and general discussion.)*

*In scuba diving in order to communicate underwater, there are a small series of signals, for which the patterns of response are either totally fixed or binary. The communications always require a response to indicate registering; that is, one cannot assume the message has been received. (Note that we do this in speech, but don’t always wait for the response.) There are two types of signals—static or dynamic. Static signals require static responses. Dynamic signals require the receiver to immediately take over all decision making until the episode has ended; and similarly the sender, after sending the signal, agrees to become passive with respect to action and decisions (e.g., out of air). Similar signaling occurs in mountain climbing, ship commands, etc. In critical circumstances requiring increased certainty, the actions get tags that increase the chance that the event will take place—those wonderful Hollywood sea battle movies with a statement and restatement: up scope, up scope, right full rudder, right full rudder, etc., are of the same type. In this article, we are exploring in considerable detail the precise nature of the communication routines used in elementary mathematics classrooms and tracing how they are established in the beginning of school.
METHODS AND DATA SOURCE

Six expert mathematics teachers were identified by examining student achievement growth scores over a five year period.* These teachers' growth scores were consistently in the top 20% of the districts' distribution.† The teachers taught in the following grades: three teachers in fourth, one teacher in fourth and fifth, one teacher in second and third, and one teacher in first. All of the teachers taught in self-contained classrooms (including one open classroom), and two taught math to a second class. When a teacher taught an additional math class, we only focused on one class for the analysis. Median class size was 28. The classrooms all served middle to lower middle class families. One was all white; one was all black; and four were integrated. The classrooms were distributed across five schools in a major metropolitan area.

The following types of data were collected for each teacher: observational logs, four of which covered the beginning school days and an average of 20 additional ones; an average of eight math class videotapes with corresponding stimulated recalls, an average of 10 additional ones; audiotapes of classes on different days; and extensive interviews on the teacher's class planning (17), math subject matter knowledge (4), perceptions of students (1), and general educational orientation. Data were collected over two academic years: midyear of year one, the first four days of year two, and midyear of year two. The audiotapes of observations, interviews, and stimulated recalls were transcribed. The transcribed data and videotapes were analyzed to identify the activity structures and supporting routines that were used in each lesson.

A matrix mapping the relationship between routines and activity structures was developed, both for individual teachers and across the sample of teachers. We were then able to identify the introduction of the routines in the first four days and describe the actions of each teacher as the routines were established. The final step was to find the attachments linking the teacher's actions to the routine. These linkages occurred as explicit directions, cues, reinforcers, the use of a child as a model, or as emergent repetitions.

*All teachers' names are pseudonyms; radical, gender, and ethnic information has been deleted. Further, all teachers have signed release forms for use of this data. Feedback of a general nature on all of the findings has been provided to all teachers in annual seminars and discussions.

†In this context, expertise is based on the assessment of the product of the teacher's behaviors. However, expertise is not unidimensional and, in fact, all of our teachers showed skills and weaknesses in varying degrees in varying circumstances. The notion is that instruction is a domain of compensating factors. While failure in some areas does produce class failure, weakness in one area (subject matter knowledge, for example) can be compensated for in others—lesson presentation skill, for example. In our case, most of the teachers were outstanding managers, but at least two were not; these two, however, had unusual command of the subject matter.
We categorized each linkage as conveying either the procedure for doing a routine, the goal or purpose of a routine, or both. If a teacher explained or taught how to do something, it was considered procedural (for example, "pass papers to the person in front, then pass center, I will collect"; or, "when you are finished, turn your paper over, fold your hands and look up"). If a teacher gave the objective, but not procedure, it was considered goal based (for example, "let me know when you’re finished and then keep busy"). In some cases, the teacher gave both the procedure and the goal.* Each routine was coded as management, support or exchange.† Inter-observer agreement on the identification and categorizing of routines was 95%.

Management routines can be thought of as housekeeping, discipline, maintenance, and people-moving tasks; for example, hanging up coats, never interrupting, lining up (to change classes or go to the bathroom). Management routines provide a classroom superstructure within which the social environment and behaviors are clearly defined and well known. Failure of management routines results in a sense of disorder or lack of discipline. Typically, “open” classrooms have fewer of these routines routinized than do other classrooms. Thus, open classroom teachers may state goals and leave the particular action procedure to the student, perhaps because they tend to have fewer instances of whole-class movement. When whole-class movement is required or when record keeping is required, standardization is introduced.

Support routines define and specify the behaviors and actions necessary for a learning-teaching exchange to take place; in other words,

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*We were primarily interested in analyzing the routines used in a functioning mathematics class, therefore, our method of establishing the specific time and activity structure when routines were presented becomes important. During the first four days we observed all of the teachers for an entire day. During the day, there are many routines that may be used or introduced in nonmath classes and that are later used in the math class itself (such as pencil sharpening). We observed, however, some routines that are not used in math class (hanging up coats, for example) and these were not counted.

† The system used to identify routines present at the beginning of school and at midyear consisted of three major phases. The first phase (coding) was the coding of routines that occurred in the first four days. In this stage, researchers read the observational logs of each teacher in the first four days. Routines and rules as well as activity structures were noted in the margin and then mapped onto a matrix developed for coding routines across activity structures. The observational logs were read a second time and the method for introducing each routine was added to the matrix. In the second phase (sorting), routines were sorted by type—management, support, and exchange. The routine was then sorted by its main function. Two researchers sorted these routines. One chose the type while the other either agreed or disagreed. The assignment was made by consensus. In the third phase (checking), videotapes or transcripts were watched to see if coded routines from the beginning of school were observable in midyear. A checklist was compiled on which the researcher noted whether or not the routine was present on any of the days that were videotaped, or in transcribed notes.
they are set-ups for this exchange. Examples are distribution and collection of papers; getting materials ready (books, pencils, crayons); specifying where an action is to occur (at the board, at student’s seat, at teacher’s desk); locating pages and lines in texts. Failure in these routines leads to a sense that the teacher is not “with it” or well prepared, or that students are having (or giving) a hard time. Failure also leads to loss of time.

Exchange routines specify the interactive behaviors that permit the teaching-learning exchange to occur. They are largely language contacts between teachers and students. More specifically, the preferred types of communication between students and teacher are modeled or defined and are often activity-structure specific. Examples are: choral exchanges, teacher travels and checks student’s work, and teacher calls on a series of individual students until she gets the correct answer. Failure in these routines leads to the appearance that teachers are talking to themselves, with students not listening or at least not responding or vice versa. To use our metaphor for teaching—the first type of routine gives broad stage directions; the second, the steps to the dance; and the third, the pas de deux.

In the next section, we summarize the major findings: when routines occur, how many of them are introduced at the beginning of the year, and how many of these exist in the middle of the year for each teacher. We then turn to a review of the three types of routines—management, support and exchange—with some specific examples. Finally, we examine some routines in greater detail to specify their function and importance to the teacher’s instruction and classroom organization.

RESULTS

All six teachers spent considerable time in the first day explaining procedures from such large movements as lining up to such finely detailed tasks as ruling paper. They also spent a considerable amount of time setting expectations for content based success. Approximately one-third of the routines that were developed during the first two days and later used were modeled—this was especially true for the response modes such as raising hands, cycling through students until the correct answer was found, and choral responses. Results are discussed in the following way: the set of activities and routines; the method of introduction; the non-overlapping set (those introduced and not used); and the dysfunctional patterns introduced and maintained. Examples taken from the observational logs will be used to highlight the differences and similarities between teachers and across days. The descriptive nature of these findings is useful in understanding the commonality among teachers’ use of routines, the uniqueness with which routines may be introduced, and the role routines play in the goal structure of different experts’ classrooms.
Patrick. Ms. Patrick's school had strict school-wide behavior and academic policies. The school had shown unusually high levels of achievement for students over the last several years and the faculty was proud of its reputation. The school was a traditional one that served a 100% black student body and used a rigid tracking system. Although Patrick had been educated in parochial schools, all of her teaching experience, including student teaching, was in this particular school. She maintained an on-going cooperative relationship which included team teaching with the teachers in whose class she student taught. As a result, Patrick had been teaching both second and third grade math for most of her twenty-plus years of teaching. In this study we observed her second grade class.

Day One. The clear-cut structure of Patrick's class was apparent from the outset of the first day. There was a sense of careful planning in her introduction of classroom rules, procedures and routines, and in the tone of the teacher/student interaction. Subject-matter instruction was minimized during the first day, although a great deal of teaching, which was essentially the procedures for instruction, occurred. The math and reading lessons served as vehicles for transmitting these procedures. Patrick, like the effective managers in Emmer, Evertson, and Anderson (1980), used her first day of school to define the way her particular classroom would work for the children. There was extensive teacher control of behavior and movement, but this control was muted by a warm and patient style.

