Fifth Annual
Early College High School Initiative Evaluation Synthesis Report

Six Years and Counting: The ECHSI Matures

August 2009

Prepared for:

The Bill & Melinda Gates Foundation
P.O. Box 23350
Seattle, WA 98102

Prepared by:

American Institutes for Research®
1000 Thomas Jefferson St., N.W.
Washington, D.C. 20007

SRI International
1100 Wilson Boulevard
Suite 2800
Arlington, VA 22209

This report is part of an ongoing series of reports based on the evaluation of the Bill & Melinda Gates Foundation's Early College High School Initiative. The views, findings, conclusions, and recommendations expressed herein are those of the authors and do not necessarily express the viewpoint of the foundation. Direct inquiries to Andrea Berger at 1000 Thomas Jefferson Street, N.W., Washington, D.C. 20007; or aberger@air.org.

Authors

Andrea R. Berger (Project Director)
Susan Cole (Deputy Project Director)
Helen Duffy
Sarah Edwards
Joel Knudson
Anja Kurki
Laura Golden
Janet Lundeen
Lindsay Poland
Daniela Rojas
Jamie Shkolnik
Celeste Kline Stone
Lori Turk-Bicakci
Kwang Suk Yoon
American Institutes for Research

Nancy Adelman (Principal Investigator)
Lauren Cassidy (Deputy Project Director)
Kaeli Keating (Project Director)
Natalie Nielsen
SRI International

ACKNOWLEDGMENTS

Once again, many people donated their time and expertise to this report. We would like to thank the many participants in the Early College High School Initiative who, despite their busy schedules, took time to communicate with us about their experiences. Staff from all of the participating intermediaries (including Jobs for the Future), principals, college leaders, college instructors, counselors, and ECS graduates all found time to share their perspectives about the Early College Schools being developed through this initiative. We also would like to thank the staff at the Bill & Melinda Gates Foundation for their ongoing support of the evaluation and for their input into its development. We are grateful for everyone's enthusiastic participation.

Many people within AIR and SRI assisted in collecting data and editing this report. We thank them all for their assistance and dedication to this work. Thank you to: Marlene Darwin, Tal Kerem, Rita Kirshstein, Lisa Knight, Dan Sherman, Mengli Song, and Karen Ward of AIR and Catherine Hall, Samantha Murray, Elizabeth Rivera, and Linda Shear of SRI.

CONTENTS

LIST OF FIGURES AND TABLES

EXECUTIVE SUMMARY

The Early College High School Initiative

The Early College High School Initiative (ECHSI) launched in 2002 with the support of the Bill & Melinda Gates Foundation. The ECHSI provides funds for the development of Early College Schools (ECSs) that serve students who traditionally are underrepresented in postsecondary education and offers them the opportunity to simultaneously pursue a high school diploma and earn college credits. Through the ECHSI, ECSs partner with institutions of higher education (IHEs) to offer all enrolled students an opportunity to earn an Associate's degree or up to 2 years of college credits toward the baccalaureate while in high school. The underlying assumption, outlined in the Core Principles, is that engaging underrepresented students in a rigorous high school curriculum that is tied to the incentive of earning college credits will motivate them and increase their access to additional postsecondary education after high school.

All ECSs are linked by their commitment to the ECHSI's Core Principles. The Core Principles as revised in 2008 largely mirror the original ones but also reflect lessons learned about how an ECS can be established and sustained. The five Core Principles are:

1. "Early college schools are committed to serving students underrepresented in higher education.

2. "Early college schools are created and sustained by a local education agency, a higher education institution, and the community, all of whom are jointly accountable for student success.

3. "Early college schools and their higher education partners and community jointly develop an integrated academic program so all students earn 1 to 2 years of transferable college credit leading to college completion.

4. "Early college schools engage all students in a comprehensive support system that develops academic and social skills as well as the behaviors and conditions necessary for college completion.

5. "Early college schools and their higher education and community partners work with intermediaries to create conditions and advocate for supportive policies that advance the early college movement." (JFF, 2008, p. 2)

The ECHSI operates through 13 grantee organizations, or intermediaries, that receive foundation funding to work with local partners — such as school districts, community organizations, tribes, high schools, community colleges, and universities — to open ECSs.[1] This report follows the activities of the ECSs in the ECHSI associated with these 13 organizations. However, there are more ECSs open or opening nationally. States, such as Georgia, Michigan, Pennsylvania, and Texas, and other school networks, such as Big Picture and Aspire, are either opening early colleges or adding an emphasis on college access while in high school (Hoffman & Webb, 2009).

[1] One intermediary covering a large jurisdiction delegates ECS partnership development to four subintermediaries.

In fall 2007, there were 157 ECSs open nationwide. The foundation also funds Jobs for the Future (JFF) as an overarching intermediary to provide technical assistance to all other intermediaries and to the local ECS partners.

Report Findings

The ECHSI is in its sixth year, and this is the fifth annual synthesis report for the ECHSI. To provide context for the findings that follow, we describe some key characteristics of the ECSs. A brief overview shows that although the ECHSI continued to grow in terms of the number of schools participating, the growth was slower than in prior years. It also is clear that fewer ECSs are opening as conversions from existing schools. By 2007–08, approximately two-thirds of the ECSs had started as new schools. More than half of the ECSs in 2007–08 were located on a college campus, and 65 percent of ECSs were partnered with a public 2-year IHE. ECSs also continued to enroll the intended target population: approximately two-thirds of ECS students were from racial/ethnic minority backgrounds and 59 percent of ECS students were low income.

The following findings are based on analyses of data from quantitative and qualitative data sources.[2] Quantitative data sources include a school survey, a student survey, extant data from publicly available sources, and the Student Information System (SIS). Qualitative data sources include site visits, intermediary interviews, and ECS graduate interviews.

Student Outcomes

Overall, the student outcome indicators suggest that students in the ECSs are doing well academically at both the high school and college levels. The outcomes analyses often revealed significant differences between groups of schools and groups of students;[3] these differences are reported below.

High School Outcomes

- In 2007–08, ECSs outperformed their comparison districts on state assessments in English language arts (ELA) and mathematics. ECSs scored an average of 7 percentage points higher than comparison districts in both content areas. Overall, the mean proficiency rate for ECSs was 74 percent in ELA and 67 percent in mathematics. ECSs located on a college campus had stronger performance (compared with their districts' averages) than ECSs located off college campuses.

- In 2007–08, students estimated that their high school grade point average (GPA) was 3.0 (B average). Analysis of transcripts at 38 schools (a nonrepresentative sample) revealed a slightly lower GPA of 2.7, which is a very similar GPA to results from a national study (2.8).[4] Females and students from non-English-speaking homes reported higher GPAs in

[2] All findings that are presented in this report are statistically significant. For findings related to school-level variables, a criterion of .05 was used, and for findings related to student-level variables, a more stringent criterion of .01 was used.

[3] The key *school* characteristics include: (a) *ECS age* — number of years open as an ECS, (b) *ECS origin* — startup versus other origins, (c) *IHE partnership* — 4-year IHE partners (or not), (d) *ECS location* — on or off a college campus, and (e) *Total enrollment*. The key *student* characteristics include: (a) gender, (b) from homes where English is not the primary language spoken, (c) low income — reported eligibility for free-reduced lunch, (d) first-generation college-going, and (e) minority.

[4] GPA was determined by pooling 2004–05 through 2007–08 data.

their high school classes than other students, while minority, first-generation college-going, and low-income students reported lower GPAs than white students.

- Between 2006–07 and 2007–08, the average 9th to 10th grade progression rate was 85 percent, with ECSs located on a college campus having higher progression rates than ECSs not on a college campus. For the 12 schools with 4 or 5 years of data, an estimated 66 percent of the students who entered as 9th-grade students will graduate from the ECS on time. For these few ECSs, this estimate is 14 percent higher than the schools' comparison districts' average estimate.
- The highest transfer rate for students out of ECSs was between 9th and 10th grades. Nine percent of 9th-grade students left their school between 2006–07 and 2007–08.
- Overall, students reported fairly high levels of academic engagement, in terms of both persistence and interest, and academic self-concept in 2007–08. First-generation college-going students reported lower engagement and self-concept than other students in the initiative, although females and students from non-English-speaking homes reported more engagement.
- In 2006–07, the average daily attendance rate in ECSs was 94 percent.[5] Attendance was higher for students attending an ECS located on a college campus.

College Outcomes

- Students estimated that their college GPA was about 3.1. ECSs reported that, on average, ECS students who graduated in 2006–07 earned 23 college credits.
- Eighty-three percent of the ECS students surveyed reported that they expected to receive a degree from a 2-year or a 4-year college; one-third responded that they expected to graduate from college and pursue further education. First-generation college-going students were less likely than other ECS students to aspire to a 4-year college degree or higher.
- Student enrollment in postsecondary education in the fall after high school graduation was higher for ECS students than for a nationally representative sample (88 percent versus 72 percent). It is interesting to note that ECS graduates were considerably more likely to enroll in a 2-year college than is the norm nationally — 43 percent versus 28 percent.
- Because they can accrue a significant number of college credits while in high school, graduates of ECSs can often choose whether to enter college as transfer students or as freshmen. Results of interviews with a small sample of ECS graduates revealed that most chose to enter college as freshmen rather than as transfer students. Most of these students reported that they felt more prepared for college than other new students. They noted that they knew what to expect in college classes and that their experience at the ECS prepared them for the writing, reading, and time management skills that would be required to be successful in college.

[5] When these data were collected in winter 2007, 2006–07 was the most recent full academic year.

Academic Experience

Most ECS students must move between the secondary and postsecondary environments. In contrast to students who complete a typical high school program, ECS students are required to assume more independence and responsibility for their learning, especially at the postsecondary level. Below is a summary of what students encountered in both of those environments.

- In terms of the content of college classes, half of students surveyed reported that at least one of their college classes was in a core academic subject area (e.g., social science or history, science, ELA, or mathematics).
- The proportion of students enrolled in at least one college class increased in each successive year, with almost three-quarters of students in 12th or 13th grade reporting completion of at least one college course.
- Ninth-grade students who took college classes typically did so with an entire cohort of ECS students (often because the college classes were offered just for them as a mechanism to increase their familiarity with college classes in a supportive environment). By the time they reached 12th grade, the majority of students reported that their college classes were integrated with traditional college students.
- According to students, the "new 3R's" — rigorous instruction, relevant curriculum, and supportive relationships for all students — were present throughout their ECS courses. Overall, students who reported high instructional rigor also reported a high level of relevance in their classes.
- Students felt adequately supported in ECSs but were more likely to access the supports at the high school level.
- Schools' understanding about what supports this population of students needs to prepare for and successfully transition to college has matured. It appeared that ECSs were trying to strike a balance between requiring certain formal supports and teaching students to be responsible learners.

The IHE Partnership

A committed IHE partner is increasingly important to the success and sustainability of ECSs as more students enroll in college classes. Because the IHE partnership is so crucial to the success of the ECS, this report provides insight into why colleges choose to participate and whether the colleges' goals are being met.

- In 2007–08, college leaders reported that increased enrollment, the creation of a pipeline for future enrollments, and positive publicity in the community they serve were key reasons for engaging in an ECS partnership.
- For some partners within the ECHSI, another benefit of the IHE–ECS partnership was collaboration between ECS and IHE faculty. However, to date, collaboration remains quite weak across the initiative. This finding has been consistent from year to year.

Maintaining the Momentum of the ECHSI

It is important that the ECSs and the ECHSI maintain the momentum created from these initial promising outcomes that are at the heart of the initiative's goals. The foundation, JFF, and the intermediaries have worked together throughout 2007–08 to identify strategies to ensure the schools' and the initiative's continued existence. Intermediaries have assumed more active leadership roles while continuing to support their schools. Supportive state and federal policies and the use of data to portray the success of ECSs remain important vehicles to ensuring the sustainability of the ECHSI.

- Players within the ECHSI realize that the foundation cannot fund intermediaries or ECSs in perpetuity. Therefore, they have shifted leadership of the initiative to the intermediaries so they can become a self-sustaining network. Intermediaries must balance these new responsibilities with overseeing their own schools.
- Intermediaries must ensure that their ECSs are exhibiting the fundamental Core Principles of the ECHSI. Theoretically, it is those principles that will enable the ECSs to continue to produce positive outcomes within a recognized and replicable network of schools. ECSs' ability to adhere to the Core Principles also often relies on the fortitude and retention of invested leaders with the connections and drive to secure support and resources, formal plans outlining how schools' needs will be met, and the support of the IHE partner.
- The ability of ECSs to produce positive results can help generate external support for the intermediaries and schools to fill the void once foundation funding ends. Some support comes in the form of state policies that allow this population of students to take college courses while in high school. To better track the data of students from high school through college, many states are starting to develop longitudinal data systems that bridge both education sectors. In the absence of these kinds of longitudinal state data systems, it has been difficult to fully populate the SIS associated with the ECHSI.

Summing Up

State and local policy-makers often view ECSs as an effective strategy for reforming secondary education and improving access to postsecondary education for all students. This report provides overall positive findings about the academic performance and experience of students attending ECSs. The results suggest that, although ECSs are not a magic bullet, many ECS students typically underrepresented in postsecondary education are experiencing academic success. The findings are particularly promising for females and students from homes where English is not the primary language; these students reported feeling more engaged in their coursework and possessed higher GPAs in high school classes than other groups of students. However, the ECHSI partners must continue to focus on the most appropriate methods to enable all students — in particular, first-generation college-going students — to be successful as well.

For the first time, the evaluation includes data from ECS graduates that furthers our understanding about what happens to students once they leave an ECS. Although our sample was limited, graduates reported having a positive experience at their ECSs that helped prepare them for postsecondary life. For example, the students' earning an average of 23 college credits while at the ECS aligns with prior research (Adelman, 2006) that suggests earning at least 20 credits by the end of the first year of college enrollment is a positive predictor of degree completion.

Overall, it appears that ECSs are creating momentum for their graduates that can lead to persistence in higher education.

This report suggests that students can succeed academically when they attend an ECS and receive the appropriate level of acceleration and academic supports. Attending an ECS located on a college campus also appears to facilitate positive student outcomes. Preliminary data indicate that a combination of factors (i.e., supports, location on a college campus, enrollment in college classes) shaped the experience of ECS students in such a way as to foster academic success at the high school and college levels.

Given this positive momentum, this report suggests the importance of the ECHSI continuing on its current path. The revised and ratified Core Principles are clearer and more attainable for schools and represent the effort by the multiple partners to build on lessons learned. The foundation and its partners believe that through adherence to the Core Principles, ECSs will produce the outcomes that are the goals of the ECHSI. To ensure that the ECS partnerships and overall network can continue to exist and exhibit encouraging results, the players within the ECHSI have started to put new processes and strategies in place. New federal guidelines and continued efforts by states to establish policies that can support ECSs and their students are increasingly important to these efforts. The ability of ECSs and the players within the ECHSI to produce and publicize positive outcomes can help generate necessary external support.

About the Evaluation

Since 2002, the American Institutes for Research and SRI International have worked together to evaluate the ECHSI for the Bill & Melinda Gates Foundation. All the data collection activities are grounded in a conceptual framework (defined in Chapter I), which denotes the key features that are measured and analyzed in the evaluation. Rather than testing a causal model, this evaluation has been descriptive and has attempted to document and describe the key features of the initiative and their interrelationships.

In 2007–08, the evaluation team collected and analyzed qualitative data (e.g., interviews, focus groups, and classroom observations) from visits to six ECSs and interviews with 13 intermediaries, four subintermediaries, 16 graduates, and JFF. The data from site visits focused mainly on understanding the colleges' rationale for participating in the ECHSI, as well as successes and challenges they experienced during implementation and in sustaining the ECSs.

The team also analyzed quantitative data on the population of open ECSs from an online school survey (administered by JFF), which included items on such topics as student-selection criteria for admission, student course-taking opportunities, and support services. Another source was the data collected through an online student survey administered to a sample of students at 35 schools. This survey asked students about their academic engagement and self-confidence, their instructional experiences in both high school and college classes, the ECS climate, and their GPA and college credit accrual expectations, among other variables. Other sources included data from the SIS and extant data from publicly available sources.

CHAPTER I. INTRODUCTION

Since 2000, the Bill & Melinda Gates Foundation has funded initiatives to increase academic achievement and attainment for low-income and minority students. In particular, the foundation is committed to helping students graduate from high school ready for college or the workforce. To date, the foundation has invested nearly $4 billion to "transform the levels of college-readiness and success for America's young people, particularly for low-income and minority youth" (Bill & Melinda Gates Foundation, 2008). The foundation has been focusing on two major education initiatives that it launched in November 2008, with goals of (a) ensuring that a high school education results in college readiness; and (b) ensuring that postsecondary education results in a degree or certificate with genuine economic value (Bill & Melinda Gates Foundation, 2008). The foundation-funded Early College High School Initiative (ECHSI) is at the intersection between these major initiatives.

