

Designing an Effective Middle Level Schedule

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If middle schools are to operate efficiently and effectively to meet their goals, the school day must be structured in the best manner possible. The middle level schedule can be defined as “the plan to bring together people, materials, and curriculum at a designated time and place for the purpose of instruction” (Ubben & Hughes, 1992, p. 257). Scheduling is a mechanism to facilitate the school’s goals and purposes in the areas of curriculum, instruction, student grouping, and staffing. It is axiomatic that a well designed schedule be the foundation for an exemplary middle level program. Conversely, a poorly developed model will not only undermine a faculty’s efforts to implement effective middle school programs, it can actually destroy any progress that has been made to make a school truly responsive to the needs of young adolescents.

The purposes of this article are (a) to examine factors relevant to developing a schedule, (b) to identify types of schedules that are used in middle level schools, and (c) to assess the effectiveness of various scheduling options for supporting a quality middle level program.

SCHEDULING FACTORS

Any decision pertained to arranging the school day will, of course, result in arbitrary divisions of time. Yet, the development of the middle level schedule is an unavoidable task that must be accomplished so students and teachers can attain maximum instructional benefits from the time allotted. George and Alexander (1993) assert that “few schools can overcome the barriers of ineffective schedules or restrictive environments” (p. 365), so the creation of an effective schedule is paramount to the development of a well-functioning middle level program.

What is the most effective schedule for the middle level? There is no definitive answer to this question, since each middle school staff will collectively develop goals and programs unique to their students and community. The following factors, however, will provide guidance school faculties as they consider scheduling alternatives.

1. The schedule should support interdisciplinary team organization. As noted by George and Alexander (1993), “The primary objective... is to facilitate the operation of those school programs determined to be advantageous in the education of middle school students” (p.368). Since the interdisciplinary team organization is “a signature practice” at the middle level (Valentine, Clark, Irvin, Keefe, & Melton. 1993, p. 49), the schedule must support the assignment of both students and teachers into team structures that promote the delivery of an interdisciplinary curriculum. Steffes and Valentine (1995) document the high level of positive relationships between six basic organizational characteristics of teaming (input by teachers into team member selection, degree of flexibility of schedule, adjacent classrooms, degree of teacher autonomy and decision making, amount of inservice for teaming, and presence of common planning time) with the overall quality of the students’ educational experience. In middle level research, the worth of interdisciplinary teaming has been so thoroughly documented that the issue has become a “given” when speaking of organizational expectations of a quality middle level program (see Dickinson & Erb, 1997).



Figure 1, 2, & 3



Traditional Departmentalized Schedule					
Master Schedule					
Time	Monday	Tuesday	Wednesday	Thursday	Friday
7:45-8:05	Advisory	Advisory	Advisory	Advisory	Advisory
8:10-8:55	1	1	1	1	1
9:00-9:45	2	2	2	2	2
9:50-10:35	3	3	3	3	3
10:40-11:25	4	4	4	4	4
11:25-11:50	Lunch	Lunch	Lunch	Lunch	Lunch
11:55-12:40	5	5	5	5	5
12:45-1:30	6	6	6	6	6
1:35-2:20	7	7	7	7	7
2:25-3:10	8	8	8	8	8

A Student's Schedule		
Time	Period	Course
7:45-8:05	Advisory	Advisory
8:10-8:55	1	Math
9:00-9:45	2	Social Studies
9:50-10:35	3	Science
10:40-11:25	4	Language Arts
11:25-11:50	Lunch	Lunch
11:55-12:40	5	Reading
12:45-1:30	6	Industrial Technology / Family Living / Art
1:35-2:20	7	Foreign Cultures / Computer Literacy / Health
2:25-3:10	8	Physical Education / Vocal or Instrumental Music

A Teacher's Schedule		
Time	Period	Course
7:45-8:05	Advisory	Advisory
8:10-8:55	1	Math (Class 1)
9:00-9:45	2	Math (Class 2)
9:50-10:35	3	Math (Class 3)
10:40-11:25	4	Math (Class 4)
11:25-11:50	Lunch	Lunch
11:55-12:40	5	Math (Class 5)
12:45-1:30	6	Math (Class 6)
1:35-2:20	7	Planning
2:25-3:10	8	Planning

Figure 4, 5, & 6



Alternating-Day Block Schedule					
Master Schedule					
Time	Monday	Tuesday	Wednesday	Thursday	Friday
7:45-8:05	Advisory	Advisory	Advisory	Advisory	Advisory
8:10-8:55	1	1	2	1	2
9:00-9:45	2				
9:50-10:35	3	3	4	3	4
10:40-11:25	4				
11:25-11:50	Lunch	Lunch	Lunch	Lunch	Lunch
11:55-12:40	5	5	6	5	6
12:45-1:30	6				
1:35-2:20	7	7	8	7	8
2:25-3:10	8				