Patrick defined and modeled the rules and routines and then had the children practice them, first in isolation and then in limited combinations throughout the first day. This approach was clearly evident in the first routine Patrick introduced, hand raising. Her style of hand raising—students put both hands on top of their heads—was introduced in conjunction with the procedures for a request to put something in the cloakroom. She not only described the hand raising behavior she wanted, she modeled it, telling them this would be the way they raised their hands in her room.

Patrick followed this introduction with an activity that had several purposes. It was a game, Simon Says, and therefore, fun. It was also an introduction to the approach she would use regularly throughout the first few days: Patrick said what she wanted the children to do, and then she modeled it. This way, the students heard the directions, saw a demonstration of the action, and then practiced the action. Here, Patrick was very much the choreographer of actions.

The introduction of basic signaling and movement routines occupied most of the first hour and a half of school. Patrick carefully described most of the procedures for handling activities that might become trouble spots—sharpening pencils, going to the cloakroom, standing up without bumping into one another, and lining up so that any possible trouble or conflict was minimized. The most dramatic example occurred early in the first day when Patrick introduced a piece of scripted behavior. She told them that they were going to
learn how to get out of their seats without bumping another person (the goal). She gave specific procedures: The children raised their hand, right or left, as Patrick indicated, then stood up on the same side of their desk as their raised hand. Each time they lined up during the first four days, they practiced the routine of getting out of their desks. Basic movement routines, such as the ones for getting out of seats and lining up, were time consuming to teach and practice during the first few days. However, as the children developed fluidity and automaticity, the movement routines assured that chances for jostling, disagreements, and/or fights that might occur as children moved from one place to another were minimized. To those who have never dealt with a crowded, busy, inner-city classroom, the apparent overscripting may seem unnecessary. However, throughout the year, Patrick’s room had almost no fighting, pencil stealing, paper snatching, or other disruptive interpersonal behaviors.

A reading lesson provided the means for defining how the appropriate exchange routines would be cued and then practiced. Patrick carefully structured her requests for choral and individual responses. She consistently listened for choral answers that were correct. When the children talked out of turn, she commented either “let the teacher speak,” “listen to the teacher,” or “my turn.” These cues were used consistently to remind the children to listen. Throughout the lesson, whenever a child was either not listening, talking out of turn, or had a desk open, Patrick stopped whatever she was doing, called attention to the unacceptable behavior and told them that work would begin again when the unacceptable behavior stopped. Patrick was establishing an environment in which she could teach without constant interruptions because of student inattention or misbehavior, and teaching verbal exchange systems.

In math class two routines were introduced: passing out and collecting papers and paper set-up. Patrick described what she wanted the students to do, then modeled it. She told them to watch how she passed out papers because students would help later. She gave explicit directions for setting up the ditto, then paced them through the instructions and finally used a student helper to collect the papers.

A variation on the paper set-up, used earlier in phonics and again in math, was elaborated during the last lesson of the day—spelling. Patrick passed out paper and described how to fold and label it with name, subject, and date. She showed them the format on the board. As they worked, she paced them through each step, walked around and checked. This was the initiation of Patrick’s procedure of traveling and checking, which continued for seatwork throughout the year. Patrick praised those who had found something to do (finishing their math papers) while they were waiting to have their papers checked, indirectly expressing her expectation for appropriate behavior.

By the end of the first day in Patrick’s room, the children had a clear sense of the teacher’s expectations for behavior, appropriate
responses, movement, and the ways to set up work and work time appropriately. The basic structure had been defined, allowing for elaboration by extending old routines and introducing new ones. Patrick was in charge of the room; however, there would be time for conversation and sharing and room for student ideas.

Day Two. Patrick used the second day to increase the repertoire of routines as well as to rehearse and elaborate the routines she taught on the first day. The exchange and support routines which provided an underpinning for her instructional style were carefully taught and rehearsed. She also began combining these into strings that permitted more complicated instructional segments. While the quantity of subject matter taught increased, there was still a sense that teaching the routines for setting up and carrying out the instruction was as important as teaching the actual content. The students practiced row dismissals, lining up and sitting and standing when cued repeatedly, with a greater emphasis on speed and efficiency. The choral and individual responses were practiced with a gradual minimizing of the cues. For example, if no name was called, a choral response was expected. Patrick continued to remind the class about her expectations for behavior, including no talking, how to raise hands, and her expectation that they keep their attention on her when she was teaching.

Patrick's continued attention to detail in setting up procedures for classwork was evident in her elaborate introduction to the set up of their phonics workbooks. Each step was carefully described with Patrick checking each child's progress before continuing. Because the process was slow and tedious, the children's attention wandered, so Patrick had to monitor behavior with some frequency. However, the lengthy set-up procedure specified methods for organizing and using materials which Patrick could extend beyond this specific instance. The routines learned would streamline the preparation for work later in the year. This activity was also significant because Patrick introduced one version of her routine of congratulating students when work was well done. In this case, it was "pat yourself on the back." Other versions of congratulating students included "shake my hand," using sign language for "good," and "take a bow."

Patrick also began to involve the students more actively in the instruction. During reading, she introduced the "call 'til correct" and "teacher corrects" routines. After calling on several children to make a sentence using new words and getting either incorrect responses or no response, Patrick modeled the type of response she wanted by making the sentence herself.

In a striking example of how rehearsed routines can be elaborated and combined, Patrick used a game for practicing math facts. The game had two forms, one in which the standing children could only be seated when they answered a math problem correctly and the second in which a child who answered correctly could tag the next player. In both cases, Patrick gave the students the problems to
answer and monitored both the responses and adherence to the rules of the games. The second day included rehearsing routines established on the first day, increasing the amount of subject matter material covered, and elaborating and combining rehearsed routines. Patrick was clearly setting the structure within which instruction could proceed fluidly and efficiently.

Days Three and Four. During the third and fourth day, Patrick continued her careful structuring of the classroom environment. She was patient and persistent in her efforts to maintain and elaborate the procedures she set up in the first two days. While there was more content taught on the third and fourth days, Patrick continued to rehearse, refine, and elaborate old routines and introduce new ones.

An interesting example of Patrick's use of learned routines occurred as the children arrived at school. She had taught and rehearsed the routine for going to the cloakroom and the one for sharpening pencils. By Day Three, she combined the routines so that while one row went to the cloakroom, another row was in line to sharpen pencils. On Day Four, she shortened the cues, pointing to one row and saying, "Coats," and another, saying, "Pencils." The children, however, were confused so Patrick explained what the cues meant, adding that she had probably shortened the cues too soon.

Movement to a spot on the floor for reading on the third day was an extended process in which Patrick broke down her routines, explaining how to move, where to sit, and how to sit. By the fourth day, she used a streamlined routine of calling children by rows. She dismissed the students by using a game-like combination of routines in which they had to answer a question correctly before they could return to their seats.

By the end of the fourth day, Patrick's class had the skeletal structure of midyear. She had taught all subjects, although procedures for instruction were still time-consuming. The classroom atmosphere was clearly set—Patrick was in charge but was willing to have students participate actively as long as their behavior was within the limits she prescribed. Patrick's encouragement of the students and her praise for their efforts added a warm, supportive touch to a classroom in which expectations for behavior and performance were high.

As Table 1 summarizes, Patrick introduced 48 routines during the first days (see Column 1). She tended to introduce the three types of routines almost equally. Patrick's retention of her routines throughout the year was relatively high; 85% were present at midyear. Of the 15 management routines introduced, 47% were introduced on day one and 6% on the fourth day; 67% were present in midyear. Of the 16 support routines, 44% were introduced on day one while 6% were introduced on the fourth day; 94% were present in midyear. Of the 17 exchange routines, 35% were introduced on day one while 12% were introduced on the fourth day; 94% were present in midyear. In general, the bulk of all of the routines were introduced
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Table 1 / Percent of Routines Introduced on Days 1 and 4 and Midyear Retention

<table>
<thead>
<tr>
<th>Routines</th>
<th>Patrick</th>
<th>Wall</th>
<th>Yoda</th>
<th>Konrad</th>
<th>Rivers</th>
<th>Pace</th>
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<td>Management</td>
<td>% introd.</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>% introd. on day 1</td>
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<td>56</td>
<td>75</td>
<td>50</td>
<td>100</td>
<td>73</td>
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<td>% introd. on day 4</td>
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<td>0</td>
<td>6</td>
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<tr>
<td>% retained midyear</td>
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<td>78</td>
<td>75</td>
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No. Routines at Midyear X 100 | 85 | 95 | 85 | 92 | 86 | 70
No. Routines Day 1-4

on the first day and far fewer on the fourth day. Exchange routines were brought in slightly more slowly across the days than were the management ones.