Overview of the Early College High School Initiative

Launched in 2002, the ECHSI funds the development of Early College Schools (ECSs) that serve students who are traditionally underrepresented in postsecondary education and offer them the opportunity to simultaneously pursue a high school diploma and earn college credits. These schools attempt to alter the tradition that only academically advanced students participate in college-level coursework during high school. In the 2002–03 academic year (the year the ECHSI started), 71 percent of public high schools across the nation offered access to college courses, but only 5 percent of students participated in these programs (NCES, 2005). ECSs partner with institutions of higher education (IHEs) to offer enrolled students an opportunity to earn an Associate's degree or up to 2 years of college credits toward the baccalaureate while in high school. The underlying assumption is that engaging underrepresented students in improved high school instruction and curriculum that is tied to the incentive of earning college credits will motivate them and increase their interest in and access to additional postsecondary education.

Operationally, the ECHSI is organized around 13 grantee organizations, or intermediaries (see Figure 1.1), that receive foundation funding to work with local partners — such as school districts, community organizations, tribes, high schools, community colleges, and universities — to open ECSs.[6] In fall 2007, there were 157 ECSs open across 21 states and Washington, D.C. The foundation also funds Jobs for the Future (JFF) as an overarching intermediary to provide technical assistance to all other intermediaries and to the local ECS partners.

This report follows the activities of the ECSs in the ECHSI associated with these 13 organizations. However, there are more ECSs open or opening nationally. States, such as Georgia, Michigan, Pennsylvania, and Texas, and other school networks, such as Big Picture and Aspire, are either opening early colleges or adding an emphasis on college access while in high school (Hoffman & Webb, 2009).

[6] One intermediary (Texas High School Project) works through four subintermediaries on ECS partnership development.

Figure 1.1. ECHSI Intermediaries and Number of ECSs Open in 2007–08

- **Center for Native Education (CNE).** Located at Antioch University in Seattle, CNE works with Native American community partners to open ECSs that target Native American students and include culturally relevant instruction and curricula. Strong family and community engagement, as well as personalized student support services, are key features of all CNE ECSs. Open ECSs: 9.
- **The City University of New York (CUNY).** CUNY, a large urban public university system, collaborates with New York City's Department of Education to improve high school students' academic achievement and ability to do college-level work. Its ECSs engage in extensive planning prior to opening, serve students in grades 6 through 12, and are located in close proximity to the partner college campus. Open ECSs: 6.
- **The Foundation for California Community Colleges (FCCC).** FCCC is a cooperative consortium of California community colleges and works through them to create ECSs. FCCC supports its ECSs by providing ongoing technical assistance, professional development, and state-level policy analysis and development. FCCC focuses on student literacy and college readiness. Open ECSs: 20.
- **Gateway to College (GtC).** GtC, based out of Portland Community College, serves youth aged 16–20 who are at risk of dropping out of high school or have already dropped out. It offers an alternative route for high school completion through college course participation and high expectations and supports. Open ECSs: 12.
- **KnowledgeWorks Foundation (KWF).** KWF is a philanthropic organization in Ohio dedicated to improving educational opportunities for all individuals by collaborating with public and private entities. Its ECSs are located in large, urban districts and partner with 2- and 4-year postsecondary institutions. Open ECSs: 8.
- **Middle College National Consortium (MCNC).** MCNC supports secondary and postsecondary public-sector educators in implementing educational reforms for traditionally underserved youth. MCNC's schools, known as Middle Colleges, receive ongoing technical assistance from MCNC. Middle Colleges, situated on community college campuses, are founded on six design principles: power of the site, teaching and learning, student assessment, student support, democratic school governance, and professional development. Some Middle Colleges are also ECSs, which have the goal of providing opportunities for students to earn an Associate's degree or up to 60 college credits. Open ECSs: 15.
- **National Council of La Raza (NCLR).** NCLR is a national constituency-based Hispanic organization that includes education as one of its key priorities. Its ECSs are located in areas serving largely Latino communities. These ECSs intend to demonstrate the ability of every Latino student to master a college-preparatory curriculum and complete 2 years of college education by the time he or she graduates from high school. Open ECSs: 10.
- **North Carolina New Schools Project (NCNSP).** NCNSP was established to address the college aspirations of underserved students in North Carolina. Funded by the state (rather than by the Bill & Melinda Gates Foundation), its ECSs are part of the governor's Learn and Earn initiative. Each ECS is located on a 2-year or 4-year college campus and offers an academically rigorous, university-prep curriculum. All students participate in work-based learning experiences and work closely with a teacher-adviser. Open ECSs: 42.*
- **SECME, Inc. (SECME).** SECME, a nonprofit corporation that links engineering universities, school systems, and corporate and government investors, seeks to prepare underserved students to enter and complete postsecondary studies in science, technology, engineering, and mathematics. It provides technical assistance to school districts to develop or redesign ECSs. Open ECSs: 2.*

Figure 1.1. ECHSI Intermediaries and Number of ECSs Open in 2007–08 (continued)

- **Texas High School Project (THSP):** THSP is a public-private initiative involving the Texas Education Agency (TEA), the Communities Foundation of Texas (CFT), the Texas governor's office, and the Texas Higher Education Coordinating Board. THSP, rather than opening ECSs directly, funds four subintermediaries to open ECSs. Open ECSs: 11.**
  - **Texas A&M University System (TAMU System):** The TAMU System is contracted under THSP, and the ECHSI grant is facilitated by the College of Education at TAMU at College Station. Its goal is to ensure that all ECS students are fully prepared to enter a 4-year college upon graduation. Its ECSs partner with a college within the TAMU System. Open ECSs: 2.
  - **Texas Community College Education Initiative (TCCEI):** TCCEI is a nonprofit subsidiary of the Texas Association of Community Colleges (TACC). One of TCCEI's goals is to increase access to community college for students across the state. Each of TCCEI's ECSs is the result of collaboration between a community college and a local school district. Open ECSs: 3.
  - **University of North Texas (UNT):** UNT's ECHSI work is an outgrowth of its participation on the regional P-16 Council, an association of regional educational organizations concerned with student success from preschool through college. UNT believes that universities should play a role in ensuring a seamless transition for all students who have college aspirations. Open ECSs: 2.
  - **University of Texas System (UT System):** The UT System works with IHEs in its system to create and open ECSs in targeted regions. The Institute for Public School Initiatives manages the ECHSI for the UT System. The institute's goal is to increase the number of high school graduates who have the academic skills they need in college and to engage in partnerships to improve student performance. Open ECSs: 4.
- **University System of Georgia (USG):** The P-16 Office of the Board of Regents is a partnership between the Georgia Department of Education and USG. This partnership aims to increase college readiness and success of high school graduates traditionally underserved by USG. Each ECS is a partnership between a USG university and one or more Georgia public school systems. USG's role is to provide guidance and support to schools so that every student can be successful and to examine the model to eventually move toward statewide replication. Open ECSs: 6.
- **The Utah Partnership for Education (UP):** UP aims to increase the number of students with the skills to enter a variety of higher paying jobs, to improve the quality of education in Utah through business–education partnerships, and to increase the research partnership efforts of business and university communities. UP ECSs emphasize science, technology, engineering, and mathematics. Open ECSs: 6.
- **Woodrow Wilson National Fellowship Foundation (WWNFF):** WWNFF is a nonprofit organization that promotes individual opportunities and institutional partnerships that lead to college access for first-generation college-goers. Its ECSs partner with 4-year public and private IHEs and emphasize rigor for students, ongoing professional development for teachers, and rich scholarly engagement for the college faculty involved. Open ECSs: 11.

* One ECS is supported by both NCNSP and SECME.

** Within the state of Texas, there are now other early colleges funded by TEA that are not part of the ECHSI and do not necessarily adhere to its Core Principles.

Over the course of its 6 years, the ECHSI has evolved as more partners have become involved and more schools have opened. As detailed in the following section, the intermediaries have adapted, and the foundation has supported, five guiding Core Principles to better meet the needs of the ECSs and to sharpen the focus on key characteristics. Although intermediaries are still opening ECSs, the initiative is slowly shifting its focus to ensuring ECSs' sustainability and success. The ECHSI's goals continue to be improved rates of high school graduation, college attendance, and college completion.

ECHSI Core Principles

In 2004, the foundation, JFF, and the intermediaries finalized a Core Principles document that defined the features of an ECS believed to be necessary for meeting the ECHSI goals. The intermediaries are responsible for supporting ECSs in meeting the Core Principles. They accomplish this by helping ECSs find resources and maintain critical relationships. They also may impose consequences for schools that cannot, or will not, meet the Core Principles.

As the initiative progressed, it became clear that ECSs were struggling to meet some of the Core Principles, such as the principle requiring all ECS students to earn 2 years of transferable college credits or an Associate's degree, while other principles received little attention. By 2007, 5 years into the ECHSI, the general climate among the key stakeholders suggested that the Core Principles could be productively revisited, revised, and refined to provide a better and perhaps more explicit roadmap for future developers of ECSs. As such, intermediary representatives, JFF, and the foundation had multiple conversations during 2007 and 2008 to refine the Core Principles. In fall 2008, the following five revised Core Principles were ratified:

1. "Early college schools are committed to serving students underrepresented in higher education.

2. "Early college schools are created and sustained by a local education agency, a higher education institution, and the community, all of whom are jointly accountable for student success.

3. "Early college schools and their higher education partners and community jointly develop an integrated academic program so all students earn 1 to 2 years of transferable college credit leading to college completion.

4. "Early college schools engage all students in a comprehensive support system that develops academic and social skills as well as the behaviors and conditions necessary for college completion.

5. "Early college schools and their higher education and community partners work with intermediaries to create conditions and advocate for supportive policies that advance the early college movement." (JFF, 2008, p. 2)

The participating intermediary networks share a commitment to these revised Core Principles. The intermediaries, JFF, and the foundation also collaboratively developed strategies that are essential to attaining each principle and are part of the formal Core Principles document (JFF, 2008). Each intermediary has a different design or model for its ECSs, resulting in varied approaches to implementation of the Core Principles across the ECSs.

National Evaluation of the ECHSI

Since fall 2002, the American Institutes for Research (AIR), in collaboration with SRI International (SRI), has been conducting a national evaluation of the ECHSI for the Bill & Melinda Gates Foundation. This evaluation is one of the ways in which the foundation will determine whether the ECHSI is meeting its goals and the intentions of the Core Principles. In the past 6 years, the size of the initiative has grown dramatically, and the evaluation design and timeline have been refined several times to accommodate this growth. The evaluation of the

ECHSI is descriptive, attempting to document and describe the key features and their relationship to implementation and to student outcomes.

Evaluation Research Questions

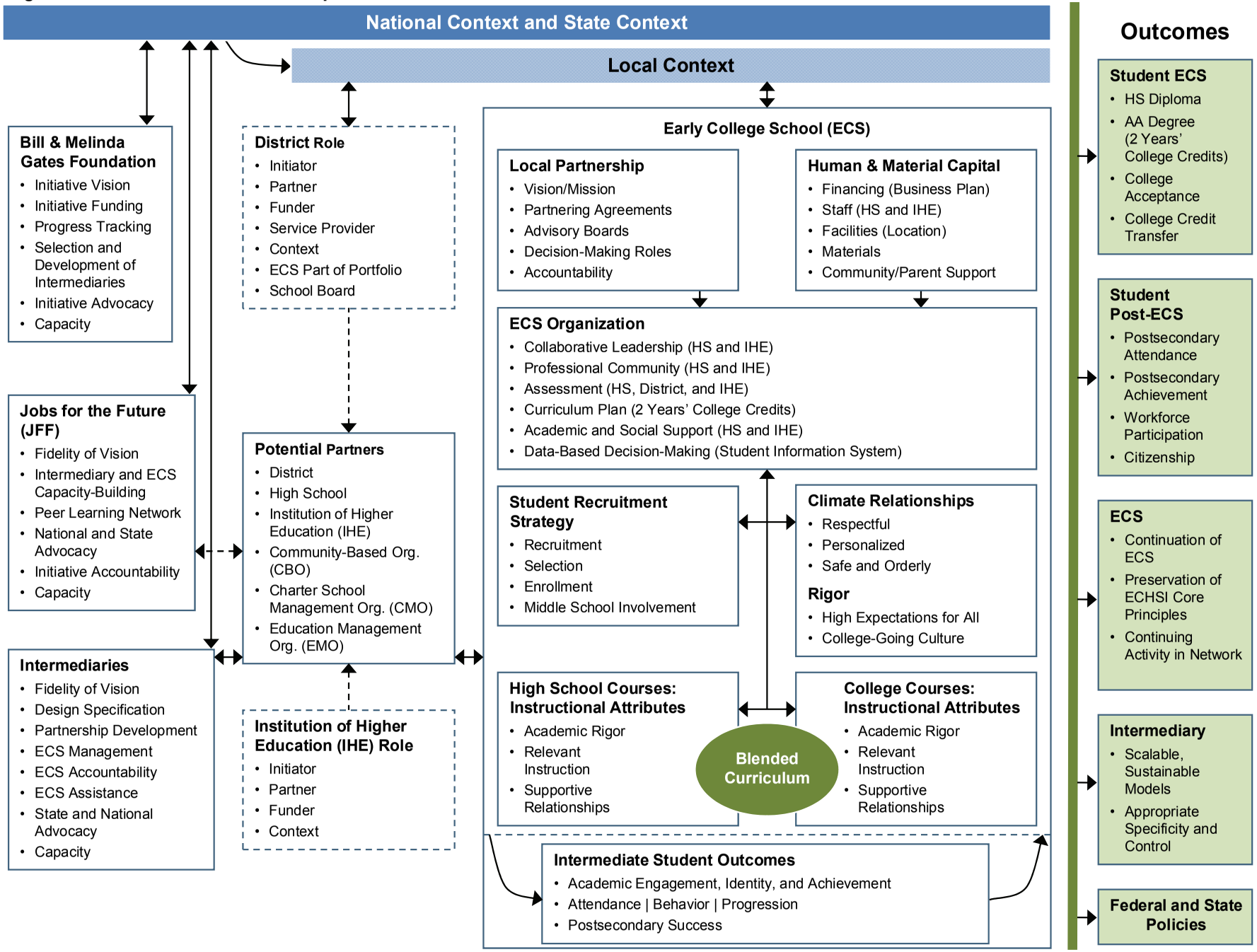
Since its inception, the evaluation of the ECHSI has been guided by research questions developed through the AIR/SRI evaluation team's understanding of the initiative and the foundation's overall strategy for reforming high schools, discussed previously (AIR & SRI, 2008). The initial questions focused primarily on topics related to the implementation of ECSs, such as high school–college partnerships and strategies that intermediaries use to support ECS development. As the initiative has matured, the evaluation has shifted its focus toward understanding the relationship between ECS implementation and college-ready student outcomes and the ongoing implementation of the ECSs, partnerships, and the ECHSI itself. To reflect this new focus, in 2007 AIR and SRI, with additional input from foundation staff and other ECHSI partners, developed the following five revised research questions to guide the evaluation:

- What are the structural, organizational, and instructional characteristics of ECSs?
- What policies (local, state, and federal) support or inhibit ECSs?
- How do the ECHSI participating organizations support ECSs and the initiative?
- What are the intermediate and long-term outcomes for students attending ECSs, especially for students traditionally underserved by the postsecondary system?
- To what extent are levels of implementation correlated with student outcomes at the high school and college levels?

Conceptual Framework

The conceptual framework developed for the ECHSI evaluation (see Figure 1.2) denotes the key features that are measured and the interrelationships that are investigated in the evaluation. Over time, this conceptual framework has been amended to reflect (a) growth and change within the initiative as it matures and (b) the evaluation team's increased understanding of the initiative. Nevertheless, the whole conceptual framework remains essentially the same representation of the components and constructs of the ECHSI (as the initiative has been defined by the foundation, JFF, and the intermediaries) that have guided the evaluation from its inception. In 2007–08, the evaluation team collected and analyzed qualitative and quantitative data primarily on the local partnership, the ECS organization, the intermediate student outcomes (i.e., the middle portion of the conceptual framework figure), and the outcomes at the student (both ECS and post-ECS), ECS, intermediary, and federal and state policy levels (i.e., the right portion of the conceptual framework figure).

Figure 1.2. ECHSI Evaluation Conceptual Framework



Data Sources

This report includes analyses of qualitative and quantitative data collected during the 2007–08 academic year and, for comparison purposes, integrates findings from prior evaluation reports. The evaluation team gathered qualitative data from six site visits, a smaller number of ECSs than in previous years, and the focus was explicitly on understanding why colleges (IHEs) participate in partnerships that develop and support ECSs. Site visits included interviews with ECS leaders, college leaders, college liaisons (at the school or the IHE partner, or both), guidance counselors, and college instructors. Although we collected rich data from these schools, they are not a representative set of schools.

Telephone interviews with 16 ECS graduates represented a new qualitative data collection activity. We purposely sampled ECS graduates who enrolled in college after graduating from an ECS. These interviews focused on how prepared the students felt they were for college (academically, socially, and emotionally) and what academic and social supports they received at the ECSs.

The evaluation team also conducted telephone interviews with the 13 intermediaries, four subintermediaries, and JFF, focusing on topics that included the revised Core Principles, the target student population, the IHE and schools as partners, the sustainability of the ECHSI, the role of the intermediaries and JFF, and the policy/advocacy landscape. Unlike previous years, the evaluation team did not interview a foundation representative due to staffing changes at the foundation.