A Student's Schedule				
Time	Period	Monday	Tuesday/Thursday	Wednesday/Friday
7:45-8:05	Advisory	Advisory	Advisory	Advisory
8:10-8:55	1	Math	Math	Social Studies
9:00-9:45	2	Social Studies		
9:50-10:35	3	Science	Science	Language Arts
10:40-11:25	4	Language Arts		
11:25-11:50	Lunch	Lunch	Lunch	Lunch
11:55-12:40	5	Reading	Reading	Exploratory A
12:45-1:30	6	Exploratory A		
1:35-2:20	7	Exploratory B	Exploratory B	Exploratory C
2:25-3:10	8	Exploratory C		

Exploratory A	Industrial Technology / Family Living / Art
Exploratory B	Foreign Cultures / Computer Literacy / Health
Exploratory C	Physical Education / Vocal or Instrumental Music

A Teacher's Schedule				
Time	Period	Monday	Tuesday/Thursday	Wednesday/Friday
7:45-8:05	Advisory	Advisory	Advisory	Advisory
8:10-8:55	1	Math (Class 1)	Math (Class 1)	Math (Class 2)
9:00-9:45	2	Math (Class 2)		
9:50-10:35	3	Math (Class 3)	Math (Class 3)	Math (Class 4)
10:40-11:25	4	Math (Class 4)		
11:25-11:50	Lunch	Lunch	Lunch	Lunch
11:55-12:40	5	Math (Class 5)	Math (Class 5)	Math (Class 6)
12:45-1:30	6	Math (Class 6)		
1:35-2:20	7	Planning	Planning	Planning
2:25-3:10	8	Planning		



2. The schedule should support an appropriate curriculum. A conscientiously developed model supports the goals of the school and does not require the staff to conform to the rigid constraints of the schedule. This schedule should allow teachers to develop a curriculum that is responsive to the needs of their students (Merenbloom, 1988) and ensures that all students “have equal access to curriculum offerings” (Williamson, 1993, p. 5). In addition, the amount of time available for core academic subjects must be sufficient to ensure mastery of basic skills. Such decisions as the time devoted to core studies, time devoted to exploratory courses, and time spent on thematic or integrated instruction are to be made by the faculty without being restricted by a set number of periods available in the school day. Instead, teachers should determine what instructional strategies will best facilitate the learning of curricular content by students. The scheduling configuration would be developed to support the use of these strategies.

3. The schedule should support quality instruction in the disciplines through the expanded and flexible uses of time. Ubben and Hughes (1992) state that it is “imperative that scheduled time be maximized so that ultimately high amounts of instructional and engaged time can also be obtained” (p. 257). The model should provide ample time for each discipline so that students have sufficient opportunities to master the content. Additionally, the schedule should permit the use of such varied instructional strategies as interdisciplinary instruction, cooperative learning, infusion of technology, use of experiments, authentic assessments, active learning, independent study, and small or large group activities.

Shadow studies of eighth graders (Lounsbury & Clark, 1990) confirm that “the predominant use of class time is still in listening and seatwork” (p. 37). Teachers must be encouraged to eliminate passive activities in favor of those which promote active learning and the development of critical thinking skills. The schedule must provide adequate periods of time to effectively implement active learning experiences.

The effective schedule is defined by instructional responsiveness, allowing teachers to vary the time devoted to different subjects on different days, avoiding “the necessity of giving equal time to unequal subjects” (George & Alexander, 1993, p. 371). As noted in *Turning Points*, “Student, need time to learn, especially to learn material in depth. When the time allotted for classes is always limited to 40 or 50 minutes, many youth will not master all the material” (Carnegie Council on Adolescent Development, 1989, p. 52). The availability of large blocks of time within the school day allows teachers to adjust the amount of time and the size of groups based upon student needs, skills being learned, and the instructional strategy used (Clark & Clark, 1994, p. 93). The greater the degree of flexibility for team members in the implementation of the schedule, the greater the levels of teacher innovation and creativity, empowerment and leadership, utilization of individual teacher strengths, varied teaching strategies and techniques, and ability to integrate the curriculum (Steffs & Valentine, 1995).

Merenbloom (1991) notes that flexible use of time is responsive to young adolescents' developmental needs and varying attention spans. He suggests that lessons may vary from 30 to 65 minutes in length. Indeed, blocks of time beyond 65 minutes may sometimes be necessary to support the types of activities that promote in-depth learning.



