To: Patrick Rhodes, Superintendent of Orange County Schools  
From: Cate Auerbach  
Re: Underachievement in Orange County’s AIG program  
Date: May 7, 2012

Executive Summary

The following analysis is based on the Orange County AIG growth data on the 2010-2011 EOG exam as given by the Orange County Division of Testing and Accountability in Spring 2012. Several of the factors influencing gifted students’ achievement, as identified in the literature review, were mathematically examined to test potential correlation to achievement. Overall trends include higher rates of negative growth in math than in reading, with twice the number of schools showing negative growth for over one quarter of AIG students in math than in reading (see Appendices A and B). Comparing both the average growth rates of AIG students and the percentage of students showing negative growth to various factors, including school size, class size, program size, school performance, and economic disadvantage, no strong correlations are found. This begs further research to identify potential factors influencing the trend of negative growth, such as methods of identification, instructional methods, and teacher quality.

Research Questions in the Literature and Orange County

1. How does school size impact AIG student growth?

While school size has the potential to affect student achievement based on cost efficiency in per-pupil expenditures, studies relating school size to students’ achievement produce conflicting results with relatively small correlations (Slate 2005). The average percentage of students showing negative growth in Orange County Schools was higher for the schools above the median size of 491.5 compared to those below the median size for both reading and math (see Appendix C). This generally supports the hypothesis that smaller schools may be able to provide more individual attention for AIG students, boosting growth.
2. *How does class size impact AIG student growth?*

While reducing class size is an appealing policy option due to its relative ease of implementation, conflicting evidence exists regarding its effectiveness in increasing student achievement (Southworth 2010). A landmark study in Tennessee shows that reduced class size has a positive impact on student achievement, especially for minority and low-income students (Krueger 2001). There is no significant difference between the average overall growth rates of AIG students in Orange County at schools with average class sizes of less than the median of 22.5 for their grade than students at schools with average class sizes greater than 22.5 for their grade (see Appendix D). This refutes the hypothesis that smaller class sizes have a positive impact on AIG student growth.

3. *How does program size impact AIG student growth?*

The impact of class size may be extended to AIG program size, with smaller program sizes lending themselves to increased student attention. However, larger programs may garner more resources and be able to differentiate students more thoroughly than small programs. The data for Orange County generally supports the hypothesis that smaller AIG programs lend themselves to higher growth scores for their students. All but one of the programs below the median size for reading had less than one third of their students showing negative growth; in contrast, 75% of programs above the median size had more than one third of AIG students showing negative growth (see Appendix E). Results are more ambiguous for math.

4. *How does overall school performance impact AIG student growth?*

There appears to be a small correlation between school-wide achievement in Orange County and AIG student growth, with the trendlines moving in an upward direction when the outlier is removed (see Appendix F). This supports the hypothesis that higher levels of school
performance encourage higher AIG growth, or rather are indicative of environment conducive to positive student performance.

5. How do the demographics of the school, specifically level of economic disadvantage, impact AIG student growth?

In a 2010 study of student achievement in North Carolina, the authors find that the “racial and poverty composition of schools affect student achievement after factoring in student, family, and other school influences” (Southworth 2010). Poverty concentrations in schools, defined here as the number of students identified as economically disadvantaged, impact teacher inputs, resources, and peer achievement. Schools in Orange County with more students of economic disadvantage, as defined in Appendix G, tended to have a higher percentage of AIG students showing negative growth than did schools with less students of economic disadvantage. However, this trend only holds for reading and the difference is negligible for math. Teacher turnover, another indicator of unsatisfactory school conditions, does not appear to be impacted in Orange County by the number of economically disadvantaged students (see Appendix H).

6. How do AIG identification practices impact AIG student growth?

In Orange County, students may qualify for the AIG program based on EOG scores once taken. This may create an effect whereby students enter the program with high scores, either due to high aptitude or due to successful test-taking one or more times, and perform worse on the same exam in subsequent years due to changes in the factors that influenced their test-taking. These factors could include thorough preparation, an extraordinary teacher, or simply getting lucky. One way to mitigate these effects is to use different exams for identification and subsequent measures of achievement. In neighboring Durham County, AIG students are
identified by either the Woodcock Johnson III Achievement Battery or the Iowa Test of Basic Skills, in addition to aptitude assessment (Durham Public Schools 2010). The current available information does not lend itself to a thorough investigation of Orange County’s AIG identification practices, though further research may confirm or deny that identification practices have an impact on AIG student growth.

7. How do instructional methods, both for the general classroom and for the AIG program, impact AIG student growth?

The documented effectiveness of interventions for gifted underachievers has been inconsistent. While smaller student/teacher ratios and less conventional classroom environments may have positive short-term effects on student achievement, the long-term effects are less clear. Overall, when appropriate educational opportunities such as motivational teachers or stimulating curriculum are present, gifted underachievers tend to respond positively (Reiss 2000). Much of the research on gifted students finds that students grouped with academic peers outperform students placed in a general classroom, however it is important to remember that ability grouping on its own does little to promote gains in achievement. Gains are only seen when the groups experience differentiated content and pace of learning, either within a mixed-ability classroom or in an isolated setting. Site-specific research can help determine which instructional methods are being used for which students in Orange County to develop further recommendations for improvement.

8. How does teacher quality impact AIG student growth?

In regards to gifted education, the teacher-student relationship may be the most significant factor influencing achievement (Baker 1998). While the definition of teacher quality is a highly debated concept, there is no doubt that quality teachers have a strong impact on
students’ learning and achievement (Southworth 2010). Research shows that compared to other teacher qualifications, National Board Certification is one of the best measures of effectiveness (Goldhaber 2008). The number of National Board Certified teachers varies greatly in Orange County, showing little correlation to overall AIG student growth scores (see Appendix I). Teacher interviews will be a crucial component to assessing the quality of the teachers who teach AIG students in Orange County.

**Policy Recommendations**

Overall, the analysis with the initially provided data yielded minimal conclusions as to potential factors leading to high levels of negative EOG growth among AIG students in Orange County. One trend of note is the higher levels of negative growth among students identified in math than those in reading, which could be related to unknown influences such as teacher effectiveness or prior curricular experiences. While economic disadvantage does appear to have a slight impact on reading growth, this is largely not an issue the AIG program can address. The lack of correlation between class size, program size and growth suggests that what occurs in the classroom is more important than the size of the class, a conclusion supported by the literature. AIG identification practices, instructional methods, and teacher quality must be evaluated on a school-by-school, program-by-program basis, and cannot be examined via the data available at this time. Through the site visits and interviews, a more thorough assessment of the school-level factors affecting AIG achievement can be reached.
Works Cited


Appendices

Appendix A: Orange County AIG Students’ Growth Scores on 2010-2011 EOG Exam

Average Growth Scores of AIG Students in Orange County Schools

Average Growth Scores of AIG Students in Orange County Schools
Appendix B: Percentage of Orange County AIG Students Showing Negative Growth on 2010-2011 EOG Exam, by school and grade (marked for confidentiality)
Appendix C: Impact of School Size

**Negative Growth as a Function of School Size - Reading**

![Reading Growth Chart]

**Negative Growth as a Function of School Size - Math**

![Math Growth Chart]
Appendix D: Impact of Class Size

Orange County AIG Growth by Class Size
Appendix E: Impact of Program Size

![Graph: Negative Growth as a Function of Program Size - Reading](image1)

![Graph: Negative Growth as a Function of AIG Program Size - Math](image2)
Appendix F: AIG Program Growth vs. School-wide achievement on the EOG

Orange County AIG Growth versus School-Wide Achievement

Average AIG Student Growth Score on 2010-2011 EOG Exam

Percent of Students Performing At or Above Grade Level on the 2010-2011 EOG Exam

Reading
Math
Linear (Reading)
Linear (Math)
Appendix G: Impact of Economic Disadvantage