Three sources of quantitative data were used this year: (a) an online student survey; (b) an online school survey; and (c) the SIS. The student survey included approximately 25 students per grade at 35 schools; this sample is considered to be representative of the initiative overall. The student survey included topics such as academic identity, educational aspirations, academic engagement, plans for college, and academic achievement. All 157 open ECSs in the ECHSI received an invitation to participate in the school survey, which included items on student selection criteria, student demographics, opportunities for taking college courses, and support services. A total of 151 of the schools completed the survey.

The third source of quantitative data for this evaluation, the SIS, is managed by JFF. The SIS is an online data collection system that includes data for students such as academic progress, background characteristics, and transcript information. Annually, JFF requests data from districts, schools, and IHEs and submits them to a data warehouse. JFF has experienced ongoing challenges populating the SIS. JFF solicits data from every school in the initiative with the goal of 50 percent participation. By the end of the data collection period for this report, few schools submitted adequate data. Therefore, the evaluation team supplemented the SIS data with school-level assessment and demographic data obtained from published sources (i.e., state and district Web sites). In this report, two primary outcomes are reported from the SIS data: grade-to-grade progression rates and college course-taking.

Data Analysis

Extensive details regarding data analysis are available in Appendix A. This section provides a brief overview. For qualitative data sources, analysts coded data looking for established as well as emerging themes. They then looked for relationships between the codes. These relationships and themes are reported in this year's evaluation report. For quantitative data sources, data are

reported based on simple descriptive statistics. For all data, the response rate was at least 80 percent, unless otherwise reported. In addition, multivariate analyses provided information on the relationship between two variables, after taking into consideration other pertinent variables. School-level data analyses used ordinary least squares (OLS) regression, and analyses based on student-level data used hierarchical linear modeling (HLM). For example, we examined the relationship between school location and average daily attendance rates, after controlling for other school characteristics (such as total enrollment). For school-level dependant variables, all findings are reported if they were significant at the 0.05 level. Given the large student survey sample size, we used a more stringent reporting requirement; all findings are significant at the 0.01 level. Other findings are included when they replicate or discount findings from previous years.

Contents of This Report

This 2007–08 evaluation report will allow key stakeholders in the ECHSI to reflect on where the initiative has been, what it has learned, and where it can go in the future. It presents the perspectives of the different stakeholders and their varied experiences as participants in a new education model. The report is divided into seven chapters including this introduction chapter (Chapter I).

Chapter II provides a snapshot of ECSs in the ECHSI, using quantitative data that include dimensions such as age, origin, partner type, location, and school size, and briefly describes the students served in these schools. The chapter outlines the variations among ECSs and discusses how the snapshot of school and student characteristics compares to previous years. The chapter also introduces the characteristics on which ECSs will be compared throughout the report.

Chapter III describes the student experience at the ECSs. The analyses are based on qualitative and quantitative data and include a discussion on how students are enrolled in ECSs, how they experience college classes while at an ECS, their experiences in ECS classrooms, and what kinds of supports they are offered. The chapter examines variations across several key school-level characteristics (e.g., school size, age, and location of the school). Student characteristics also are examined, including grade level, gender, minority status, first-generation college-going status, and poverty status.

Chapter IV describes the ECS and postsecondary student outcomes using both quantitative and qualitative data. Outcomes are compared to districts, states, and the country as a whole. The chapter includes intermediate outcomes (e.g., academic engagement and self concept), attendance, academic performance, academic progress, and post-ECS preparation and experiences.

Chapter V focuses on the local partnerships, paying particular attention to the IHE perspective on the partnership. This chapter discusses topics such as the motivation of IHEs to be involved in the ECHSI, the level of ongoing commitment of college leaders and liaisons, buy-in from the IHE faculty, and professional collaboration among IHE and ECS faculty.

Chapter VI considers the efforts of the ECHSI stakeholders to maintain the momentum of the initiative given its ever-evolving nature. It discusses the changing role of the intermediaries, the efforts of the intermediaries and ECSs in maintaining the unique features of ECSs, the role of community, state, and federal support, and the importance of outcome data to help garner support for the ECSs and to propel the initiative forward.

Finally, Chapter VII summarizes the major findings of the evaluation and emerging patterns in the available data to date, particularly focusing on the outcomes for various student populations.

This evaluation report also includes Appendix A, a technical appendix that provides information on quantitative and qualitative data collection and analysis methods. Appendix B includes tables with detailed results from quantitative analyses. Appendix C is an overview of the state and federal policy environment for the ECHSI. It draws upon previous research to outline key policy areas that are critical to the success of ECSs and, where possible, describes the impact of these policies on ECSs.

CHAPTER II. A SNAPSHOT OF THE EARLY COLLEGE SCHOOLS

This chapter addresses one of the evaluation's basic research questions, and one that is critical to understanding the ECHSI: What are the structural and organizational characteristics of ECSs? Put simply, what do ECSs look like? This chapter serves two purposes. First, it provides a snapshot of the schools in the ECHSI along particular dimensions — including their age, intermediary, origin, partner type, location, and size — and briefly describes the students served in these schools. It outlines the variation among ECSs and discusses how the snapshot of school and student characteristics compares with previous years. Second, it introduces the characteristics on which ECSs will be compared in two subsequent chapters.

The findings presented in this chapter are descriptive in nature. The data are based primarily on the school survey administered in 2007–08, unless otherwise noted. Out of the 157 schools in the initiative open in 2007–08, 151 participated in the 2007–08 ECHSI school survey. Throughout this report, the total number of ECSs on which each analysis is based may vary, depending on how many ECSs responded to the relevant items in the school survey.

School Openings and Initiative Growth

The ECHSI began in 2002 with three ECSs.[7] By its sixth year in 2007–08, the ECHSI had grown to 157 schools. Table 2.1 provides the number of schools opened between 2002 and 2007 for each intermediary. Some of the intermediaries continue to open new ECSs as part of the ECHSI, while others have completed opening their designated number of schools; seven of the 13 intermediaries opened at least one school in 2007. A total of 25 schools joined the initiative in 2007. This is the smallest number of schools that joined in a given year since 2003. Nevertheless, it does not signal a slowdown, as the initiative continues to grow; 41 new ECSs opened in fall 2008.

Table 2.1. Number of ECSs in the ECHSI by Intermediary and Opening Year

Intermediary	Year ECS Opened						Total
	2002	2003	2004	2005	2006	2007	
Center for Native Education (CNE)	0	1	2	3	1	2	9
City University of New York (CUNY)	0	0	1	2	3	0	6
Foundation for California Community Colleges (FCCC)	0	2	2	4	5	7	20
Gateway to College (GtC)	0	0	2	3	4	3	12
KnowledgeWorks Foundation (KWF)	0	1	2	3	0	2	8
Middle College National Consortium (MCNC)	3	6	4	1	1	0	15
National Council of La Raza (NCLR)	0	2	4	1	3	0	10
North Carolina New Schools Project (NCNSP)	0	0	1*	13	20	8	42
SECME, Inc. (SECME)	0	0	2*	0	0	0	2
Texas High School Project (THSP)	0	0	3	0	8	0	11
University System of Georgia (USG)	0	0	0	1	4	1	6
Utah Partnership for Education (UP)	0	1	2	2	1	0	6
Woodrow Wilson National Fellowship Foundation (WWNFF)	0	3	2	2	2	2	11
Total	**3**	**16**	**26**	**35**	**52**	**25**	**157**

* One ECS is supported by both SECME and NCNSP.
Source: 2007–08 ECHSI school survey and JFF

[7] One of the original four ECSs is no longer in operation.

ECS Origins

Although all ECSs open under the umbrella of the ECHSI, they begin in one of four ways: as startup schools, as adaptation schools, as conversion schools, or as programs within schools. Startup schools, which are newly created schools, made up more than two-thirds of all ECSs (68 percent) in 2007–08. The remaining schools evolved out of an existing high school (called adaptation ECSs, 22 percent) or the breakdown of a larger school into multiple smaller schools (called conversion ECSs, 5 percent), or were designed as programs within a regular high school (called program ECSs, 5 percent). Compared with 2006–07, the initiative had a similar percentage of adaptation, startup, and conversion ECSs but fewer program ECSs in 2007–08. None of the schools that joined the ECHSI in 2007–08 were classified as program ECSs; all of this type joined the initiative in prior years. Table 2.2 compares the distribution of ECSs by origin between 2006–07 and 2007–08.

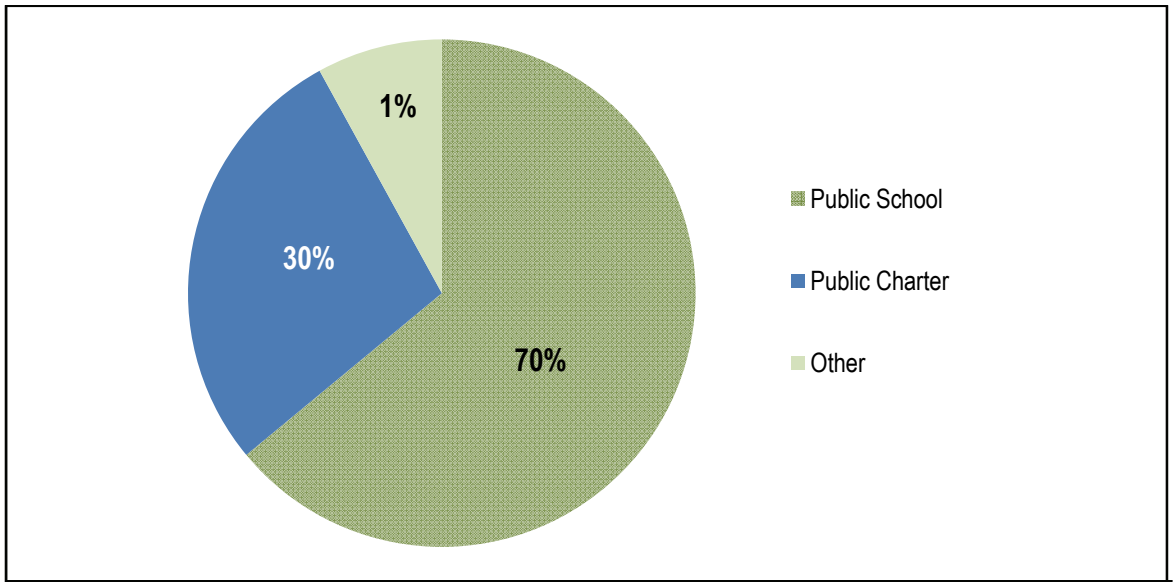
Table 2.2. Percentage Distribution of ECSs by Origin in 2006–07 and 2007–08

School Origin	2006–07	2007–08
Adaptation	20%	22%
Startup	66%	68%
Conversion	2%	5%
Program	13%	5%

2006–07 *n* = 119; 2007–08 *n* = 148
Source: 2006–07 and 2007–08 ECHSI school surveys

ECSs also can be traditional public schools or public charter schools. This designation has implications for the level of autonomy a school has to implement the model; charter schools typically enjoy more autonomy in their operations and programming. Figure 2.1 displays the distribution of ECSs by school type. In fall 2007, 70 percent of ECSs were public schools, slightly more than the 69 percent in fall 2006. Nearly one-third of ECSs (30 percent) were public charter schools, more than the 26 percent in fall 2006. Other schools did not fit neatly into these two categories. For example, some schools identified themselves as a program on a community college campus.

Figure 2.1. Distribution of ECSs in 2007–08, by School Type



ECSs *n* = 142
Note: Percentages do not add to 100 due to rounding.
Source: 2007–08 ECHSI school survey

IHE Partnership Types

All ECSs are required to partner with an IHE. Throughout the life of the initiative, public 2-year IHEs have been the most prominent partner type. Community colleges are natural choices as partners in serving a nontraditional (i.e., high school) student population because of their mission to serve their community and their inclusive enrollment policies. Approximately two-thirds of ECSs (65 percent) partnered exclusively with a public 2-year IHE in 2007–08.

ECSs also can be partnered with public or private 4-year IHEs or a combination of 2- and 4-year IHEs (i.e., they can have multiple partners). Twenty-four percent of ECSs reported partnerships with a 4-year IHE in 2007–08 and 11 percent of ECSs reported partnerships with multiple IHE partner types.[8] As Table 2.3 demonstrates, the distribution of types of partnerships in the initiative changed very little between 2006–07 and 2007–08.

Table 2.3. IHE Partner Types in 2006–07 and 2007–08

IHE Partner Types	2006–07	2007–08
Public 2-year	64%	65%
Public 4-year	24%	23%
Private 4-year	3%	1%
Multiple partner types	9%	11%

2006–07 *n* = 120; 2007–08 *n* = 157
Source: 2006–07 and 2007–08 ECHSI school surveys, JFF, IHE partner Web sites, and school personnel

[8] The majority of 4-year IHE partners were public institutions, though the partners represent a wide variety of college and universities. Examples of 4-year IHE partners include Hunter College, the University of Utah, multiple campuses within the California State University and University of Texas systems, and Stanford University.

Findings in the previous evaluation report (AIR & SRI, 2008),[9] about the 2006–07 school year, suggested better student outcomes at ECSs affiliated with 4-year IHEs. To further explore the relationship between partner type and outcomes of interest, we split ECSs into two categories that will be used to discuss findings in this report: those that have a partnership with a 4-year IHE (either as a single partner or as one of multiple partners) and those that do not. In 2007–08, 35 percent of schools had a 4-year IHE partner.

ECS Location

ECSs are physically situated in a variety of locations. Previous research on high school reform and on the ECHSI has emphasized the "power of place," which supports the additive effects on students of having access to an authentic college environment by being located directly on a college campus (Cavalluzzo, Corallo, & Jordan, 2002; AIR & SRI, 2008; Cunningham & Matthews, 2007). Therefore, we look to see where ECSs are physically located, and whether that location is on a college campus.

The exact location of an ECS can be difficult to determine given the complex nature of ECS course-taking. Within the ECHSI, schools offer students a combination of high school and college classes, meaning that students sometimes have unique and varied arrangements for taking their classes (e.g., students at ECSs located on college campuses may take both their college and high school courses on the college campus, whereas students at ECSs located off campus may take college courses on a college campus and high school courses off campus). This diversity often creates some ambiguity about how to describe and analyze data based on the location of the schools. Where, indeed, do the heart and soul of these ECSs reside? On the school survey, ECSs identified where they offered the majority of high school courses and the majority of college courses. For several years, the evaluation team has considered ECSs to be "located" where they offer the majority of their high school classes.[10] Table 2.4 compares the distribution of ECS locations in 2006–07 and 2007–08. As in 2006–07, close to half of the ECSs in 2007–08 were located on a 2-year college campus.

Table 2.4. Location of ECSs* in 2006–07 and 2007–08

Location of ECSs	2006–07	2007–08
In own school building	37%	42%
On a 2-year college campus	47%	45%
On a 4-year college campus	9%	8%
On another school's campus	4%	3%
In a nonschool building	3%	2%
Distance learning	N/A†	1%

* Based on the location of the majority of high school courses.
† Distance learning was not provided as a response option in the 2006–07 ECHSI school survey. 2006–07 *n* = 117; 2007–08 *n* = 157
Source: 2006–07 and 2007–08 ECHSI school surveys, ECS Web sites, and school personnel

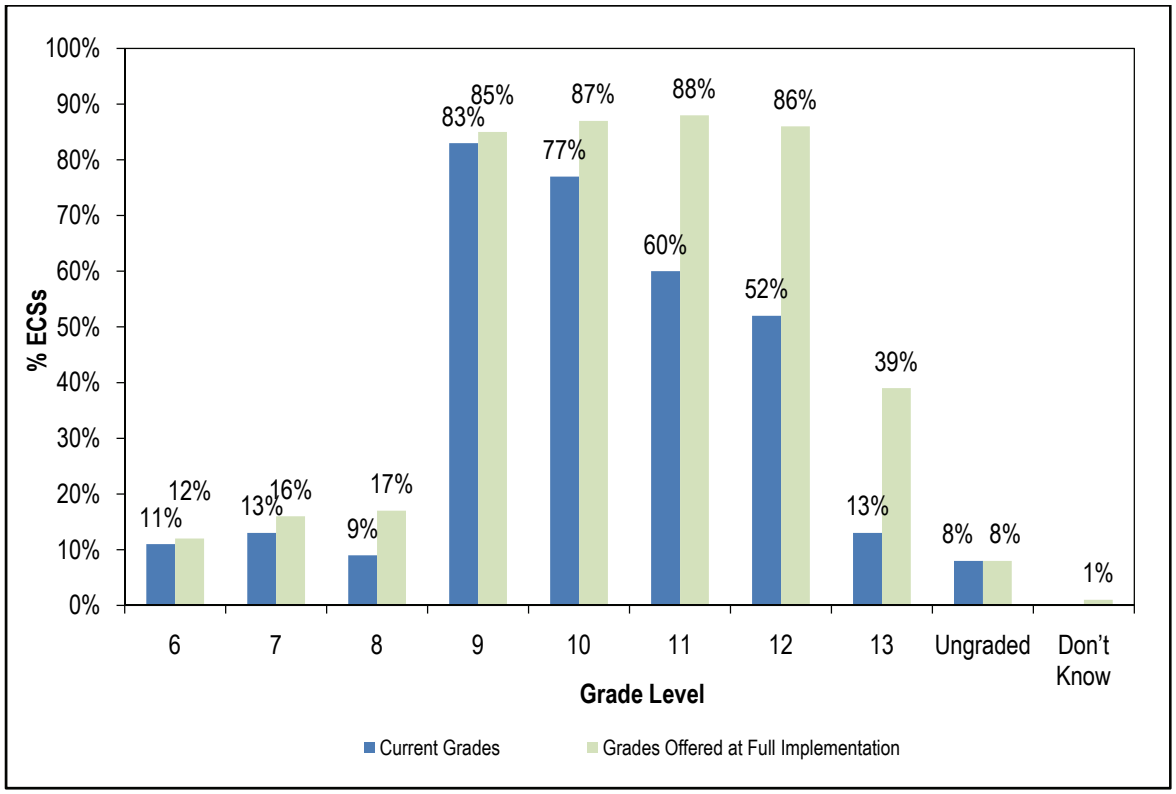
[9] Please note that all references to findings from the previous evaluation report are from AIR & SRI, 2008. The in-text citation will not be repeated with each reference to that report.
[10] GtC ECSs do not technically offer high school classes. All of these sites are "located" where they offer college classes, which is on a college campus.