4. The schedule should promote Student development and supportive relationships.

For many students the transition to a middle level school means moving to a “larger, more impersonal institution” (Carnegie Council on Adolescent Development, 1989) and requires that teachers and students change classes several times each day. This Turning Points report concluded that the “constant shifting creates formidable barriers to the formation of stable peer groups and close, supporting relationships with caring adults. The chances that young people will feel lost are enormous” (Carnegie Council on Adolescent Development, 1989, p. 32). Therefore, the quality schedule should “achieve a balance between daily stability and creative variety that is developmentally responsive to young adolescents” (Shurr, Thomason, & Thompson, 1995, p. 103). Implicit in this responsiveness to young adolescents’ needs is the belief that the program is child-centered and promotes the development of students’ self-esteem and self-efficacy. Steffes and Valentine (1995) found a positive relationship between the extent of teaming provided for students in middle level schools and the ability of teachers to identify and address individual learner problems. They also found a relationship between the extent of teaming and the lack of student discipline problems.

The quality schedule should support the small communities for learning endorsed by the Turning Points task force (Carnegie Council on Adolescent Development, 1989) in order to facilitate the development of close, supportive relationships with adults and peers. The Coalition of Essential Schools goes a step further, recommending that “no teacher has direct responsibility for more than 80 students” (Sizer, 1986, p. 41), so that teaching and learning can be personalized. Dividing the student body into interdisciplinary teaching teams can readily be supported by a carefully planned scheduling model.

5. The schedule should promote quality teacher collaboration. Chief among the benefits of the middle level schedule is the provision for both individual and common planning time for teaching teams. However, Clark and Clark (1994) report that less than half the country’s junior high and middle schools practice interdisciplinary teaming and, therefore, have no shared planning time. Valentine and associates (1993, noted that only 54% of middle level teachers have both common planning time for the team members and an individual planning period. Since the majority of middle level teachers work in isolation, “they receive no benefits from teaching with each other, from sharing expertise, or from support systems that are typically found in collaborative environments” (Clark & Clark, 1994, p. 191). Steffes and Valentine (1995) found three organizational characteristics directly associated with scheduling that correlated significantly with teacher collaboration. Those were the extent of teaming in the school, the degree of flexibility of schedule, and the presence of common planning times for the team members.

6. The schedule should promote teacher empowerment. Teachers should be empowered with the ability to influence the scheduling process and to make fundamental decisions concerning the most effective uses of time for their students. The greater the degree of teacher autonomy for making decisions about their students and the team, the greater the degree of three variables: (a) teacher innovation and creativity, (b) varied instructional strategies and techniques, and (c) ability to identify and address student needs and behavior (Steffes & Valentine, 1995). As noted by George, Stevenson, Thomason, and Beane (1992), “Because teachers are closest to the instructional program, they are in the best position for reestablishing instructional priorities and judging the most appropriate way to apportion time” (p. 72). The quality schedule is flexibly structured and can



be modified by teachers as they address their curriculum priorities and capitalize on learning opportunities that present themselves (Carnegie Council on Adolescent Development, 1989). Teacher empowerment promotes teacher efficiency because teachers are able to make necessary scheduling changes without requesting approval through administrative channels. As Husband and Short (1994) found in their study of teaming and empowerment, “[T]he interdisciplinary team approach is not only more instructionally effective for young adolescent learners, but it is also a more enlightened, progressive, and empowering type of work organization for middle level educators” (p. 60).

SCHEDULING TYPES

It is difficult to generalize about the varied types of schedules across all middle level schools, partly because some schools may choose to use different configurations for varying grade levels. Scheduling options range from self-contained classrooms to traditionally departmentalized, single-subject schedules. Consider, for example, a middle level school housing grades 5-8 with self-contained classrooms in grade five, two-teacher teams in sixth grade, four-teacher teams in seventh grade, and a departmentalized schedule for the eighth grade. Some schools may adopt this approach in an effort to ease young adolescents’ transition both into and out of the middle school.

A myriad of middle level scheduling variations have been developed, each designated to meet the unique curricular needs of the individual school. Three general classifications—the traditional departmentalized schedule, the alternating-day block schedule, and the flexible interdisciplinary block schedule—serve as a means of categorizing the scheduling types and are described below. The self-contained classroom will not be included in this discussion.

1. Traditional departmentalized schedule. The traditional schedule is characterized by a fixed number of daily periods of uniform length, with delivery of instruction strictly adhering to departmental classifications. This departmentalized schedule is typically considered to be associated primarily with high schools and junior high schools. Alexander, Williams, Compton, Hines, Prescott, & Kealy (1969) noted that 76% of middle level schools responding to their survey reported using this traditional schedule. Although today this percentage is much lower, Valentine and associates (1993) determined that period-by-period departmentalized instruction is still the primary format for instruction in the seventh, eighth, and ninth grades. However, McEwin, Dickinson, and Jenkins (1996) found departmentalized schedules to be used in less than 50% of seventh grades and to hover just at 50% in eighth grades.

