

Policies and Practices of Successful Delaware High Schools

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Executive Summary

This study examined the policies and practices used by three Delaware high schools to promote student achievement and graduation. The research found that high schools employed different combinations of policies and practices, including transition programs to orient incoming ninth grade students, academies to organize ninth grade students into smaller groups, extra instructional time to support students not making satisfactory academic progress, afterschool instructional help for all students needing extra help, mentoring, and twilight programs for students missing a small number of credits to graduate. These approaches were based on research findings, sound management, and creative programming. Many had been in place for multiple years, others had only been recently adopted. Although few conclusions about the effectiveness of the specific policies and practices described above can be drawn from a study of only three schools, the case studies do point to key considerations in deciding what interventions are appropriate in any school. These include student population, universal versus targeted services, resource availability, and size of school.

Introduction

All schools are measured by the achievement and promotion and graduation rates of their students. However, some schools have higher levels of student achievement and promotion and graduation rates than others, and these differences often correlate with the demographic profiles of the enrolled students and their families. Over the past decades, numerous research studies have identified successful elementary schools and their characteristics, regardless of their demographic profiles (Buttram, 2008a; EdSource, 2005; Purkey & Smith, 1983). Fewer such studies exist for successful secondary schools. In addition, there are few research-supported models to guide secondary school reform.

The Delaware State Board of Education supported earlier Delaware Education Research & Development Center (DERDC) research to identify successful elementary schools in Delaware and to determine what actions they were taking that contributed to their success (Buttram, 2007, 2008a, 2008b). The study described in this report extended this earlier work to secondary schools by exploring the question:

What policies and practices do successful high schools use to promote achievement and graduation?

The research focused on policies and practices aimed primarily at ninth graders, but was not limited to this class. Previous research has shown that ninth grade is a critical turning point for adolescent students. Almost half of Delaware students drop out if they do not successfully complete this grade (Editorial Projects in Education Research Center, 2009). As before, the Delaware State Board of Education has provided the funds to support this study.

Study Design

This study used a case study design to gather in-depth data from three schools that are identified as “successful” based on an analysis of their Delaware State Testing Program (DSTP) scores and graduation rates as described below.

Phase 1 – Selecting the Case Study Schools

In order to identify secondary schools in Delaware that are “successful”, DERDC analyzed DSTP scores for ninth and tenth graders for the past three school years (2005-06, 2006-07, and 2007-08) and graduation rates for the past two years (2006-07 and 2007-08).¹ These analyses relied on similar cluster analysis methodology used in the earlier elementary studies (Buttram, 2007, 2008b). Specifics on the formation of clusters used in the cluster analysis can be found in Appendix A.

In order to be identified as successful, schools must score at least 3 percentage points or normal curve equivalents (NCEs) higher than the cluster mean on three of the four tested subject areas (ninth and tenth grade reading and mathematics) in 2005-06 and three out of the five (graduation rate, ninth and

¹ Graduation rates were not available for the 2005-06 school year.

tenth grade reading and mathematics) in the other two years. Table 1 presents the results of these analyses.

Table 1
Analyses of DSTP and Graduation Rates

Cluster	2005-06	2006-07	2007-08
Low		Dover Sussex Central Laurel	Dover
High	Indian River Sussex Tech	Delmar Polytech Sussex Tech	Polytech Sussex Tech

Only Sussex Technical High School was identified as scoring higher than its cluster all three years, Dover High School and Polytech High Schools were identified two years, and Indian River High School, Sussex Central High School, Laurel High School, and Delmar High School were each identified one year.

DERDC selected five high schools based on these analyses to gather preliminary background information — Sussex Tech, Dover, Indian River, Polytech, and Laurel. The principals or assistant principals from all five high schools responded to either e-mail or telephone questions, although three responded more rapidly than the other two. We gathered information about particular practices and policies that schools had in place and their willingness to participate in the study. All five schools were willing to participate, but there were resources to support only three. DERDC selected the first three that responded for further study because the school year was coming to a close.

Phase 2 – Collecting Data on Policies and Procedures

This study relied on a combination of principal, teacher, and student interviews to identify and describe the policies and practices used by the successful schools to support their above average student DSTP scores and graduation rates. Each data collection method is described in more detail below.

Principal Interviews. A follow-up interview was conducted with each of the principals in his office to gather more detailed information about each policy or practice of interest. These interviews typically lasted between 45-60 minutes, depending on how many different policies or practices were operational in the school. Information was gathered about the grade levels targeted by this policy or practice, the number of students affected, the length of time that the policy or practice had been in place, policy or practice rationale, how it works, most and least important parts, and transportability to other schools (see Appendix B for a copy of the interview protocol). Responses to these questions were

recorded by the lead researcher on her laptop, and available for reference in preparation for later data collection. In addition, arrangements were made during this interview for a second visit to collect information from relevant administrators, faculty, and students. Parental consent forms were given to the principal to distribute to parents so that minor students could be interviewed.

Teacher/Administrator Interviews. At the next visit, a small sample of teachers or administrators involved in each policy or practice was interviewed in a quiet location in the school. These interviews addressed the same issues as the principal interview described above; a copy of this protocol is also included in Appendix B. Each interview required between 15-30 minutes to complete; these interviews were completed by two of the three researchers involved in conducting the study. Notes were taken during each interview and summary comments prepared for analysis.

Student Focus Groups. Student focus groups were conducted to gather information on one or more policies or practices. When students participated in multiple practices, we combined those focus groups to minimize the time students were away from their classes. Focus groups were conducted at Indian River and Sussex Tech; scheduling did not permit conducting student focus groups at Dover.