For the purposes of our analysis, and consistent with the idea that the "power of place" matters, we use two categories for ECS location: ECSs that are located on a college campus and those that are not. In 2007–08, 53 percent of schools were physically located on a college campus and 47 percent of schools were not located on a college campus. Note that the purpose of this distinction is to capture the effects of being located on a college campus, not merely having access to it. ECSs that allow students to take college classes on a college campus but are themselves situated off campus are not considered to be located on a college campus. However, the location of college courses is important as well and will be discussed later in this report.

ECS Grade Span

In addition to describing the structural and organizational characteristics of schools in the ECHSI, we briefly outline the students served by the initiative. In 2007–08, the grade spans offered by ECSs continued to vary. Figure 2.2 displays the percentage of ECSs offering each grade level in 2007–08 and the percentage of ECSs that plan to have each grade level at full implementation. The distinction between enrolled and planned grades is important because it demonstrates a common implementation strategy for both new and existing schools — starting with one or two grades and adding a grade each year until the school includes all planned grades. Fewer than half of the schools had reached full implementation in 2007–08; 54 percent of schools planned to serve more grades at full implementation than they served in 2007–08.

Figure 2.2. Percentage of ECSs Offering Each Grade Level in 2007–08 and at Full Implementation



ECSs n = 151
Source: 2007–08 ECHSI school survey

Although the ECHSI is a "high school" initiative, the foundation has emphasized the importance of preparing students early for the demands of rigorous coursework. To meet these demands, some ECSs

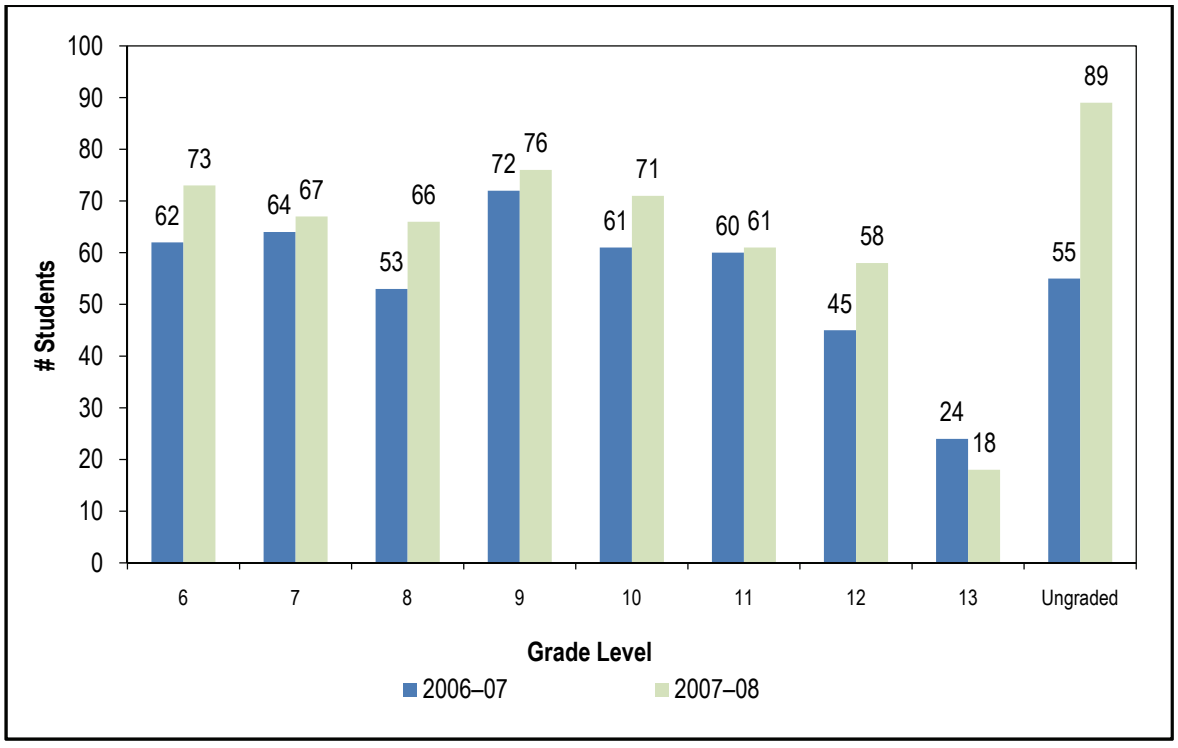
include middle school grades; 13 percent of ECSs enrolled grades below 9th grade in 2007–08. Some ECSs incorporate an extra year, grade 13, which usually provides the opportunity for students to focus on college credit accumulation. Other ECSs, including all GtC ECSs, are ungraded. In these schools, students move through the program based on timelines specific to their needs and capabilities.

Importantly for our analysis, the percentage of schools with 12th-grade students is now over 50 percent. Furthermore, 26 percent of ECSs had a class of students that had progressed through the entire ECS program in 2007–08.[11] These numbers increased from 2006–07, in which 43 percent of ECSs served 12th-grade students and 16 percent had a class of students that had progressed through and graduated from the ECS program. While these statistics demonstrate the youthfulness of the initiative, they also highlight the fact that increasing numbers of ECSs have graduates who have been through the entire ECS program. As a result, we have a better opportunity to examine the outcomes of the initiative.

ECS Enrollment

A small, personalized learning environment is one of the fundamental characteristics of schools in the ECHSI. The average size of an ECS in 2007–08 was 211 students total. However, wide variation in size existed — the smallest school had only 20 enrolled students, while the largest school had 1,300 students. As shown in Figure 2.2, many ECSs did not yet enroll all of the high school grades, and schools served or planned to serve different grade levels. As such, the size of the schools can be better illustrated through the average size per grade. As displayed in Figure 2.3, the average grade size in ECSs was well below 100 students per grade.

Figure 2.3. ECSs' Average Grade Size in 2006–07 and 2007–08



2006–07 ECSs *n* = 120; 2007–08 ECSs *n* = 151
Source: 2006–07 and 2007–08 ECHSI school surveys

[11] These schools both offered 12th grade and had been a part of the ECHSI for at least 4 years.

Figure 2.3 also demonstrates the difference in average enrollments between 2006–07 and 2007–08. Average grade size was roughly comparable between the two years, with an increase in most grades.

ECS Student Demographics

In addition to the grade levels served by the ECSs, we examined the demographic characteristics of the students served by these schools. One of the key features of the ECHSI is its effort to reach students traditionally underrepresented in higher education. Revised Core Principle 1 outlines three strategies that the intermediaries deem essential to meeting this "target population":

- "Early college schools recruit low-income students, racial and ethnic minorities, first-generation college-goers, and English language learners.[12]
- "Early college schools recruit students at risk of dropping out of high school, not matriculating to college, and not completing a degree, (i.e., students with poor attendance, struggling learners, students who are overage and under-credited).
- "Student admission is not based solely on prior academic performance." (JFF, 2008, p. 2)

Here we examine the student population served by ECSs.

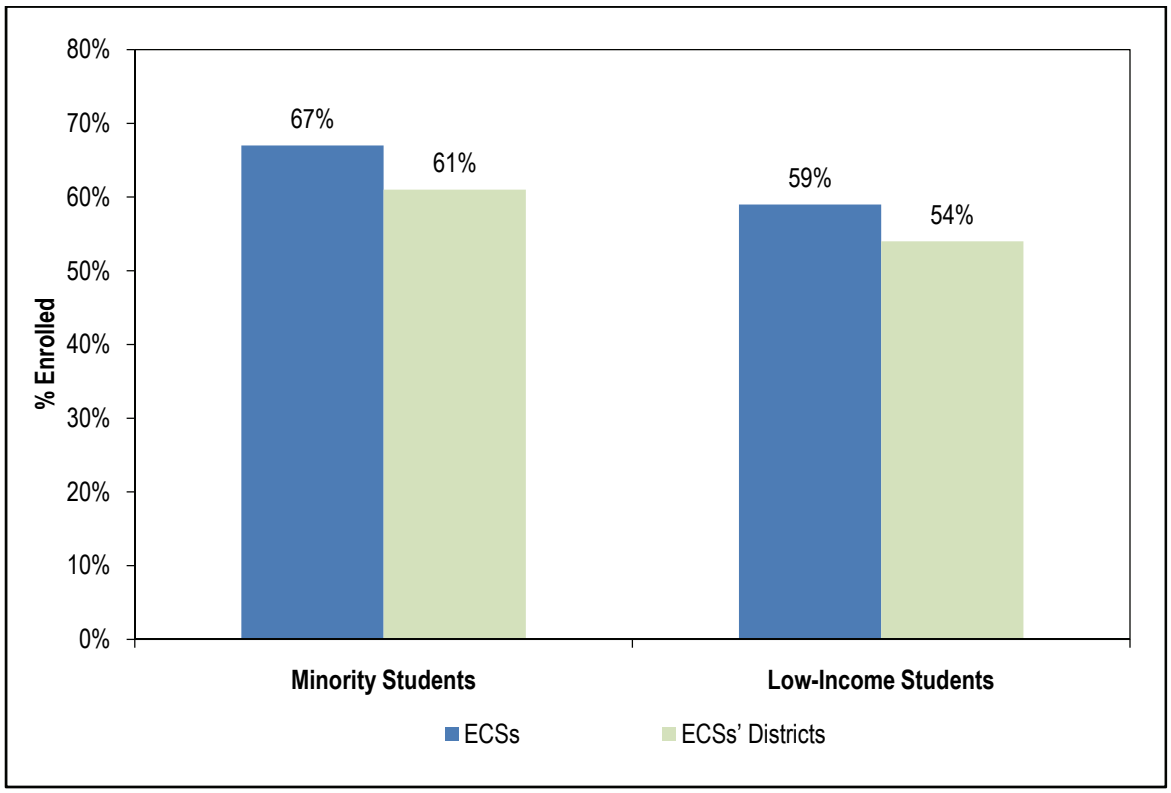
Minority Students

Minority is defined as any student not classified as white and not of Hispanic origin.[13] In 2007–08, the average percentage of minority students across the ECHSI was 67 percent, which is identical to that in 2006–07. According to Web site and school survey data, ECSs had a population of minority students that was on average 6 percentage points higher than the population of the districts from which they drew students (see Figure 2.4).

[12] While the Core Principles use the term "English language learners," the school survey and other publicly available data use the term "limited English proficient." We use both terms in this chapter as a means of describing the language minority status of the ECHSI's student population.

[13] Across the initiative, an average of 34 percent of students were white, 30 percent were Hispanic, 25 percent were black, 5 percent were Native American, 4 percent were Asian, and 3 percent were classified as "other." (Percentages sum higher than 100 percent due to rounding.)

Figure 2.4. 2007–08 Average Percentage Enrollments of Minority and Low-Income Students in ECSs and Districts



Minority ECSs *n* = 153; Low-income ECSs *n* = 136
Source: 2007–08 ECHSI school survey, and ECS and district Web sites

Low-Income Students

Across the population of ECSs, the average percentage of students classified as low-income was 59 percent.[14] This finding is consistent with the percentages in 2006–07, when an average of 60 percent of ECS students were low-income. As with minority students, ECSs had a higher percentage of low-income students than the districts from which they drew students (see Figure 2.4).

Limited English Proficient Students

Based on the school survey, populationwide, an average of 10 percent of students in ECSs were designated as limited English proficient (LEP) in 2007–08. Publicly available data on LEP status were not sufficient to generate district-level estimates for comparison purposes. In 2006–07, too few ECSs reported on LEP status, so an initiativewide average was not calculated.

Students From Non-English-Speaking Homes

The ECHSI student survey collected information about the primary language spoken in students' homes. In 2007–08, 43 percent of students who took the student survey reported living in homes

[14] Low-income students are defined as students qualifying for free or reduced-price lunch, or students meeting other comparable local criteria.

where English was not the primary language. Note that some of these students may themselves be native English speakers. Nevertheless, this measure may provide some indication of the percentage of multilingual students and/or students who are from immigrant families.

First-Generation College Students

The ECHSI seeks to serve students who are the first in their families to attend college. In 2007–08, 31 percent of students who attended ECSs reported that their mothers had graduated from college and 28 percent said that their fathers had graduated from college (of the students who knew this information about their parents). These percentages are about the same as in 2006–07, when 33 percent of students said their mothers had graduated from college and 29 percent said their fathers had graduated from college. These percentages in 2007–08 are higher than or similar to those based on a nationally representative survey of 10th-grade students, which indicated 24 percent of mothers and 29 percent of fathers had graduated from college (Ingels, Burns, Charleston, Chen, & Cataldi, 2005). The previous evaluation report identified several potential explanations for this finding, which included issues of data quality as well as student access to ECSs.[15]

In the remainder of this report, students are identified as first-generation college students if they reported that neither of their parents had attended college. In 2007–08, 46 percent of ECS students reported that neither parent had attended college (i.e., first-generation college students).

Summary

These data represent the demographic characteristics of students served by the ECHSI. One significant missing variable is prior achievement, which could be useful in determining ECSs' success at meeting the target population as outlined in Core Principle 1 (stated previously). Moreover, prior achievement scores could provide an indication of whether ECSs are enrolling students who are already performing at the top of their class (as opposed to improving performance over their time at the ECS). As data become available, future research can integrate information about prior achievement.

High-Minority/High-Poverty ECSs

Throughout this chapter, we have identified a number of school characteristics considered in the analyses later in this report. We also employ, as a control variable, a measure that has been used in research to denote the overall level of challenge in a school: high-minority/high-poverty (HMHP) status. The percentage of minority and/or poor students in a school has been commonly used to identify schools with challenges (see, for example, Harris, 2007; Education Trust, 2008; Heck & Mahoe, 2006; Clotfelter, Ladd, Vigdor, & Wheeler, 2006). For the purposes of this evaluation, HMHP ECSs have 75 percent or more minority students *and* have 75 percent or more students from families living in poverty. Twenty-four percent of ECSs in the ECHSI qualified as HMHP schools in 2007–08.

[15] For example, one challenge in making this comparison is the data source. The national study figures are based on questions asked of parents and students. The ECS data are based on student data, and 14 percent of students reported that they did not know their mother's highest level of education and 23 percent did not know the same information for their fathers. Previous research has demonstrated that students have difficulty answering these questions accurately (Levine, Huberman, Allen, & Dubois, 2001).

The HMHP measure does not capture the two remaining student demographic characteristics identified in Core Principle 1: English language learners and first-generation college-goers. However, HMHP schools are serving these target populations at higher rates than non-HMHP schools. HMHP ECSs have a higher average percentage of LEP students than their non-HMHP counterparts — 22 percent, compared with 5 percent. The average percentage of first-generation college students at HMHP schools is also higher, 64 percent versus 38 percent.

Summary

This chapter provides a basic overview of the structural and organizational characteristics of ECSs and the demographic characteristics of the students they serve. Overall, ECSs are small learning environments typically serving students in high school grades and usually partnered with 2-year IHEs. They serve student populations typically underrepresented in higher education, and in particular serve higher percentages of minority and low-income students than the school districts from which they draw students.

Most ECS characteristics were consistent with those reported in 2006–07. This finding may be an indication that the increased maturity of the initiative has brought with it a consistency in the approach to opening and implementing ECSs. The primary change from 2006–07 to 2007–08 was that the number of open ECSs increased.

Five key school-level characteristics described in this chapter will be used in subsequently reported quantitative analyses to understand differences between schools in the ECHSI:

- *ECS age* — the number of years open as an ECS
- *ECS origin* — startup versus existing sites
- *IHE partnership type* — whether the ECS has 4-year partners
- *ECS location* — where the ECS is physically located, based on whether most high school classes are offered on a college campus
- *Enrollment* — size of the student population at ECS

The next two chapters describe the ECSs, how students experience these programs, and the student outcomes. In these chapters are discussions of how ECSs vary in the student experiences they offer and the outcomes they have had based on these five school-level characteristics. The chapters also present important differences between students who have different background characteristics. Overall, these two chapters discuss in greater detail how all of these characteristics come together to create learning environments for students and the evidence of student outcomes that these environments produce.

