Introduction

Middle schools play a significant role in adolescent development, and they have become a staple of K-12 education in the U.S. Junior high schools, which were first established in 1909 as an extension of the high school model, originally developed to address the academic and social needs associated with pre-adolescence but often struggled to meet these goals [1]. The middle school model replaced the junior high model in the 1960s. Operationally, the middle school model was designed to serve as a bridge between elementary school and high school [2]. The efficiency of middle schools thus depends in part on the scheduling method adopted by the schools, as scheduling may facilitate or detract from effective transitioning between the two education levels.

Since October 2011, stakeholders of Durham Public Schools (DPS) have had extensive conversations about magnet schools. During this process, many questions about middle school scheduling surfaced. Topics included the following: 1) number of periods in a day, 2) the importance of extended blocks of time for literacy and math, 3) the importance of recess/exercise, the importance of time for enrichment and intervention, 4) start/end time of middle schools, and 5) the length of the school day. With the recent magnet school proposal being accepted, exploring the above issues has become more critical.

This policy brief aims to provide recommendations for successful middle school scheduling based upon the literature. Specifically, the objectives of the brief are to provide a succinct overview of scheduling strategies recommended in the literature, report the insights of five DPS middle school principals regarding scheduling in their particular institutions, and suggest ways to comprehensively plan middle school scheduling for future academic years.
National Overview: Best Scheduling Practices

The literature on middle school scheduling highlights the best practices of high-achieving middle schools across the nation. Three scheduling strategies emphasized throughout the publications are as follows:

(1) Implementing flexible scheduling

(2) Incorporating interdisciplinary teaming

(3) Facilitating a global education curriculum

Implementing flexible scheduling

The literature defines “flexible scheduling” as the creative use of the time in the school day in an attempt to match the instructional time and format to the learning needs of students. Flexible scheduling encompasses several types of scheduling that deviate from the traditional daily uniform periods scheduling. Examples include block scheduling, alternate day scheduling (also known as “A/B scheduling”), and rotating schedules [3]. According to a national study, more than 90% of middle schools use traditional fixed time schedules, which are comprised of seven instructional periods of 41-55 minutes per period [4], despite several decades of middle grades’ advocates recommending flexible scheduling. In contrast, in a survey of nominated exemplary middle grades schools, 75% of respondents indicated that flexible scheduling was moderately to well-developed at their schools [5]. These two studies show that flexible scheduling has emerged as a best practice among schools recognized to be successful in terms of their performance on the end-of-grade tests and other measures of learning.

As indicated by the literature, benefits of flexible scheduling over traditional fixed time schedules include the following:

- Flexible scheduling reduces time spent on transitioning between classes.
Flexible schedules ease the transition from the self-contained elementary environment to the highly departmentalized high school environment [6].

An ex post facto design examining the academic performance of middle school students taught in a flexible schedule environment showed that lower achieving students in particular benefitted from flexible scheduling [7].

Teachers can use longer blocks to explore subjects in greater depth.

Flexible scheduling decreases disciplinary problems and other barriers to learning [8].

Incorporating interdisciplinary teaming

Highly successful middle schools (HSMS), schools recognized as Schools to Watch by the National Forum to Accelerate Middle Grades Reform or as Breakthrough Middle Schools by the National Association of Secondary School Principals, demonstrated higher levels of interdisciplinary teaming than the schools in the sample of randomly selected middle schools [9]. Most of the higher-performing middle schools are organized into teams, with core academic subject teachers teaching the same group of approximately 100 students [10].

Why do successful middle schools adopt interdisciplinary teaming?

- Teaming fosters more integrated instruction and provides the flexibility to meet diverse student needs [11].
- Common planning time for teachers in teams enables them to work on the curriculum together.
- Teaming in the context of flexible scheduling allows information taught in one class to be reinforced or applied in another [12].
- Teachers in teams can talk about specific students and how the team can work with the students to improve their performance.

Facilitating a global education curriculum

A global education curriculum prepares middle school students to learn skills that will enhance their competitiveness in the world economy. Scheduling practices that facilitate diverse learning better equip students for the future. High achieving middle schools incorporated these practices regarding their curriculum:
• Compared to the random sample, the highly successful middle schools scheduled slightly more time for instruction in core subjects [13].
• Extra instructional time and support within class (differentiation, inclusion) as well as outside (academic intervention services, after-school, summer programs) are designed to meet diverse student needs and close achievement gaps [14].
• Teachers emphasize literacy skills in all courses.
• Schools offer a variety of elective courses to create a system in which students are recognized for achievement in areas beyond academic classes.