Patrick's routines were embedded in 10 activity structures. The six most important routines (hand raising, individual exchange, choral response, take out/put away, travel check, no talk/I talk) occurred over 4-6 activity structures and occurred in all four days, as well as in midyear. Of these important routines four were exchange, one was support, and one was management.

Wall. Ms. Wall taught in an integrated school that, compared to other schools in the city, had exceptionally high achievement levels for its students. She was viewed by the other teachers in the school as a strong, competent fourth-grade teacher and her nomination as an expert teacher was supported by many, including the principal. Wall ran a very teacher-controlled classroom. She used many procedures to govern the children's behavior and these routines were
consistently enforced throughout the year. Wall attended parochial schools and then a community-controlled public high school. She taught briefly in parochial schools before coming to her current school ten years earlier.

*Day One.* Much of Wall's first day involved a meticulous structuring of an environment which would be conducive to her style of teaching. Wall's approach was fast-paced, bold, and touched with sarcastic humor, some of which was lost on her fourth graders. She used the first day to assert her position as definitely being the one in charge. Wall's approach was made clear to the students during the first activity—roll call. She called a child's name and the child answered, "Yeah." Wall corrected him by saying, "Yes. Yes, Ma'am." She was consistent in her requirement at the beginning of the year that the children's response to her was always "yes Ma'am" or "no Ma'am."

Wall maintained her brusque, in-charge demeanor during the day's activities. She introduced class and school rules, schedules and class jobs, and made it clear that her expectations were to be met. As a follow up to her opening discussion of rules and expectations, she asked the class if they knew anything about her reputation. When a student responded that she was mean, Wall clarified the circumstances when she might be mean: when students do not cooperate, when they do not do their best, and when they do not work with her. This was an example of one of Wall's goal-driven routines which established a definite tone for her classroom—I am strong and I am in charge.

Wall used most of the morning to structure her class, explaining carefully how she expected her students to behave in her classroom and elsewhere in the school. She had a unique approach for introducing rules and the outcomes of infractions. She asked a question, "What do I do about . . . ?" and the students responded, often with specific details. Although the students were new to Wall's room, it was clear that they had a great deal of information about her.

In the course of her discussion about rules, Wall covered a number of routinized procedures. She reminded them about raising their hands to speak, remaining in their seats, and how she expected them to pay attention to her when she talked. At the conclusion of her explanation of rules and procedures when she asked, "What do I do about a messy desk," the students responded, "You dump it." Wall elaborated on what would happen, telling them she would first dump the desk, then throw away the books and papers, and finally punish the owner.

Wall gave the students her rationale for being strict; she wanted this year to be successful, which in her room meant coming prepared, doing the assigned work, and being as quiet as the class was at that moment (which was complete silence). Wall also told them that when they did not behave in this way, she would yell, which she didn't like to do. Incorporated in her discussion of outcomes was a bit of
INTEGRATION OF CLASSROOM ROUTINES

humor. Wall showed the class a plastic model of a child’s face with a flattened nose and told them this was a student in her room who did not listen. The students appeared to be impressed. As a reminder of her expectations for behavior and the possible outcomes of failure to meet those expectations, the model remained on her desk throughout the first week.

Wall’s introduction of routines for academic work occurred after lunch. In preparation for a math pretest, she described the paper set-up in detail, then traveled and checked individual student’s work. She also explained what to do with completed work and gave a description of the types of papers—dirty, crumpled, or wrinkled—that she would not accept. Messy papers would be ripped and students would not get credit. While the students worked on the test, Wall monitored their behavior and reminded students to keep busy when they finished the pretest.

Wall introduced exchange and attentional routines during the math review that followed. With this activity and the ones that followed, Wall was prescribing a format she used consistently. The class would respond chorally and/or individually at a very fast pace when the task was either to check completed work or review well-learned problems. Wall turned an oral review of the test problems into a quick three-minute drill in which the students responded chorally. In the next sequence, which was a review of basic facts, Wall read the problem number, although she mixed the order that the problems were presented in the book. She started with a choral response, but switched without warning to an individual call-on in order to catch an inattentive child. For the last review drill, she had the boys answer one column while the girls listened for mistakes. Then the girls had a chance to answer the problems.

Wall’s preparation for a written assignment led to reminders about already covered routines and the introduction of new ones. Wall introduced a distribution routine when she passed out the papers by giving a sufficient number of dittos to the child at the front of each row. The children passed the papers back without any kind of prompting or directions. During the distribution, the students’ attention wandered, leading Wall to call their attention to her before she had a student read the directions out loud. Wall had the class work through several problems together before she told them that this paper would be homework. She followed the assignment with a humorous reminder about the condition of papers which she would not accept—those which belonged in a garbage can because they were messy, dirty, or crumpled.

The thrust of Wall’s first day was to set out and institute the procedures which would govern the students’ behavior as well as their academic work. Wall presented an attitude which despite its over-tone of humor was definitely a statement of her extensive control in the classroom. Classwork was secondary to Wall’s goal of structuring her classroom so that expectations and outcomes were clearly de-
fined. Wall clearly believed in the adage, “Don’t smile before Christmas.” The gradual softening of her affective style during the year supported this.

_Day Two._ Wall used the second day to refine the routines for academic work, including the paper set-ups, and the use of individual call-ons to check on real understanding as well as to embarrass non-attenders. She kept a close watch on the students’ behavior, providing reminders of her expectations. In math class, Wall increased the pace and the amount of academic work covered.

Wall’s second day set a precedent for the businesslike, efficient way her class would run. Immediately after the opening exercises, she began to check homework papers at her desk while the children worked on the “bellwork” problems—math problems which she always put on the board prior to the bell that signals the start of the day. In preparation for students’ independent work during reading groups, Wall explained the paper set-up in great detail. Wall, like most of the teachers, demonstrated the appropriate way to fold the paper and to put on the headings. While she traveled and checked each step of the set-up, she explained importance of neatly set up papers. Her careful instructions were necessary since students were expected to work independently on problems put on the board and on dittos during the time when Wall was teaching reading. All papers from independent work were to be placed in a bin in the back of the room when completed. Unfinished work could be completed during lunch period. In addition, Wall clearly stated her expectation that students who finished their independent work would find something else (library books, games, other unfinished work) to do; she would not tolerate fooling around.

Wall spent most of the morning organizing her three reading groups. As she was organizing the first group, she reminded the class that interrupting her was unacceptable as were constant trips to the bathroom. In the interim between reading groups, Wall traveled and checked the students’ independent work. Although Wall gave the class a number of tasks, by the middle of the third reading group, many had finished and were restless. Wall reminded them about what they could do when their work was finished and gave a number of children who were finished housekeeping types of tasks.

Math class, which occurred after lunch, had much of the structure and form found in midyear, even though the presentation was abbreviated. Wall used a variety of exchange routines, including alternating between individual and choral responses, checking for attention and having individual students solve more difficult problems on the board. At one point when she asked a conceptual question and failed to get an answer, she initiated a “call 'til correct” routine. Wall kept the pace for the oral math class fast. In this oral review, the class covered four pages in about 25 minutes. To keep attention high Wall frequently asked, “If I call on you, will you know where I am?” She also told the students that the outcome of failing to pay atten-
tion would be writing the problems instead of doing them orally. Wall moved into written work quickly and with no time spent on set-up. She reviewed several problems on each page assigned, then had the students work independently. In addition to the two dittos to be completed in class, Wall gave a homework assignment.

Wall moved the students through the review material and pre-testing at a fast pace. Her routines were evident in math class, particularly those that kept the exchange going and attention high. She also reminded students constantly about her expectations for the quantity and quality of work. Wall’s math class already had taken on a form similar to the midyear one and her high expectations for performance and efficiency were clear.

_Days Three and Four._ By the third and fourth day, most of the routines in Wall’s class were in place and functioning with only short reminders from her. The emphasis was on covering subject matter content in an efficient and organized way. Wall used the established routines to keep up the pace, to define what should be happening at a particular time, to support her teaching and the students’ classwork, and to maintain her high expectations for performance and behavior.

It was clear that Wall intended to keep students’ participation level high and many of her routines served that purpose. For example, during a short oral practice in math, she mixed choral and individual exchanges, students at the board, and students showing answers on their fingers. She controlled inattention by calling on children without warning. If a child was lost, s/he was given extra work. Homework and in-class work were checked in class, followed by Wall asking students to indicate publicly the number of problems correct. Wall used the seatwork time to travel, check, and give short tutorials.

Wall was also consistent in maintaining the expectations she set on the first day. She ripped up a messy paper and then had the student redo the work. During her traveling, she regularly checked children who were working slowly, reminding them to keep on task. Wall monitored the students’ behavior with looks or short verbal reminders. She was clear about her unwillingness to tolerate chatting or wasting time.