Canady and Rettig (1992) caution against the use of this traditional schedule because it can perpetuate practices such as ability grouping of students. They assert, “if we are ever to move away from tracking and provide greater access to school curricula, we must reduce our reliance on this practice” (p. 26).

Current practice in middle level schools indicates the number of instructional periods varies between five and ten periods. A national survey conducted by Valentine and associates (1993) reported that 94% of middle level schools utilize a six, seven, or eight-period day. Figure 1 shows an example of a traditional eight-period schedule that includes a homeroom advisory period and 45-minute instructional periods. Figure 2 provides an example of a student schedule for the traditional disciplinary approach, and Figure 3 is an example of a math teacher's daily schedule for the same traditional disciplinary approach.



2. Alternating-day block schedule. Block scheduling, an interesting alternative to the traditional approach, is rapidly gaining popularity in high school settings. Cawelti (1994) noted that 39% of the nation's high school faculties intended to implement block schedules by 1994. The defining feature of this type of schedule is the opportunity to hold classes in large blocks of time, typically 90 minutes or more, with fewer classes meeting daily and correspondingly fewer class changes. These larger blocks of time are well suited for almost any class, from laboratory classes such as art, family and consumer science, and industrial technology to creative writing and social studies. Since teachers and students do not feel rushed to complete instructional activities within short time periods, some schools report a dramatic improvement in overall building climate (Hackmann, 1995).

Several creative permutations to the block schedule are possible. Four-by-four daily schedules allow students to enroll in eight classes each academic year, four per semester (Edwards, 1995). Copernican schedules (Carroll, 1989) offer block classes on a trimester basis, with the additional feature of offering seminars designed around topics of student interest. These two models have the advantage of permitting students to enroll in more courses than would be possible under traditional six or seven-period schedules. Additionally, students who fail a required course can immediately re-enroll the following semester, rejoining their classmates the next year. However, 4x4 schedules do not necessarily afford schools the flexibility of offering year-long classes in selected subjects. Copernican and 4x4 schedules may provide numerous advantages for high schools, but they possess a critical flaw that makes them very problematic for implementation at the middle level: since courses are offered on a semester or trimester basis, students would not be enrolled in all required core classes the same semester. Consequently, it is impossible to design and implement interdisciplinary units that integrate language arts, mathematics, social studies, and science.

Alternating-day block schedules are emerging in some middle level schools because they result in fewer daily classes with fewer numbers of teachers for students to deal with and *visa versa* for teachers. Canady and Rettig (1995) assert that middle level schools can benefit from this type of model. An eight-block arrangement is commonly used, with even-numbered and odd-numbered class periods meeting on alternating days (Hackmann, 1995). This format has a decided advantage for students, since they will have homework from only half their classes each evening and two nights to complete the assignments. One variation on this block arrangement holds all classes on Mondays or Fridays so that all teachers will have contact with their students at either the beginning or end of each week. Other variations have been implemented which include scheduling on a daily 45-50 minute class in an attempt to accommodate those courses which may necessitate daily academic instruction such as a foreign language

The alternating-day block schedule displayed in Figure 4 has been purposefully developed using the same number of periods and time frames as the traditional disciplinary model show in Figure 1. Kentta (1993) notes that under this scheduling arrangement "students spend more time in integrated block classes, and teachers have considerable flexibility to develop and teach classes" (p. 19). A disadvantage is that time is still divided into uniform blocks. While interdisciplinary instruction may be more readily delivered in this model than under the traditional disciplinary schedule, teachers may still find the block format too rigid to effectively deliver a thematic, integrated curriculum. Examples of student and teacher schedules for the alternating-day block schedule are provided in Figures 5 and 6.



3. The flexible interdisciplinary block schedule. The flexible interdisciplinary block schedule, sometimes referred to in middle level writing as the flexible block schedule or the interdisciplinary block schedule, establishes blocks of time for teaching teams, allowing teams the flexibility to determine the most appropriate uses of shared time for the core academic disciplines. George and Alexander (1993) note that the interdisciplinary team organization is the basic organizational framework of the exemplary middle level school and stress that this component should indeed determine the nature of the scheduling process. The flexible interdisciplinary model may take a variety of forms. Figures 7-8-9 demonstrate an interdisciplinary approach that uses the same number of periods and time constraints as the schedules illustrated in Figures 1 through 6.