Insights from DPS Middle School Principals

The qualitative research component of the project was to gather insights about how Durham Public Schools’ middle schools formulated their current schedules. The research consisted of interviews with principals from five different DPS middle schools. Every school represented in the research does not have a specific academic focus (arts, magnet, etc.) but possesses distinctive characteristics that set it apart from other middle schools in the system. The principals’ responses reflected several common themes.

Discovery/elective course choices

• All schools surveyed offer physical education/health, music, and art.
• Additional electives such as foreign language and computer skills form a foundation for the students to continue learning in these areas through their high school years.
• Some schools use discovery courses for remediation/enrichment purposes.
• Principals have mixed opinions about the use of elective course time for a literacy-focused block.

Time issues

• Lunch is a limiting factor in creating a schedule. Multiple lunch periods need to fit in a day.
• Transitions create big losses in instructional time.
• A schedule that starts and ends later than the current middle school schedule would be more in tune with the students’ biological rhythm.

Traditional vs. block scheduling

• Block schedules would be ineffective if teachers do not know how to utilize the longer periods.
• Teachers need to acquire more advanced classroom management skills.
• One principal noted that implementing the block schedule concurrently with adopting the Common Core Standards would be a challenge.

Consideration of sixth-grade students

• Sixth-graders struggle more with focus and concentration than the older students.
• Schools elected to have sixth-graders have their electives towards the end of the day, limiting the bell schedule’s flexibility.

Recommendations for DPS

Be school-specific in crafting schedules.

During their interviews, each principal provided thoughts concerning context-specific obstacles with scheduling. Some schools face limitations due to their physical infrastructure, and others cite financial restrictions as an impediment to creating the most effective scheduling practices. The middle schools in the district also have different percentages of younger students and Academically and Intellectually Gifted (AIG) students, which can affect scheduling as well. Beyond the implementation of the initial schedules, continue to seek feedback from principals, teachers, and community members. Setting up regular schedule assessment sessions with appropriate stakeholders will ensure that DPS middle school schedules are evolving with their students’ changing needs.

Consider flexible scheduling.

An evaluation of best scheduling practices indicates that flexible scheduling yields great benefits for middle school students. Being aware of various contextual challenges that each school faces, adopting some form of flexible scheduling would give teachers more time to meet the educational needs of their students. However, a few of the principals noted that block scheduling, one method of flexible scheduling, looks good in theory but in practice would be
difficult to implement. The literature challenges such perception and proves that flexible scheduling can be financially, politically, and operationally feasible.

Potential arguments against flexible scheduling options include parents’ perceptions that block schedules limit course variety, students’ difficulties with adjusting to longer class periods, and teachers’ hesitations with making use of the additional time. Information sessions in which parents can ask questions and learn about the scheduling changes may mitigate some parental pushback. Gradual implementation of the new scheduling methods will aid with student adjustment and will have long-term benefits.

*Provide teachers additional training on teaching in a flexible schedule.*

Initially, teachers may be overwhelmed by the amount of class time and thus unsure how to utilize the extra time. Workshops on facilitating student participation, directing project-based learning opportunities, and creating activities simulating the “real world” can aid teachers with taking advantage of a flexible schedule.

*Implement interdisciplinary team organization for all grade levels.*

DPS middle schools already possess academic teams, but these can be more effective with common planning time. Teachers may use such common planning time to assess individual students’ needs and to coordinate their lessons.

*Encourage interdisciplinary electives and maintain a strong focus on core classes.*

Each DPS middle school will take on a unique interdisciplinary focus. Elective courses that align with their interdisciplinary focus will improve students’ learning experience. Additionally, providing teachers with an opportunity to develop their own electives would lead teachers to have a greater ownership of the discovery classes and the students to have access to a substantial variety in their course selection.
However, a continued emphasis on the core classes is essential for a global education curriculum. Demand for skills in the STEM subjects continue to increase, and literacy is a constant component in all aspects of education. Currently, DPS mandates all middle schools to have at least 240 minutes of core course instruction in their schedule, and this allotment of time is similar to those of nationally high-achieving middle schools.

**Conclusion**

Middle school years are some of the most formative years of students’ lives, and effective scheduling strategies are an essential component for successful middle schools. The above recommendations embody both findings from literature and qualitative interviews with selected DPS middle school principals. One critical aspect of implementing a new schedule format is ensuring that for each new component added, there is substantial buy-in from administrators, teachers, and parents. Literature-informed schedule planning is important, but the district can achieve the greatest success if it evaluates these research-based recommendations in the specific context of each school in the system.
References

1,2 McEwin, C. K., & Greene, M. W. (2011). *The status of programs and practices in America’s middle schools: Results from two national studies*. Westerville, OH: Association for Middle Level Education.