By the end of the fourth day, Wall’s class had taken on structure like that found in midyear. She had established a classroom atmosphere in which the teacher set expectations which if not met had well-defined negative consequences. Her pacing was fast, as it continued to be in midyear; students learned to respond quickly and pay attention. Although Wall was brusque, there was a humorous aspect to her teaching style which emerged more fully in midyear.

Wall introduced 46 routines during the first four days (See Table 1, Column 2). She tended to introduce and emphasize support routines over exchange and management ones. She did, however, introduce more management routines than our other fourth grade
teachers. Of the 46 routines, 44 (95%) appeared in midyear. Of the nine management routines, 56% were introduced on day one, and 22% on day four; 78% were present in midyear. Of the 24 support routines, 45% were introduced on day one while 13% were introduced on the fourth day; all were present in midyear. Of the 13 exchange routines, 77% were introduced on day one while none were introduced on day four; all were present in midyear.

In general most of the routines were introduced on the first and second days. Unlike Patrick, Wall taught all of her exchange routines early on; however, Wall was working with older, more verbally competent children. Wall’s routines were embedded in 10 activity structures. The seven most important routines occurred across two or three activity structures and appeared in three of the four days (yes/no Ma’am, individual exchange, eyes on me, choral exchange, distribute/collection, travel check, finished work to bin or book). Of these routines, five were exchange and two were support.

Yoda. Ms. Yoda taught in an integrated school that had shown steady improvements in its achievement standings in the entire school district throughout the last five years. Initially an all black school, it was integrated with an adjacent white neighborhood. The integration was accomplished peacefully, but with great trepidation on the part of the white parents whose schools had been closed. In fact, the educational preparation of the black students in the school was superior to that of the in-migrating white students. That fact quickly became known and it increased the status of the school tremendously within both communities. Yoda was unusually concerned about her students’ psychological and academic development. Yoda’s quiet manner was occasionally a cause for concern to some of the other teachers in the school, since her managerial control was viewed as being weak. She had been teaching for over seventeen years. In this study we observed her fourth grade class.

Day One. Yoda’s classroom was somewhat unstructured and disorganized. She was slightly scatterbrained and forgetful and often turned to the students for reminders of where materials were or what should happen next. The students quickly learned on the first day to prompt her through actions. Yoda’s style did not have the elements of teacher control found in most of our other teachers. While she taught a number of procedures and routines the first day, they often emerged as asides after an incorrect response or request for clarification. Yoda also stressed subject matter content over procedures during the first day.

Yoda began the first day by defining the procedures and routines that covered how work was to be completed and when certain activities such as pencil sharpening were acceptable. Unfortunately, her “rules” were not enforced; so, failure to complete work as well as high levels of off-task behavior were frequent. Yoda’s procedure for line-up to leave the room exemplified the ambiguity in her introduction of routines. It is not always necessary to have students form
lines or exit from their desks in a precise fashion, however, the reason for doing it is that it can save time and hassle. Unlike Patrick who choreographed her exits to clear a small space efficiently, Yoda asked her students to line up by height, rather than distance from the door. Solving the problem about height took ten minutes and subsequent line-ups always took a lot of time and were somewhat chaotic.

Yoda’s discussion of expectations for homework were also a reflection of her style—homework assignments were posted on the board and unfinished homework could be completed during the day. However, when the students repeatedly failed to complete homework, they were sent to the principal; there was no teacher-determined consequence. Even within the first four days, this procedure went through several changes, leaving no clear-cut routine governing homework.

Yoda moved quickly into teaching subject matter content, laying the groundwork for several persistent routines, including the distribution of paper, the set-up for papers, her preference for individual exchanges with students, and an initiation of her use of traveling and checking. The routine of travel/check was an elaborated and integral part of Yoda’s teaching. Yoda’s mini lessons and tutorials during her traveling provided far more teaching than any one else we saw. The teaching during these tutorials was usually of a high quality and specific to an individual child’s need.

Yoda’s class on the first day had a skeletal form that was very similar to that found in midyear. For example, math class involved a short presentation followed by a lengthy seatwork period during which Yoda traveled and tutored students. The students’ off-task behavior such as sharpening pencils, chatting, moving around the class or hall began after they learned that Yoda did not effectively limit these behaviors.

Yoda’s first day contained procedural information about line-ups, homework expectations, and how materials were to be used. The tone was set for the way interactions between the teacher and students would occur. Although routines were present, they were not adhered to very tightly. Yoda’s goals were stable, but elusive, and the specific procedures were loosely defined. The looseness of the structure set-up in the first day was costly in terms of time and energy later in the year.

Day Two. Yoda’s second day was generally content-oriented with the exception of a short explanation of the morning procedures to two new students. There was further erosion of the already loose structure she set up on the first day. This was particularly evident in her unsuccessful attempts to monitor talking and off-task behavior. Yoda continued her use of short lessons followed by extensive seatwork time during which she tutored and occasionally worked at her desk. The children continued to help Yoda when she forgot to provide information or when she lost something.
Yoda began the second day by checking homework as well as the problems completed during a short work period at the beginning of school. To check the in-class work, Yoda called on individuals to answer problems and then assessed performance by asking how many problems students had correct. She checked for completed homework and listed the names of students who were not finished. For the homework check, Yoda called out the problem and the students answered chorally, then passed in their homework. This morning procedure was handled efficiently and with relative fluidity.

Yoda, like Wall, began to set up her morning structure by assigning reading groups and giving the children who were not involved in reading an assignment. For this assignment, she provided a description combined with a demonstration on the board of how to write an outline. Yoda was clear in her request that the students wait to begin the work until her explanation was completed. Unlike Wall, she did not set any restrictions on their interaction with her while she was teaching so during the work period, students frequently raised their hands or went to Yoda’s desk for help.

Math class had many of the characteristics found in its midyear form. Yoda wrote the assigned pages on the board and introduced the lesson concepts, using numerical examples. Following the short presentation, Yoda gave the students reminders about how to set up their papers before they began independent work. She told students to write each problem and solve it immediately before going on to the next. During seatwork, Yoda traveled, monitored the talking, pencil sharpening and toilet trips of students somewhat ineffectively, and wrote the day’s homework assignment on the board. After fifteen minutes of independent work, she told the class to stop, checked how many students were finished and began a choral check of the work. This could have served as a seatwork pacer but, unlike Wall and Patrick, no advance information was available to the children and only three children had finished. She collected the finished papers and told the others to finish at home.

The second day in Yoda’s room was relatively typical of midyear, except that the presentations of subject matter content were somewhat truncated. Her use of lengthy seatwork periods during which she was inconsistent about maintaining a fast pace and high levels of on-task behavior set a precedent for students in which they could do their assigned tasks at a relatively leisurely pace with ample time for breaks. Yoda was vague about her expectations, the consequences of failures and the criteria for successful performance in her class.

Days Three and Four. During the third and fourth days, there was further erosion of the structure Yoda seemed to be trying to establish. She did not effectively manage either the students’ work habits or behavior. While her emphasis was on teaching subject matter content, considerable instructional time was lost because routines did not operate efficiently. The smoothness and fluidity found in the other teachers by the middle of the first week was missing.
Yoda tended to let the students determine the flow of the class simply by her failure to prescribe and carefully enforce routines. When students were slow in getting organized to begin a lesson, Yoda waited rather than establishing a routine to govern these activities. She did not follow through with her stated expectation that classwork be finished during class and she permitted a significant amount of chatting and off-task behaviors during seatwork.

By the end of the fourth day, Yoda's class had taken on its midyear structure. She had established routines but not rehearsed or monitored them sufficiently so that they were quickly modified and diluted by student variations. As a result, her class was somewhat disorganized with expectations not defined clearly. She had already established her preference for short presentations followed by lengthy seatwork periods during which she tutored individually and extensively. It was clear that Yoda cared for her students' education and development, but by her failure to establish an efficiently managed room, her effectiveness was somewhat diminished. This lack of management also had the consequence of spreading out her students' performance levels. Skilled students moved far ahead on their own while weaker students, distracted by the off-task behaviors of others, fell far behind. As a note, by the end of the year her most advanced math student was doing sixth grade work, while the weakest was still doing early fourth grade.