Two focus groups were conducted at Indian River (on extra instructional time) and four focus groups at Sussex Tech (with two on extra instructional time in math, one on freshman orientation, and one on mentoring programs). One researcher conducted each focus group (see Appendix B for a copy of the focus group protocol). The discussions were tape recorded and a written summary prepared by the researcher assigned to the focus group. Students were asked about their experiences with each policy or practice, what parts were the most helpful, how could the policy or practice be improved, and whether other students could benefit from the policy or practice. Each focus group typically lasted for 30 minutes.

Phase 3 – Analyzing Data

Interview data from the principal, other administrators, teachers, and students were summarized and aggregated for each policy or practice. Short narrative descriptions were prepared that highlight the goals and rationale for the policy or practice, the target students, the activities, the resources required, and the advantages and disadvantages to the policy or practice. Information relevant to the portability of the policy or practice also was captured. Each description was prepared by one of the three researchers assigned to this project and then reviewed by the other two for accuracy and completeness. These descriptions then became the basis for the remainder of this report.

Study Findings

Six policies or practices were identified across the three high schools that contributed to their success. Table 2 below presents the policies or practices that were present in each of the high schools.

Table 2
Policies or Practices in Successful High Schools

Policy or Practice	Dover HS	Indian River HS	Sussex Tech HS
Transition		x	x
Ninth Grade Academy	x		
Extra Instructional Time	x	x	x
Afterschool Instructional Help			x
Mentoring			x
Twilight Program	x	x	

Only one of the six was present in each school —extra instructional time. Two of the six, transition and twilight programs, were in place at two schools. The remaining three were present in only one school. Sussex Tech had the largest number of policies or practices (n=4), while the other two high schools each had three. The six policies or practices are described in more detail below.

Transition

Transition from middle school to high school can be a daunting challenge for many adolescents. Eighth graders long for the perceived freedom and autonomy of high school, yet are often intimidated by the size of the school building, the number of teachers and students, and options confronting them each day. Two of the high schools adopted ninth grade transition programs to help students and their families make this adjustment.

The two high schools provide opportunities for all ninth grade incoming students and their parents to visit the school, although they are handled in somewhat different time frames. At Indian River, transition activities are held during the eighth grade school year, over several months. Students are bussed to visit the school, parents are invited to learn about the course offerings and select classes for their child, and counselors follow up with individual students at their middle schools. Students are required to fill out a registration form, even though it is a public high school, to help reinforce their commitment to attending this particular school. A second application is required for the honors program, along with a writing sample and an eighth grade teacher recommendation. Indian River adopted this transition program over five years ago. Administrators would like to add a day at the start of the school year to further facilitate eighth graders' transition, but have been unable to find the financial resources necessary to cover faculty time and other costs.

At Sussex Tech, the freshman orientation occurs for two half-days before school starts for the other students. The program is run by teachers and student peer leaders together. The first day starts with a motivational speaker; 2008's speaker poignantly talked about the challenges he faced starting high school and helped students understand that many others face the same hurdles as they do. Students are then divided into groups of 20 to 30, each assigned to a teacher and student peer leader. In these groups, they tour the building, meet administrators, learn the ins and outs of how to survive and be successful. Incoming freshmen go through their schedule, find their classes, and complete a career interest inventory. During lunch, the students listen to music from a band whose members are all school faculty. The student peer leaders are encouraged to share their points of view, from the quickest ways to travel from one end of the building to another, to organizing and managing their time, and taking advantage of the school's resources. As with Indian River, Sussex Tech designed these two half-days to build positive relationships between teachers and students, identify potential challenges facing specific students, and demystify the school. A side benefit has been the involvement of the upperclassmen who receive community service credit and are so enthusiastic about the ninth grade transition program that the faculty advisor has to turn students away from serving as peer leaders.

Faculty from both high schools reinforced the importance of these days in helping incoming ninth graders make the transition. Indian River has also used these activities as crucial outreach activities to students and parents who have other secondary school options from which to select; they believe that when students and parents understand the mix of programs and activities at their high school, they will decide to enroll at Indian River. Interestingly, one of their competitors is Sussex Tech.

Sussex Tech ninth graders spoke most positively about the transition program, identifying the tour and help finding classrooms as especially useful. As one student said, that is important because the "school is big and it's got a lot of students." Other comments about the positive aspects of the orientation include, "you get to meet your teachers" and "they help you make your schedule so you know what time" you have to be in your classes. The program also seems to be a source of social support: They have a chance to interact with other freshmen, so when they get to school "they won't be loners, they'll have someone to talk to." However, the peer leaders indicated that one way the orientation could be improved is by increasing the opportunities for the incoming ninth graders to interact with one another.

Both high schools acknowledged that these programs require resources to operate. Administrator and faculty time is needed to prepare and deliver these programs. Transportation resources are a second cost. In addition, some training costs are involved if student peer leaders are involved. Nevertheless, all thought that other high schools could easily initiate a similar transition program for their incoming ninth graders.

Ninth Grade Academy

Ninth grade academies have received significant attention in the secondary school reform literature (Connell & Klem, 2006, Raywid, 2006). They typically organize ninth graders into groups of about 150

who share five or six teachers. Students benefit because they deal with a smaller number of students in their classes and teachers benefit because they are able to complement and support each other's instruction and communicate information about their shared students. As with the transition programs described above, ninth grade academies are seen as a critical strategy in helping students adjust to the high school setting.