Drake and Roe (1994) state, "The primary purpose of the flexible schedule is to individualize and personalize learning, freeing learners to concentrate on those areas of need and interest, freeing them from time cells of passive knowledge intake" (p. 233). All lessons do not have to be the same length of time if the team teachers take full advantage of this opportunity (Merenbloom, 1991). Interdisciplinary teams may choose to divide the time equally for subject-discipline instruction, may team-teach interdisciplinary units, or may on selected days devote greater portions of the shared time for an activity such as a science laboratory experiment.

One variation of this scheduling type is the flexible modular schedule, in which the school day is divided into numerous modules, such as 15 or 20 minutes, which allows classes to be held for varying time increments (Wiles & Bondi, 1993). Another flexible approach is the rotating schedule (Williamson, 1993), in which classes are rotated to allow teachers and students an opportunity to work together at different times each day. The rotating dropped schedule (Williamson, 1993) maintains the class rotation concept with one class dropped daily. In this instance a student may be enrolled in eight classes but attends only seven each day.

CRITERIA THAT DETERMINE AN EFFECTIVE SCHEDULE

When determining the schedule type that best meets a school's programmatic needs, it would be helpful to compare the various scheduling options on their effectiveness in addressing the factors that support a student-centered, middle level program. The discussion which follows uses the previously discussed scheduling factors as criteria for comparing the three scheduling models: traditional departmentalized schedules, alternating-day block schedules, and flexible interdisciplinary block schedules.

1. Potential to support interdisciplinary team organization. Since they are developed along departmental lines, traditional disciplinary schedules fall short on this criterion. Alternating-day block schedules may facilitate an interdisciplinary approach, depending on how carefully teams are arranged and the level of teacher and administrative support given to the concept. However, two-teacher (two-discipline) teams are much more likely to emerge than four or five teacher teams. Flexible, interdisciplinary block schedules are designed to address this criterion. Clearly they are the most effective schedule for promoting team organization.

Figure 7, 8, & 9



Variations on a Block Schedule					
Master Schedule					
Time	Monday	Tuesday	Wednesday	Thursday	Friday
7:45-8:05	Advisory	Advisory	Advisory	Advisory	Advisory
8:10-11:25	Core Block				
11:25-11:50	Lunch	Lunch	Lunch	Lunch	Lunch
11:55-12:40	Core Block				
12:45-1:30	Exploratory A				
1:35-2:20	Exploratory B				
2:25-3:10	Exploratory C				

Exploratory A	Industrial Technology / Family Living / Art
Exploratory B	Foreign Cultures / Computer Literacy / Health
Exploratory C	Physical Education / Vocal or Instrumental Music

A Student's Schedule		
Time	Period	Course
7:45-8:05	Advisory	Advisory
8:10-11:25	1-4	Math, Social Studies, Science, Language Arts
11:25-11:50	Lunch	Lunch
11:55-12:40	5	Reading
12:45-1:30	6	Exploratory A
1:35-2:20	7	Exploratory B
2:25-3:10	8	Exploratory C

Exploratory A	Industrial Technology / Family Living / Art
Exploratory B	Foreign Cultures / Computer Literacy / Health
Exploratory C	Physical Education / Vocal or Instrumental Music

A Teacher's Schedule		
Time	Period	Course
7:45-8:05	Advisory	Advisory
8:10-11:25	1-4	Math
11:25-11:50	Lunch	Lunch
11:55-12:40	5	Math
12:45-1:30	6	Exploratory
1:35-3:10	7-8	Planning



2. Potential to support an appropriate curriculum. If a discipline-by-discipline curriculum is desired, any of the three scheduling models will suffice, with the advantage probably going to the alternating-day block schedule because of the longer periods of instructional time to implement a disciplinary curriculum. However, if a thematic, integrated curriculum, or even an interdisciplinary curriculum, is the goal, the flexible interdisciplinary block schedule is the model of choice. The issue here becomes the definition of an appropriate curriculum—whether the intent is to have a disciplinary, an interdisciplinary, or an integrated curriculum. Contemporary educational literature endorses either the interdisciplinary or the integrated curriculum (see March 1998 *Middle School Journal*), thus the most appropriate scheduling model for this criterion is the flexible interdisciplinary block schedule.

3. Potential to support quality instruction in the disciplines through expanded and flexible uses of instructional time. The key word is “quality.” If quality is defined as a guaranteed amount of time devoted to each core academic area, all scheduling variations achieve this purpose. The middle level schedule must allocate sufficient time to the core subjects so that students can attain mastery of the core academic skills. However, if “quality” implies the ability to make interdisciplinary connections across disciplinary lines or to deliver an integrated curriculum, then an interdisciplinary schedule would be most effective. Assuming that both variables—increased time and curricular integration—have merit, the traditional departmentalized schedule falls very short on this criterion. As noted above, the alternating-day block schedule has some potential to support interdisciplinary or integrated curriculum on a two-discipline level. However, the flexible interdisciplinary block schedule best supports integrated and interdisciplinary instruction and flexible use of time.