CHAPTER III. STRIKING A BALANCE: THE STUDENT EXPERIENCE AT EARLY COLLEGE SCHOOLS

Introduction

This chapter examines the student experience within ECSs, including the ways students apply for and are enrolled in ECSs, how students access and experience their college courses, and how and under what circumstances they access support services. Over the years of this evaluation, many of these topics have been covered. For example, prior findings pointed to a number of tensions between providing access to college courses and recruiting students who might be academically underprepared, and between recruiting and retaining instructors who could establish the kinds of relationships with students that the initiative values but also meet the need for highly qualified teachers who can teach rigorous content. Tensions also existed between the logistical challenges of providing curriculum plans that cross institutional boundaries and meeting ECS student needs.

In 2007–08, some of these same tensions emerged, but in slightly different ways. For example, although the development of curriculum plans still required that ECSs work across institutional boundaries, the challenge was not primarily logistical, as it had been in the past. Rather, it was a matter of curricular coherence across institutions and finding a balance between students' passions, high school graduation requirements, and transferable credits. Other topics presented here may have been addressed previously, but new data sources were available that shed more light on these issues. The data sources included the school survey, the student survey, achievement data, SIS data, site visit data, and graduate interview data. Whenever possible, this chapter presents the students' perspectives as captured in the student survey and ECS graduate student interviews. Many of the student survey items were combined to create scales. Details about the content of these items are provided in Appendix A.

Both the school and student survey data reported in this chapter and Chapter IV point to substantial variability in students' experiences among ECSs, and even among students within the same ECS. To explore those variations, we employed multivariate analyses that allowed us to assess the relationship between a given student or school characteristic and a student outcome of interest independent of the influence of the other student and school characteristics included in the same analysis.

The school characteristics that we examined in these analyses, as outlined in Chapter II, include ECS age (number of years the school has been an ECS or had an ECS program), the school's origin (e.g., startup versus other strategies such as conversion or programs), the IHE partnership type (whether the ECS had or did not have a 4-year IHE partner), the location of the school (on or off a college campus), and school size (total student enrollment). The examined student characteristics included students' grade level, gender, minority status, from non-English-speaking home status, first-generation college-going status, and poverty status.[16]

School-level data analyses used OLS regression, and analyses based on student-level data used HLM.[17] These multivariate analyses allowed us to measure the unique relationship between a particular school or student characteristic and the variable of interest after controlling for other important school and student characteristics. For example, if school origin has a significant

[16] Not all school- or student-level characteristics were available for all analyses. Several additional control variables were included in all analyses; these are detailed in Appendix A.

[17] HLM takes into account the nested structure of student-level data (i.e., it is not a random sample of students from across the ECHSI; students are nested within ECSs).

relationship with GPA, that means that the relationship is there even after taking into consideration all the other variables included in the analysis, such as location and size of school.

Most significant findings based on the OLS and HLM analyses are reported in the body of this report (in this chapter and Chapter IV). For school-level predictors, we set the significance level at the conventional 0.05 level. For student-level predictors, however, we adopted a more stringent significance level (0.01) because of the large sample size at the student level. When significant mean differences are reported, they are reported after adjusting for other variables included in the analysis; these are labeled as "adjusted" values, otherwise simple means are reported. More details about the analytic methods are provided in Appendix A. In addition, complete results tables for all OLS and HLM regression models are provided in Appendix B.

How Students Are Enrolled in ECSs

The original Core Principles for the ECHSI included a focus on serving students underrepresented in higher education (JFF, 2004). That focus remains, and it has been expanded to clarify the importance of enrolling students who are not being well served by existing schools, are from low-income families, will be the first in their families to go to college, are racial or ethnic minorities, and/or are English language learners. To make the ECS experience available to a wide range of students, the ECHSI Core Principles specify that prior academic achievement may not be the most important criterion for admission.

Across the initiative, the overall admission rate was 64 percent. According to 2007–08 school survey responses, 14 percent of ECSs accepted all students who applied and 38 percent conducted a lottery to select students for admission. Most common was the use of admissions criteria (even if a lottery was ultimately held to select from a pool of applicants): 76 percent of ECSs had at least one admissions criterion. Of schools with admissions criteria; 34 percent had a minimum standardized assessment score and 20 percent had a minimum GPA.[18] To learn about students' commitment and motivation, 77 percent of these schools required students to complete an essay, and nearly the same percentage requested recommendations from middle school counselors or instructors (73 percent). In addition, 79 percent of schools with admissions criteria conducted interviews as part of the process and, notably, half required an interview with parents (50 percent).

On average, ECSs accepted 64 percent of their applicants; 76 percent of ECSs had at least one admissions criterion.

The presence of admissions criteria differed based on school characteristics, but there were no significant differences in ECS selectivity. Larger schools were less likely to have admissions criteria.[19] ECSs on college campuses were more likely to have admissions criteria (89 percent) than those off college campuses (68 percent, adjusted).

How Students Experience College Classes While at an ECS

The tension between enrolling the target population and the accelerated accumulation of college credits while in high school has been discussed in previous evaluation reports (in particular, see AIR & SRI, 2007). These discussions identified some of the logistical constraints that pre-empted

[18] A few ECSs had maximum criteria; four ECSs only admitted students with assessment scores below a cutoff, and six ECSs had a maximum GPA cutoff.

[19] Each 100-student increase in school enrollment corresponds to a 33 percent decrease in the odds that an ECS will have admissions criteria, after adjusting for school characteristics.

developmental and pedagogical needs of students in college course-taking decisions. For example, factors such as compatibility of high school and college instructional calendars, whether the college classes have the space to enroll ECS students, and transportation issues for schools not already located on a college campus play an important role in decisions about which courses students might enroll in.

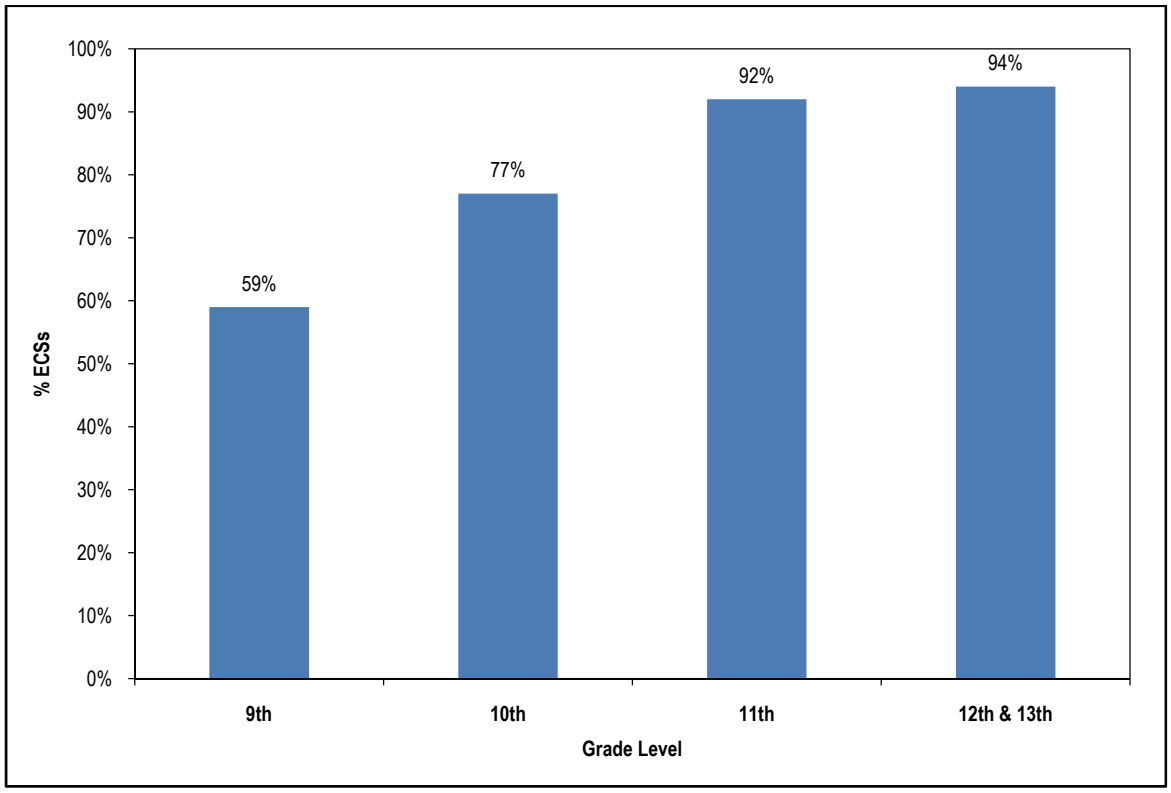
As ECS implementation has progressed, addressing the logistical challenges of cross-institutional planning and attending to the developmental needs of students have led to tremendous variability across the ECHSI. Although most ECSs have plans in place to allow students to earn at least 2 years of college credits or an Associate's degree (74 percent and 72 percent, respectively), the way in which these credits are earned is very different. Following is a discussion of how the ECSs are structured to include college classes.

When Students Start Taking College Classes

ECSs introduce college classes to students early on. A few students in middle school grades appeared to be taking college classes in 2007–08.[20] Figure 3.1 displays the percentage of ECSs that offered courses for college credit for each of the high school grades. More than half of ECSs (59 percent) had at least some students enrolled in credit-bearing college classes in 9th grade, and the percentages of ECSs with students enrolled in college classes increased as later grades were considered.

[20] One respondent on the school survey noted that the school had a few 6th grade students and about one-quarter of the 7th- and 8th-grade students taking college classes. This school was not included in any other data collection activities, and, therefore, did not have a chance to provide information about the types of classes that middle school students were taking.

Figure 3.1. Percentage of ECSs That Offered Courses for College Credit in 2007–08, by Grade



9th grade, *n* = 125; 10th grade, *n* = 117; 11th grade, *n* = 90; 12th and 13th grades, *n* = 78
Source: 2007–08 ECHSI school survey

According to the student survey sample, 61 percent of students had taken at least one college class.[21] By 12th or 13th grade, almost three-quarters of the students (73 percent) had taken a college class. Nationally, 17 percent of first-time college students in 2003–04 had earned credits from a college while in high school (NCES, 2007a). Previous research suggests that these students will have additional positive outcomes. In a study conducted in two states (Karp, Calcagno, Hughes, Jeong, & Bailey, 2007), students who had taken college classes while in high school were more likely to earn a high school degree, enroll in college, enroll in a 4-year college, enroll full-time, and persist in college, compared with students without college experience. In addition, students who received college credits while in high school had higher college GPAs and earned more college credits within 3 years of high school graduation.

In 2007–08, 61 percent of ECS students had taken at least one college class.

Content of College Classes

ECS students want to take college classes that fit their passions and move them forward toward their goals. Therefore, balancing student interest with high school requirements and credit transferability emerged as an important theme. Student survey data illustrate in which subject areas and grades students take college classes.

[21] Not surprisingly, 10th-, 11th-, 12th-, and 13th-grade students were all more likely to have taken a college class than 9th-grade students.

Forty-eight percent of students were taking at least one college class in spring 2008. Of these students, 50 percent took a class in a core academic subject area: 19 percent in social studies or history, 11 percent in science, 11 percent in English language arts (ELA), and 9 percent in mathematics.[22] The percentage of students taking academic college classes increases to 61 percent when subjects such as foreign languages are included. The remaining students reported taking electives, academic or study skills classes, college orientation classes, or others (e.g., a dental technician class). The percentage of students taking academic college courses increases fairly steadily by grade. In 2007–08, by 11th grade, students were 3.5 times more likely to be taking an academic class (78 percent) compared with 9th grade (22 percent, adjusted).

Of the students taking college classes in spring 2008, 61 percent took an academic class; 50 percent took a class in a core academic subject area.

The college integration patterns outlined above encompass different ECS philosophies concerning student college course selection. Some schools are extremely prescriptive about the college courses students can take. ECSs report that this approach ensures that students not only meet high school graduation requirements but also accumulate a meaningful and transferable set of classes for use in future enrollment at 4-year colleges. One guidance counselor explained that the first courses students could take had to be transferable to 4-year colleges, and if students had an opportunity to take anything else, that was "icing." Although not all schools are prescriptive, some talked about moving more in this direction. One ECS leader noted, "The guidance counselor encourages students to take certain classes … but we've not prescribed it. … Quite frankly, I'd be happy for it to be completely lock-step."

No ECSs leave students on their own to select classes from a college catalog, but some do give students choices with input from instructors, counselors, or college liaisons. An ECS with this approach noted that students need to find college classes that engage their interests. As the ECS guidance counselor stated,

> *It depends on the individual, what their desires are, their passions. ... I don't like the idea of mandating a series of classes over a 2-year period because it's not going to fit every student. If we get someone who wants to be a mechanic or wants to weld and someone who wants to ... be a vet, those are two different paths that they need to go down. If we plan out a sequence of courses that they all have to adhere to, then we're going to leave some students out.*

One ECS leader explained how the students' interests intersect with guidance from the ECS staff:

> *We met on several occasions and, based on what we knew about high school students and what we knew about the courses and the faculty, we considered the classes that might be of interest to the students and that would also count toward a "gen ed" credit.*

Therefore, although some ECSs allow students some flexibility in choosing college credits, they also attend to many important factors, including students' long-term goals, high school and college requirements, and even classes and instructors who work well with high school students.

[22] These data are based on students' first college class of the week. This request provided data on a distribution of subject areas in which students took classes while not over-burdening the student respondents by asking them about all classes. The percentage of students taking any academic classes during the 2007–08 school year is higher.

Finally, demonstrating that both the prescriptive and flexible approaches have a place, some ECSs use both types of approaches. For example, at one school, every student first takes the college's Freshman Seminar. After that, students have choices within humanities, social sciences, physical education, and foreign language. At another ECS, the school is developing pathways for students who are interested in career or technical training and those who are interested in liberal arts. Furthermore, one ECS set up its program to reflect students' changing maturity levels. The guidance counselor at this school explained, "The first 2 years are spelled out, and [in] the senior year, there are two classes spelled out and the rest are more electives." As first described in last year's evaluation report, this approach enables ECSs to put students into electives or college preparatory courses in 9th grade in order to build students' self-confidence and motivation, provide them with essential study skills, and acclimate them to college expectations. This approach explains why students take more core academic classes in later grades.

Although previous evaluation reports (e.g., AIR & SRI, 2007, 2006) focused attention on some of the logistical and policy challenges of offering students access to college classes (e.g., conflicting academic calendars, transportation to the IHE, and assessment scores), by 2007–08 many of those challenges seem to have been resolved or mitigated; not that the challenges were gone, but that schools had solutions for how to work around them. However, the variety of approaches taken by ECSs reflects their efforts to balance student interest, high school requirements, a cohesive set of college credits that will be transferable, and classes where the students can be successful. The evidence that this is a challenge comes from the number of ECS staff who reported either having already made changes to their curriculum plans or those who were considering making changes.

ECSs strive to balance student interests with practical concerns when choosing college classes.

College Class Offerings

The degree to which ECSs prescribe college classes relates to the number of options in how the classes are offered. If schools have large portions of the college catalog open to ECS students, then these students have the opportunity to be integrated within the college environment. If ECSs arrange for special sections, instructors, and locations to suit their students' and school's needs, then students have fewer choices. In this evaluation, three aspects of college class administration characteristics are tracked: course location, student composition, and instructor affiliation. Table 3.1 provides a summary of these characteristics.

Table 3.1. Summary of College Course Administration Characteristics, Based on Student and ECS Reports

Course Location*		Student Composition*		Instructor Affiliation†	
On a college campus	66%			College faculty	87%
ECS classroom on a college campus (for only ECS students)	17%	ECSs integrated with traditional college students	60%	High school faculty	7%
On a high school campus	18%	Only ECS students in a class	40%	Co-taught or other (e.g., distance learning)	7%

* Source: Students' first college class of the week, as reported on the student survey.
† Source: By whom the majority of ECSs' college classes are taught, as reported on the school survey.
Students: Course location, n = 1,109; Student composition, n = 1,112
Schools: Instructor affiliation, n = 135.