Yoda introduced 34 routines during the first four days (see Table 1, Column 3). Like Wall, she introduced more support and exchange routines than management ones. Of the 34 routines introduced, 85% were retained in some form in midyear. Of the four management routines introduced, 75% were introduced on the first day, 25% on the second day and none thereafter; 75% were present at midyear. Of the 16 support routines, 63% were introduced on the first day while none were introduced on day four; 81% were present at midyear. Thirteen exchange routines were introduced, 77% on the first, and the rest on the second day; 92% occurred at midyear. In general, the bulk of the routines were introduced on the first two days, with only one new support routine introduced on the third day. Yoda, who was a poorer manager than either Patrick or Wall, taught very few management routines, emphasizing routines that were support and exchange.

Yoda's 34 routines were embedded in eight activity structures. The seven most important routines occurred across two or three (in two cases, as many as five) activity structures and appeared in at least three of the four days (individual exchange, paper format, hand raising, distribution/collect, take out/put away, turn to/open/look at/close, travel/check). Of these routines, three were exchange and four were support. For Yoda, travel/check was an extremely important teaching tool. During a monitored practice, she moved from child to child and often tutored extensively, giving mini lessons to students lagging behind.
Konrad. In her segregated black school, Konrad was viewed as a strong teacher, able to control children with behavior problems. Both teachers and students assumed that an assignment to Konrad’s fourth grade room meant that a student’s discipline problems must be pretty bad. Much of Konrad’s teacher-centered classroom approach was a reflection of her reputation and the placement of difficult students in her classroom. Her dramatic flair helped her to play her role as the tough one. She was active in theater and music groups during after-school hours and the summer. Konrad had attended a small parochial elementary school and a public high school. She began teaching in a parochial school and then moved to the public school where she had been teaching for ten years.

Day One. Konrad’s first day set the tone for the classroom quite explicitly. There was to be a high degree of teacher control over routines such as the following: distribution, what to do when work was finished, and pencil sharpening. In addition, the interaction style was clear—call to correct was introduced in both its versions (student finally answers or teacher supplies answer) during the first lesson. Konrad also introduced her students to her use of reprimands and impromptu teaching almost immediately. She covered a considerable amount of content, introducing routines as asides in the lesson.

Within the first few minutes of school, Konrad disciplined a student. During locker assignment, when a student talked back to Konrad, she was sent outside where Konrad reprimanded her. This was the first instance of two primary modes of disciplining in Konrad’s class—a severe personal reprimand to a child which was done partially in public and partially in private and a group moral lecture. Several minutes later, the first group reprimand occurred, which was a comparatively short one that lasted only two minutes.

Konrad moved quickly into her first substantive discussion, a social studies lesson, in which she introduced the students to her exchange routines. The first exchange routine was an individual one in which Konrad either called a student by name or pointed to him/her. When Konrad asked a question, and failed to get a correct answer from two or three students, she supplied the answer herself. This was the emergence of her “call until correct” exchange routine. While all teachers used it, Konrad introduced it earliest and used it as a primary mode of interaction. Another exchange routine, signaling to be called on, developed indirectly when Konrad responded positively to a student’s raised hand after asking a question without indicating who should respond.

After the first lesson, Konrad explained her routines for activities such as line-up, bathroom privileges, and distribution of supplies, all which involved a high degree of teacher control. Konrad’s directions for pencil sharpening were unique. She simply told the students to line up at the pencil sharpener, then assessed their behavior in line
before she told them her procedure for sharpening pencils—one person at a time.

Konrad’s class was exceptionally teacher-centered; she did not develop routines for student participation or for independent student actions, even during instruction. When the students were given a pretest in math, Konrad controlled the beginning of the activity by having the students attend to her before starting the test. Upon completing the pretest, the students were to turn over their completed papers and wait for instructions. She collected the papers from individual students (as opposed to using a student collector or passing to the aisles) before passing out the next set of materials. Unlike other teachers, Konrad retained the maximum amount of control over all aspects of student behavior and interaction, an approach which was costly in terms of her time and effort.

By the end of the first day, the students were familiar not only with the mechanics of managing classroom activities but also the style of interaction that would occur. Unlike Patrick, all of the style setting behavior was dictated by the teacher with virtually no negotiation, or multiple role-playing on anyone’s part. This approach might be explained by the placement of students with discipline problems in Konrad’s class, giving her a huge management job the first few days which she solved by using strong verbal control. While some of the style was similar to Wall’s, the implementation in Konrad’s class utilized far more teacher effort (collection and distribution, for example) than Wall’s.

Day Two. Konrad’s second day was heavily content-oriented. She continued to use the routines developed on the first day without any let-up in the degree of teacher-control. For example, her exchange routines consisted of an individual exchange in which teachers’ queries, calls on student, student responds almost exclusively. She added support routines during the instructional sequence, providing careful descriptions of her expectations for each routine.

Konrad’s paper set-up, including reminders to write names on papers, was described and modeled on the board several times as she initiated each new academic task. During the set-up and while the students worked, Konrad either worked with students at her desk or traveled and checked. She used the traveling to provide individual help as well as to monitor behavior.

Konrad’s collection and distribution routines remained teacher-based. She both passed out and collected papers to individual children by walking up and down the rows, which put her in a demanding position because it meant that the students did not share or help speed up the task. The exception to this procedure came at the end of the seatwork period in math. The students brought their papers to Konrad either while she was traveling or when she was working at her desk located in the back of the room. Konrad then corrected the paper and gave the student a task to do. Like much in Konrad’s
room, in which each instance was individually determined, students did not have a repertoire of acceptable independent tasks to perform when assigned work was completed. This placed a heavy load on Konrad since it meant interruptions and constant on-the-spot planning. Students, too, did not develop a sense of expectation of how the day might progress since each instance was directed anew by the teacher.

Konrad managed behavior in the classroom firmly. She reminded the students how to behave at the pencil sharpener, during a bathroom break, and during a lesson or seatwork. She also usually provided a number of cues for getting ready to work—clear desks, get out pencils, open books, etc. She definitely did not let the students forget that she was in charge.

Overall, Konrad's second day was similar to the midyear form of her class. She taught actual lessons in which the activities were structured. She maintained tight control over students' interactions with her and with the other students as well as over how instruction was to be structured and proceed. Her approach, with its high demand for teacher monitoring of individual students without a support system of student participation, had the potential for being exceptionally exhausting and emotionally draining.

Days Three and Four. During the third and fourth days, Konrad continued to enforce her role as the person in charge. She controlled most of the students' participation through her preference for teacher determined responses and her unwillingness to allow students to help in classroom activities, such as distributing paper. Although Konrad emphasized subject matter content, she did provide reminders about procedures and expectations. Konrad used a number of routines to convey and support her expectations for performance and behavior. During a presentation segment, she did not vary her role as the person who asked the questions. She did, however, vary the students' exchange routines, using individual and choral responses, hand raising, and "call 'til correct." During the seatwork, Konrad alternated between traveling and sitting at her desk checking papers. She monitored behavior, moving students who were not working to different seats. Konrad continued to use lectures and reprimands. In fact, on both days, the presentation in math class was interrupted by Konrad's reprimands. In one case, a student who had been reprimanded continued to disrupt the class.

By the end of the fourth day, Konrad's class had taken on its midyear form. There was an emphasis on subject matter content along with a heavy dose of management routines, including reprimands. Konrad's tendency to control all aspects of the class often had the effect of slowing down the pace. Konrad distrusted her students, a fact she commented on, since they were often behavior problems. This distrust may have made the task of managing an already difficult group of students harder.

Konrad introduced 26 routines during the first four days (see
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Table 1, Column 4). Like Wall and Yoda, she introduced more support routines than management and exchange ones. Of the 26 routines introduced, 24 (92%) were present in midyear. Of the six management routines, 50% were introduced on the first day, 17% on the fourth day and 83% were present at midyear. Of the 12 support routines, 58% were introduced on the first day, none on the fourth day and 92% were present in midyear. Of the eight exchange routines, 75% were introduced on the first day, none on the fourth day and all were present in midyear. The lower number of management and exchange routines were a function of the tight degree of teacher control in Konrad’s room. She controlled most of the exchanges with students and much of the management. Her introduction of limited exchange routines gave her classes a sameness and tedium of lecture-recitation that also caused difficulty later on.

Konrad’s 26 routines were embedded in nine activity structures. The seven most important routines occurred in two to four activity structures and on all of the first four days (distribution/collect, individual exchange, travel/check, paper format, open/turn to/look at/close, hand raising, and take out/put away). Three of these routines were exchange and four were support.

Rivers (in brief). Ms. Rivers, with eighteen years’ experience, taught the fourth grade and a fifth grade math class in an all-white ethnically homogeneous neighborhood school. (We observed both classes but focused on fourth grade.) Her education and teaching experience were in both public and parochial schools. While the initial decision to be a teacher was the Church’s rather than hers, she loved her students and felt she was a good math teacher mainly because her own weaknesses in math made her empathetic.