The traditional schedule, with the start-and-stop period-by-period approach, increases the likelihood that teachers will favor passive instructional activities over active ones. Block schedules are particularly compatible with this criterion because they provide sufficient time to incorporate either multiple strategies or more lengthy learning activities during a single class session. When coupled with another block class for integrated instruction, they provide an even longer learning block. The flexible interdisciplinary block schedule provides the same opportunity to support multiple strategies, but does so only for the core courses included in the block. Teachers of exploratory courses often complain of having to take a “back-seat” to the demands of the core courses in a flexible interdisciplinary block school. With the alternating-day block, those classes have the same opportunity to apply multiple and more lengthy learning activities. Thus, the alternating-day block schedule has the edge for addressing this criterion across all classes within the curriculum.

4. Support for child-centered instruction. The traditional departmentalized schedule offers little support for the child-centered criterion when compared to other scheduling formats. As noted previously, one advantage is the “daily” engagement with the content. Perhaps something, albeit little, can be said on behalf of small doses of instruction each day. However, research syntheses of studies comparing student academic success in departmentalized schedules with flexible interdisciplinary block schedules find in favor of the flexible interdisciplinary block schedule (Arhar & Irvin, 1995; Felner, Jackson, Kasak, Mulhall, Brood, & Flowers, 1997). Also, the argument can be made that a teacher can better “get to know” the students because of this daily contact. Again, the research fails to support the contention that the traditional departmentalized schedule has this advantage. In fact, possibly more so than with academics, the flexible interdisciplinary schedule has



the advantage when the issues are affective (Arhar & Irvin, 1995). Both the alternating-day and the flexible interdisciplinary block schedules provide opportunities for greater personalization of instruction and opportunity to develop class experiences which permit greater depth of understanding of students and their needs. The flexible interdisciplinary block schedule provides the added benefit of multiple teachers working together to meet students' needs. Such collaborative endeavors enhance the likelihood that solutions will be found when problems arise. The team's common planning time provides the opportunity to staff students, counsel students, and work with parents to meet individual student needs. Four or five teachers thinking collaboratively is a more powerful method of meeting students' needs than the same number of teachers working independently. The flexible interdisciplinary block schedule has the advantage for this criterion.

5. Support for quality teacher collaboration time. Traditional departmentalized schedules provide limited opportunities for collaboration. Planning times are often dictated by scheduling conflicts, extra-duty responsibilities, and personal preferences sometimes associated with seniority or personal relationships with the schedule makers. Common planning times are seldom purposeful and difficult to schedule given the nature of the departmentalized, individual-course driven schedule. The alternating-day block schedule creates a planning time for one-fourth of the school day, which provides more opportunity for collaboration with other teachers than the traditional departmentalized schedule. If the flexible interdisciplinary schedule includes both an individual and common planning period for teacher teams, it effectively supports the goal of teacher collaboration time. A recent national study (Valentine et al., 1993) indicates that 54% of schools provide both types of planning times for team-members. Certainly, this is optimum for the interdisciplinary team members, but provides little advantages for the non-team faculty.

6. Potential to empower teachers. While some might argue that operating independently within a departmentalized schedule is empowering, it only offers "power" over one's own domain. Little impact across the school's entire environment can be made when one operates independently of others. Traditional departmentalized schedules provide minimal opportunities for true empowerment. An alternating-day block schedule offers little additional opportunity for empowerment beyond the individual classroom. Flexible interdisciplinary block schedules provide the environment for teachers to work collaboratively to establish curriculum, design instruction specifically to meet student needs, design behavior modification plans, and assess individual and group success. Four or five teachers working together have the authority to design the learning environment to best meet the needs of their block of students. Such a high level of autonomy, coupled with the strength of collaboration, provides an environment which fosters a high level of empowerment. The flexible interdisciplinary block schedule has a down side that is most appropriately addressed with this criterion. What does a teacher do when he or she is part of a four or five person team within a seven or eight period schedule, i.e. what does he or she teach during the one or two periods beyond the core block and the planning times? Note the example of the math teacher's schedules in Figures 3, 6, and 9. In the traditional disciplinary schedule and the alternating-day block schedule, the teacher has only math assignments, typically at the same grade level. Within a flexible interdisciplinary schedule, the teacher may teach math at another grade level that is not teamed, or the teacher may have to work with students in a field of study outside math. This may lead to frustration and anxiety, and increase the likelihood of ineffective instruction. This presents a disempowering situation for the math teacher.



