
CHAPTER 2

Time Management

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A. The Research Literature

In summarizing the findings from the research design to identify the characteristics of effective math teachers, Brophy (1986) made the following observation:

... student achievement is maximized when teachers allocate most classroom time to activities designed to promote student achievement and use managerial and instructional strategies that support such achievement [p 3].

Without a doubt, the effective teacher ensures that students are appropriately engaged in instruction for as much of the available time as possible. Time is important. This is a consistent theme throughout the research, regardless of whether the findings are from studies comparing effective and ineffective teachers in the United States or from studies comparing the effectiveness of instruction in basic skills across different countries.

The "Active-direct" Teacher

A teacher's approach to the use of time is often tied to his or her assessment of a teacher's relative value in the classroom. If teachers feel that the time they spend with students has considerable value, they will work to increase the amount of time spent interacting with students.

The research on the characteristics of effective teachers has yielded a consistent profile of a teacher actively teaching, rather than depending on less direct approaches in which there is less instructional activity and less teacher contact with students. Brophy (1986), in reviewing the research on effective math instruction, reported that "Students achieve more in classes where they spend most of their time being taught or supervised by their teacher rather than working on their own or not working at all" (p. 4).

Borg (1980), in his summary of the research on the relationship between time and school learning, noted a consistent finding: "The amount of time that students are engaged in relevant reading and mathematics tasks is positively associated with academic achievement" (p. 59).

One of the major implications of the research on the effective use of time lies in the extent to which an individual teacher can manage the use of time. The research shows considerable variability among teachers teaching the same content at the same grade levels. Rosenshine (1980) noted that the teachers who were more successful at engaging students had their students engaged for

two hours and thirty minutes per day, or 53 percent of the in-class time. The least successful teachers had students engaged for one hour and twenty minutes per day, or 28 percent of the in-class time. Berliner (1984) reported that some teachers generate very high engagement rates. He summed up the importance of student engagement with instruction tasks as follows:

The fact that engaged time is so variable across classes is what is now well documented. There are classes where engagement rates are regularly under 50 percent, and those where engagement rates are regularly about 90 percent. One hour of allocated mathematics instruction, then, can result in either 30 minutes or 54 minutes of actual delivered instruction to students. In a single week, differences of such a magnitude can yield a difference of about two hours in the amount of mathematics that is actually engaged in by students. It is no wonder that in reading, mathematics or science, at any grade level, large variations in engaged time by students is a strong predictor of achievement [p. 57].

Time Management Concepts

Research on the effective use of time has generated several time management terms. The most common term is *time-on-task*, or *engaged time*. Other terms include *available time*, *allocated time*, *academic learning time* (or ALT), *pacing*, *transition time*, and *instructional momentum*. (See Figure 2.1.)