## Appendix A: Types of Flexible Scheduling

<table>
<thead>
<tr>
<th>Schedule Type</th>
<th>Description</th>
<th>Potential Concerns</th>
</tr>
</thead>
</table>
| Block schedule        | *Usually consists of two or more combined periods  
*In a standard “4 X 4” (four-by-four) schedule, students take 4 classes first half of the year and four different classes in the second half of the year.  
*Can be modified to have longer blocks for core classes and shorter blocks for electives  
*A common block arrangement in middle schools consists of two blocks, on in the morning and one in the afternoon.                                                                                                                   | *Cost of training teachers to take advantage of extra time  
*Pushback from leadership, parents, and community as a whole  
*Feasibility within existing physical structures                                                                                                                                                                                                                       |
| Alternate day schedule (“A/B schedule”) | *Assigns classes on an every-other-day basis during the week  
*A student can take electives on an A/B schedule with core classes meeting every day.  
*Another popular arrangement is students taking two core classes on one day the other two core classes on the alternate day.                                                                                           | *Potentially causing retention loss in core classes  
*Difficult staffing adjustments                                                                                                                                                                                                                                                            |
| Rotating schedule     | *Classes are held at different times each day.  
*The most popular method of rotating scheduling by rotating the classes one period later each day.  
*This process enables students to have all subjects at various times of the day and can be implemented by teams or by an entire school.                                                                                                         | *Students may become confused by constant changes  
*Complexity of scheduling to facilitate swift transitions                                                                                                                                                                                                                             |
| Dropped schedule      | *Students are scheduled for more classes than class periods, with one class being dropped on any given day.  
*This schedule provides allotted times for advisory programs, electives, assemblies, and other curricular offerings beyond core academic requirements.                                                                                           | *Learning losses  
*Challenge of making the best use of the “dropped” period                                                                                                                                                                                                                                |
# Appendix B: An Example of a Potential Flexible Bell Schedule

<table>
<thead>
<tr>
<th>6&lt;sup&gt;th&lt;/sup&gt; Grade</th>
<th>7&lt;sup&gt;th&lt;/sup&gt; Grade</th>
<th>8&lt;sup&gt;th&lt;/sup&gt; Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30am-9:30am</td>
<td>8:30am-9:45am</td>
<td>8:30am-9:10am</td>
</tr>
<tr>
<td>Core A</td>
<td>Math</td>
<td>Discovery</td>
</tr>
<tr>
<td>9:33am-10:33am</td>
<td>9:48am-10:28am</td>
<td>9:13pm-10:28am</td>
</tr>
<tr>
<td>Core B</td>
<td>Discovery</td>
<td>Math</td>
</tr>
<tr>
<td>10:36am-12:08pm</td>
<td>10:31am-12:16pm</td>
<td>10:31am-12:50pm</td>
</tr>
<tr>
<td>Core C/Lunch</td>
<td>Language Arts/Lunch</td>
<td>Science/Social Studies (Science-M/W, Social Studies- T/R, alternating Science and Social Studies- F)</td>
</tr>
<tr>
<td>L1: 10:36-11:01am</td>
<td>L1: 11:26-11:51am</td>
<td></td>
</tr>
<tr>
<td>L2: 11:01-11:26am</td>
<td>L2: 11:51am-12:16pm</td>
<td></td>
</tr>
<tr>
<td>12:11pm-1:11pm</td>
<td>12:19pm-12:59pm</td>
<td>12:53pm-2:37pm</td>
</tr>
<tr>
<td>Core D</td>
<td>Discovery</td>
<td>Language Arts/Lunch</td>
</tr>
<tr>
<td>1:42pm-1:54pm</td>
<td>1:02-3:20pm</td>
<td>L1: 12:55-1:20pm</td>
</tr>
<tr>
<td>Discovery</td>
<td>Science/Social Studies (Science-M/W, Social Studies- T/R, alternating Science and Social Studies- F)</td>
<td>L2: 1:20-1:45pm</td>
</tr>
<tr>
<td>1:57pm-2:37pm</td>
<td></td>
<td>Discovery</td>
</tr>
<tr>
<td>2:40pm-3:20pm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Characteristics:*
1) 6<sup>th</sup> Grade- traditional bell schedule with 60-minute core class periods, 40-minute discovery class periods
2) 7<sup>th</sup> Grade and 8<sup>th</sup> Grade
   *Math and Language Arts meet every day, Science/Social Studies on alternating block
   *Alternating block longer than Math/Language Arts blocks
   *40-minute discovery class periods
3) Start time at 8:30am, which is an hour later than the current time of 7:30am.
4) This example fits the current core class time requirement.

*Note: In crafting this example, several factors went into account (practices in the literature, ideas from DPS principals, etc.) but do note that this is simply an example. It is important that teachers and administrators not become too focused on a single scheduling format, as it becomes just as restrictive as the traditional schedule.