Figure 10

Types of Schedules Compared Against Scheduling Criteria			
Schedule Criteria	Type of Schedule		
	Traditional Departmentalized Schedule	Alternating-Day Block Schedule	Flexible Interdisciplinary Block Schedule
Interdisciplinary team organization	0	2	3
Appropriate curriculum content	2	2	3
Quality instruction in the disciplines through expanded instructional time ¹	2 / 1	3 / 3	3 / 2
Child-centered instruction	1	2	3
Teacher collaboration time	1	2	2
Teacher empowerment	1	2	2
Total Score	8	16	18

Note: The number above the slash refers to core classes. The number below the slash refers to noncore classes.

Key
 3 = Schedule provides high support
 2 = Schedule provides moderate support
 1 = Schedule provides low support
 0 = Schedule provides no support

The three scheduling models are rated for each criterion associated with an effective middle level schedule. A rating of “0” indicates the schedule provides no support for the criterion, a “1” for low support, a “2” for moderate support, and a “3” rating notes high support. The ratings have been summed to provide a total score indicating the schedule’s effectiveness in supporting a quality middle school program. The flexible interdisciplinary schedule, with a total score of 18, appears to most effectively facilitate a program which closely adheres to the components of a true middle school. The alternating-day block schedule rated a score of 16, and the traditional departmentalized schedule achieved a score of 8.

CONCLUSION

Clearly the interdisciplinary schedule provides middle school faculties with both the freedom and flexibility to design an instructional program that is most responsive to the needs of young adolescents. However, in some school settings the implementation of a full-scale flexible interdisciplinary schedule is difficult. Resources for effective implementation of common planning time and proximity of classrooms are often limited. Partial implementation of the process, particularly without the dual planning times, is often frustrating and always highly taxing of staff energies. Teacher resistance to change in organizational structure and the expectations associated with team teaching and integrated instruction is another realistic impediment. Mandated changes seldom survive the test of time, so when the school moves hastily into teaming and then retreats a few years later back to a departmentalized model, many years may pass before the school can return to the implementation of interdisciplinary teaming. Another obvious shortcoming of the flexible interdisciplinary schedule is the imbalance between the support often provided to core team members, such as individual and



common planning times, and the lack of such amenities for noncore teachers. Again, staff frustrations often result in regression back to the traditional schedule. To remedy such inequities requires additional fiscal resources, an issue seldom effectively addressed by school policy makers. Simply stated, few schools provide the opportunity for noncore teachers to team. If staff across the organization do not collectively value the concept of interdisciplinary teaming, teaming is a difficult process to implement effectively.

The alternating-day block schedule provides an intriguing alternative. First, it can be viewed as an interim step in a transition from a traditional departmentalized schedule to a flexible interdisciplinary schedule. Second, it provides the opportunity for interdisciplinary teaming on a small scale and the advantage of lengthy blocks of instructional time for all subjects. Third, teachers and students meet fewer classes daily, providing the opportunity for greater focus, fewer homework assignments for students each evening, and more time between classes to complete assignments and study content.

With the proliferation of interest in the alternating-day block schedule, new, well-conceived research about scheduling effectiveness is critical—and the need is immediate. For years, scholars assessed the differences between the traditional departmentalized schedule and the interdisciplinary schedule. The findings that support the advantages of the interdisciplinary schedules are well documented. However, seldom did the research methodology include an assessment of the quality of the interdisciplinary schedule, particularly the degree of flexibility of time and the use of that time to implement varied instructional strategies. Often, interdisciplinary schedules mirror period-by-period departmentalized schedules, thus calling into question research that did not adequately address the qualitative nature of the interdisciplinary program before contrasting it with a traditional departmentalized program. Old questions to be revisited and new questions to be answered include: What schedule model best promotes academic achievement? Which promotes a more positive building climate, including such things as higher attendance rates, a decrease in discipline referrals, and increased numbers of students recording passing grades? Which promotes greater student self-esteem and self-efficacy? Which promotes higher levels of teacher satisfaction?

The use of the alternating-day block schedule is clearly on the rise. Given the difficulties of effectively implementing the flexible interdisciplinary schedule, the alternating-day model may soon surpass the flexible interdisciplinary schedule in popularity. The time is right for all educators who desire optimum learning conditions for their middle level students to begin asking and seeking answers to basic organizational questions. Let us not get on a bandwagon simply because it seems right. Let us not cling to a long-held belief without adequate data to support that belief. Let us be as open in our inquiry into these scheduling issues as we would want our students to be open when we ask them to study an issue in class. Perhaps a solution is the development of an alternative schedule that, in effect, combines the “best of both worlds”—an alternating-day flexible interdisciplinary schedule. Is such a model possible? If possible, is it feasible?