*More economically disadvantaged defined as having a higher percentage of economically disadvantaged students, as indicated by the number of ED-identified students taking the 2010-2011 ABC End-of-Grade test

*Less economically disadvantaged defined as having a lower percentage of economically disadvantaged students compared to the other schools studied (elementary and middle combined)

Average Percentage of AIG Students Showing Negative Growth in Schools of More and Less Economic Disadvantage – Reading

### More ED

- % Negative: 32%
- % Positive: 68%

### Less ED

- % Negative: 22%
- % Positive: 78%
Average Percentage of AIG Students Showing Negative Growth in Schools of More and Less Economic Disadvantage – Math

More ED

- 70% Positive
- 30% Negative

Less ED

- 69% Positive
- 31% Negative
Appendix H: Impact of Economic Disadvantage on Teacher Turnover

Impact of ED on Teacher Turnover

Number of Economically Disadvantaged Students taking the 2010-2011 EOG

2010-2011 Teacher Turnover Rate
Best Practices for Implementing a 1:1 Laptop Program

by Chris Gierl
April 2012

Executive Summary In August 2012 Orange County Public Schools will be joining an increasing number of school districts that have adopted a 1:1 laptop program in order to improve student outcomes. A review of the literature reveals that some, but not all, 1:1 laptop programs have improved student outcomes. Variation in outcomes is largely attributable to how the programs are implemented. Key components of this implementation should include a high-quality professional development program, adequate technological infrastructure and support, and leadership in attaining stakeholder buy-in for the program.

Background: Orange County Public Schools to start a one-to-one laptop program A 1:1 laptop program alters the school environment by having every individual student possess and use a laptop. Such programs have been around for over a decade, but adoption of such programs has ramped up, and 1:1 programs are generally viewed in a favorable light as a research has documented a general trend of improving educational outcomes (Holcomb 2009). There are now six states with one-to-one laptop programs as well as over 30 districts throughout the country. Orange County Public Schools in North Carolina began program implementation in April 2012 when 6th-12th grade teachers received their laptops and plans for professional development. In August of this same year
all 6th-12th graders will receive their laptops. The following year, 4th-5th grade teachers and students will go through this same process.

**Implementation plays a large role in the success of a one-to-one laptop program**

There is a gap between the research on effective one-to-one laptop programs and schools having successful 1:1 laptop programs. Implementation is the key in connecting the “science” to the “service.” If a good program is implemented poorly the expected positive outcomes may not be realized. Implementation is important for determining whether the staff are fully prepared, whether the technological and support infrastructure is sufficient, and whether there is adequate buy-in of administrative, teacher, parent, and student stakeholders.

A review of the scientific literature and interviews with three directors of technology of North Carolina districts provided guidance on how to implement a successful, sustainable one-to-one laptop programs. For the implementation of Orange County Public School’s one-to-one laptop program, the core implementation components are the professional development program for teachers, the technical and support infrastructure for the teachers, and attaining stakeholder buy-in for the one-to-one laptop program.

**Recommendations for Orange County Public Schools**

The following recommendations are based on results from the literature review and interviews with directors of technology.

- **Possess a high-quality, ongoing professional development program:** Sam Morris said that professional development “is the most important money that [districts] will spend in
the process [of implementing 1:1 laptop programs].” Successful implementation hinges on the execution of the teaching staff, so the professional development of the teachers is a core component of implementation. The professional development should consist of training throughout the summer and school year that provides adaptive and continual development for teachers. Knowing how to the technology is important, but the training should focus more on the pedagogical shifts that realize the full potential of the laptops. Non-punitive evaluations should provide constructive feedback for teachers as well as collect data to improve the professional development program. Professional development should be enhanced through the use of teacher leaders and collaborative communities. “The most effective professional development is job-embedded, student-centered, collegial, ongoing, and metacognitive” (Holcomb 2009).

- **Institute an adequate technical infrastructure and support system:** Reliable technical infrastructure and readily available technical support are crucial keys in implementing 1:1 laptop programs (Penuel 2006). Without adequate electrical supplies, network access points, and internet bandwidth, teachers are unable to fully realize the potential of the laptops. Pilot programs are an excellent means of determining what is adequate. Technological support for teachers should be localized at the school level, and managed at the district level in order to provide just-in-time assistance. Districts should maintain close relationships with external organizations such as laptop vendors in order to best leverage their resources.

- **Develop stakeholder buy-in through supportive leadership and culture:** Sam Morris said, “It all depends on leadership.” School administration should guide the implementation of a 1:1 laptop program by focusing on improving student achievement and selling
stakeholders on the potential of the program. The administration needs to be inclusive and supportive of key stakeholders, especially teachers. Policies that include teachers in decision making, alignment of program objectives, pedagogical practices, and teacher expectations in evaluations, and dispersing leadership through the use of teacher leaders and collaborative learning communities help create a supportive, innovative culture. A 1:1 laptop program with such an environment, high-reaching standards and objectives, and provides adequate support removes many of the highest barriers to technology integration (Ertmer, Ottenbreit-Leftwich et al. 2012) and will see higher rates of user acceptance and usage behavior (Venkatesh, Morris et al. 2003)

**Conclusion**

It is not enough to copy a successful one-to-one laptop program. In order to improve student achievement, successful implementation combining multiple implementation components, which includes excellent professional development, technical infrastructure and support, and community buy-in, is crucial.

**References**


Introduction

Durham Public Schools [DPS] is considering providing education in single-gender classrooms and/or schools as a way to improve academic achievement and social adjustment. Gender-based education is particularly relevant to students who are transitioning from middle to high school. This transition is frequently accompanied by a learning loss that is attributed to both academic and social factors (Smith, 2006). Concerns about gender equity in coeducational environments also necessitate an exploration gender-based education. If separating males and females can reduce this academic learning loss, gender-based education should be considered as an alternative to traditional coeducation. This brief will examine the existing literature and explain the constraints that may limit success if DPS implements single-gender classrooms and/or schools for middle and high school students. It was written in conjunction with a longer research paper, which is available upon request.

Context and importance of gender-based education

Coeducational classrooms contain potential hurdles to student achievement. As compared to females in all-girl environments, female students in coed classrooms and/or schools report higher levels of sexual temptation, preoccupation with physical appearance, and harsh criticism from peers about their various behaviors, coupled with a lower sense of global self-worth (Shah & Conchar, 2009). Additionally, in the coeducational environment, friendships between females are often threatened by competition for male attention, and female students experience higher rates
of sexual harassment (Mael, 1998). Both males and female students also suffer from teacher-transmitted stereotypes; female students must often choose between popularity and mathematical interests, as such pursuits are traditionally viewed as “masculine,” whereas male students are often disciplined at a rate disproportionately high to that of female students, especially when the teacher is female (Glasser, 2011). Gender-based education has gained popularity in the public school realm as a way to ameliorate these issues.

**Policy Recommendations for DPS**

Based on existing research of single-gender education, there are policy recommendations for DPS to employ if a decision to implement single-gender education is made. They are as follows:

1. *Clearly define measurable district goals in adopting gender-based schooling*

   - The effects of gender-based education often differ between male and female students. Schools using gender-based education have often experienced an increased enrollment of male but especially female students in math and science courses, improved performance of female students on mathematic tasks, and increased participation of male students in activities traditionally deemed “feminine” such as theater, drama, and music (Hughes, 2006), (Mael, 1998).

   Research also suggests gender-based education is most impactful among racial and ethnic minorities of low socioeconomic status, economically disadvantaged females, and individuals who fall into more than one of these categories (Shah & Conchar, 2009). Similarly, male students without positive male role models (generally from disadvantaged backgrounds) typically perform poorly in coeducational classrooms, especially with female teachers, but experience greater
academic success in single-sex classrooms with male teachers (Mael, 1998). This information should be applied to predict if a specific goal for DPS can be met. For instance, if the achievement of African-American males is of particular concern to DPS, gender-based schooling is likely a good choice for that cohort of students, but may or may not be logical to implement at a district-wide level.