Only one high school in our sample currently offers a ninth grade academy. One other, Indian River High School, plans to offer some components of a ninth grade academy next year. At Dover HS, the ninth grade academy is in its third year. It started with 90 students in its first year, expanded to two teams of about the same size in the second year, and now includes all incoming freshmen. Each team is comprised of four regular education teachers and one special education teacher. No changes were made in the expected curriculum for academy students, although the option was there for teachers to plan interdisciplinary units and reinforce each other's instruction. The master schedule was arranged for teachers on each team to have common planning time so that they can work together to design instruction and monitor students' progress. At the current time, the teachers' classrooms are not located physically close together, and teachers were of mixed opinion on how important proximity was. Teachers praised the opportunity to collaborate and share students. As one noted, "it makes it easier to figure things out."

Most high school academies are limited to ninth graders, though some schools not included in this study do extend the program to the tenth grade. Scheduling becomes more difficult after ninth grade because students' course selections increase dramatically each year.

Dover High School teachers received some professional development from the Southern Regional Educational Board (SREB) on forming academies. A few teachers visited other schools that had ninth grade academies in place. Some teachers have resisted the set-up, preferring more autonomy and independence to working as a cross-disciplinary team; this is often an issue with secondary teachers who are more accustomed to working in departments.

The Dover High School principal is very supportive of this model. He believes that the academies have improved student achievement and facilitated incoming ninth graders' transition to high school. He has received no complaints from parents or students. Because of scheduling issues, we were unable to interview any of the ninth grade students. He believes that that this is a strong program and with modest resources and some scheduling flexibility, the academy model can be adopted by other high schools.

Extra Instructional Time

Offering extra instructional time to students who are in need of remediation is a common strategy. Illustrations can be found in the three cases examined for this study. The extra time can be provided

either by scheduling additional time instead of other electives or every day instead of every other day for schools that are on different day schedules. For example, at Dover High School, struggling students are assigned to a freshman seminar where they work on assignments and use instructional software to improve reading and math skills. In Indian River, an extra math class, in addition to algebra or geometry, is offered daily to students who either just passed or just barely failed making adequate progress on the DSTP. In Sussex Tech, the Algebra Plus class meets daily, rather than the regular Algebra class that meets every other day. In addition to giving students extra instructional time, these classes are also structured to give students extra attention, with smaller class sizes and more individual attention, as demonstrated below.

- Dover High School, alternative Reading and Math –10-15, compared to around 25 in regular class
- Indian River High School , Math-- 8-15, compared to around 30 in regular class
- Sussex Tech High School, Math -- 22 students in program; maximum 1:16 teacher:student ratio

In some cases, these classes are targeting students who are just short of meeting the DSTP standard, on the grounds that they are most likely to improve with help. In other cases, the classes target students who have special needs. In Indian River, such classes were offered in both ninth and tenth grades.

Teachers indicated that the goals for these classes included keeping students “above water,” preparing them for regular class so they “won’t struggle,” and making sure they are familiar with the type and format of DSTP problems.

A typical class might include introductory basic skills practice, DSTP review, preview of upcoming work in regular classes, homework review, and individualized work. In addition, one teacher said that she assessed the students regularly in order to motivate students by showing them their progress on test results and to tailor teaching to the individual needs of students.

The students that we spoke to were generally positive about this strategy. They identified several features as particularly beneficial:

- The smaller class size, which allows:
 - More individual help. As one student said, “we all need help with different things.”
 - More interaction. According to one student, “We can ask a lot more questions than we normally could in a regular algebra class.”
- A slower pace. With a slower pace, problems can be gone over more than once. Students said, “You don’t feel rushed;” and “We have more time to get a good understanding.”

- Amount of time/meeting daily. While one of the teachers said the extra time mattered, the students commented on the importance of meeting every day. As one student said, “It makes us more accountable for our work. All of our other classes meet every other day so we have two nights to do our homework whereas this class only has one so it is always fresh in our mind.”
- Course content. Students commented on how the classes had helped them improve their grades and test skills.

Other than making the activities “more fun,” most students did not have any recommendations for improving the classes. However, one student said she would have liked to have had more time for independent reading. This echoed the teacher’s comment that she would like to add more challenging reading materials to the class.

Obviously, the major resource requirement for these kinds of programs is faculty and faculty time. At Dover, the teachers in the four academies alternated working with students in the freshman seminar. In Indian River, one faculty member was dedicated to providing remedial reading throughout the day. In another case, one of the math teachers said that it takes significant time to coordinate what is being offered in the DSTP math with what is being offered in the students’ regular math classes so that they are complementary.

In the schools we visited, computers and other technologies were used extensively. For example, Dover High School uses Navigator software for much of their freshman seminar content. Sussex Tech Algebra Plus classes included a computer at every desk, smart board, electronic overhead projector, audience response system, amplification of teacher’s voice, wireless laptops, graphing calculators, and accelerated math software. (Title I funds help purchase and maintain technology as well as hiring of an extra teacher at Sussex Tech. However, while the technology is used, it was also identified by a teacher, who is also a Title I fund coordinator, as the least important aspect of the strategy’s effectiveness.)

In addition to resources, challenges with these kinds of programs include targeting students who can really benefit. One teacher commented on attendance problems among students in his class; another noted the need to motivate the students, implying that these were students who were not highly motivated to start with. However, others talked about the value of extra attention and small class size in engaging students in these classes.