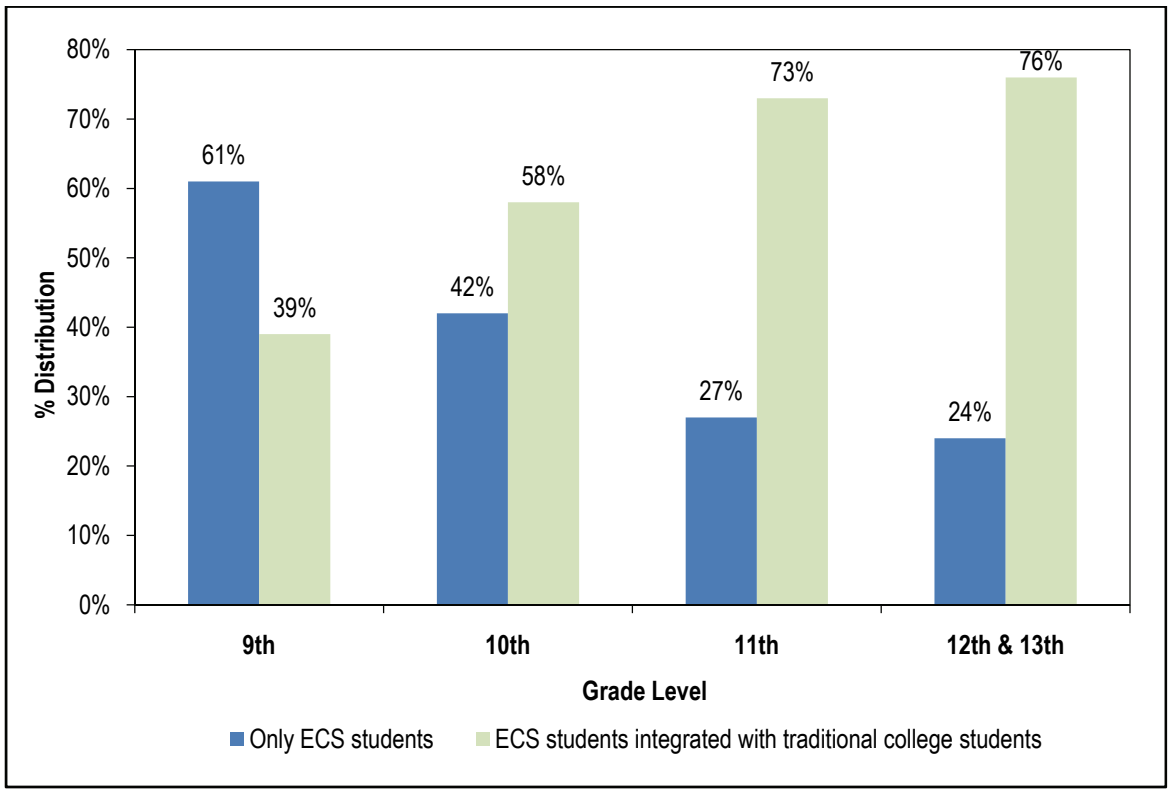
Of the surveyed students taking a college class, most noted at least one college class was located on a college campus, either in a traditional college classroom or in an ECS classroom (83 percent). The prevalence of students on college campuses is not surprising, given that 53 percent of all ECSs are located on college campuses. Students in 11th grade were significantly more likely to be taking a class on a college campus than students in 9th grade (46 percent for 9th grade and 80 percent for 11th grade, adjusted). Although it is not surprising that students at ECSs located on a college campus were more likely to take a college class on a college campus than students at ECSs located on a high school campus (adjusted percentages of 93 and 41, respectively), many off-campus ECSs sent students to the college for classes.[23]

Minority students who were taking a college class were less likely to be taking it on a college campus than white students taking a college class (adjusted percentages of 78 and 92, respectively). This finding, which occurred within ECSs with various characteristics (including HMHP schools), is unexpected. It suggests that minority students do not have access to the same ECS experiences as white students. Future research can examine whether this difference is an anomaly or persists over time.

Once on a college campus, students could be enrolled in a regularly scheduled college class with traditional college students or in a class arranged specifically for the ECS students. Figure 3.2 shows the percentage of students in these two arrangements for each grade. It clearly demonstrates that as students progress through the ECS, they are more likely to be integrated with traditional college students in college classes. This finding aligns with a common ECS approach, which involves giving students more college-level experiences as they mature.

[23] Students at ECSs located on a college campus may still have access to college classes through other means (e.g., distance learning classes).

Figure 3.2. Adjusted Percentage Distribution of Student Composition in College Classes, by Grade



Students: 9th grade, *n* = 265; 10th grade, *n* = 362; 11th grade, *n* = 237; 12th and 13th grades, *n* = 185
Note: Respondents reported on the student composition of their first college class of the week. 11th- and 12th/13th-grade students were significantly more likely to be taking a class with college students than 9th-grade students, after adjusting for student and school characteristics.
Source: 2007–08 ECHSI student survey

Finally, 87 percent of ECSs reported that the majority of their college classes are taught by college faculty. Therefore, regardless of where the high school is located, most ECS students, at least in the upper grades, have or will have opportunities to experience taking a college class on a college campus taught by a college faculty member much like traditional college students.

> Most ECS students have or will have opportunities to experience taking a college class on a college campus taught by a college faculty member much like traditional college students.

Student Experiences in ECS Classrooms

In 2006–07, the evaluation team conducted an in-depth examination of observed ECS classes (reported in the previous evaluation report). According to that analysis, the observed classes provided students with exposure to rigorous instruction, but some instructors did not support students to fully engage in those opportunities. Observed lessons also demonstrated strong instructional relevance and relationships. This section focuses on how students experienced instruction, from their own point of view, with additional details provided by interviews with college instructors and administrators. When asked to consider their experiences on the student survey in ECS classes, students ranked their ECS high with regard to the "new 3R's."

The New 3R's

The 3R's include academic rigor, instructional relevance, and instructional relationships. In past evaluation reports, these features have largely been examined by observers (e.g., through classroom observations). In this section, these features will be examined from the students' point of view via the student survey. Students rated the frequency of rigorous and relevant activities, as well as how connected they felt to their instructors and how students treated each other.

Rigor

On average, students rated their ECSs quite high on the instructional rigor scale. Students were asked to estimate how often they engaged in different rigorous activities in both high school and college courses.[24] Most students indicated that they participated in these rigorous activities roughly once or twice a week (a mean of 3.7 on a 5-point scale). However, first-generation college-going students reported less frequent rigorous activities on average than did other students (adjusted means of 3.7 and 3.8, respectively). This difference is slight, but statistically significant, and will be repeated in additional findings reported in this and the next chapter. If these students enter ECSs with lower academic skills, they may be in classes that rely more on practicing procedures and memorizing facts. On the other hand, students at larger ECSs were more likely to report frequent rigorous activities, though the size of the difference is very small.[25] The largest ECSs are those where the ECS is a program within a larger school. The evaluation does not study the broader high school environment, so we do not currently know what might be the cause of this finding.

Most students indicated that they participated in many different rigorous activities roughly once or twice a week.

Forty-three percent of students reported that their high school coursework prepared them for college classes.

ECSs strive to offer high school classes that provide enough content and instructional rigor to prepare students for college classes. In 2007–08, 43 percent of students reported that their high school coursework prepared them for college classes, and 39 percent felt somewhat prepared.[26] One group of students — students from non-English-speaking homes — was more likely to feel prepared for college courses than other students (adjusted percentages of 46 and 35, respectively). But 18 percent of students felt that they were not at all prepared. Interviewed ECS staff noted that preparation for college classes was an area for improvement, particularly working toward a more seamless transition into college coursework. When asked about the curricular alignment between high school and college, one college administrator commented:

> *It's a huge gap, which surprised me, because it's not an area I paid that much attention to in the past. ... I kind of assumed that long ago this had been worked*

[24] For the purposes of this evaluation, rigorous instruction requires students to: build upon existing knowledge and skills to create or explore new ideas; demonstrate conceptual understanding of important content; organize, interpret, evaluate, and synthesis information; communicate clearly and well; and revise work based on informative feedback. This definition is about instruction and does not cover the level of rigor in the content being taught. These aspects of rigor are measured by eight items on a student survey scale. These items cover, for example, how often instructors expected students to learn a topic well enough to teach others, find multiple solutions to problems, or apply what they have learned to solve a new problem. The full item lists for all scales on the student survey are included in Appendix A.

[25] Each 100-student increase in school enrollment corresponds to a less than 0.1 increase in the mean rigor scale, after adjusting for school and student characteristics.

[26] This item on the student survey asked students to what degree their high school classes prepared them for their first college class in the week.

out — that we know what they teach in high school and they know what we teach. And I was kind of blown away to realize that there wasn't much in place at all. It's kind of mind-boggling.

In addition to working on aligning content, ECSs are working to improve instructional rigor in both high school- and college-level classes. In fact, there were indications that college instructional strategies were changing due to the presence of the ECSs. (See text box for more information.)

ECS Influence on College Instruction

Although the majority of college instructors interviewed indicated that the content of their courses remained the same regardless of whether ECS students were in the class, some reported that the way they taught was influenced by the presence of ECS students.

At a 4-year college, two college instructors believed that their experience teaching ECS students had improved their instructional practice. One college instructor, who had experience at the elementary, high school, and college levels, noted that he had changed his instructional approach to meet the needs of ECS students. For example, he was more repetitive and had realized the need to be a more interesting instructor to keep students' attention:

Some of the things I've done in the [ECS students-only college class], I've taken back to the college class because it works there as well. I begin every class session reviewing things from last session, last week, last chapter, so I'm putting things in perspective again so we hear it over and over again. … I think I'm doing better at the college to keep them interested because of my experience with the high school students.

He credited the ECS with helping him rethink his college instruction more broadly, showing him the importance of letting students know he cares that they are successful. This instructor said he now "badger[s] students more now than I used to."

Another college instructor at a 2-year college also felt that teaching ECS students had a positive influence on his college instruction:

I learned something when I was teaching early college, because I came from the university. I learned from the counselors and other teachers in the program how to be more effective. I wouldn't say disciplinarian, but structure in the classroom, making sure that students stayed on task. I didn't have that at the university. It's something I encountered here and more in this program, but it made me a better teacher, I think. I think it would make anyone a better teacher.

Relevance

In this evaluation, instructional relevance pertains to student choice in academic work, making connections to other classes and to the real world, and providing experiences for students outside of school. While instructional observations described in last year's evaluation report suggested that instructors might want to consider relevance more carefully as they planned their lessons, student ratings did not indicate a lack of relevance. Students rated the relevance of their high school and college classes just above the midpoint (3.3) on a 5-point scale.

Students in 12th and 13th grades reported a higher degree of instructional relevance (adjusted mean of 3.5) than students in 9th grade (3.2). As students progress in their education and move on from introductory courses, they may encounter courses where more relevant activities (e.g., activities that offer student choice) are provided. Also, students from non-English-speaking homes reported slightly, though significantly, more relevant instructional activities than

Students in 12th and 13th grades reported a higher degree of instructional relevance than students in 9th grade.

other students (adjusted means of 3.4 and 3.3, respectively). Once again, these students' positive views of ECSs are evident. Surprisingly, once other school characteristics have been controlled for, students at larger schools reported more relevant activities.[27] This relationship also occurred for the instructional rigor scale. Future research can investigate the relationship between instructional relevant and rigor (noted above) and ECS size.

Relationships

When asked about their relationships with instructors (both high school and college), students generally felt that they got along with their instructors, and they cared what their instructors thought of them. On a student survey scale measuring students' connectedness with instructors, the mean was 3.3 on a 4-point scale. Connection with instructors is one aspect of adolescent relationships that research has shown to correlate positively with self-esteem and school attitude, among other factors (Karcher, 2005). Students' connectedness to instructors varied based on one characteristic: females reported higher levels of instructor connectedness than males (adjusted means of 3.4 and 3.2, respectively).

One way that instructors can build strong relationships with students is to have high expectations for all of them and for students to experience those expectations for success. Students reported the degree to which instructors "believe that all students in the school can do well" and "work hard to make sure that all students are learning." Across the ECHSI, the mean score on this scale was 3.2 out of 4. Students from non-English-speaking homes reported higher instructor expectations than did other students (adjusted means of 3.3 and 3.2, respectively). Again, although this difference is small, it continues one theme: students from non-English-speaking homes are more positive about ECSs than other students.

> Students generally felt that they got along with their instructors, that they cared what their instructors thought of them, and that instructors had high expectations for all students in the school.

Students also were asked to consider the nature of their relationships with each other. Students reported that most students respect each other and do not get into trouble (mean 3.9 out of 5). Not surprisingly, students in smaller schools reported higher respect and responsibility among their peers than did students in larger schools. However, this overall change is minor, as every 100-student increase in school enrollment corresponds to a less than 0.1 decrease in the mean, after adjusting for school and student characteristics. Interestingly, low-income students — those eligible for the free or reduced-price lunch (FRPL) program — reported higher respect and responsibility among their peers than did other students (adjusted means of 3.9 and 3.8, respectively). This finding may be an anomaly, which future research can investigate.

Interrelationship of the 3R's

In the previous evaluation report, observations of 74 classes in 2006–07 revealed that although the 3R's can occur together, that is not always the case. In particular, there did not seem to be a relationship between instructional rigor and instructional relevance. From the students'

> Students who reported high levels of rigorous activities were also likely to report high levels of relevant activities.

[27] Each 100-student increase in school enrollment corresponds to a less than 0.1 increase in the mean relevance scale, after adjusting for school and student characteristics.

perspective in 2007–08, however, the student survey data showed a strong positive relationship between instructional rigor and relevance ($r = 0.66$).[28] There was not, however, a strong association between relationships (instructor connectedness or student respect) and rigor or relevance. Therefore, although the relationship between the 3R's was weak in observations of individual classes in 2006–07, students' perceptions in 2007–08 of their entire ECS instructional experience was that instruction that was rigorous also tended to be relevant. In the next chapter, the 3R's scales will be examined for their relationships with students' intermediate outcomes (e.g., academic engagement).

How Students Are Supported in ECSs

A key feature of the ECS design is its "comprehensive support system" to ensure that students have the supports needed to be successful in their high school and college classes. These supports are particularly important in the ECS setting given the specific needs of the target populations (e.g., English language learners, students whose parents did not attend college) and the rigor of the ECS curriculum. The types of supports that are offered at ECSs across the ECHSI, and the students' use and opinion of those supports, are discussed in this section.

Support Provided by Instructors

ECS students and staff indicated that students' first line of support is their instructors. The 2007–08 student survey revealed that most students taking high school courses seek extra help from their high school instructors (67 percent). The bulk of the remaining students indicated that they do not ask because they "don't need to" (24 percent). Only 6 percent of students said that they "didn't want to" and 3 percent were "not sure how to."

The student survey data also indicated that students perceived instructors to be supportive (the mean was 3.2 for ECS instructors and 3.0 for college instructors on a 4-point scale). However, students' ratings of instructor support varied by school and student characteristics. Compared with white students, minority students felt less supported by their ECS instructors (adjusted means of 3.2 and 3.3, respectively). Females and students from non-English-speaking households felt more supported by their ECS instructors (adjusted means of 3.3 for both) than other students (3.2 for males and 3.1 for students from English-speaking homes). These students did not differ in their perceptions of college instructors. Although a very small difference, students at more established ECSs (i.e., older ECSs) felt less supported by college instructors than did students at other schools.[29] The differences reported here reflect very minor differences in a sample of students who largely felt supported by both ECS and college instructors.

The ECSs have small teaching staffs and an emphasis on providing personalized attention, giving students frequent access to their instructors. As noted previously, students have strong relationships with their high school and college instructors. In rating how well they felt supported by all staff (both high school and college) across different types of needs (e.g., help with a personal problem, help thinking about meeting graduation requirements), students on average reported that there were four or five staff members

Students perceived instructors to be supportive. Students on average reported that there were four or five staff members available to help them with various needs.

[28] Because the student survey sample was quite large, almost all correlations between scales are significant. Therefore, only "strong correlations" (those above 0.5) are reported (Cohen, 1988).

[29] Each year older corresponds to a decrease of less than 0.1 in the mean college instructor support scale, after adjusting for school and student characteristics.

available to help (mean of 3.8 on a 5-point scale). As students progressed through the grades, they reported that they had more staff available for support (for students in grades 12 and 13, the adjusted mean was 3.9, and for students in 9th grade, the mean was 3.7). Although most ECS graduates reported particularly strong connections to an individual ECS staff member (e.g., a mathematics instructor or a college counselor), they also felt that the whole staff was working with them. One ECS graduate said:

> *I think [the instructors at the ECS] taught me everything a school should teach you, and they went above and beyond what they were supposed to do. The [ECS] is so small that you can really have one-on-one relationships with your teachers, the principal, students, everybody.*

Even within schools with various characteristics, first-generation college-going students felt they had fewer staff available to help them than other students (adjusted means of 3.7 and 3.9, respectively). Research suggests that perhaps these students were less adept at identifying where they could go for support or perceived staff to be less available to help (see Pike & Kuh, 2005, for evidence of this difference in college students).

Formal Supports

In addition to the assistance provided by instructors as part of classes, most ECSs offer formal supports. These formal supports include those that occur as part of students' course loads (for example, college life skills classes) and those that may be offered outside of the school day (such as after-school or weekend tutoring programs).

Most ECSs (89 percent) reported on the school survey that they provide academic or social support courses or seminars to assist students with skills such as literacy, research skills, and mathematics. For example, at one site-visited ECS, faculty were concerned that many students did not have some of the requisite skills to be successful in a college environment, such as note-taking, test-taking, and time management. So, the school began requiring all incoming students to pass a one-credit AVID class before they enrolled in college courses. At another ECS, students at all grade levels participated in a noncredit advisory class once a week. The purpose of the class is to ensure that at least one adult in the school has a handle on the academic and emotional needs of each student. This percentage has remained fairly steady, as 84 percent of ECSs in 2006–07 and 85 percent of ECSs in 2005–06 offered support courses.