2. **Assess community support for single-gender education**

   o Gender-based schooling must be voluntary. DPS should therefore evaluate the existing demand for gender-based schooling to appropriately plan staffing assignments, classroom configurations, etc. Additionally, DPS should assess support for a single-gender program on a broader level, to determine the potential resources available at its disposal. Many successful single-gender models benefit from significant extra funding from school districts or outside research grants, which may skew the positive results such models report (Halpern et al, 2011). A local example of the is the Middle College at North Carolina A&T State University, a boys’ school that has been successful in boosting performance on end-of-course tests as well as increasing attendance and retention rates. It is worth noting, though, that this school received funding from the North Carolina New Schools Project, and its students enjoy unconventional- and costly- rewards for achievement such as movie passes, nature trips, social outings, etc. (Hines, personal communication, March 27, 2012). In fact, the academy costs about $14,000 per student, approximately twice as much as the per-pupil expenditure for an average Guilford County high school (Goldsmith & Hui, 2011). Whether this school would be as successful without extra financial resources is
an important question for DPS to ask, and the resources at DPS’s disposal should be
evaluated before instating gender-based education.

3. **After assessment, create a school choice plan to determine how single-gender**
classes/schools will be filled

   o DPS should conduct research of similar districts that currently use public-school
   choice policies to learn best practices in order to avoid the potentially precarious
   situation of schools and/or classrooms with highly unequal student distributions of
   race, gender, and/or socioeconomic status. This is a plausible outcome, given the
   specific student demographics most benefited by single-gender education.

4. **Train teachers in gender-equitable practices**

   o Single-gender education may actually reinforce stereotypes and restrict student
   potential when teachers introduce their own preconceived notions of gender into the
   classroom. Research shows that teachers in girls’ schools often encourage dependent
   behaviors such as seeking unnecessary and frequent affirmation in the classroom, a
   problem that did not appear in the boys’ schools studied, and which rarely appeared
   in the coeducational schools studied (Lee, et. al, 1994). Similarly, male teachers tend
   to encourage aggression and disrespectful attitudes towards women in their all-male
   classrooms; one study described the atmosphere in such classes as having a “good old
   boy” and “clubby” feel (Lee, et al, 1994, p. 106). Indeed, the American Association
   of University Women, initially a strong proponent of gender-based education, later
   withdrew support on the basis that single-gender schooling could lead to separate and
unequal curricula (Spielhagen 2011). Therefore, teachers must be taught how to treat their students equally, and not promote stereotypical notions of gender. This teacher training will likely require district funds.

5. Explore alternate solutions

- The strengthened student-teacher bonds that often accompany gender-based schooling are extremely influential in determining student success. For example, in one study of low-income, minority students in a single-gender condition in which female students showed both academic and social improvements, researchers concluded that the main reason for the documented improvement was not the separation of boys and girls; rather, it was the relationships students formed with their teachers that improved the overall school experience. For instance, whereas girls often felt uncomfortable discussing matters such as teen pregnancy and sexual peer pressure with teachers in a coeducational school, they felt freer to do so in an all-girls’ setting (Hubbard & Datnow, 2005). The Middle College at North Carolina A&T State University again provides a local exemplification of this principle. Principal Eric Hines cites the strong relationships his staff works to form with their students as a critical element that creates the boys’ positive attitudes towards school and perception of school as a fun place where they enjoy spending time (Hines, personal communication, March 27, 2012). There may be ways to facilitate such bonding in a manner that is less costly and complicated than gender-based schooling. Options such as a single-gender, after-school mentoring program or discussion forum might be worth looking into.
Sources consulted


Executive Summary

The Durham Public School (DPS) district currently has Freshman Academies in four of its traditional high schools: Jordan, Northern, Hillside, and Southern. These academies are designed to bridge the transition from middle school to high school, a critical transition point in a student’s academic development. Currently, significant variation exists in the structure and implementation of the four Freshman Academies within Durham. This memo will present:

- The key components identified in the research as integral to Freshman Academy success.
- Ways in which Durham’s Freshman Academies align with these key components.
- A Freshman Academy Rating Scale that can guide future evaluations of Freshman Academies.

Four recommendations to improve the Freshman Academies in Durham Public Schools are also presented:

- Identify the primary outcome goal of each Freshman Academy and evaluation metrics that will be used to evaluate this goal.
- Implement and/or improve common planning time for teacher collaboration.
- Create a physical presence for the Academy within the school building.
- Improve Freshman Academy Professional Development.

Research-Identified Key Components

Significant variation in structure and implementation exists across Freshman Academies both throughout the country and within Durham. However, research and program evaluations have identified several key components found in successful Freshman Academies. These key components, along with the research-based critical levels identified in the literature, are presented in Table 1 below.

Table 1. Research-Identified Key Components and Critical Levels

<table>
<thead>
<tr>
<th>Key Component</th>
<th>Critical Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher common planning time</td>
<td>More than 1x per week for more than 40 minutes</td>
</tr>
</tbody>
</table>
Teacher/Student Ratio  Less than 25:1  
Students per teacher team  Less than 140  
Team continuity  Teachers have worked more than 3 years within academy  
Separate Identity  Floor/wing within school  
Decision-making  Academy decisions made autonomously within academy  
Teacher selection  Teachers self-select to teach within program  
Strong school leadership  Administrator and counselor assigned to academy  
Professional Development  Academy-specific, focus on curriculum  

**Evaluating DPS Freshman Academies Using Key Components**

I evaluated the Freshman Academies within DPS along the nine key components identified above. To do this, I conducted a structured interview with the Freshman Academy guidance counselor at each school. In addition, I utilized a survey of teachers at Jordan and Northern High Schools to assess teaching teams, autonomy in decision-making, school leadership, and professional development. The full results are summarized in a comparison chart in Appendix 1. Following US Department of Education criteria, high implementing schools must use teaching teams, common planning time, and have a separate identity. Moderate implementing schools meet two of these criteria, while low implementing schools meet one or less of these criteria. A summary “implementation level” score for each school is presented in Table 2. Note that Table 2 simply identifies whether or not a given component is present within the school’s Freshman Academy and does not evaluate the quality of that component.

**Table 2. Implementation Levels of DPS Freshman Academies**

<table>
<thead>
<tr>
<th>School</th>
<th>Year Implemented</th>
<th>Teaching Teams</th>
<th>Common Planning Time</th>
<th>Separate Identity</th>
<th>Implementation Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jordan</td>
<td>2004</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>High</td>
</tr>
<tr>
<td>Northern</td>
<td>2006</td>
<td>X</td>
<td></td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Hillside</td>
<td>2011</td>
<td></td>
<td></td>
<td></td>
<td>Low</td>
</tr>
</tbody>
</table>

**Freshman Academy Rating Scale**

In addition, I created the Freshman Academy Rating Scale that can guide further evaluation and improvements in Durham’s Freshman Academies. The rating scale evaluates 16 components within five categories:

- Program Goals and Outcome Measures
- Effective use of teacher teams
- Autonomy in decision making
- Strong school leadership
- Professional Development

Each component is assessed as “low”, “medium”, or “high” implementation, with a clear rubric defining the minimum criteria. The full rating scale can be found in Appendix 2.
Recommendations to Improve Durham's Freshman Academies

Based on the results of the literature review, structured interviews with guidance counselors, and the teacher survey, I have four recommendations to improve the Freshman Academies within Durham Public Schools.

1) Each school should clearly define its primary outcome goal for the Freshman Academy and use this goal in planning and improving the academy. Schools then must identify evaluation metrics that match the primary outcome goal and must collect, analyze, and disseminate this information to all stakeholders.