Afterschool Instructional Help

Sussex Tech adopted an afterschool techademic coaching program numerous years ago. The program provides afterschool help in all core subject areas to students. Students are encouraged to take advantage of these resources. Each core area has a schedule for when assistance is available from teachers four days a week, Monday-Thursday. Students who are enrolled in these courses know when they can stay late (3:45-5:45 pm) each week to receive help for a specific course, complete assignments including science labs, or take quizzes and tests if they were absent. In addition, the library is open for

students to work on research papers and computer labs are available for word processing and other tasks. Teachers are assigned to cover particular time slots and paid a stipend for their time. Assistance is not always provided by the assigned classroom teacher; however, all departments make a point of keeping each other informed so that whoever is staffing the afterschool program is knowledgeable and able to provide appropriate assistance to the students. Activity buses are available to transport students home.

One science teacher estimated that approximately 2000 students take advantage of techademic coaching in science each year. He reported that sometimes only 2-3 show up on a single day, but the numbers swell at other times, especially before exams or the end of a marking period. His experience is that students who are not able to complete science labs and assignments in class come to techademic coaching and finish their work; he firmly believes that the afterschool sessions allow students to meet class expectations that they otherwise would not meet. He also suggested that the techademic coaching does not have the stigma often attached to seeking extra help. Students are there for lots of reasons, including absenteeism, so no one feels singled out.

The school culture and norms reflect deep commitments on the parts of administrators and teachers to students. As a result, many teachers who are not part of the techademic coaching program frequently stay late at this high school. Nevertheless, this program ensures that knowledgeable assistance in each core area will be available to students four nights a week.

Almost every student that we interviewed had gone to techademic coaching for one reason or another, either to make up a test or for help in specific subjects. Typical comments included: "It helped me a lot" and "It's pretty much the place to go if you need help." One student noted the added benefit of staying at the school to do research at the computers if you don't have a computer at home. Teachers also observed that many students stay late, regardless of whether they need help in specific courses. Some go home to empty houses because parents work outside the home, others face difficult situations with abusive or uncaring parents and guardians. The school provides a nurturing, safe environment that numerous students seek out.

Parents also view the techademic coaching as a resource for their child. One teacher noted that when parents are contacted about students' failing performance, the first question often asked is when the next techademic coaching period is.

The techademic coaching program requires modest resources to maintain. At Sussex Tech, teachers receive \$25/hour and there are six teachers, four days a week. One teacher noted that he would probably stay late anyway, but the stipend does increase his consistency in staying. Teachers receive no special training, but departments do need to make sure that the techademic teachers are knowledgeable about the current assignments and content being covered. Transportation costs are not minimal, but the high school already runs activity buses because of its county-wide enrollment and so these costs are not charged to this program specifically. The school also encountered some problems

this year with discipline with a few students who roamed the halls; an administrator now is charged with hall monitoring.

Mentoring Programs

Mentoring programs are not as common as other programs identified in this study. Such programs were only identified in one of the high schools in this study, Sussex Tech. This school has two mentoring programs ongoing. One is a mentoring program for African American male students using adult mentors, and the other program provides mentors of upper-class students, called Attitude is Contagious. Both attempted to meet at least once every week, and provide a mix of academic and social support.

Mentoring Program for African American Male Students. This program started 4 years ago when the dean of students at Sussex Tech noticed that African American male students were enrolling at the high school, but not “sticking with it.” He noted good enrollment for 9th graders, but a lack of diversity in the student segment actually graduating. Students who dropped out typically felt a lack of “comfort” in their new school of choice, and so went back to their home schools to rejoin their local group of friends. The dean thought that by providing mentoring, these students may feel more comfortable in their new school and “stick with it.” Thus, the main focus of this mentorship program is graduation rates.

The program has been running for the past 4 years, and is currently serving 19 students. Students are assigned to an adult teacher or administrator. This adult mentor meets with the student at least once every 2 weeks. The mentor also collects information from the student’s teachers about attitude, grades, attendance, and homework completion. The mentor discusses this academic data, as well as any emotional, behavioral, or home situations which may be impacting academic success.

The most important part of this program is making new students feel “comfortable” and supported in their new school. Additionally, it is important for mentors to know about home environment, which may impact academic performance.

This program requires little resources to run. However, it requires diversity of staff to handle the needs of minority students. Additionally, it requires some time for staff involvement and buy-in from teachers of targeted students. Spreading students across a number of teachers and administrators would reduce the time commitment of each individual adult mentor.

The applicability of this program will be variable throughout the state. It may be appropriate for technical high schools or other schools of choice. However, as the primary motivation for the program is to prevent students from dropping out of a technical high school to attend the local public high school, the program may not be appropriate for these “regular” public schools.

Attitude is Contagious Mentoring. The non-profit company “Pathways to Success” received a grant from the Delaware Department of Labor to provide the “Attitude is Contagious” program to students throughout the state of Delaware. The Pathways to Success director connected with the dean of students to provide the program to students at his high school. The program combines academic support with life skills training.

The program meets for 2 hours every Wednesday evening during the academic year. The first hour is devoted to academics. Volunteering teachers and upper-class “mentoring” students meet with program participants to review tests or assist with homework. The second hour is devoted to providing students with “goals to succeed.” Program modules are designed to build self confidence to not only graduate, but think beyond graduation and into the work force. Modules include self-worth and career planning. The rationale for the program is that incoming students may not have the skills necessary to succeed in the high school setting. Students need to be provided with the opportunity to learn how to study and work at a high school level. Thus, the academic component is crucial. “Basically it’s going to follow them until college to make sure they have everything they need to be successful,” one student said.