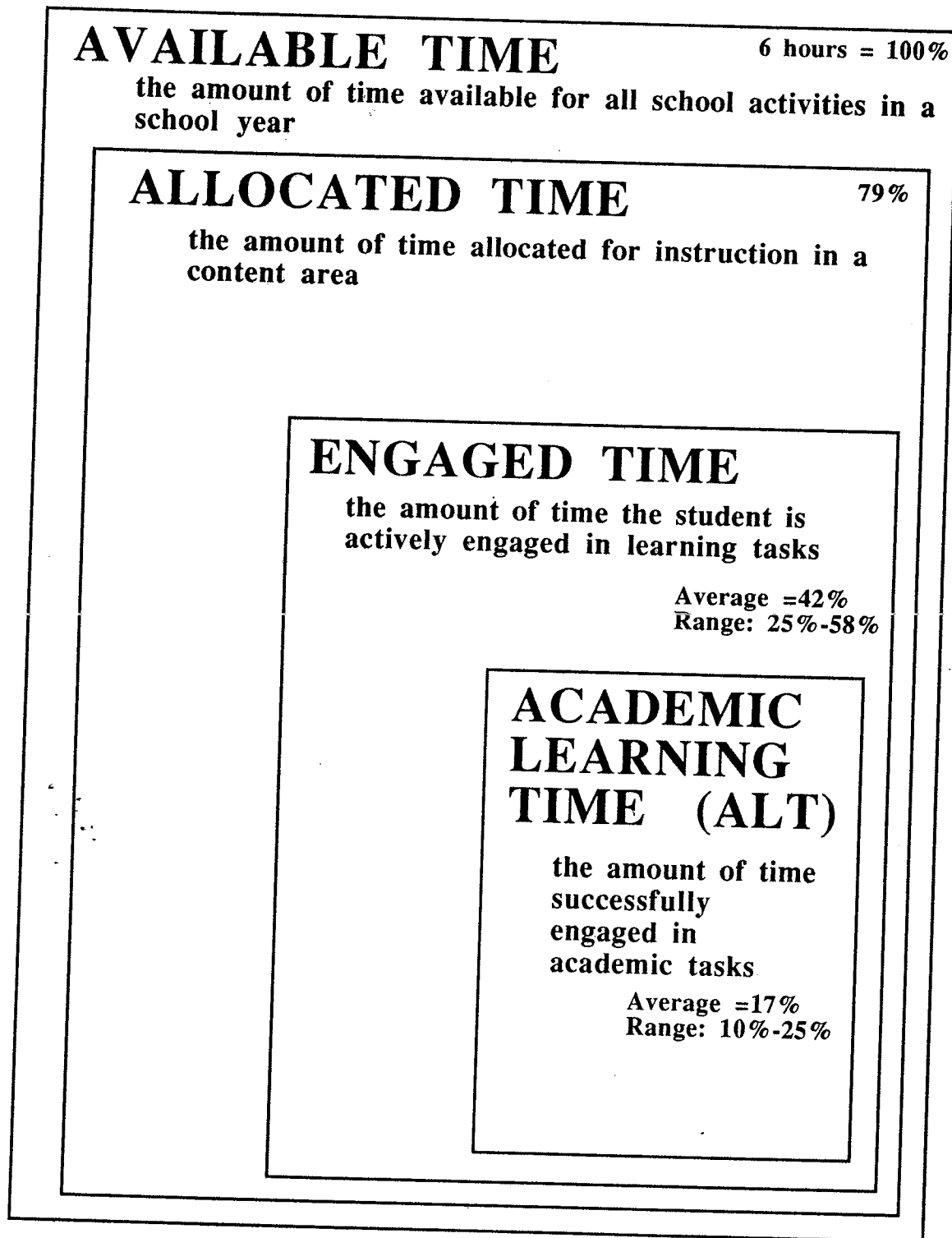
1. Available Time. This is the time available for all school activities. The available time is limited by the number of days in a school year (approximately 180 days) and the number of hours in a school day (approximately six hours, including one hour of break time). Available time will be divided among all the diverse functions of a school, including the recreational, social, and academic goals that form the mandated and the hidden curriculum present in every school district.

Schools vary only slightly in the number of school days in a school year, but there is considerably more variability in the hours assigned per day and in the average daily attendance. Variations of up to two hours per day among school districts have been noted (Stallings, 1975). The data on average daily attendance has shown that some schools within the same district provided 50 percent more schooling than other schools because of variations in average daily attendance (Wiley & Harnischfeger, 1974).

2. Allocated Time. Allocated time is the amount of time assigned for instruction in a content area, without reference to the quality of the activities being conducted during that time. In allocating time to a specific curriculum area, one must consider how the time

FIGURE 2.1

Time and the School Day



is allocated as well as total time set aside for the class. The amount of time and the way it is distributed during the day, week, and school year are issues related to allocated time. In an extensive multiyear study of teaching practices, the following findings on the allocation of time were reported (Fisher et al., 1980):

Within reading and mathematics, classes differed in the amount of time allocated to different skill areas. For example, in one second-grade class, the average student received 9 minutes of instruction over the whole school year in the arithmetic associated with the use of money. This figure can be contrasted with classes where the average second grader was allocated 315 minutes per school year in the curriculum content area of money. As another example, in the fifth grade some classes received less than 1,000 minutes of instruction in reading comprehension for the second year (about 10 minutes per day). This figure can be contrasted with classes where the average student was allocated almost 5,000 minutes of instruction related to comprehension during the school year (about 50 minutes per day) [p. 16].