2) Each school should ensure, at a minimum, a weekly common planning period for teachers during the regular school day. This planning period is best used if dedicated to teacher collaboration. Results of the teacher survey revealed identified the importance of the planning time but felt that it was interrupted with too many administrative tasks and meetings.

3) Strengthen the quality of the professional development for academy teachers. Teachers indicate that they are receiving professional development, but many were not confident that this training improved the Freshman Academy. Several teachers commented that more curricular-focused training as well as more “grassroots” training would be useful. One recommendation is the use of “lesson study” that may fit well into the collaboration inherent among Freshman Academy teachers. This type of professional development involves groups of teachers drafting lessons on sample topics, and then one teacher presents the lesson to the group. The group then debriefs and the lesson is modified and presented again. This type of professional development focuses on content and pedagogy while also increasing teacher collaboration.

4) One school – Northern High School – does not have a separate location for the academy within the school. The other academies occupy either a wing or a floor of the building. A review of the research literature indicates that the separate location is the primary mechanism through which the school becomes physically “smaller” for the students. This aids in teacher collaboration and improves contact between freshman teachers and students. However, this recommendation is resource-intensive and requires balancing a trade-off between giving more resources to the Freshman Academy and taking resources away from other uses within the school.

Conclusion
Freshman Academies are an innovative approach to challenges with the transition to high school. While variation does exist between Durham’s four Freshman Academies, all are designed to bridge the gap between middle school and high school. The results of this study can help improve the policies and practices of the Freshman Academies within Durham Public Schools.

### Appendix 1
**Comparison of Freshman Academies within Durham Public Schools**

<table>
<thead>
<tr>
<th></th>
<th>Jordan</th>
<th>Northern</th>
<th>Hillside</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Outcome Goal</strong></td>
<td>Reduce freshman retention rate</td>
<td>Decrease dropout rate, improve attendance, reduce suspensions</td>
<td>Improve graduation rate, reduce 9th grade retention</td>
</tr>
<tr>
<td><strong>Evaluation Metrics</strong></td>
<td>Student and parent surveys, freshman retention rate, other student data</td>
<td>Attendance and dropout data, number of suspensions, student test scores</td>
<td>Student surveys, attendance data, test scores, 10th grade promotion rates</td>
</tr>
<tr>
<td><strong>Eligible Students</strong></td>
<td>All freshmen</td>
<td>All freshmen</td>
<td>Approximately ½ of Freshman Class</td>
</tr>
<tr>
<td><strong>Scheduling</strong></td>
<td>“AB” Block Schedule</td>
<td>“AB” Block Schedule</td>
<td>“AB” Block Schedule</td>
</tr>
<tr>
<td><strong>Classes Taught within the Academy</strong></td>
<td>English, History, Honors Biology, Earth Science, Health/PE, Freshman Focus</td>
<td>High School Seminar, 30 min of sustained silent reading daily</td>
<td>Freshman Focus/Health/PE, Algebra 1, English 1, World History, Earth Science, Remedial “bridge” courses</td>
</tr>
<tr>
<td><strong>Students per Team</strong></td>
<td>100-120 students per team</td>
<td>No teams</td>
<td>No teams</td>
</tr>
<tr>
<td><strong>Class size</strong></td>
<td>25-30 students</td>
<td>&lt;25</td>
<td>Up to 30:1, Freshman Focus limited to 20:1</td>
</tr>
<tr>
<td><strong>Teacher Selection</strong></td>
<td>Hired to teach within Academy.</td>
<td>Teacher self-selection to teach HS Seminar course</td>
<td>Most teachers hired to teach within Academy</td>
</tr>
<tr>
<td><strong>Parental Participation</strong></td>
<td>Freshmen parent night, encourage parent-teacher conferences</td>
<td>Freshmen Orientation, bi-monthly progress reports, emphasis on parent-teacher conferences</td>
<td>Monthly parent night, newsletter, phone calls</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-------------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td><strong>Common Planning Time for Teachers</strong></td>
<td>Daily team common planning time</td>
<td>Weekly common planning time after regular school hours.</td>
<td>No</td>
</tr>
<tr>
<td><strong>Professional Development</strong></td>
<td>Yearly Freshman Academy retreat, quarterly staff meetings, additional professional development throughout the year</td>
<td>Teacher meetings, professional development throughout the year</td>
<td>Weekly PLC meeting, additional professional development throughout year</td>
</tr>
<tr>
<td><strong>Freshman Academy Decision-Making</strong></td>
<td>Principal, Leadership team consisting of 4 team leaders, 2 counselors, and an assistant principal</td>
<td>Freshman Academy committee consisting of principal, assistant principal, guidance counselor, and 9th grade teachers</td>
<td>Weekly leadership meetings (2 administrators and counselor)</td>
</tr>
<tr>
<td><strong>Separate Location within School</strong></td>
<td>Separate wing</td>
<td>No separate location</td>
<td>Separate wing</td>
</tr>
</tbody>
</table>
Appendix 2
Freshman Academy Rating Scale

### Category 1: Program Goals and Outcome Measures

<table>
<thead>
<tr>
<th></th>
<th>Low Implementation</th>
<th>Medium Implementation</th>
<th>High Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman Academy has clearly defined outcome goal(s).</td>
<td>There is no statement of the primary student outcome goal(s) of the Freshman Academy.</td>
<td>Student outcome goal(s) have been specified, but could be improved by adding or reducing the number of goals. The goals could be better connected to the activities/structure of the Freshman Academy.</td>
<td>Student outcome goal(s) are clearly specified, are specific and measureable, and are used consistently within the Freshman Academy.</td>
</tr>
<tr>
<td>Appropriate metrics are identified, tracked, and reported to measure outcome goals.</td>
<td>No metrics are aligned to measure the outcome goal(s) of the Freshman Academy or the metrics chosen do not accurately measure the outcome goal, but the results or not</td>
<td>Metrics aligned to the outcome goal(s) are clearly identified and accurately measure the outcome goal, but the results or not</td>
<td>Metrics aligned to the outcome goal(s) are tracked and reported annually.</td>
</tr>
</tbody>
</table>
measure the defined outcome goal(s).

### Category 2: Effective Use of Teaching Teams

<table>
<thead>
<tr>
<th>Students per team</th>
<th>Over 200 students are assigned to one Freshman Academy team or students are not divided into teams.</th>
<th>Over 140 students are assigned to one Freshman Academy team.</th>
<th>Less than 140 students are assigned to one Freshman Academy team.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom Time Spent within Team</td>
<td>Students spend 1 period or less with Freshman Academy team.</td>
<td>Students spend less than half a day with the Freshman Academy team.</td>
<td>Students spend at least half a day with the Freshman Academy team.</td>
</tr>
<tr>
<td>Common Planning Time</td>
<td>Teachers have no common planning time.</td>
<td>Teachers have common planning time less than 60 minutes during the regular school week or common planning time outside of regular school hours.</td>
<td>Teachers have 60 minutes or more or common planning time during the regular school week.</td>
</tr>
<tr>
<td>Selection of Teachers</td>
<td>Teachers are assigned to the Freshman Academy.</td>
<td>Some teachers self-select to teach within the Freshman Academy while others are assigned.</td>
<td>All teachers self-select to teach within the Freshman Academy.</td>
</tr>
<tr>
<td>Team Continuity</td>
<td>Less than 50% of Freshman Academy teachers have been teaching for 3 years or longer in the Academy.</td>
<td>Between 50%-75% of Freshman Academy teachers have been teaching for 3 years or longer in the Academy.</td>
<td>More than 75% of Freshman Academy teachers have been teaching for 3 years or longer in the Academy.</td>
</tr>
<tr>
<td>Collaboration with Parents.</td>
<td>Teacher teams make no additional effort to collaborate with parents.</td>
<td>Teacher teams have additional communication with parents through team updates and more frequent student progress reports.</td>
<td>Teacher teams have additional communication through team updates, more frequent student progress reports, and through team meetings with individual parents.</td>
</tr>
</tbody>
</table>
### Category 3: Autonomy in Decision-Making