Students described the program in the following ways:

- “They help, they really help” [the mentors].
- We do some studying on the DSTP “so we can get high scores on it.”
- We work on “homework, anything we’re struggling in, things we don’t understand.”
- “It brought my grades up . . . I’m not in danger of failing.”
- “We study, we do our homework there, pretty much it’s like a program that works; for me personally, it brought my grades up so I consider it just a helpful program.”

This is the first year for the program in its current form. Currently, 29 students are part of the program. Students are targeted who get a 1 or 2 on the DSTP, or students who have an economic or behavioral barrier which may prevent them from succeeding. Such students are recruited in ninth grade, but followed throughout their high school career. Interest in the Attitude is Contagious by students seemed variable. One student had gone once but she wasn’t that interested. Another said that the dean of students was really trying to get her to go. A third expressed support for attending, saying “it wasn’t as bad as it sounds.”

Only one improvement suggestion came from a student: “I wish this program [mentoring] didn’t end so soon though ‘cause now I’m getting a little rocky again. It’s the end of the year, there’s still a lot of homework coming in, no program, so it’s like no one’s pushing me to do my homework, so I don’t have to do it now, well I do...”

Administrators believe this program would work in other schools. Schools would need funding to support the programming and volunteer teachers and upper-class students to support incoming students making an academic transition. When asked whether other students could use such a program, students note that “One brain isn’t as good as two,” and “They should keep it and if they see other

students who need help they should invite them to come to the program to help bring their grades up so they could pass.”

Twilight Program

Two high schools, Dover and Indian River, offer twilight programs. These programs offer students opportunities to recapture credits that they did not initially earn and, as a result, graduate with their class on time. The Dover program started five years ago, the Indian River program is in its first year. Both principals see it as a way to increase their high school graduation rate, a critical factor in achieving Adequate Yearly Progress (AYP) under No Child Left Behind (NCLB).

Both programs are aimed at students shy one or more credits. Although the program is intended for seniors, both schools have allowed other students to enroll. Students are identified by their guidance counselors and are referred to the twilight program director. At both high schools, the director is a full-time teacher who oversees this program after school for additional salary. Students fill out an application to be admitted and sign a contract. Parents at Indian River must also sign the contract. At Dover, students are charged \$25 for enrollment in each credit; no fee is required at Indian River. Indian River modeled its program closely after Lake Forest High School’s program, after visiting it last summer and taking cues from what that school found worked well for them.

As part of their enrollment in the twilight program, students are required to attend specific hours after school, typically two afternoons. Absenteeism is not accepted. Students enroll in specific credits they are lacking; the course is delivered on-line using software packages licensed by Ed Options. The school is charged a fee for each license; multiple students may use the license, but only one at a time. As a result, the number of student slots is restricted by the number of licenses. Dover typically has had 50 licenses; this year, they were able to add another 30 slots. Indian River has only 10 slots. Although this software package includes courses in a diverse set of subjects, students are restricted to courses that each high school offers.

The on-line courses each have a number of lessons with a quiz at the end of each lesson, and a final exam. Students move through the lessons at their own rate in the school computer lab during pre-specified times. Students are not allowed to log on from other locations or at other times. The Indian River director has seen students take as little as 6 weeks and others as long as 14 weeks. The assessments include multiple choice, short answer, and essay questions; the multiple choice items are scored by the software, with the others scored by the program administrator, who is the twilight program director. The software provides sample answers for the short answer and essay questions to help guide the program director in scoring student answers.

Both twilight program directors praised the program. They noted that most students complete their courses on-line. These students are usually highly motivated, because they want to graduate with their class. The two directors also noted that students short a few credits, especially in core academics, are

unlikely to return the following school year to retake the class and therefore often do not complete their high school programs. With the twilight program as an option, these students graduate, and graduate on-time.

The on-line instruction is not generally available to other students in the school. However, an Indian River High School student who is not able to attend school because of health issues is taking courses using the on-line program. The Dover twilight program director is advocating for other students to be eligible in the coming year. Based on her experience with numerous special education students who have taken advantage of the twilight program to graduate on time, she believes that many other special education students who have behavioral issues would be more successful in an on-line learning situation than in a classroom.

We were not able to interview students at either high school who have participated in the twilight program because of absenteeism and end-of-year scheduling. However, both twilight program directors reported that students are very grateful for these opportunities and have high rates of completion.

In considering the portability of the program, the key resources are a faculty to oversee and manage the program, computer and software licenses², and explicit guidelines for eligibility and participation in the program. The program also requires a computer lab that is well-maintained and of sufficient size to warrant running the program.

Conclusions and Recommendations

The above review of policies and practices in the schools illustrate the variety of approaches to supporting student achievement and graduation rates employed in the three high schools. These approaches were based on research findings, sound management, and creative programming. Many had been in place for multiple years, others had only been recently adopted. Although few conclusions about the effectiveness of the specific policies and practices described above can be drawn from a study of only three schools, the case studies do point to key considerations in deciding what interventions are appropriate in any school. These include student population, universal versus targeted services, resource availability, and size of school. Each is briefly explained below.