Berliner (1984), in a review of the research literature on content decision, made the following observations:

- The assumption that the curriculum and associated time allocations are set by school boards and administrators is only partly true. The final arbiter of what is taught is the classroom teacher.
- The research has documented wide variations among teachers for both content and time allocation decisions, even in the presence of clear and mandatory regulations detailing content and time allocations.
- The empirical data relating content coverage, or content emphasis to achievement, is clear. The opportunity to learn a content area is perhaps the most potent variable in accounting for achievement in that area.

Berliner concluded his review of content decision with the following statement by Buchmann and Schmidt (1981):

During the school day, elementary school teachers can be a law unto themselves, favoring certain subjects at their discretion. What is taught matters, hence arbitrariness in content decisions is clearly inappropriate. If personal feelings about teaching subject matters are not bounded by an impersonal conception of professional duties, children will suffer the consequences. Responsibility in content decision making requires that teachers examine their own conduct, its main springs and potential effects on what is taught [p. 54].

3. Engaged Time. Engaged time is the amount of time the student is actively involved in such learning tasks as writing, listening, and responding to teacher questions. Engaged time does not include classroom tasks such as handing in a paper or waiting for

a teacher to pass out materials, or inappropriate activities such as disruptive talking to another student or daydreaming.

Doyle (1986), in reporting on some of the most well-documented research on teacher behavior by Gump (1967), stated:

Gump found that approximately one-half of the teachers' acts involved instruction (questions, feedback, imparting knowledge, etc.). The rest of the time the teachers were involved in organizing and arranging students for instruction and orienting them to tasks (23% average), dealing with deviant behavior (14%), and handling individual problems and social amenities (12%) [p. 399].

4. Academic Learning Time (ALT). Academic learning time has been defined as time spent by a student engaged on a task in which few errors are produced and where the task is directly relevant to an academic outcome (Romberg, 1980). The concept of ALT represents a considerable refinement over engaged time. Romberg noted that ALT is positively correlated with achievement, whereas time unsuccessfully engaged in academic tasks is negatively related to student achievement.

In order to determine which tasks were *directly* relevant to an academic outcome, ALT researchers emphasized correspondence between the tasks and the tests that would be used to measure student achievement. The alignment among the teacher's instruction, student learning activities, the curriculum, and tests of student outcomes is an important issue that will be treated in more detail in Chapter 5. ALT addresses one of these relationships—namely, the alignment between the student learning activity and the test used to measure student outcomes. Clearly, increasing academic learning time is a high priority for the teacher. The measurement of ALT is complex, because one has to combine the assessment of the time-on-task with measures of success and measures of the appropriateness of the learning tasks.

In one study (Fisher et al., 1980) that documented ALT in a large number of classrooms, it was noted that ALT varied from four to fifty-two minutes per day. The researchers commented on this finding as follows:

It may appear that this range from 4 to 52 minutes per day is unrealistically large. However, these times actually occurred in the classes in the study. Furthermore, it is easy to imagine how either 4 or 52 minutes per day of Academic Learning Time might come about. If 50 minutes of reading instruction per day is allocated to a student who pays attention about a third of the time, and one-fourth of the student's reading time is at a high level of success, the student will experience only about 4 minutes of engaged reading at a high success level. Similarly, if 100 minutes per day is allocated to reading for a student who pays attention 85 percent of the time at a high level of success for almost two-thirds of the time, [he or she] will experience about 52 minutes of Academic Learning Time per day [p. 23].

The ALT notion of success in the engaged tasks represents a major refinement of the concept of engaged time. Marliave and Filby (1985) noted that "student success during instructional tasks is an ongoing learning behavior of equal or greater importance than that of time allocated to criterion-relevant tasks or student attention during those tasks" (p. 222).