<table>
<thead>
<tr>
<th>Separate Identity</th>
<th>The Freshman Academy has no separate location (wing, floor, or cluster of classrooms) within the school.</th>
<th>Some, but not all, of the Freshman Academy has a separate location (wing, floor, or cluster of classrooms).</th>
<th>The Freshman Academy has a separate location within the school, including science labs and cafeterias.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers have decision-making power.</td>
<td>All decisions regarding the Freshman Academy are made by school or district administrators.</td>
<td>Teachers or a committee of teachers make some policy decisions with final approval from school or district administrators.</td>
<td>Teachers or a committee of teachers make most or all important decisions regarding the Freshman Academy.</td>
</tr>
<tr>
<td>Teacher's use a variety of data to make decisions.</td>
<td>Teachers do not base decisions off student data or teachers do not have access to this data.</td>
<td>Teachers use student achievement and attendance data to make decisions.</td>
<td>Teachers use a variety of data including but not limited to grades and test scores, student work, attendance, and demographic data to make decisions.</td>
</tr>
</tbody>
</table>

### Category 4: Strong School Leadership

<table>
<thead>
<tr>
<th>School Administration supports the Freshman Academy.</th>
<th>School-wide staff planning and development does not specifically address Freshman Academy.</th>
<th>School-wide staff planning and development directs resources to the Freshman Academy.</th>
<th>School-wide staff planning and development resources are allocated to SLCs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Administrator works within the Freshman Academy.</td>
<td>No school administrator is assigned to the Freshman Academy.</td>
<td>A school administrator is assigned to the Freshman Academy but has other responsibilities.</td>
<td>A school administrator is assigned with sole responsibility to the Freshman Academy.</td>
</tr>
<tr>
<td>Guidance Counselor(s) work within the Freshman Academy.</td>
<td>No guidance counselor(s) are assigned to the Freshman Academy.</td>
<td>Guidance counselor(s) are assigned to the Freshman Academy</td>
<td>Guidance counselor(s) are assigned with sole responsibility to the Freshman Academy.</td>
</tr>
<tr>
<td><strong>Category 5: Professional Development</strong></td>
<td><strong>Academy.</strong></td>
<td><strong>but have other responsibilities.</strong></td>
<td><strong>Freshman Academy</strong></td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-------------</td>
<td>-----------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td><strong>Professional Development specific to the Freshman Academy is provided.</strong></td>
<td>No professional development specific to the Freshman Academy is provided.</td>
<td>Professional development specific to the Freshman Academy is provided. Focus is on structural organization of the Academy.</td>
<td>Professional development specific to the Freshman Academy is provided. Focus is on both the structural organization of the Academy and curricular matters.</td>
</tr>
<tr>
<td><strong>Professional development is guided by Freshman Academy teachers.</strong></td>
<td>Freshman Academy teachers attend professional development organized by school or district administrators.</td>
<td>Freshman Academy teachers attend professional development organized by school or district administrators, with input on content from the teachers.</td>
<td>Freshman Academy teachers plan and formulate a variety of professional development opportunities, including both internal planning and collaboration and external training.</td>
</tr>
</tbody>
</table>
In 2006, 28% of new Durham Public Schools teachers left after their first year and 42% of DPS teachers left after their second year (New Teacher Center, 3). This high rate of beginning teacher attrition caught the attention of DPS leaders. During the 2005/2006 school year, DPS became the first school in North Carolina to implement the New Teacher Center model of teacher mentoring. Under this model, about 30 full-time mentors worked with up to 15 novice teachers while receiving extensive training in mentoring strategies. Because of budget constraints, this model of mentoring experienced significant cuts. In 2009, the number of full-time new teacher mentors was cut from 14 to 8. The program was further cut in the 2011-2012 school year. Currently, Durham Public Schools is unable to grant mentors full release time. The New Teacher Center model has effectively been eliminated due to lack of funding. This elimination requires examination of how mentoring impacts new teachers. Policy makers must also look for new ways to facilitate mentoring, given limited resources.

Mentors provide emotional and professional support for new teachers. Keeping new teachers in the classroom allows them to become more effective and this positively impacts their students’ learning. Even though the legislature has eliminated funding for mentors, this should not end mentoring. Mentors can continue to guide new teachers in Durham Public Schools, but they may work in a more informal capacity. Durham Public Schools should foster positive relationships between mentors and mentees. They should focus on clear communication between the central office, mentors, and mentees, and, perhaps, provide time during the school day for mentoring.
Context and Importance of the Problem

The main problem is that new teachers in Durham Public Schools do not receive the same type and amount of mentoring as they did before the budget cuts. Mentor teachers and mentees have full class schedules that leave little time for formal meetings. New teachers are stretched in many different directions, and mentoring meetings are often forced to the bottom of a long to-do list. With fewer resources, the quality and effectiveness of the mentoring has even greater importance.

Effective mentoring can positively impact a new teacher’s experience in several ways.

- Provide emotional support for new teachers
- Improve professional practices including lesson planning and curriculum development
- Improve classroom management
- Help a teacher adapt to the culture and operations of the school
- Improve teacher retention
- Improve teacher satisfaction with the profession

Range of Policy Options

Not all new teacher mentoring programs have the same structure and guidelines. Although most states require that new teachers receive a designated veteran teacher as a mentor, enforcing this requirement remains difficult. In some cases, mentors have full release time, a reasonable number of mentees, and regularly scheduled meetings. More often, mentors and mentees have an informal relationship consisting of hallway check-ins and lunch meetings. Specific mentoring formats might include:
- University partnerships
- Electronic mentoring
- Professional learning communities
- Full-release time mentors
- Informal, self-regulated mentoring

The mentoring options listed above represent a sample of options cited in the literature. University Partnerships can lower the costs of mentoring by utilizing volunteer veteran teachers. These volunteers are usually alumni from the partner university who desire to guide new teachers. Because this program operates on a volunteer basis, mentors usually see this as a personal investment of their time and care about the process.

Electronic mentoring often supplements a face-to-face mentoring program. The benefit of electronic mentoring is that time and location are more flexible. Teachers and mentors have the opportunity to post on an online discussion board. This allows for the entire group to benefit from the questions, responses, and reflections. Also, teachers may feel more comfortable expressing themselves from a distance rather than in person.

Professional learning communities also often supplement one-on-one mentoring. A Professional Learning Community (PLC) develops with the goals of engaging students and improving the school culture. The PLC selects mentors and assigns them to teachers, clearly stating the roles for mentors, new teachers, and PLC members. PLC members facilitate new teacher-mentor meetings and engage in peer coaching. The school principal, an integral part of the PLC, creates an open dialogue between mentors and mentees and encourages reflection on the teaching and mentoring experience.
Full release time mentors are veteran teachers who mentor a group of beginning teachers rather than teach in the classroom. They receive extensive professional development training and training in mentoring. During the 2005-2006 school year, DPS granted about 30 veteran teachers full release time to mentor. When mentors do not have the obligations associated with a regular classroom schedule, they can devote all of their time to mentoring. This provides more time for observation and formal mentoring practices such as conducting long, pre-planned meetings. Although full-release mentoring provides more time for mentors, it is difficult to facilitate matches in content area and/or grade level. Also, the full-release mentor usually comes to the school for part of the day. Because the mentor does not work in the school full time, he/she might not get to know the school or create an informal relationship with his/her mentees.