Two routines used by Rivers were particularly noteworthy—her drill routine and her “play dumb” routine. One of the most salient feature of Rivers’ teaching was her regular use of a competitive, fast-paced drill (for homework check or practice) with groups of students at the board. Her successful and fluid drill procedure utilized a complex set of routines which she carefully described and rehearsed during the first few days (i.e., getting to the board, changing groups at the board, chalk in left hand, eraser in right hand, working quietly, first one done gets to read answer, etc.) She also used an idiosyncratic exchange routine of “I don’t understand” or “teacher plays dumb” which effectively encouraged student participation.

Rivers’ high expectations for behavior and achievement were tied to goal statements and moral discussions providing her students with the reasons for her demands. (For example, Rivers was committed to parent involvement, so she required students to have their parents sign the homework.)

Rivers introduced 21 routines during the first four days (see Table 1, Column 5). Like the other fourth grade teachers, she introduced more support routines than management and exchange ones. Of the
21 routines introduced, 18 (86%) appeared in midyear. Of the 13 support routines, 54% were introduced on the first day, 15% on the fourth day, and at midyear 77% were retained. Six exchange routines were introduced—33% on the first day; 17% on the fourth day—and all were present at midyear. There were two management routines,* both of which occurred on the first day and at midyear (i.e., “line up” and “don’t interrupt”).

Rivers routines were embedded in nine activity structures. The three most important routines (individual exchange, board procedure, and drill procedure) occurred over two activity structures on each of the first four days and were all evident at midyear.

Pace (in brief). Ms. Pace, the primary team leader in an open, integrated, magnet school, taught several first grade academic classes to different groups of students. Much of Pace’s previous teaching and her education were in rural settings; however, she had been teaching in this urban school for ten years. A dominant feature of Pace’s teaching was her extensive use of a complex but efficient small group format.

During the first few days of school, Pace carefully defined and demonstrated expected behaviors. She explained each portion of the behavior or task, often in very fine detail suited to first graders. By the end of the first four days, her students were using a large repertoire of routines, most of which were evident at midyear (even though some class members would change after the first week of ability testing in her school).

Several salient routines in Pace’s class warrant mention. Pace taught a small number of simple but effective management routines for student movement to and from small groups and for defining appropriate student actions when working independently. Among her exchange routines were a limited number of attentional ones (i.e., “eyes to me”) which she used frequently and effectively to direct students’ attention to each segment of the learning task. Many of her support routines, such as paper set-up, were introduced by explaining each segment of the procedure. Pace tended to have more repetitions of practicing segmented routines than did any of the teachers with older groups.

During the first four days of school, Pace introduced 37 routines (see Table 1, Column 6). She introduced an equal number of management and support routines. While Pace did introduce fewer exchange routines than any other teacher, she used the few she did introduce with greater frequency. Of the 37 routines introduced, 26 (76%) appeared in midyear. Of the 15 management routines, 73% were introduced on the first day, 6% on the fourth day and 67% were present

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*Rivers’ fourth grade math class was not her homeroom class. In her fifth grade (homeroom) math class we observed six management routines being introduced over the first four days. It appeared that management routines were more a part of the class environment than they were of the lesson environment.
in midyear. Of the 15 support routines, 53% were introduced on the first day, 13% on the fourth day and 67% were present in midyear. Of the seven exchange routines, 71% were introduced on the first day, 14% on the fourth day and 86% were present at midyear. Unlike the other five teachers, the bulk of Pace's routines were management and support; the exchange routines were limited. The difference in Pace's use of routines can be explained by two factors: her children were younger and less school-wise than the children in the other classes we studied; and the structure of her class often utilized multiple small group activities, which required fewer varieties of exchange routines.

Pace's 37 routines were embedded in seven activity structures. The six most important routines occurred in from two to five activities and appeared in all of the first four days (choral exchange, individual exchange, hand raising, travel/check, no talking, take out/put away). Of these routines, one was management, one was support and four were exchange.

First Four Days Summary. The first few days were a time when the teachers introduced the routines they would use throughout the year. The teachers' routines were important to the organization of classroom tasks and interactions. The great majority of routines were introduced in the first day by all of the teachers, either by a clear statement or a demonstration to specify what was required. The first day was also important in setting the tone for teacher-student interaction during the year. For some teachers, like Wall, this tone setting was a conscious and controlled behavior. She knew what kind of class she wanted and she spent time and energy in creating it.

The teachers kept their routines in place during the first few days by acknowledging almost every time they were used correctly (lining up for Patrick; paper tearing for Pace; yes Ma'am for Wall), and by correcting firmly each time they were violated. The reminders they provided for the initiation of routines became more and more cryptic as the days went on. By the fourth day, the teachers, especially those in fourth grade, expected the students to respond quickly and correctly when they cued a routine. With younger children, although the teachers were slower at removing the reminders and rehearsals, they too were using the routines in relatively efficient ways by the fourth day. Thus, with the exception of Pace whose class membership was likely to change, all the teachers' classes closely approximated the midyear structure by the end of the first week of school.

Management/Support/Exchange Summary

Figure 3 shows the cumulative count of the introduction and use in midyear of routines in each of the three categories—management, support and exchange. The counts are cumulative numbers of routines from Day One to Day Four. Retention of each type of routine
at midyear is indicated. Most routines are introduced in the first day with gradually less acute slopes (which means fewer new routines are added) towards day four. The introduction of exchange routines appears to be the most evenly distributed across the first four days.

**Management.** Having identified both the way individual teachers use routines during the first four days and the stability of use at midyear, we will now look at how the teachers use each type of routine. During the first four days, teachers' use of different types of management routines varied from a low of two to a high of fifteen. Recall that management routines refer to those routines that involve student movement and non-academic interactions. The first and second grade teachers introduced the most management routines (fifteen each) but retained lower percentages. The best manager in the fourth grade group used a greater number of management routines than any other fourth grade teacher; in addition, she used them in consistently more powerful and complex combinations than any other teacher. There was crispness in her execution of the management routines as well as complexity that resulted from frequent combination of routines into strings. The most frequently used management routines were used by four or more teachers—pencil sharpening (4), line up (6), “don't interrupt” (4), and no talking (4). With the exception of “don't interrupt,” all these important management routines were still
present in midyear. "Don't interrupt" may have disappeared because interruptions had disappeared. As Figure 3 shows, teachers set up fairly stable routines for management in the first few days of school, with the largest concentration of these routines occurring on the first or second day. Midyear retention of these routines was relatively high. In the first few days, management routines were introduced by a precise, verbal description and occasional modeling of behavior. Later they were cued by single words or gestures. The reasons for using them were not usually explained to the children. Having a large number of management routines suggests a controlled and trademarked classroom: "In this room, this is the way we do things." Having too many management routines suggests no freedom or individuality.

Support. The teachers introduced a great variety of support routines, 44 different ones in all. Teachers used support routines to facilitate instructional actions. However, only twelve of the support routines were used by three or more teachers. An implication of this relatively limited overlap of specific routines may be that support routines reflect a teacher's personal style. Thus, a teacher has to spend considerable time at the beginning of the year teaching idiosyncratic procedures to the students. The most important support routines were used by four or more teachers—take out/put away (6), paper format (6), teacher collects/distributes (6), student collects/distributes (4), wait to start (5), open/turn to/look at/close (5), keep busy when assigned work is finished (4). In general, these routines continued to be used throughout the year. As with the management routines, the vast majority were introduced in the first or second day. Support routines were introduced by demonstration and description or demonstration alone. They were maintained by practice and rejection of non-compliance. For the most part, in midyear, they were cued by the action that required them (e.g., the need to pass out papers), rather than by a teacher's verbal signals. Because support routines help to keep a lesson working without breaks, they can be critical time savers. However, when overused, support routines can be burdensome and inefficient, especially if the specific routine relies exclusively on teacher actions as in Konrad's case.

Exchange. Teachers introduced slightly more exchange routines (32) than management routines (25) and fewer than support (44). Exchange routines facilitated communication between teacher and student. The first and second grade teachers tended to use fewer exchange routines and to introduce them later in the first week of school. However, only two exchange routines were introduced on the fourth day. The most important exchange routines were used by four or more teachers—hand raising as a signal (5), call until a student gives a correct answer (5), individual exchange (6), travel/check (6), and choral exchange (6). Two versions of an attention getting routine ("eyes on me" and "pay attention") were used by three teachers, the two primary teachers and the best manager in the fourth grade. All of these important routines were still present in midyear.
Table 2: Ratio of Median Number of Routines Used to Those Introduced

<table>
<thead>
<tr>
<th>Type of Routine</th>
<th>manage</th>
<th>support</th>
<th>exchange</th>
</tr>
</thead>
<tbody>
<tr>
<td>procedure</td>
<td>.82 (40) a</td>
<td>.87 (70)</td>
<td>.90 (61)</td>
</tr>
<tr>
<td>goal + procedure b</td>
<td>1.00 (11)</td>
<td>.83 (16)</td>
<td>1.00 (4)</td>
</tr>
</tbody>
</table>

a( ) Numbers introduced indicate total number of routines introduced of that type
b A total of 2 routines (m+s) were introduced using only goals. They have been added to the goal plus procedure row; they do not affect the ratios.