Student Population

Differences in the academic performance and graduation rates by different student subgroups should drive the intervention(s) selected. For example, if there is a large proportion of students who are failing to make academic progress, putting resources toward extra instructional time may make sense. How to

² One of the high school principals with a twilight program estimated that the software license per student slot is about \$400/year, plus other technical software costs that typically range from \$500-\$1,000/year.

provide extra instructional time depends on the number of students or subgroups, the areas in which they need help, and the availability of resources. As might be expected, the administrators in the high schools studied reacted differently to the numbers of students not making satisfactory academic progress; their solutions for dealing with these students differed depending on the numbers and resources. Nevertheless, they all developed intervention(s) to meet these students' needs.

Universal versus Targeted Interventions

Differences in performance and graduation rates by different student subgroups should drive the intervention(s) selected. This issue is obviously linked to the student population. Depending on the needs of the students, schools can choose among universal programs, such as afterschool coaching or ninth grade orientation, which were open to all students, or targeted programs, such as extra instructional time or mentoring, which were open to only particular subgroups of students. Universal programs are important when the needs are general and cut across subgroups. Targeted approaches are more likely when the needs are well-defined, the size of the student subgroup is small, particularly in comparison to the students overall.

Resources

In today's tight economy and demand for accountability, the issues of staffing and other resource costs are never unimportant. Some programs like Sussex Tech's Attitude is Contagious mentoring program or Dover and Indian River's twilight programs require additional faculty hours, while other programs like Dover's ninth grade academies are more an issue of scheduling. It is important in considering possible interventions to develop a full budget that includes salaries, materials, and other costs for both the initial start-up and long-term operation. For example, the software licenses for the two twilight programs have to be renewed each year and there are ongoing computer maintenance costs. It is also important to weigh the cost per student versus the likely gains in student performance and graduation.

Size of School

The size of the school should also be considered in selecting possible interventions. High school size plays an important role in creating more or less personal learning environments for adolescent students. In high schools that are relatively large, transition programs to introduce and orient incoming ninth grade students may be more important than in relatively small high schools. According to Sussex Tech students, the transition program was particularly useful in helping them learn how to navigate the building and find their classrooms.

As this list suggests, different combinations of programs will be appropriate for different kinds of schools. This study has provided some insight into the nature and resource requirements for some commonly used approaches to increasing student achievement and graduation rates, but cannot provide prescriptions for policies and practices that will fit every context.

References

- Buttram, J.L. (2007). *Beating the Odds: A Study of Delaware Schools*. Newark, DE: Delaware Education Research & Development Center, University of Delaware.
- Buttram, J.L. (2008a). *Strategies Used by Four Delaware Elementary Schools to Beat the Odds*. Newark, DE: Delaware Education Research & Development Center.
- Buttram, J.L. (2008b). *Beating the Odds: Analyses of 2007 DSTP*. Newark, DE: Delaware Education Research & Development Center.
- Connell, J.P. & Klem, A.M. (2006). First things first: A framework for successful secondary school reform. *New Directions for Youth Development, 2006*, 111, 53-66.
- EdSource. (2006). Similar students, different results: Why do some schools do better? *EdSource Report*. Mountain View, CA: Author.
- Editorial Projects in Education Research Center. (2009). State Graduation Report. Retrieved June 16, 2009, from <http://www.edweek.org/apps/gmap/details.html?year=2009&zoom=6&>)
- Purkey, S.C., & Smith, M.S. (1983). Effective schools: A review. *Elementary School Journal, 83*, 427-454.
- Raywid, M.A. (2006). Themes that serve schools well. *Phi Delta Kappan, 87*, 9, 654-656.

Appendix A
Cluster Analysis Results

To focus on schools that have been most successful over time, data were examined over the three year period 2005-2008. All data was obtained from the Delaware Department of Education public web site (<http://www.doe.k12.de.us>). Clusters were formed using ninth grade reading and math DSTP scores for the 2005-06 school year, tenth grade reading and math DSTP scores along with graduation rates for the 2006-07 school year, and tenth grade reading and math DSTP scores along with graduation rates for the 2007-2008 school year. No graduation rates were available for the 2005-06 school year, and missing data on tenth grade DSTP scores from that year forced the use of ninth grade data.

All three years exhibited two main clusters: those schools above average on the measures of interest, and those about and below average on the measures of interest for each given year. By using cluster analysis, schools serving students from less privileged backgrounds are grouped together and compared among themselves, so as not to compare these schools to those serving students from more privileged backgrounds. Due to the collinearity introduced between graduation rates, DSTP scores, percentage of white students, and percentage of low income students, schools were grouped on graduation rates and DSTP scores alone.

School year cluster data is provided in the charts below.

School Year 2005-2006

High minority, low SES	10 Reading	10 Math	9 Reading	9 Math
Dover	58	58.5	59.6	65.4
Christina	57	52.3	56.8	57.2
Glasgow	61.4	58.1	60	59.1
Newark	61.5	60.5	60	61.5
Penn	59.3	57.2	59.1	58.4
Laurel	59.4	61.8	58.9	62.7
Howard HS of Tech	56.4	53.8	61.4	61.9
Dickinson	58.7	57.4	55.4	60.6
McKean	60	62.3	56.2	60.5
Seaford	58.6	56.7	59.2	62.2
Woodbridge	59.9	57.6	61.6	60.5
Average	59.1	57.8	58.9	60.9
Lower minority, higher SES				
Middletown	62.6		67	67.6
Brandywine High	64.3	65.8	63.3	67.2
Concord High	64.7	64.1	65.1	70.3
Caesar Rodney	66.3	66.3	65.1	65.8
Cape Henlopen		67.9	65.8	68.6
Delmar	62.9	64.6	66.5	67.2
Indian River	65.5	67.9	68.3	70.6
Sussex Central	63.4	62.7	63	64
Lake Forest	59.1	59.7	58.4	60.4
Milford	68.4	66.9	63.9	66.3
Delcastle Tech	59	59.5	63.1	67.1
Hodgson Vo-Tech	61	62.3	63.6	67.8
Polytech	64.9	63.9	65.2	70
Al duPont	65.9	65.6	64.3	69.2
Smyrna	63.4	64.2	63.7	64.9
Sussex Tech	66.3	66.7	70.5	72.4
Average	63.8	64.5	64.8	67.5