5. Pacing. Pacing has two related dimensions. One dimension, curriculum pacing, is concerned with the rate at which progress is made through the curriculum. The second dimension, lesson pacing, is concerned with the pace at which a teacher conducts individual lessons. One team of researchers summed up the importance of pacing as follows:

... researchers have shown that most students, including low-achieving students, learn more when their lessons are conducted at a brisk pace, because a reasonably fast pace serves to stimulate student attentiveness and participation, and because more content gets covered by students. This assumes, of course, that the lesson is at a level of difficulty that permits a high rate of student success; material that is too difficult or presented poorly cannot be learned at any instructional pace [Wyne, Stuck, White, & Coop, 1986, p. 20].

Berliner (1984), in discussing the rate at which progress is made through the curriculum, reported:

The evidence for the power of the pacing variable keeps mounting. The more the teacher covers, the more students seem to learn. This is hardly shocking news. But again, it is the variability across classes that is most impressive. One teacher adjusts the pace in the workplace and covers half the text in a semester; another finishes it all. One teacher has 20 practice problems covered in a lesson, another manages to cover only 10. One teacher has students who develop a sight vocabulary of 100 words before Christmas, another teacher's students learn only 50 [p. 55].

Thus pacing, like many other characteristics of effective instruction, shows considerable variability among teachers and has a pronounced effect on student achievement.

In comparing the effective and less effective teachers, Good, Grouws, and Ebmeier (1983) noted that the less effective teachers covered 37 percent less when measured on a daily rate. Less effective teachers tended to try and catch up late in the course and then provided too much material without any distributed practice to consolidate and review the content. Clearly, the amount of content covered daily relates to other skills and should be viewed as both a symptom and a cause.

6. Transition Time. A lesson consists of a series of related instructional activities, including demonstrations, discussions,

guided practice, and independent practice. Considerable time can be wasted if the transitions between these different activities within a lesson are not managed quickly and smoothly. To facilitate smooth transitions that maintain instructional momentum and student attention, teachers must demonstrate a wide range of curriculum and classroom management skills.

One method of reducing transition time (which is not necessarily recommended) involves reducing the number of lesson activities. For example, a teacher who confines a lesson to one activity ("Work the examples at the end of Chapter 6 and raise your hand if you want help") will have no trouble with transition time, because transitions will be eliminated. However, the omission of activities, such as guided practice, may reduce learning outcomes.

For transitions to occur quickly and smoothly,

- The teacher must have materials ready and demonstrate confidence in closing one activity and initiating the next.
- The teacher must exercise increased vigilance during the transition period.
- The student must enter the next activity with interest and the expectation of success.

In summarizing the research on effective instruction and transitions, Doyle (1986) made the following observation:

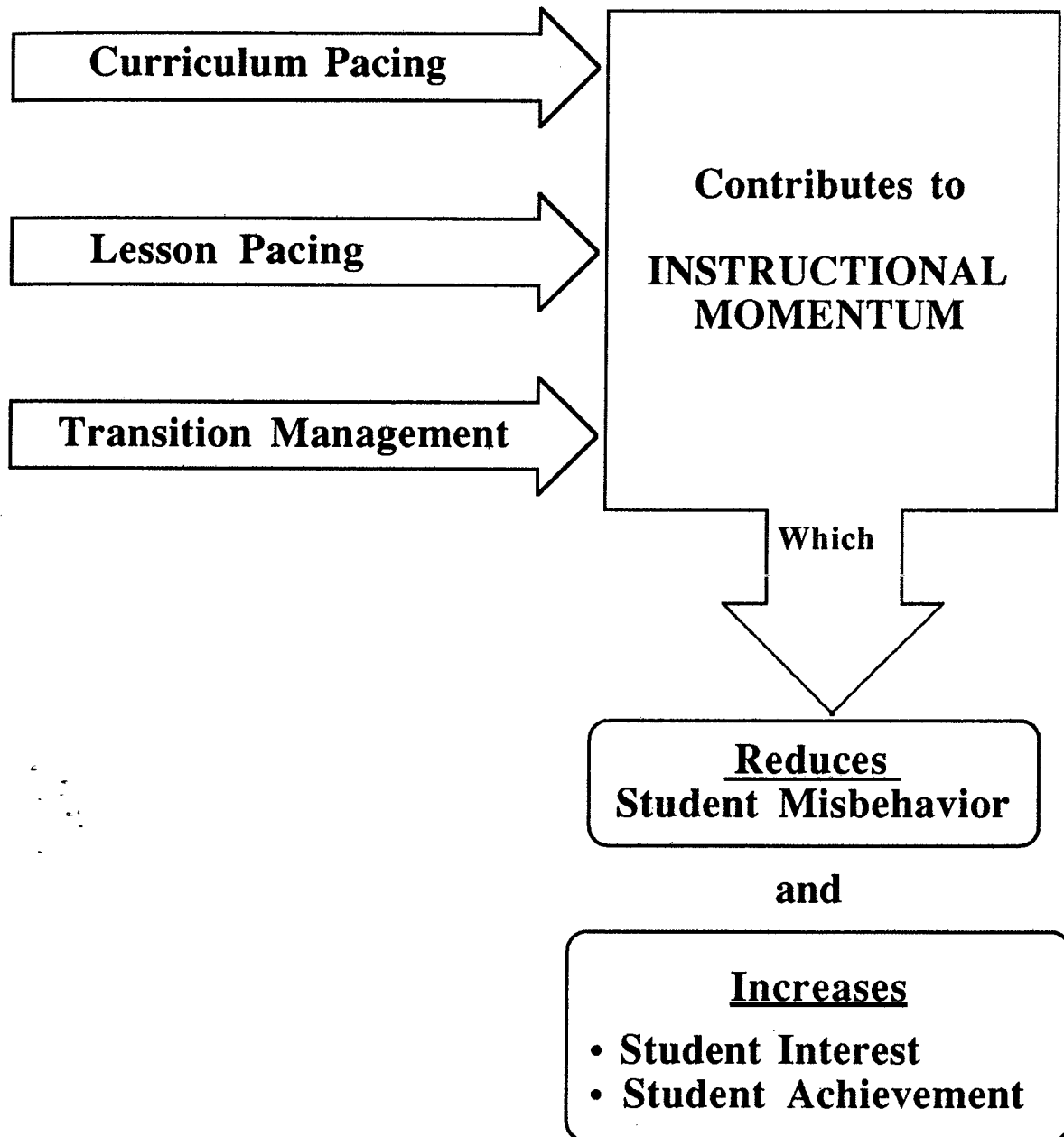
... skilled managers marked the onset of transitions clearly, orchestrated transitions actively, and minimized the loss of momentum during these changes in activities. Less effective managers, on the other hand, tended to blend activities together, failed to monitor events during transitions, and took excessively long to complete the movement between segments. Transitions appear to require considerable vigilance and teacher direction to accomplish successfully [p. 416].

The skillful management of transitions does far more than save time. Kounin and Doyle (1975) reported that misbehavior is most likely to occur when there is a lag in the continuity of a lesson. Gump (1967) found that teachers dealt with more deviant behaviors during transitions than during any other time. Ross (1983) stated that the management of transitions was one of the most critical management tasks faced by teachers. No surgeon manipulates more interacting complex variables in a short time span than does the master teacher managing a transition. Ross (1983) searched the research literature for management procedures for "reducing the chaos of transitions" and identified a number of principles, including advance preparation, use of routines, and movement management. These principles are discussed in more detail in Section E of this chapter.

7. Instructional Momentum. Pacing and transition time management contribute to instructional momentum (see Figure 2.2).

FIGURE 2.2

INSTRUCTIONAL MOMENTUM



Both teacher and student need to feel a sense of movement through the curriculum. A loss of momentum will indicate structural problems in the instruction. A prolonged loss of momentum will have destructive, affective consequences for both teacher and student, as well as a negative effect on student achievement. Fortunately, the reverse of this is also true. Well-maintained momentum has positive affective consequences for student and teacher.