In general, the fourth grade teachers emphasized support and exchange routines with more limited use of management routines. Both primary grade teachers initially introduced a large number of management routines; there was, however, a 33% attrition rate by midyear. The second grade teacher introduced a large number of support and exchange routines which were still present in midyear. The first grade teacher introduced many support routines, but a limited number of exchange routines, perhaps because it may be harder to introduce young children to varied ways of communication. Unlike the other routines, exchange routines were not explicitly taught, they were just done and maintained by constant use. Having a large repertoire of exchange routines adds variety, flexibility and interest to the overall conversation of the classroom. There is a sense of spontaneity and the variety livens up the discourse. Of course, having too many exchange routines could lead to confusion about the purpose of the talk, but we never saw that happen.

Table 2 shows the ratio of routines used in midyear to those taught at the beginning, broken down by method of introduction and by type of routine. A very high proportion of routines taught at the beginning continue to be used in the middle of the year whether taught by procedure and goal or by procedure alone. That is, in the first few days of school, teachers show students how to do a variety of things they will use repeatedly throughout the year. Although the students are generally not given the goal but simply the procedure, they seem to master the routines effortlessly. Likewise, while there is little difference in the proportion retained by type of routine, exchange routines appear more stable from the beginning of the year to midyear.
### TABLE 3 / Most Important Routines as They Occur in Activity Structures—Days 1 to 4.

<table>
<thead>
<tr>
<th>Activity Structures</th>
<th>Management</th>
<th>Support</th>
<th>Exchange</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pencil Sharpening</td>
<td>Look to Board for Info.</td>
<td>Hand Raising</td>
</tr>
<tr>
<td></td>
<td>Quiet with Eyes</td>
<td>Put Away</td>
<td>Call til Correct</td>
</tr>
<tr>
<td></td>
<td>Line Up</td>
<td>Paper Format*</td>
<td>Individual Exchange</td>
</tr>
<tr>
<td></td>
<td>Move Inattentive Child</td>
<td>Wait to Start</td>
<td>Exchange</td>
</tr>
<tr>
<td></td>
<td>Don't Interrupt</td>
<td>Take</td>
<td>Sat Board</td>
</tr>
<tr>
<td></td>
<td>No Talking</td>
<td>Papers Home</td>
<td>Travel Check</td>
</tr>
<tr>
<td>Presentation</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Shared Presentation</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Review</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Drill</td>
<td>6</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Test</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Practice/Home work</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Transition</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Monitored Practice</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Guided Practice</td>
<td>1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Practice Homework</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Assignment</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

*All forms.

**Notes:**
- Pencil Sharpening: All forms.
- Quiet with Eyes: All forms.
- Line Up: All forms.
- Move Inattentive Child: All forms.
- Don't Interrupt: All forms.
- No Talking: All forms.
- Look to Board for Info.: All forms.
- Put Away: All forms.
- Paper Format*: All forms.
- Wait to Start: All forms.
- Take: All forms.
- Papers Home: All forms.
- Call S to Board: All forms.
- Fold: All forms.
- Open Turn to Look at: All forms.
- Keep Busy: All forms.
- When Finished: All forms.
- Unfinished Work: All forms.
- Later Home: All forms.
- Hand Raising: All forms.
- Call til Correct: All forms.
- Individual Exchange: All forms.
- Exchange: All forms.
- Sat Board: All forms.
- Travel Check: All forms.
- Eyes on Me: All forms.
- Paying Attention?: All forms.
Routines in Activity Structures

Table 3 shows the teachers’ use of the most important routines (those used by three or more teachers) in each category—management, support, exchange—as they occurred in activity structures during the first four days. Recall that activity structures represent the larger task driven segments of lessons such as lesson presentation, guided practice, or review. Different routines can be unique to or shared among activity structures. Although the activity structures existed in a somewhat primitive form the first day or two, they quickly took on the form found in our midyear observations.

The management and support routines were most likely to occur in a transition between activities, while exchange routines tended to occur during guided practice and presentations. The results are consistent with our definitions of the purposes served by each routine.

As Table 3 shows, teachers use the most routines in transition, the time before or between activities or instructional segments. Because students are changing activities and occasionally locations, there are numerous tasks that need to be accomplished efficiently in a short period of time. To facilitate speed and fluidity, expert teachers who are good classroom managers call on a range of routines taught to students early in the school year. For example, looking at Table 3, we can see that during the transition activity structure all of the management routines were used. Two, “line-up” and “no talking,” had a high number of occurrences, more than in any other activity structure. These routines are most directly related to shifting people or materials quietly and are critical to both speed and efficiency in these activities. Support routines are also used heavily during transition, when students prepare to change materials and prepare for a new activity. The two most frequently used support routines are “take out/put away” and “collect/distribute.” The other routines used often are also preparatory ones such as “paper format,” “fold,” and “wait to start.” Exchange routines do not have the same degree of importance in transition as they do in the core teaching/learning activities.

It is clear that expert teachers utilize a large repertoire of routines during transition. For novice and student teachers, tenuous classroom management often breaks down during transition, resulting in classroom chaos and inefficient attempts to establish order. When this happens, the completion of each task becomes lengthy and demanding, so that time and student attention are lost. Even a small repertoire of routines (those most frequently used) which have been consistently taught and used would greatly facilitate a novice’s management of transition. This would improve both the flow between the activities and the novice’s rapport with the class.
Some Routines in Detail

What follows is a more detailed description to exemplify how routines can function in enhancing instruction, including three exchange routines (cycle to correct; play dumb; and "eyes to me") and two support routines (collect/distribute and wait behaviors). The teachers used multiple versions of both of these support routines. A description of the use of games by one teacher is presented to highlight how routines can be combined. Finally, we discuss the use of routines that do not enhance instruction, which we call dysfunctional routines.

**Cycle to correct** (or call 'til correct) is a routine used in presentation, shared presentation, review and guided practice. Essentially, it involves the teacher calling on students in rapid succession until the correct answer is given or in some cases, until the teacher gives it. A certain speed is required so that students do not forget the initial question. Cycle to correct serves to get the correct answer stated and keeps students' attention high. Konrad introduced the routine within the first few minutes of math on the first day. She did not explain that the answers were incorrect; she just repeated the question. By day three in Konrad's class, this routine looked exactly the same as it did in midyear, when she generally said “no” after incorrect responses and then prompted to get the correct answer. Cycle to correct often served to pick up the pace and alertness of the class and for five of the teachers it was a very useful exchange routine. Returning to Figure 1, we can see that cycle to correct is useful within the presentation portion of a lesson.

A second exchange routine was **"I'll play dumb."** This involved the teacher pretending not to understand how to do something or why one way was right and another wrong. While this particular routine was unique to Rivers, other teachers also developed less routinized styles that permitted or invited discussion. Essentially, Rivers' routine involved putting an erroneous or ambiguous piece of information on the board and proceeding as if it were totally correct. For example, she drew a circle, divided it into six unequal parts, and started to talk about one-sixth. The students “explained” her error to her. At other times, she said, “I don’t understand . . . why the three has more value than the nine” (this on day two in a lesson on place value). When this routine was used, it always occurred during a shared presentation and included both a cycle to correct (or complete) and her conversation routine. She simply introduced this routine by “doing it” and reinforcing the correct style of response, but she never explained that she would try to fool the class. "I'll play dumb” had the risk of leading the class off on a discussion that neither got the point across nor saved any time. Its advantage was that it represented a clear invitation to discussion.

Another exchange routine, **"eyes to me,"** was one of several atten-
tional cues and/or begin exchange cues. It was slightly different from the notion of teacher points/student looks (at a problem on the board) because it was the cue for the beginning of a teacher/student interaction. The students learned that their attention was to be focused on the teacher and what she was saying, not on a problem or a chart which was being described. The routine was modeled in the first day by all teachers but with corrections for non-compliance. Several teachers said things like “I know you are ready,” or “I need you to look at me,” etc., but most just stated the request and corrected non-compliance. “Eyes to me” became a shorthand for returning control to the teacher. In general, it was not a disciplinary routine, but rather it signaled a switch in attention.