Most ECSs had formal tutoring programs available, usually staffed by high school instructors.

Most ECSs (84 percent) had formal tutoring programs available as well. Despite the increase in the number of ECSs, this number is remarkably similar to the 86 percent of ECSs that had tutoring in 2006–07 and 85 percent in 2005–06 (AIR & SRI, 2007, 2008).

Programs vary with regard to who provides the tutoring services. In many cases, high school instructors provided the tutoring (81 percent). In other cases, tutoring was provided by college faculty (25 percent). As these percentages indicate, student academic support is primarily by the ECS and its staff rather than the IHE. When asked whether students are getting the support that they need to be successful, one ECS guidance counselor, noting this difference, said, "On the high school side, yes; on the college side, they just don't use the resources." Although this is a finding we have learned in prior years, it is not clear whether the labs and tutoring services offered by the IHE partners are used any more frequently by traditional college students than by ECS students.

Although these formal supports fit within a school's comprehensive system of supports, a theme that emerged in the qualitative data is the balance ECSs are trying to strike between requiring those kinds of formal supports and teaching students to be self-advocates and approach instructors when they need assistance. This challenge is evident in the quantitative data as well. Although most ECSs offered some type of tutoring, most students in the survey sample did not take advantage of it (66 percent).

Schools had different policies regarding how much student choice was involved in participation. Often, tutoring was required for some students (74 percent of schools), and at some schools it was required for all students (16 percent). In other cases, participation in tutoring was entirely voluntary (10 percent of schools). Those policies related to the likelihood that a student reported using tutoring. On the student survey, 34 percent of students answered that their school offered tutoring and that they used it. In schools that require tutoring of all students, 47 percent of students reported using the tutoring. Although this is far below the 100 percent that the policy suggests should be attending, it is higher than the 34 percent of students who participated when it was required of only some students and the 24 percent of students who participated when it was not required at all.[30] Minority and low-income students were more likely to use tutoring (adjusted percentages of 45 and 47, respectively) than were white or higher income students (both 35 percent). At larger ECSs, students were less likely to use tutoring.[31] Overall, these data suggest that requirements relate to usage, although it could be that student need affects the decision to set requirements in the first place.

> Only 34 percent of students reported using tutoring, though more students attended when it was required by the ECS.

Supports for Transitions to College

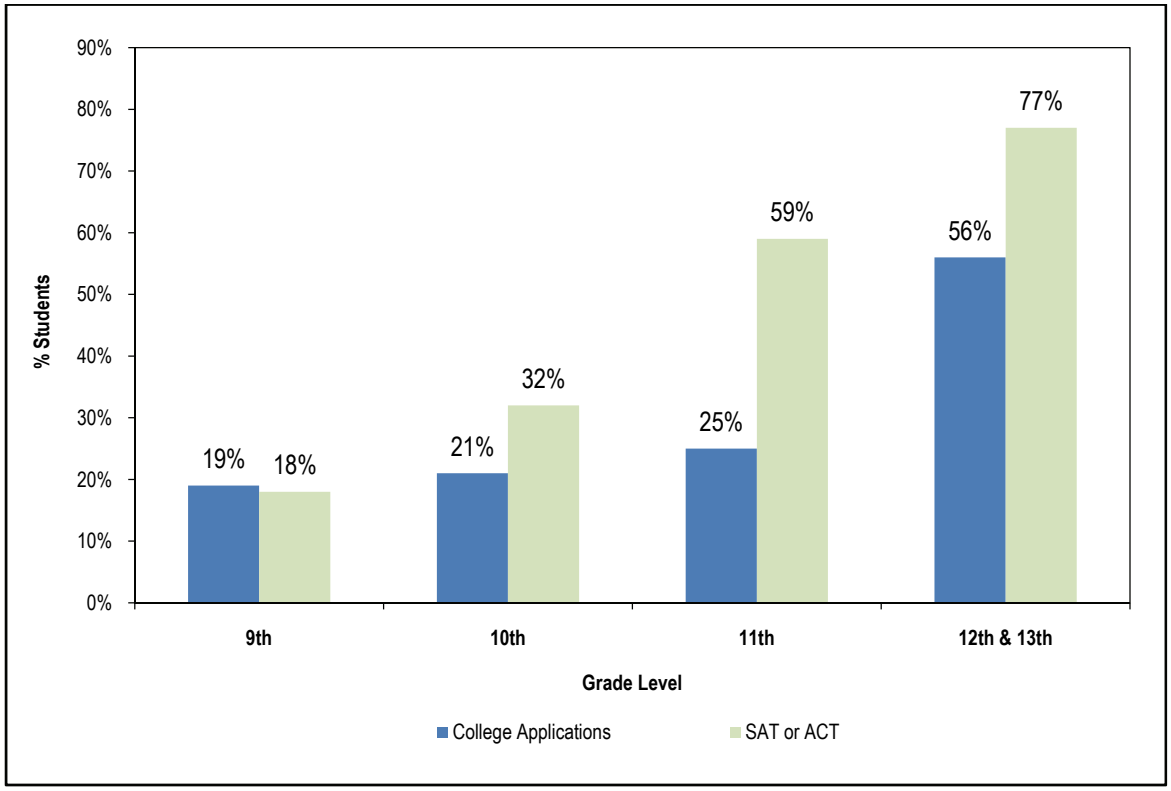
The Core Principles for the ECHSI include an explicit goal that ECSs provide students with not only college credit, but specifically credit that is transferable and will lead to college completion. That goal acknowledges research that has shown that the transition between high school and college is where many students are lost (Kirst, 2004; Adelman, 2006; Goldberger, 2007) and that all students and their families should receive assistance in preparing for college (Kirst, Antonio, & Bueschel, 2004). Therefore, most ECSs offer assistance to students around this transition. On the school survey, schools noted providing supports for college entrance exam preparation (63 percent), college tours (73 percent), and scholarship information sessions (74 percent). In addition, 81 percent of ECSs offered career guidance. The student responses reflected this coverage: on the 2007–08 student survey, of the students who did not use the supports, 10 percent or fewer said that it was because supports were not available.

ECSs seemed to be reaching most students in college transition activities. Although students in higher grades were more likely to have used these supports, as Figure 3.3 illustrates, even students in lower grades used supports for many college entrance related activities. Also, students at ECSs partnered with 4-year IHEs were more likely to use ACT and SAT supports than similar students at ECSs without 4-year partners (adjusted percentages of 42 and 28, respectively). This difference was not evident in student use of ECS supports in completing college applications.

[30] These figures are not adjusted to control for student or other school characteristics.

[31] Each 100-student increase in school enrollment corresponds to a 10-percent decrease in the odds that a student uses tutoring, after adjusting for school and student characteristics.

Figure 3.3. Adjusted Percentage of Students Who Use ECS Supports for College Transitions, by Activity Type and by Grade



Applications: 9th grade, *n* = 567; 10th grade, *n* = 595; 11th grade, *n* = 346; 12th and 13th grades, *n* = 324
SAT or ACT: 9th grade, *n* = 594; 10th grade, *n* = 652; 11th grade, *n* = 391; 12th and 13th grades, *n* = 336
Note: Percentages for grades 11, 12, and 13 were significantly higher than those for 9th grade with regard to getting SAT or ACT support. Percentages for grades 12 and 13 were significantly higher than those for 9th grade regarding getting support for college applications.
Source: 2007–08 ECHSI student survey

Although current ECS students largely took advantage of ECS supports for applying to college, graduates are the best source for examining the utility of these supports. A small sample of interviewed ECS graduates (16 students) provided this perspective, albeit anecdotally, about how well students felt supported in the transition to college after the ECS. A note of caution is important: This is not a representative group of graduates. For example, all of the interviewees continued to college after the ECS, a path that not all graduates take.

As expected, graduates appreciated the college entrance and financial aid application support. For example, one graduate noted:

> *[The college liaison] set up this database online. … And she set it up so whenever she found a scholarship out there, she would put it into the system, and she would put the minimum requirements of the scholarship. And then each particular student … would send their profile and if they'd match that scholarship, it would automatically pop up.*

Graduates also were appreciative of the more general support and encouragement they received from ECS faculty, even when they were not looking for the support. One graduate admitted:

> *I was just thinking on how to get out of high school with my Associate's degree. … I postponed everything, so finally it got to the point where I had missed all the deadlines for scholarships. … But the whole faculty sat with me and talked with me and told me it was better for me to go to school.*

Another graduate noted:

> *Since I'm actually the first generation to graduate high school and go to college, I was basically out there up the river without a paddle. So every time I had a question concerning something, I could go to somebody in the faculty for help, and they helped me out.*

For students who are the first in their families to attend college, the process of applying to college can be daunting. Students from higher socio-economic status families whose parents attended college enjoy access to social networks and information that other students do not. The support that students need to successfully transition into college requires more than simply help filling out forms. One ECS graduate pointed to the fact that before the ECS, he did not even know what a bursar's office was, let alone where he might find it on campus. He continued: "I think the [ECS] experience was worth it, because it just prepared me more for the academic life as well as the social life in college."

Graduates appreciated the specific financial aid and application supports ECSs provided, as well as the general encouragement to apply for and attend college.

These responses from students who graduated from ECSs indicate that while students need support completing applications and financial aid forms, they also find other kinds of supports helpful.

When asked whether there were areas for improvement in how their ECSs supported students, graduates had some suggestions. One graduate thought that ECS students were well supported in the process, but that families needed more support. Another student had difficulty translating the ECS courses into the more traditional high school format expected by the college admissions office. However, most graduates did not offer suggestions for improvement. Furthermore, three of the graduates continued to seek help from the ECS staff even after graduation. One graduate said, "I call teachers to get advice on classes to take and on where to apply for internships," and another reported:

> *I still stay in contact with [the ECS counselor] all the time. I go up there sometimes. She's still a counselor to me. If I need help with anything, then I'll call and ask her for it. … My first year … any time I needed help, I'd go back there and talk to [my chemistry instructor]. And also … my math teacher, so when I had any questions about math, I would go back and talk to him about it too.*

These findings on supports for students reflect the aforementioned larger theme: ECSs are focusing attention on finding a balance between supporting students directly and helping them learn to advocate for themselves. One guidance counselor pointed out that "some of the students are better equipped to utilize resources than others. … Students who really need help, they're better off if the instructor can identify that in them because they might not be able to see that in themselves yet." However, as another guidance counselor stated:

> *At some point we just need to say we want them to be ready when they are out. How much support is too much? So it's about trying to get them to get their own help. They do that, but they do that with us. … Asking for help is probably the biggest hurdle.*

ECSs acknowledge that these supports are critical in the short term, but they have not lost sight of their larger goals of helping students to be self-advocates — to recognize when they need assistance and to decipher who might provide the kind of support they need.

Summary

The ECS student experience starts with an application to enroll. In 2007–08, most ECSs required students to meet multiple admissions criteria, both academic and non-academic. ECSs accepted about two-thirds of the students who applied.

Although not every student in the ECHSI has had access to college instructional experiences, 61 percent of students had taken at least one class. More than half of the students enrolled in a college classes were taking one in a core academic subject area. Some of these course selections were made by the ECS, and some were made by students, as several schools noted different approaches to the degree to which the course-taking path for students is prescribed. Although not all college classes were offered in a traditional college setting, most ECS students experienced this setting by their later high school years.

Overall, students reported many rigorous and relevant instructional activities occurring on a weekly basis. Students felt connected to their instructors and reported that the instructors, both ECS and college, had high expectations and supported them. Students also experienced positive peer interactions, and students did not engage in disruptive behavior with any regularity.

Almost all ECSs offered tutoring and support classes, though a surprising number of students reported that they did not use tutoring. Only 16 percent of schools required tutoring for all students. Most students, by grades 12 and 13, received support in preparing college applications.

Although it is essential that all schools balance the competing needs and interests of students within their organizational constraints, the nature of the cross-institutional structures of ECSs make that task complex. Earlier evaluation reports have pointed to some tensions that schools faced as they implemented the ECSs — tensions that focused attention on the logistical challenges when ECSs tried to bridge the divide between two institutions with different practices. However, as the ECHSI has grown, the focus for many key stakeholders has moved beyond those logistical kinds of challenges to a more complex balancing act that must account for students' goals and interests as well as their social and academic developmental needs across those institutional boundaries and practices. In the next chapter, the outcomes of those efforts will be examined.

CHAPTER IV. STUDENT OUTCOMES

Introduction

ECSs strive to offer students access to educational opportunities and guidance to be successful in those opportunities far beyond what most high school students are offered. This chapter explores ECS student outcomes, both typical (e.g., attendance) and unique (e.g., college credit accumulation). The available evidence of positive student outcomes at ECSs is beginning to accumulate. This chapter combines all available data sources, including the student survey, data from the SIS, site visits, and alumni interviews, to present a picture of how students are doing. The data vary in their breadth, depending on the source and the outcome, but overall present a comprehensive picture of ECSs and their students.

The student outcomes examined in this chapter include how students feel about themselves as learners (e.g., academic engagement and self-concept) and how they are doing on demonstrable measures, in particular, attendance, academic performance, academic progress, and post-ECS preparation and experiences. Whenever possible, reasonable comparison figures for districts, states, and the nation are provided. As done in the previous chapter, school and student characteristics are presented when they are significantly related to student outcomes (full detailed results are available in Appendix B).

Intermediate Outcomes

As presented in the previous evaluation report, intermediate outcomes (academic engagement and academic self-concept) are hypothesized to mediate the relationship between ECS attributes and observable student outcomes (e.g., grades in classes).[32] In other words, the school environment may improve student learning through engaging students and making them feel like capable learners.

Academic Engagement

Two scales based on student survey data provide measures of students' academic engagement (i.e., students' psychological investment in and effort put toward their education) and cover both behavioral and psychological dimensions. The first scale, persistence, measures students' persistence in academic work, even in the face of challenges (e.g., students getting help on difficult assignments or trying hard to do well).[33] The second scale, interest, measures students' interest in academic work (e.g., students talk with family about schoolwork or students participate in class discussions). In 2007–08, students' average level of persistence was 3.8 and average level of interest was 3.5, both on a 5-point scale and both fairly consistent with the mean values on the 2006–07 student survey.[34]

> Students reported being academically engaged with their work, finding it interesting and worthy of effort.

Some groups of students felt more engaged than others. In 2007–08, first-generation college-going students expressed lower levels of engagement than other students on both interest (adjusted means of 3.5 and 3.6, respectively) and persistence (adjusted means of 3.7 and 3.8,

[32] This chapter does not present an analysis of the mediating relationship.
[33] In this report, the term "persistence" reflects students' dedication to and effort in academic work. Students' ongoing enrollment is called "progression" rather than "persistence" (commonly used for this context).
[34] On the 2006–07 student survey, the mean level of persistence was 3.7 and interest was 3.3 (AIR & SRI, 2008).

respectively). Although a slight difference, it is not new. In 2006–07, these students also reported lower levels of interest, but not persistence, than other students.[35] Research suggests that this difference in engagement is also evident at the college level, where first-generation students often have less engagement with academic experiences and put forth less effort toward courses (Pike & Kuh, 2005; Lundberg, Schreiner, Hovaguimian, & Miller, 2007).

Females reported feeling more engaged than males. For interest, females reported more interest than did males (adjusted means of 3.6 and 3.4, respectively). For persistence, the same difference occurred between females and males (adjusted means of 3.9 and 3.7, respectively). This outcome is consistent with findings from the 2006–07 student survey. Further, students from non-English-speaking homes expressed higher levels of engagement than other students. For interest, the adjusted means were 3.5 and 3.4, and for persistence, the adjusted means were 3.8 and 3.7 for students from non-English-speaking homes, compared with other students.[36] Although these differences between student groups are statistically significant, the actual size of the differences is generally quite small. As is indicated by the overall mean, students spend much of their week engaged with instructional activities.

No school-level characteristics related significantly to student engagement. In 2006–07, there was evidence that students at more established ECSs had lower engagement than those at newer schools. In addition, the previous analyses demonstrated that students at ECSs located on a college campus were more engaged than students at other ECSs. Neither of these findings was replicated in the 2007–08 analyses, where more sophisticated models were used for analysis.

In addition, we theorized that if ECSs are affecting students' engagement, students in higher grades should be more engaged than students in lower grades. However, in 2007–08, no significant differences existed between students in different grade levels.

Academic Self-Concept

Academic self-concept concerns students' understanding of themselves as good learners (e.g., asking for help, learning mathematics). Academic identity, which is broader than self-concept, is operationalized in this evaluation to include both academic self-concept and educational aspirations (discussed later in this chapter). Academic self-concept is an important intermediate outcome to consider, as it has been shown in the research literature to launch students into and through educational pursuits (Cokley & Chapman, 2008; Nasim, Roberts, Harrell, & Young, 2005).[37]

Students' average academic self-concept in 2007–08 was the same as what students reported in 2006–07 (both 3.1 on a 4-point scale). As stated by Nakkula and Foster (2007), the ECSs can take students from believing they can be successful in college to knowing they have been successful.