School Year 2006-2007

High minority, low SES	Grad Rate	10 Reading	10 Math	9 Reading	9 Math
Dover	77.1	60.6	61.3	57.8	65
Christina	76.9	55.9	50.9	56.4	56.8
Glasgow	72.9	57.4	53.8	54.5	55.2
Penn	73.8	57.8	55.3	59.1	57.4
Sussex Central	76.7	62.1	60.4	64.4	66.2
Laurel	60	62.9	64.8	60.6	60.4
Howard	96.3	59.5	55.2	61.1	61
Dickinson	63.2	57.5	59.3	53.7	60.9
McKean	61.5	60.7	59.7	52.3	57.4
Seaford	69.2	60.9	57.5	59.4	65
Woodbridge	62.5	60.5	55.2	58.6	59.3
Average	71.8	59.6	57.6	58.0	60.4
Lower minority, higher SES					
Middletown	92.1	66.2	67	65.9	68.8
Brandywine	85.9	66.3	66.6	62.8	66.9
Concord	87.2	66	69.3	62.5	67.1
Caesar Rodney	86	66.2	65.7	66	64.9
Cape Henlopen	83.8	65.5	69.3	64.8	69.2
Newark	76.4	64.4	60	64.5	63.5
Delmar	90.1	63.8	69.6	68.6	69.4
Indian River	80.9	66	69.4	67.2	68.5
Lake Forest	74.6	61.9	58.6	55.7	62.1
Milford	84.8	66	62.5	65.9	67
Delcastle	95.7	59.7	59.4	61.6	66
Hodgson	97	60.7	59.6	64.2	68.6
Polytech	96	64.1	62.8	68.9	72.3
Al duPont	82.6	66.7	65.6	65.1	68
Smyrna	72.6	63.7	62.7	62	66.9
Sussex Tech	96.6	68.7	67.2	72.7	73.4
Average	86.4	64.7	64.7	64.9	67.7

School Year 2007-2008

High minority, low SES	Grad Rate	10 Reading	10 Math	9 Reading	9 Math
Dover	76.8	60.9	62	57.8	62
Laurel	73.5	59.6	60	62	62.7
Dickinson	68.5	58	57.6	53	57.6
Seaford	70.9	59.3	60.5	59.9	64.2
Woodbridge	78.2	61.5	57.5	58.7	62.2
Christina	72.4	54.2	51.5	56.2	59.9
Glasgow	68.2	54.7	52.6	52.7	55.5
Penn	67.5	57.4	55.1	57.1	56.8
McKean	65.4	55.4	56.3	56.1	59.8
Howard	97	57	56.1	59.9	61.3
Average	73.8	57.8	56.9	57.3	60.2
Lower minority, higher SES					
Concord	88.7	65.9	67.2	60.7	67.6
Caesar Rodney	78	64.3	64.4	64.6	64.4
Milford	80	65.4	65.3	64.6	68.4
Polytech	91.1	64.6	67.6	69.9	73.3
Al duPont	88.5	65.9	67.1	63	67.3
Sussex Tech	94.7	65.5	66	72.2	74.5
Middletown	88.6	63.2	65	66.7	70.4
Brandywine	89.1	62.9	64.1	63.3	68.4
Cape	87.5	64.3	62	63.3	66.9
Newark	77.9	61.1	60.4	61	62.5
Delmar	90.8	62.9	62	64.4	69.7
Indian River	86.5	64.2	64.3	71.6	72.1
Sussex Central	81.3	63.5	62.5	62.9	65.8
Lake Forest	79.3	57.6	60.1	57	65.4
Smyrna	76.7	62.3	62.7	62.8	66.9
Delcastle	98.5	59.6	59.2	61	67.3
Hodgson	98.8	60	59.5	64.2	69.3
St. Georges		62.2	58.7	65.1	67.1
Average	86.8	63.1	63.2	64.4	68.2

Appendix B
Interview Protocols

Interview Guide for Principals

Verbal Consent

Hello, as you know from our phone conversation, I am from the Education R&D Center at the University of Delaware and we are doing a study to learn about what your school does to help students do well on the Delaware Student Testing Program (DSTP) and graduate from high school. The study will be given to the Delaware State Board of Education to help them understand what successful high schools are doing in the State.

Our analysis identified your school as having consistently strong DSTP scores and graduation rates relative to other schools with similar demographic profiles. As part of a larger case study of your school, we would like you to participate in an interview of approximately 45-60 minutes. Your school is one of three that will be included in the study and we plan to conduct interviews of principals at all three. Because of the small number of schools and your official position, we may not be able to keep your identity confidential. I hope you will still participate. While there is no direct benefit to you, there is also little risk, and your participation will help us understand the strategies that high schools are using to support students.

Taking part in this study is voluntary. If you decide to not participate in the study, you do not have to participate in this interview. In addition, if you do participate, you can withdraw at any time or decide not to answer any specific question. There is no penalty for not participating or for changing your mind once the interview starts.