REFERENCES

- Alexander, W. M., Williams, E. L., Compton, M., Hines, V. A., Prescott, D., & Kealy, R. (1969). *The emergent middle school* (2nd ed.). New York: Holt, Rinehart and Winston.
- Arhar, J. M., & Irvin, J. I. (1995). Interdisciplinary team organization: A growing research base. *Middle School Journal*, 26(5), 65-67.
- Carnegie Council on Adolescent Development. (1989). *Turning Points: Preparing American youth for the 21st century*. New York: Carnegie Corporation.
- Canady, R. I., & Rettig, M. D. (1995). The power of innovative scheduling. *Educational Leadership*, 53(3), 4-10.
- Carroll, J. M. (1989). *The Copernican plan: Restructuring the American high school*. Andover, MA: The Regional Laboratory for Educational Improvement of the Northeast and Islands.
- Cawelti, G. (1994). *High school restructuring: A national study*. Arlington, VA: Educational Research Service.
- Clark, S. N., & Clark, D. C. (1994). *Restructuring the middle level school: Implications for school leaders*. Albany, NY: State University of New York Press.
- Dickinson, T. S., & Erb, T. O. (Eds.). (1997). *We gain more than we give: Teaming in middle schools*. Columbus, OH: National Middle School Association.
- Drake, T. L., & Roe, W. H. (1994). *The principalship* (4th ed.). Englewood Cliffs, NJ: Prentice Hall.
- Edwards, C. M., Jr. (1995). The 4x4 plan. *Educational Leadership*, 53(3), 16-19.
- Felner, R. D., Jackson, A. W., Kasak, D., Mulhall, P., Brood, S., & Flowers, N. (1997). The impact of school reform for the middle years: A longitudinal study of a network engaged in *Turning Points*-based comprehensive school transformation. *Phi Delta Kappan*, , 528-532, 541-550.
- George, P. S., & Alexander, W. M. (1993). *The exemplary middle school* (2nd ed.). Fort Worth, TX: Harcourt Brace.
- George, P. S., Stevenson, C., Thomason, J., & Beane, J. (1992). *The middle school-and beyond*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Hackmann, D. G. (1995). Improving the middle school climate: Alternating-day block schedule. *Schools in the Middle*, 5(1), 28-34.
- Husband, R. E., & Short, P. M. (1994). Interdisciplinary teams lead to greater teacher empowerment. *Middle School Journal*, 26(2), 58-60.
- Kenta, B. (1993). Moving with cautious velocity. *The School Administrator*, 50(3), 17, 19.
- Lounsbury, J. H., & Clark, D. C. (1990). *Inside grade eight: From apathy to excitement*. Reston, VA: National Association of Secondary School Principals.
- McEwin, C. K., Dickinson, T. S., & Jenkins, D. M. (1996). *America's middle schools: Practices and progress — a 25 year perspective*. Columbus, OH: National Middle School Association.
- Merenbloom, E. Y. (1988). *Developing effective middle schools through faculty participation* (2nd ed.). Columbus, OH: National Middle School Association.



Merenbloom, E. Y. (1991). *The team process: A handbook for teachers* (3rd ed.). Columbus, OH: National Middle School Association.

Shurr, S., Thomason, J., & Thompson, M. (1995). *Teaching at the middle level: Professional's handbook*. Lexington, MA: Heath.

Sizer, T. R. (1986). Rebuilding: First steps by the Coalition of Essential Schools. *Phi Delta Kappan*, 68, 38-42.

Steffes, R., & Valentine, J. (1995, February). *Organizational characteristics and expected outcomes of interdisciplinary teaming*. Paper presented at the annual convention of the National Association of Secondary School Principals, San Antonio, TX.

Ubben, G. C., & Hughes, I. W. (1992). *The principal: Creative leadership for effective schools* (2nd ed.). Needham Heights, MA: Allyn and Bacon.

Valentine, J. W., Clark, D. C., Irvin, J. L., Keefe, J. W., & Melton, G. (1993). *Leadership in middle level education. Vol. I: A national survey of middle level leaders and schools*. Reston, VA: National Association of Secondary School Principals.

Wiles, J., & Bondi, J. (1993). *The essential middle school* (2nd ed.). New York: Macmillan.

Williamson, R. (1993). *Scheduling the middle level school to meet early adolescent needs*. Reston, VA: National Association of Secondary School Principals.

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