Informal, self-regulated mentoring lies on the opposite end of the spectrum from full-release time mentoring. Informal mentor-mentee relationships usually develop organically through repeated contact in the school and during teacher meetings. The mentor volunteers his/her time to mentor a beginning teacher. Because the mentor does not have a lighter class schedule, finding time to meet is often the biggest challenge. Mentors and mentees often exchange brief “check-ins” in the hallway and meet during lunch to reflect on the school day. Currently, DPS beginning teachers participate in this type of mentoring. Beginning teachers who were interviewed acknowledged that the most challenging aspect associated with mentoring is finding time to meet and conduct observations. However, the teachers interviewed expressed satisfaction with their mentors. Under this model, mentors and mentees often become friends. Informal mentoring provides beginning teachers with emotional support along with professional and content development.
Policy Recommendations

Ideally, DPS administrators would have more money allocated to mentoring first year teachers. However, an increased budget and release time for mentors does not guarantee an effective program. Based on the literature, the teacher working conditions survey, and findings from teacher interviews I recommend the following mentoring requirements and policies for consideration by Durham Public Schools.

- Allow mentors and mentees to form a relationship based on a mutual process
- Provide time during the school day for mentoring, perhaps
- If possible, create a voluntary online discussion-board for mentors and beginning teachers to discuss teaching practices and strategies.
- Match new teachers with mentors who teach the same content area whenever possible
- Clarify the accountability requirements for the district (online logs, meeting requirements, etc.) so that both mentors and mentees are fully informed about the expectations for record keeping

Research has found that mentoring, when done correctly, can make a difference in whether a teacher decides to continue teaching at the same school. About 80% of teachers in Durham Public Schools reported that they believed that mentoring impacted their students’ learning. Policy makers must find a way to facilitate effective and extensive mentoring given current budget restraints. Administrators should aim to create a matching process that leads to positive relationships between mentors and mentees. A positive mentor-mentee relationship will lead to more frequent and higher quality collaboration, check-ins, and emotional support. Aiming to match mentors and mentees who teach the same grade level and content area will also maximize mentoring effectiveness. Unfortunately, education policy makers cannot create more
hours in the day for mentoring and professional development, but they can ensure that mentors and mentees benefit from the process.
At the request of Bud Lavery, the Executive Director of Communities in Schools of Durham, I have researched best practices to reduce the amount of mathematics knowledge that students lose during the summer months. After a comprehensive survey of the literature on the topic, I recommend that Communities in Schools of Durham proceed with a mathematics summer program for elementary school children. Low-income children in Durham will benefit from a summer mathematics program. A program will get at-risk children caught up with the rest of the students in the class and therefore set them up for a successful following school year.

**Summer programs can effectively prevent knowledge loss**

The months lost in schooling over the summer are one of the most important factors of underachievement in schools in the United States. On average, children scored at least one month lower on achievement tests when they returned to school in the fall than they did when they left school in the spring, and two months of math skills. Although much attention is paid to creating summer reading programs for children over the summer, there are few summer math programs.

However, summer loss in more pronounced for math than for reading because children’s home environments provide more opportunities for them to practice reading skills over the summer than to practice math skills. Because students do not encounter math in their daily lives over the summer like they encounter words and reading, the need for a summer math program is especially important.

**Remedial summer programs can help at-risk children catch up over the summer**
Properly created summer programs can be very effective at reducing the amount of knowledge lost over summer and preparing students for the next school year. There are two types of summer programs:

- **Remedial summer programs** are designed to help the low-achieving students catch up to their peers over the summer.
- **Accelerated programs** allow high-achieving students to enrich their educational experience.

Although both types of programs can be successful, this policy brief will focus on remedial summer programs. Remedial summer programs have a positive effect on students’ achievement for both middle-class and economically disadvantaged students. Although the positive effects of summer programs are greater for middle-class students than for low-income students, summer programs targeted at disadvantaged students can help close the achievement gap.

Existing summer math programs have been very successful

Although there are many reading summer programs, there are not many summer programs for math. Some existing summer programs were specifically created for math while others focus on a wide range of skills and subjects, including math.

- **AIM High** is a California-based program for middle school students with small classes that prepare students for the following year. The program stresses collaborative work and hands-on projects. Pre-program and post-program surveys show improved student confidence and motivation.
- **Summer Extravaganza** is a project-based science, math, and technology program where students are paired with a mentor to explore actual, real-world issues. Pre-
program and post-program data indicate an increase in participants’ grades the following year.

- **Redhound Enrichment** is a summer program for students in kindergarten through 6th grade. Participants enjoy a camp-like setting where they incorporate math, reading, science, social studies, and humanities with outdoor learning. 55% of students’ math grades increased by at least one letter grade. A key to the program is early planning.

- **GO Summer** helps struggling elementary school students succeed throughout elementary school and guarantees successful placement in middle school. In the morning, the students work on intensive math, reading, and writing. Students enjoy enrichment classes in the afternoon. Pre- and post-program test results indicate that 50% of students experienced no summer learning loss.

- **Horizons Student Enrichment Program** is an academic, cultural, and recreational program for students in grades 1 through nine. Two-thirds of the students are below grade-level; one-third is at/above grade-level. An evaluation indicates a 10-month improvement in math skills for below grade level students.

- **Oasis Summer Programs** work on both academic skills and social skills and confidence for students of all ages. In each classroom there are 15 students, two group leaders, and an experienced instructor. An evaluation found that students scored at/above expectancy of Mathematics Standardized tests, an 8.4% increase.

- **Hamilton County Virtual School** is a 4-week completely computer based program for 225 elementary and middle school students in Tennessee. They use software from Compass Learning to create customized courses for each student. The
The coordinator of the school believes that the personalized learning experience improves students’ academic achievement.

- **Summer Advantage USA** uses different software, TenMarks, which is an online mathematics program. In the morning, participants work on math and literacy for three hours and in the afternoon, students take physical education, music, and art classes. On Fridays, students go on field trips or hear from guest lectures.

- **The Lorna Verde Elementary School** did a trial run of TenMarks math software. 60 students who were identified for math remediation participated in the twelve-week program. TenMarks claims that 82% of the participants’ math skills improved.

Instructional process and Computer-Assisted Instruction programs are very effective

Because there are not many summer math programs, in order to learn the characteristics of effective math programs, it is helpful to look at successful year-round programs. A comprehensive overview of elementary mathematics programs identified common reform strategies in improving mathematics achievement, including:

- **Mathematics curricula**: Change the curriculum.
  - This strategy did not have positive effects.

- **Computer-assisted instruction (CAI)**: Add a computer-based component to regular instruction.
  - This strategy has positive effects.

- **Instructional process**: Focus on teachers’ instructional practices and classroom management strategies.
  - This strategy has very positive effects.
This research indicates that the best way to improve elementary math achievement is to change the way teachers and students interact in the classroom. Teachers who use time effectively, keep children engaged, give children opportunities and incentives to help each other learn, and motivate students to want to learn math produce the best results for their students. Including a computer-based component to classroom instruction is also an effective way to improve achievement. Although the study did not look into programs that combine CAI and instructional process approaches, it predicts that there will be very large positive effects. I recommend that a summer math program focuses on teacher and student interaction and has a computer component.