**Distribute/collection** was, as its name implies, the set of routines used by teachers to pass out material or to retrieve it. Each teacher had several such routines; all taught at least one or two of them on the first day. The routine was used in at least six activity structures by most teachers: presentation, guided practice, transition, test, check and monitored practice. It was introduced by demonstration, verbal explanation, and modeling. Some examples of the specifics of distribution were: pass to head of column and pass back; walk to each child and give child paper; go to a location and get a paper. Collect had a similar array. The routine was primarily a time saver and permitted the overlapping of activity structures without transition breaks (monitored practice with homework distribution at the end, for example). Failure to have at least one and preferably several such routines is one of the most common problems facing novices and produces tremendous delays.

**Wait to start and what to do when finished** were routines that often covered the beginning and end of an activity. The wait to start routine allowed teachers to control the pacing of events. The teachers often handed out a paper, told the students to wait before working, went over directions plus an example, and finally had the students begin working. Wait to start frequently occurred at the beginning of a drill, a test or a timed practice. What to do when your work was finished covered the time when some students finished the assigned task before the class ended. All the teachers had a version of this, which sometimes included explicit directions about things students might do when finished. However, often teachers merely reminded students of appropriate tasks, directing their reminders to students who were talking or doing nothing. In addition, most students knew that an excess of unfinished work from other classes could be completed at this time. What to do when finished occurred most frequently in a monitored practice and occasionally during a test.

### Games Using Routines

Games to facilitate instruction were used occasionally by most teachers but were very clearly explicated in Patrick’s class. She used
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games regularly to keep the interest and pace high. In addition, the first games she used were excellent examples of how routines taught in isolation could be combined to facilitate complex and sophisticated strings of action. As early as the first day Patrick used a simple and familiar game, Simon Says, as a teaching device. This game served two purposes. It required the children to listen carefully to what she, in the role of Simon, said and it also required them to copy her actions.

After Patrick had rehearsed a number of routines with her class, she combined them into more sophisticated games to enhance learning. At the end of math class on the second day, Patrick introduced a game into the oral guided practice. The game had two forms: in the first, the students who stood up could sit when they answered an addition problem correctly; in the second, a number relay game, a student could tag another student if s/he answered the problem correctly. In both game forms, Patrick asked the child to answer one of the addition problems they had just practiced.

If we break these two game forms up into their composite elements, we find that Patrick had incorporated a number of routines in each. For the first game form, an important routine was Patrick's technique for having children get out of their desks. The repeated practice meant that even in the excitement of a game, students' exits from their desks took place smoothly. The second routine involved individual students' responses to the problem given by Patrick. When the students did not follow directions in the first try of the game, Patrick first reminded them to listen to directions. Patrick then used the signaling technique she modeled for teaching the children during the first few days—she got their attention, explained the directions, and asked them to show her if they understood by putting their hands on their heads. They started the game again. Everyone followed the rules until near the end of the game when one boy forgot to sit. Patrick reminded him to follow directions, asked everyone to stand, and repeated the game. By the third round everyone played the game smoothly.

The second form of the game followed a segment in which Patrick added new math facts to the list to practice as well as a routine of one student choosing another. The verbal pattern was Patrick gave a problem, Child A responded, Patrick evaluated, Child A chose Child B, etc. The game continued until everyone had a turn to answer a problem. Throughout the first four days, Patrick continued to use games both to teach and to create a brief interlude between traditional lessons. Her games were more sophisticated by midyear, serving primarily as a way of practicing facts and previously learned material. The routines used first separately, and then together in games included: move from seat (in/out); hands to head; individual response; call on another child; listen; and "eyes on me". The presence of these routines permitted the "game" to be played very early on in the year.
Dysfunctional Routines

Dysfunctional routines are scripted pieces of behavior that do not enhance management or teaching in the classroom. Dysfunctional routines are, unfortunately, learned as completely as functional ones. These were not simply repeated events that we did not personally like, rather they were segments that tended to compete with or destroy some other clearly valued goal such as learning. One example of this occurred in Konrad’s class. As early as the middle of the morning of the first day of school, she stopped the class and gave a lengthy lecture on bad behavior. These lectures frequently focused on the inappropriateness of certain behavior or responses or on the need to strive for higher levels of behavior or achievement. The lectures were lengthy, impassioned, and equally likely have an individual or group target. The students responded to these explosive bursts of verbal anger by sitting in sullen silence. When the lesson resumed, there was no observable change in class behavior—only a loss of time.

Dysfunctional routines also developed in Yoda’s room, but in a somewhat different way. Because she neither modeled nor reinforced routines that she set up on the first day (for example, pencil sharpening should occur first thing in the morning), the children took advantage of her flexibility and developed boredom-break activities. They used pencil sharpening, bathroom trips and the like as a means to break up the lengthy practice periods or as a way of socializing. These dysfunctional routines tended to be individual in use and type.

SUMMARY AND CONCLUSIONS

Effective teaching involved constructing complex patterns of relevant behavior. To study the development of these patterns, we selected teachers who, over long periods of time, were effective in improving the achievement levels of their students. We posited that in order to set the stage for effective teaching, a teacher must design a way in which to structure the classroom and conduct a lesson. We found that the majority of our teachers accomplished this by teaching and getting skilled performance levels in the execution of routines quickly during the first few days. However, because teaching is so complex, there seem to be compensating practices. Thus, routines facilitate effective teaching but are not mandatory for its occurrence, as we saw in the case of Yoda.

With the exception of Yoda, it appeared that routines were an important aspect of the effectiveness of the other teachers’ instruction. If we return to our initial conceptualization of a planning net which we used to represent each of the lesson segments, we can see how routines work. As the teacher progresses through a goal-directed
action sequence, small pieces of coordinated behavior are repeatedly used. Some behaviors will be needed frequently, sometimes more than sixty instances in one day. In such cases, the teacher invests teaching time early in the year to purchase automaticity for certain preassembled actions. If all the actions used in teaching were preassembled, regardless of their use rate, there would be inefficiency in both the length of the list and time needed to teach it all. Experienced teachers seemed to have developed both a critical list of which routines need to be taught in the first few days and a methodology for initiating it.

Teachers introduce routines in several ways: (a) by calling for the action and supporting correct usage; (b) by describing or showing the actions and supporting correct use and discouraging incorrect use; and (c) by responding to incorrect use. The latter technique does not seem to be the best way to get functioning routines established. The most impressive aspect of the introduction of routines was the speed with which the students learned them. By fourth grade, most support and exchange routines were fine tunings of an already existing system, and many management routines were school-wide.

In summary, this research was designed to identify the content and configuration of activity structures and routines in effective teachers' classrooms; to trace the origins of routines at the beginning of school; and to identify the mechanisms used by effective teachers in teaching their students about the routines that will be used throughout the year. We found that activity structures emerged slowly at the beginning of the year. They were quite primitive on the first day, evolved gradually over days two and three, and were clearly discernible by day four. By midyear, activity structures were noticeable features of lessons and the teachers used the routines taught during the first days flexibly within a variety of activity structures. Unlike the slow emergence of activity structures, teachers introduced routines early with frequent rehearsal, gradually moving toward efficiency in cuing them.

We posited three categories of routines: management or class running routines; support or lesson running routines; and exchange or interactional routines. Most of the routines were taught by procedure and some were taught with both procedures and goals. A very high percentage of all of the routines introduced were retained in midyear. To highlight the role of routines in a classroom, we examined some specific routines and how they were introduced in detail. We found that teachers were efficient in choosing which routines to introduce. They taught the majority of their routines in the first day and used these routines regularly. By combining strings of simple routines, teachers built more complex routines. Thus, by the end of the first week of school, the effective teacher or choreographer, to return to our metaphor, had put together and rehearsed a group of routines which singly and in combination, allowed the class to move through the year in a fluid and carefully organized manner.
There are several implications of this research for the training of teachers. Student teachers working in a master teacher’s room need to recognize existing routines and to understand their function. When a student teacher is actually responsible for managing the class, it is important that s/he either explicitedly modify the master teacher’s routines or use them as they exist, so that the students do not perceive the changes or modifications as disintegrations. Practice in recognizing and modifying routines can help teachers when they are required to develop their own routines. Novice teachers need to be prepared to develop and maintain routines that serve a variety of functions so that teaching can occur. If they either change the form or cues without warning, or they do not require completely correct execution in the beginning, multiple inconsistent versions develop. We can see this inconsistency in our weak manager who tended to introduce a routine and then to compromise it almost immediately; this meant that not only was the original use of the routine unavailable but composite use (the ability to combine routines to play games, for example) was also unavailable. When only fragments of routines are taught or when established routines are allowed to disintegrate, the students do not respond quickly or consistently to cues. As a result, time and fluidity are lost and the cognitive burden is increased for both the teacher and students.

AUTHOR’S NOTES

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