Do you have any questions before I begin?

Interview Guide

1) In our earlier conversation, you identified several strategies or practices. Before talking about those, I would like to check to see if there are other approaches that should be added to the list [show list]. We are interested in policies as well as programs. Are there any policies, programs, or other strategies that are used to support student achievement and graduation in [SCHOOL]? We would like to talk about each of these in turn to learn what aspects of the approaches seem to be effective and what aspects seem less effective.

2) *Strategy-specific questions*

- a. What grades are targeted by this strategy?
- b. How many students are affected by this program/policy?
- c. How long has it been in place?
- d. How does it work?
- e. What is the rationale for the [policy/program/practice]?
- f. What are the most important parts? What makes these important?
- g. What are the least important parts? What are limitations of these? Would you recommend dropping them or are there ways to strengthen them?

- h. Would this work in other schools? What would have to be in place for it to be effective?
- i. Who else in the school should we talk to for more information about how this approach has been implemented/applied/used? How can you help facilitate this?

3) *General*

- a. What other policies or programs that you have heard of or seen used in other schools do you wish you could you add?
- b. What else should we be thinking about as we learn more about how your school has put these efforts in place?

Interview Guide for Administrators/Teachers

Verbal Consent

Hello, I am from the Education R&D Center at the University of Delaware. We are doing a study to learn about what your school does to help students do well on the Delaware Student Testing Program (DSTP) and graduate from high school. The study will be given to the Delaware State Board of Education to help them understand what successful high schools are doing in the State.

Our analysis identified your school as having consistently strong DSTP scores and graduation rates relative to other schools with similar demographic profiles. As part of a larger case study of your school, we would like you to participate in an interview of approximately 30-45 minutes. Your school is one of three that will be included in the study and we plan to conduct interviews of administrators and other school staff at all three. Because of the small number of schools and your official position, we may not be able to keep your identity confidential. I hope you will still participate. While there is no direct benefit to you, there is also little risk, and your participation will help us understand the strategies that high schools are using to support students.

Taking part in this study is voluntary. If you decide to not participate in the study, you do not have to participate in this interview. In addition, if you do participate, you can withdraw at any time or decide not to answer any specific question. There is no penalty for not participating or for changing your mind once the interview starts.

Do you have any questions before I begin?

Interview Guide

- 1) After talking with [PRINCIPAL], we identified several strategies or practices your school uses to help students do well on the Delaware Student Testing Program (DSTP) and graduate from high school. He mentioned you might be helpful to talk with about [STRATEGY/STRATEGIES]. We would like to talk about each of these in turn to learn what aspects of the approaches seem to be effective and what aspects seem less effective.
- 2) *Strategy-specific questions*
 - a. What grades are targeted by this strategy?
 - b. How many students are affected by this program/policy?
 - c. How long has it been in place?
 - d. How does it work?
 - e. What is the rationale for the [policy/program/practice]?
 - f. What are the most important parts? What makes these important?
 - g. What are the least important parts? What are limitations of these? Would you recommend dropping them or are there ways to strengthen them?
 - h. Would this work in other schools? What would have to be in place for it to be effective?

- i. Who else in the school should we talk to for more information about how this approach has been implemented/applied/used? How can you help facilitate this?

3) *General*

- a. What other policies or programs that you have heard of or seen used in other schools do you wish you could add?
- b. What else should we be thinking about as we learn more about how your school has put these efforts in place?

Interview Guide for Student Focus Groups

Verbal Consent

We are from the University of Delaware. We are doing a study to learn about what your school does to help students do well on the Delaware State Testing Program (DSTP) and graduate from high school. The study will be given to the Delaware State Board of Education to help them understand what schools are doing.

[_____] told us that you have participated in [_____]. If you agree to be a part of this study, you will take part in a 45-60 minute group interview with approximately 6-12 other students. We will ask you about your experiences and thoughts about how the [_____] has worked or not worked.

Participating in this interview does not involve any risks to you. There may be no direct benefit for taking part in this study. However, your participation will help us learn about the approaches used in the school.

Notes will be taken during the interview. The interview may also be audio tape recorded. These things are done to help be sure we accurately understand what was said. Any written documents or reports will summarize the group discussion and will not include your name or any identifying information. If we tape record the discussion, we will destroy the tapes after one year. All information will be kept confidential and we will not share what was said with anyone else inside or outside the school.

Taking part in this study is voluntary. If you decide not to participate in the study, you do not have to sign this form. If you change your mind and decide not to participate in the study, you can withdraw at any time. You can also decide not to answer any specific question. There is no penalty for not participating or for changing your mind once the interview starts.

Do you have any questions before I begin?

Interview Guide

- 1) First, could you let me know what grade you are in?
- 2) What do you do in [STRATEGY]?
 - a. *Option: What was your experience with [STRATEGY] like?*
- 3) Which parts of [STRATEGY] were most helpful?
 - a. *Option: If they say, "it was all helpful" or can't answer, ask "What is the one thing that is most valuable or helpful?" or "What part of it do you like the most?"*
- 4) How do you think [STRATEGY] could be improved?
 - a. *Option: If they say, "it is okay as it is" or can't answer, ask, "What do you like the least about it?"*
- 5) Do you think other students could benefit from [STRATEGY]?

- 6) *Ask if they are involved in any of the other programs/practices. If so, what do they do, what do they like/dislike.*
- 7) Is there anything else that the school is doing that you think helps students do well and graduate?