**Characteristics of Effective Summer Programs**

There are many common characteristics of the effective summer programs mentioned earlier and in the school-year programs. Research suggests that effective summer programs should:

- Involve parents
- Contain substantial academic components
- Coordinate summer learning experiences with school-year experiences
- Be aligned with statewide standards
- Begin at a young age
- Provide small-group or individual instruction
- Have a strict program plan created purposely to achieve program goals
- Have qualified staff
- Forge strong relationships with schools
- Create linkages to outside groups in the community
• Incorporate fun activities like field trips and hands-on learning experiences

Policy Recommendations

Communities for Schools in Durham should create a summer math program for elementary school children. An instructional process approach with a CAI component is likely to be very effective. Instructional practice strategies focus on improving student-teacher relations. A summer program will also benefit teachers because they will gain experience and learn better ways to interact with students in the classroom. Summer programs should have small groups and encourage interactive and hands-on learning. These techniques, coupled with a CAI component will most likely have very positive effects. Therefore, I recommend that you create a summer program with a computer-based learning component that embodies the characteristics of effective summer programs mentioned throughout this policy brief.
To: Dr. Kristin Bell  
From: Nicole Schollmeyer  
Date: May 2, 2012  
Re: Developing Best Practices for Durham’s Exceptional Children’s Programs

**Executive Summary:** In an effort to improve the academic outcomes of students with special needs in Durham’s Exceptional Children’s Program, a review of national research and a case study of Durham Public Schools have been conducted. Based on findings from national best practices and a survey conducted with DPS staff, recommendations for future improvements include increased professional development, data-based decision-making, progress monitoring, and clearly defined and efficient procedures. Through a combination of broad research and a more focused understanding of individual schools, building on current strengths within the EC program can help allow for more informed decisions that provide all students, regardless of disability status, with greater opportunities for academic success. Readers desiring more detailed information on these issues may request a longer review paper by contacting Nicole Schollmeyer at Nicole.schollmeyer@duke.edu.

**Statement of Issue:** Despite efforts by public school systems to provide an appropriate education for all learners, students with special educational needs continue to experience significant academic challenges. In Durham, for example, only 22.3% of students with disabilities passed both the reading and math end-of-grade tests in the 2010-2011 school year; this compares to a passing rate of 51.4% for other students [1]. These low test scores suggest that students with disabilities in Durham are at risk for adverse academic outcomes. To facilitate more successful academic outcomes for these students, it is necessary to carefully examine current school practices in exceptional children’s (EC) programs to try and identify ways to better support their learning.

**National Best Practices:** The following review of national literature is focused on three specific facets of exceptional children’s programs: identification, intervention, and service setting. These findings can form the basis of solutions to challenges that DPS educators face while serving students with special needs.

**Identification**
- **Identify at-risk students early** in order to begin early intervention and prevent further academic consequences [2].

- **Response to Intervention** provides a helpful framework for identifying at-risk students.
  
  - Essential aspects include: universal screening, progress monitoring, and data-based decision-making [2].
  
  - This procedure can identify students who have lower academic outcomes as well as those who are progressing more slowly than their peers [3].
  
  - This method adopts a problem-solving approach to provide intervention services in the process of identifying a student who may be in need of further exceptional services [2].

- **Awareness of disproportionality** can help prevent factors such as race, socioeconomic status, and gender from interfering in equitable decisions on service provisions for students in need [4].

- **Training and shared awareness** of identification policies can help provide all faculty and staff – not just special educators – with the support they need to identify at-risk students [5].

**Intervention**

- **Match interventions to students’ individual needs** to ensure that all needs are met by the services provided. Monitor student progress and problem-solve to select the most beneficial intervention for each student [6].

- **Improve communication of research findings.** Sharing evidence-based interventions and other findings can help make research more useful for real-world application and make decisions better informed.

- **Local testing of research-based interventions** can ensure that interventions are applicable to the students intended, instead of assuming that an intervention that was effective in one district can be effective everywhere [7].

**Service Setting**

- **One size (or service setting) does not fit all.** Educators should keep each individual student in mind and base decisions on each child’s particular needs [8].

- **Knowing the advantages and disadvantages** of each possible service setting will help guide decisions, based on a student’s particular needs. Different options are described below.
  
  - **Inclusion:** All instruction and services are provided in a general education setting
- **Advantages:** This unrestrictive environment allows for increased self-esteem, collaboration, friendship making, and social skills [9].

- **Disadvantages:** Full inclusion alone may not meet all student needs, and these students are not always being included socially [10].

- **Inclusion with Co-Teaching:** One general education teacher and one special education teacher collaborate to teach a class.
  - **Advantages:** Both teachers can benefit professionally. Students learn work ethic, cooperation, and social skills [11].
  - **Disadvantages:** Co-teaching is not always implemented in a truly collaborative way. Not all students are prepared for inclusive settings [11].

- **Pull-Out / Resource Room:** While students learn some subjects in mainstream classrooms, all service in IEP areas takes place in the resource room only.
  - **Advantages:** Students benefit from a smaller, less distracting environment with more supportive instruction [9].
  - **Disadvantages:** Students are separated from their peers, and teachers may see the resource room as somewhere to send “difficult-to-teach students” [12].

- **Self-Contained Classes:** Students receive all instruction separate from students who do not have special needs.
  - **Advantages:** Students have higher self-concept and decreased anxiety [10].
  - **Disadvantages:** Students are nearly entirely isolated from nondisabled peers, and these placements are typically inflexible [12].

- **Blend of Inclusive and Pull-Out Classes:** Students receive IEP services in both the general classroom and the resource room.
  - **Advantages:** This model provides unrestrictive learning opportunities with the support of special instruction in smaller settings [9].
  - **Disadvantages:** This setting requires a large amount of collaboration between general and special educators.

- **Adhere to intentions of service settings** to ensure that children are receiving the full benefits intended for a particular learning environment. For example, in a co-taught classroom, teachers must be sure to practice true collaboration [11].

- **Remain flexible** so that adjustments or new placement decisions can be made if a child’s needs change [11].
Focus on Durham Public Schools: In order to gain a clearer picture of current practices in DPS and potential areas for improvement, insight from current staff was needed. A survey was developed to get a clearer picture of current identification and intervention techniques in DPS. (A full copy of this survey can be found in Appendix A, and raw data responses from this survey, as well as detailed discussion of results, can be found in the more extensive research paper that accompanies this policy brief.) This survey was distributed to Student Assistance Program (SAP) chairpeople and Exceptional Children’s (EC) facilitators, who are responsible for the identification and intervention processes for all elementary students with special needs in DPS. With 61 total staff members submitting this survey, the participation rate was nearly 100%. Key findings are shown below.

General Feedback from DPS Staff
- 69% of DPS staff members were satisfied or very satisfied with the services provided to students with special needs in their schools.
- EC facilitators were more likely to feel satisfied with their ability to meet students’ needs than were SAP chairs, 84% vs. 41%. These results overall suggest that while participants are generally satisfied with the current practices used in Durham, there is room for potential improvement.

Key Issues to Address
- **Obstacles to support:** Commonly noted obstacles were (a) lack of available resources (i.e., money, time, materials); (b) lack of coordination and collaboration; (c) insufficient intervention design and implementation; (d) insufficient training, qualifications, and enthusiasm of staff; and (e) shortcomings and inconsistencies of the system itself (i.e., barriers to identification and intervention, missing elements of identification, inconsistency across schools).
- **Early identification and intervention stages** of EC and SAP procedures need the most attention, according to participants. Satisfaction ratings were higher for progress monitoring (45% satisfied) and later interventions (67% satisfied) than earlier stages of universal screening (27% satisfied) and preliminary interventions (14% satisfied). Participants were most frequently concerned about underprepared staff and lack of universal screening in some schools.
- **The effectiveness of interventions can be limited by** (a) lack of time to devote to implementing interventions, (b) high student-teacher ratio, (c) poorly matched interventions for students’ individual needs, (d) lack of adequate support for
teachers, (e) lack of familiarity with how to implement interventions, and (f) difficulty gaining parental support.

- **Variation in service setting frequencies:** There was substantial variability in the reported use of different service settings across schools. While some schools estimated that none of their students were in a setting, other schools reported that all or nearly all of their students were placed in this service setting.

- **Variations in service setting decisions:** When asked to rate the importance of a variety of factors (e.g., age, cognitive ability, test scores, class grades, social abilities, EC eligibilities, teacher/parent recommendations, available resources, etc.) in decisions to place students into particular service settings, participants responded in ways that again indicated wide variations across schools. This suggests that at different schools, different factors weigh into service setting decisions.

**Recommendations for DPS:**

**Identification**
- **Establish a clear universal screening procedure.** Implementing this in schools where this screening does not yet exist and strengthening it in schools where it does will help increase the chances of identifying students’ needs in all schools. There may be value in using a standard procedure in all schools.

- **Provide professional development and training.** This support will help prepare staff to identify students with exceptional needs earlier and with more accuracy.

**Intervention**
- **Provide professional development and training.** This will ensure that interventions are matched appropriately to students’ individual needs and that selected interventions are implemented effectively in the classroom. Focusing on alterable factors such as familiarity with interventions, support for teachers, and selecting appropriate interventions (all concerns identified by participants) can lead to the most efficient reforms of intervention implementation.

- **Emphasize research, data, and progress monitoring.** Stressing the importance of providing research-based intervention services when available will help successfully meet the needs of students. Developing consistent procedures for progress monitoring will facilitate providing more effective academic supports.

**Service Setting**
- **Investigate variation across schools.** This research can determine whether the wide variation in estimates of service setting placements is best meeting students’ needs or whether greater consistency is warranted. In addition, research can analyze whether this variation is related to school-based differences in the decision-
making processes behind service setting placements and whether this is also in the best interest of students. **Explore the possibility of a more standardized process.** Additional research can determine whether students might be better served through a more standardized, uniform approach to decisions for service setting placements.

**Concluding Thoughts:** By combining resources from national research literature on issues surrounding exceptional children, along with knowledge of the local Durham Public School district, advances in research, practice, and policy can be made. From the national level, best practices in identification, intervention, and instruction include thorough staff training and detailed screening procedures for exceptional needs, research-based interventions with continuous progress monitoring, and flexible service setting placements appropriately matched to children’s needs. In Durham, survey results indicated that initial identification screening measures, preliminary interventions, and variations in service setting decisions should be more carefully examined to determine what changes may be advantageous to implement. Based on a combination of findings from national best practices and the suggestions of DPS staff, recommendations for future improvements include increased professional development, data-based decision making, progress monitoring, and clearly defined and efficient procedures. This combination of broad research with a more focused understanding of individual schools can facilitate beneficial outcomes for all students with exceptional needs.

**References**


This policy brief accompanies a larger research paper developed under the guidance of Dr. David Rabiner in conjunction with the School Research Partnership Office in the Center for Child and Family Policy at Duke University.
Appendix A. Durham Public Schools Survey

1. How long have you been working in elementary education?
   • Select from drop-down list of <1-30+ years

2. How long have you been working in your role as a SAP chairperson/EC facilitator?
   • Select from drop-down list of <1-30+ years

3. To what extent do you feel that your role as a SAP chairperson/EC facilitator allows you to help students in need of special educational services?
   • Select from: 1 (My position does not allow me to provide any support) → 5 (My position allows me to provide every support they need in school)

4. How would you estimate the level of cooperation, collaboration, and coordination between SAP chairs and EC facilitators?
   • Select from: 1 (Very low) → 5 (Very high)

5. Please briefly describe any school-based obstacles you encounter to providing students with greater support.
   • Text box for free response.

6. Please briefly describe any district-based obstacles you encounter to providing students with greater support.
   • Text box for free response.

7. Approximately what percentage of students identified as in need of EC services are placed into each of the following service settings?
   Sum to 100:
   • Co-taught classes
   • Only pull-out or resource time up to 1 hour/day
   • Only pull-out or resource time up to 2 hours/day
   • Only pull-out or resource time up to 4 hours/day
   • Self-contained classes with some inclusion for non-academic subjects
   • Blend of inclusion and pull-out or resource

8. How important are each of the following factors in leading to a decision to place a child in a co-taught classroom?
   Rank from 1 (Not at all important) → 5 (Extremely important)
   You may fill in up to three “other” responses.
   • Student age
   • Student’s cognitive ability
   • Student’s EOG scores
   • Student’s academic achievement (class grades)
   • Student’s social abilities
   • Student’s EC eligibility classification
• Teacher recommendation
• Parent recommendation
• Resources available (money, classrooms, teachers, etc.)
• Master schedule limitations
• Most common practice in the school
• Other:
  • Other:
  • Other:

9. How important are each of the following factors in leading to a decision to place a child in pull-out services for a portion of the day?
   Rank from 1 (Not at all important) → 5 (Extremely important)
   You may fill in up to three “other” responses.
   • Student age
   • Student’s cognitive ability
   • Student’s EOG scores
   • Student’s academic achievement (class grades)
   • Student’s social abilities
   • Student’s EC eligibility classification
   • Teacher recommendation
   • Parent recommendation
   • Resources available (money, classrooms, teachers, etc.)
   • Master schedule limitations
   • Most common practice in the school
   • Other:
     • Other:
     • Other:

10. How important are each of the following factors in leading to a decision to place a child in a self-contained classroom for the majority of the day?
    Rank from 1 (Not at all important) → 5 (Extremely important)
    You may fill in up to three “other” responses.
    • Student age
    • Student’s cognitive ability
    • Student’s EOG scores
    • Student’s academic achievement (class grades)
    • Student’s social abilities
    • Student’s EC eligibility classification
    • Teacher recommendation
    • Parent recommendation
    • Resources available (money, classrooms, teachers, etc.)
    • Master schedule limitations
    • Most common practice in the school
    • Other:
11. How important are each of the following factors in leading to a decision to place a child in a blend of inclusion and pull-out services?
Rank from 1 (Not at all important) → 5 (Extremely important)
You may fill in up to three “other” responses.
- Student age
- Student’s cognitive ability
- Student’s EOG scores
- Student’s academic achievement (class grades)
- Student’s social abilities
- Student’s EC eligibility classification
- Teacher recommendation
- Parent recommendation
- Resources available (money, classrooms, teachers, etc.)
- Master schedule limitations
- Most common practice in the school
- Other:
- Other:
- Other:

12. Are you generally satisfied with the services that students with disabilities are provided at your school?
Yes / No
If no, what concerns do you have? (Text box to enter response)

13. Which academic interventions are most effective for students with disabilities?
List up to 5.

14. Which behavioral interventions are most effective for students with disabilities?
List up to 5.

15. What makes you believe the academic intervention(s) you selected are effective?
Text box for free response.

16. What makes you believe the behavioral intervention(s) you selected are effective?
- Text box for free response.

17. How reliably do you think the teachers in your school are able to implement the interventions that are recommended for students with disabilities?
- Select from 1 (not at all as the interventions were designed) → 5 (exactly the way the interventions were designed)

18. Please rate the importance of each factor below in limiting the effectiveness of the academic interventions that are recommended.
19. Please rate the importance of each factor below in limiting the effectiveness of the behavioral interventions that are recommended.

Rate from 1 (not at all important) to 5 (very important):

- Teachers cannot devote enough time to implementing the intervention;
- Student-teacher ratio is too high;
- Interventions selected are poorly matched to students’ needs;
- Teachers are not adequately supported;
- Teachers are not familiar enough with how to implement certain interventions;
- Difficult to obtain parent support for interventions being implemented at school;
- Other: Please describe (text box for free response.)

20. From your experience, approximately what percent of referrals for EC services come from each of the following sources?

Sum to 100.

- Teachers
- Parents
- Physicians
- Other: __

*Note that this question was eliminated due to ambiguity in wording.

21. How satisfied are you with each of the following steps of SAP referral and EC services at your school?

Rank from: 1 (Not at all satisfied) → 5 (extremely satisfied)

- Tier 1: universal screenings
- Tier 2: interventions (personal education plan)
- Tier 3: SAP meetings and progress monitoring
- After identification: EC interventions

22. For any aspects you are unsatisfied with, please explain your response.

- Text box for free response.
23. Would you like to share any additional thoughts regarding Durham’s Exceptional Children’s Programs? Any problems you would like to see addressed? Any suggestions for ways to improve the way that students are served?
   - Text box for free response.