[35] This and subsequent references to student-level significant findings from the 2006–07 student survey are reported in the results tables provided in the technical appendix of the 2008 evaluation report, but are not reported in the text (findings about grade-level differences are the exception). Note that the models tested are similar but not identical. An increase in sample size in 2007–08 allows for the addition of two school-level variables (total enrollment and HMHP) and one student-level variable (students from non-English-speaking homes).

[36] This is the first year that this variable was included in the HLM models. Therefore, we do not have comparisons to previous findings for this variable.

[37] See also Dweck's (2007) work on the positive influence on student outcomes when students view intelligence as the result of effort rather than fixed.

Therefore, students in higher grades should have higher academic self-concepts. In 2007–08, although students in the 12th and 13th grades did not report significantly higher levels of academic self-concept than did students in 9th grade, the difference was in the expected direction. In addition, in 2006–07, students in higher grades reported significantly higher academic self-concept.

Students reported high academic self-concepts.

As with academic engagement, first-generation college-going students reported lower academic self-concept than other students (adjusted means of 3.1 and 3.2, respectively). This difference is also noted in college populations, where first-generation college-going students reported that they had made less progress on intellectual development than other students (Pike & Kuh, 2005). The two school-level characteristics that were associated with higher academic self-concept in 2006–07, the age and location of the ECS, were not significant in the 2007–08 data, when more school-level characteristics were included in the analyses.

Intermediate Outcomes and the 3R's

Additional analyses looked at the relationship between the scales measuring the 3R's and the intermediate outcomes scales. In 2007–08, the only strong correlation was between instructional rigor and interest: When students reported that their classes had a lot of rigorous activities, they also reported being more interested in their academic work. The previous evaluation report also included analyses of the relationships between the scales measuring the 3R's in ECS classrooms and the intermediate outcomes.[38] In these analyses, the strongest relationship was also between instructional rigor and interest. It is noteworthy that instructional rigor is more closely tied to interest than to persistence or academic self-concept. The other two R's, relevance and relationships, were not strongly correlated with academic interest, persistence, or self-concept.

A strong, and persistent, finding is that student interest is related to rigorous instructional activities.

Attendance

We next turn to a discussion of attendance, which is a major concern for many ECSs, particularly those that actively seek to enroll students who have poor attendance records in other schools. Of course, attendance is an important precursor for learning. In 2006–07, the most recent attendance data available for schools, ECSs reported an average daily attendance (ADA) of 94 percent, identical to that reported in last year's evaluation report. One reported nationwide ADA rate for high schools in 2003–04 was also 94 percent (Izrael & deFriesse, 2006).

ECSs located on a college campus reported significantly higher ADA (95 percent) than did ECSs not on a college campus (93 percent). This replicates a finding from the previous evaluation report and is the first of several findings that student outcomes are higher at ECSs on college campuses. Generally, this is attributed to the "power of place," the concept that students respond to the high expectations and peer models that the college environment provides by taking more responsibility for their education, including coming to school. However, this is relational and does not inform causality. Another finding from the previous report, that startup ECSs and ECSs with 4-year IHE partners had higher ADA than other schools, was not replicated

Over several years, ECSs have had very high average daily attendance rates, consistently averaging over 94 percent.

[38] The full correlation matrix is provided in Appendix B.

once more sophisticated analyses controlled for other school characteristics in the current analyses.

Academic Performance

Several indicators of student academic performance in ECSs are discussed in this section, including high school standardized assessment proficiency rates, high school and college grades and GPA, and college credit accrual. In general, students are performing well in high school classes, particularly in comparison with national figures, but student performance in college courses is mixed.

Proficiency on State Assessments

In most ECSs, students must participate in their state's assessment systems. In 2007–08, ECSs' mean proficiency rate on state assessments was 74 percent for ELA and 67 percent for mathematics. Although ECSs are ultimately aiming for a 100 percent proficiency rate, one positive indicator is the degree to which ECSs are exceeding area districts (i.e., the districts from which ECSs pull their students).

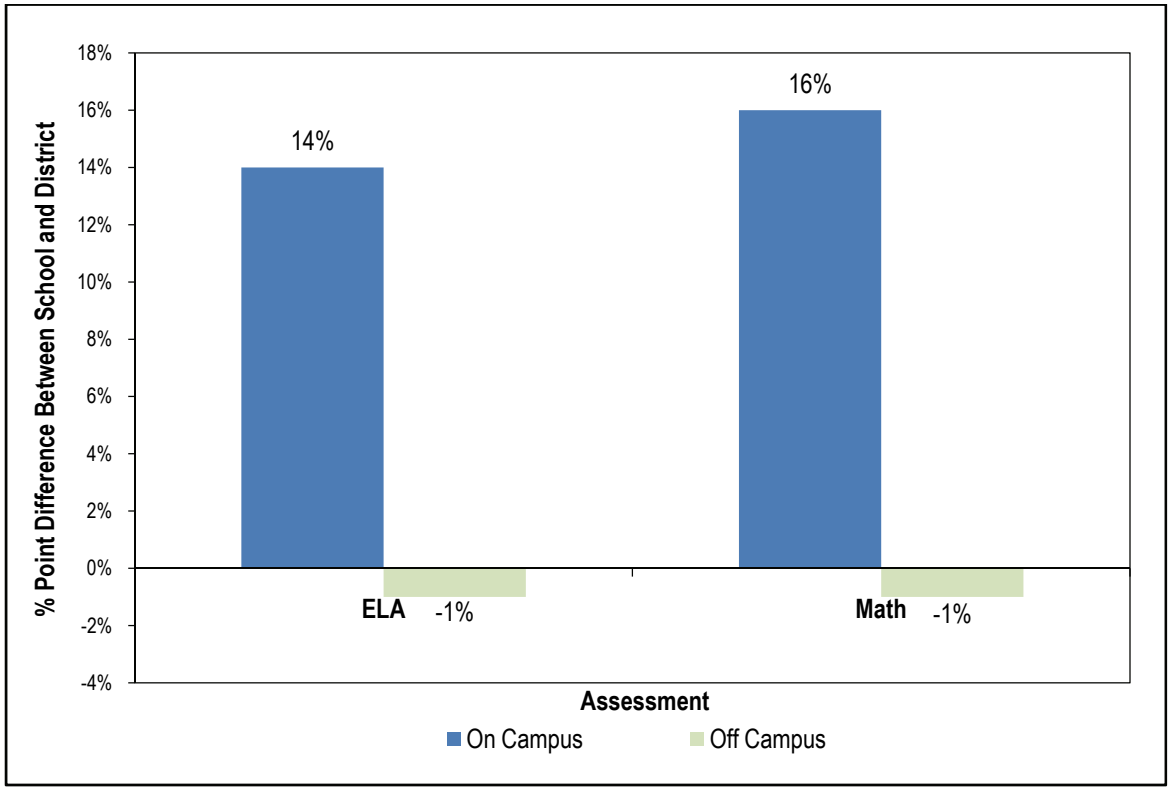
Data on school performance on state assessments came from published data sources, usually district or state Web sites. Since we examined proficiency rates across schools in many states, and some states might have higher standards than others, rather than use proficiency rates in our analyses, we looked at the proficiency rate at the ECS relative to the proficiency rate at the district (i.e., the proficiency rate at the ECS minus the average proficiency rate at feeder districts). This variable makes the comparisons "fairer" because schools in states with more challenging standards are only compared to other schools in the same state, subject to the same standards.

In 2007–08, ECSs outperformed comparison district proficiency rates by an average of 7 percent on ELA assessments and 7 percent on mathematics assessments. This positive finding has been consistently noted in previous years as well (AIR & SRI, 2007, 2008). ECHSI stakeholders hope that ECS students are performing well due to the impact of attending an ECS. However, these analyses are relational and cannot rule out alternative explanations.

> On average, 74 percent of students reached proficiency in ELA and 67 percent did in mathematics. ECSs outperformed their local district high schools on state assessments by an average of 7 percentage points in both ELA and mathematics.

The positive results for ECSs are driven largely by the ECSs located on a college campus, which had strong performance compared with their districts. Off-campus ECSs performed about the same as their districts on state assessments. Figure 4.1 shows that on-campus ECSs had proficiency rates that were 14 percent higher than their districts in ELA and 16 percent higher than their districts in mathematics, after adjusting for other variables. Off-campus ECSs were about the same as their districts (1 percent lower). The previous evaluation report included a number of differences in 2006–07 proficiency rates based on school characteristics, including IHE partner type, age of the ECS, origin, and location. Although the finding for location was replicated, the other findings were not. This change is likely due to the introduction of inferential statistics, now possible due to the large number of schools with data.

Figure 4.1. Adjusted Differences in the Percentage of Students Scoring Proficient Between ECSs and Their Comparison Districts on ELA and Mathematics Assessments, by ECS Location



ECSs: *n* = 49 on-campus for ELA; *n* = 55 off-campus for ELA; *n* = 49 on-campus for mathematics; *n* = 54 off-campus for mathematics
Note: District averages were based on the districts that sent students to ECSs. The district averages were weighted based on the percentages of students enrolled in an ECS who came from each district.
Source: 2007–08 ECHSI school survey and extant data from publicly available sources

Course Grades and GPAs

The evaluation team used two sources of data on students' grades: the student survey and student transcripts. Each data source represents a different strength. The student survey data are representative of the ECHSI students in 2007–08 but rely on students' self-reports of their grades. The transcript data contain actual grade information but are not from a representative set of schools (among other challenges detailed in Appendix A).

High School GPA

Overall, students in the student survey sample estimated that their GPA was 3.0 (or mostly B's), exactly the same average GPA reported by a national sample of high school students (High School Survey of Student Engagement, 2006). Several student characteristics were related to lower GPA estimates. Minority students reported lower GPAs than white students (adjusted means of 3.0 and 3.2, respectively). First-generation college-going students reported lower GPAs than other students (3.0 and 3.1, respectively). Finally, low-income students reported lower GPAs

than other students (adjusted means of 2.9 and 3.0, respectively).[39] All of these differences related to student characteristics also were significant for the 2006–07 student survey sample. This may reflect the generally lower academic preparation of these groups prior to high school (Heck & Mahoe, 2006; Brint, 2006).

However, two student characteristics were related to higher GPA estimates. Students from non-English-speaking homes reported higher estimated GPAs in their high school classes than other students (3.0 and 2.9, respectively). In addition, females reported higher estimated GPAs (3.1 and 3.0, respectively), a finding also found in the 2006–07 data. Unlike a previously reported finding, however, students at newer ECSs did not report higher GPAs than students at more established ECSs.[40]

Students' actual high school GPAs were slightly lower than their reported GPAs, at least based on the sample of 38 ECSs with useable transcript data.[41] Between the 2004–05 and 2007–08 academic years, students' average GPA in high school classes was 2.7. In a national examination of high school students' 2004 transcripts, the average GPA was 2.8 (NCES, 2007a).

Students estimated their GPA to be, on average, about 3.0. In the 38 ECSs with transcript data, students' average high school GPA was 2.7.

College GPA

In 2007–08, students' estimated GPAs in their college classes averaged 3.1, similar to the 3.0 that was reported in the evaluation report for 2006–07. More than half of the students who had taken college courses (55 percent) reported that they received mostly A's and B's. Only 3 percent reported that they received mostly D's or below. In the analyses presented in the previous evaluation report, students in startup ECSs reported higher college GPAs than students at other schools. With the more complex model run using the 2007–08 student survey data, this finding was not replicated.

For college courses, none of the student characteristics were significantly related to higher or lower GPAs (this finding is explored in more detail for minority students in the transcript data findings below). Although it did not meet the stringent criterion for significance, in both 2006–07 and 2007–08 student survey samples, first-generation college-going students reported lower grades in college classes than did other students at the significance level of 0.05. A possible explanation for this lack of differences in college GPAs is that ECSs are careful about placing students in college classes in which they can succeed. As discussed in Chapter III, ECSs have worked, and continue to work, to develop college course-taking plans that follow students' interests and allow them to be successful. The lack of significant differences in college GPA across student characteristics suggests that ECSs are selecting college classes to improve students' likelihood of success.

The actual average GPA in college courses in 30 ECSs based on SIS transcripts with college level data was 2.2, or just above a C, which was much lower than students' estimated GPA (3.1).

[39] Note that each of these effects is independent of the others. For example, minority students reported lower GPAs after controlling for whether they were eligible for FRPL or were first-generation college-going students.

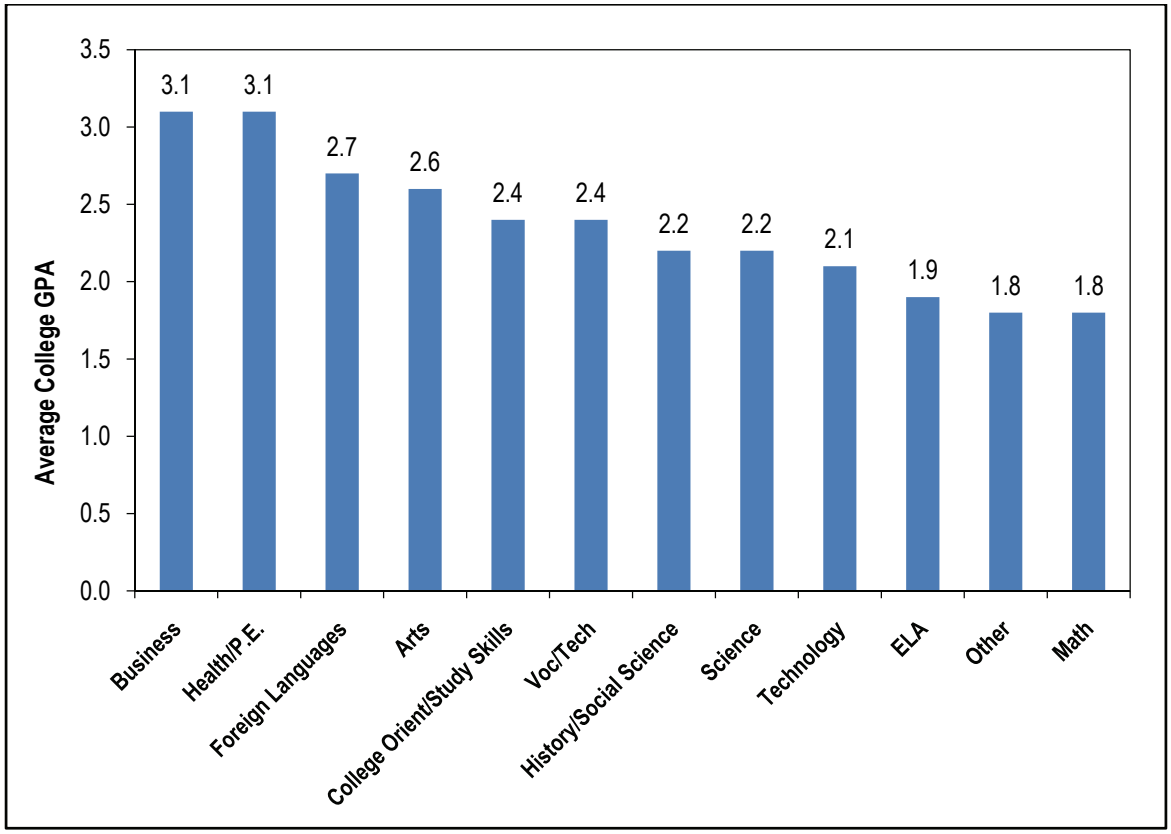
[40] In addition, the previous evaluation report (AIR & SRI, 2008) included a finding that students who have taken a class on a college campus have higher high school GPAs than students who have not taken classes on a college campus. This variable was not included in the analyses this year. However, the location of the ECS did not have a significant relationship to high school GPA.

[41] See Appendix A for more on the SIS transcript data.

However, the SIS data are not representative of the ECHSI, and this GPA is likely lower than the national ECHSI average due to sampling bias. A major source of sampling bias resulted from an overrepresentation of GtC schools in the transcript data. These schools offer only college classes (i.e., students do not have high school classes). When GtC students are excluded, the mean GPA is 2.8. Although these data, with or without GtC, cannot be considered representative of the ECHSI, they are informative, particularly regarding the relative performance of students in college classes.

Given that students may have access to college classes in a wide variety of subject areas, it is useful to examine students' GPAs by subject area (see Figure 4.2). Students received the highest average GPA in electives such as business, health, and physical education classes (3.1). All of the core academic subject areas (i.e., ELA, history/social science, mathematics, and science) had averages 2.2 or below (or around a C average).[42]

Figure 4.2. Students' Average College GPA, by Subject Area, 2004–05 to 2007–08



Schools, n = 30; students, n = 2,504; classes, n = 10,695
Source: SIS data

The transcript data provide some insight into the college experiences of minority students.[43] As reported on the student survey, the transcript data demonstrate that minority students have college

[42] These data also are not representative of the ECHSI-wide average. For example, GtC, a model that serves students who have dropped out or were at risk of dropping out of high school, starts students in college ELA and mathematics classes upon entry. When GtC students are excluded, the mean GPAs for these two subject areas are 2.7 and 2.5, respectively.

[43] Unfortunately, the data did not allow for an analysis of low-income or first-generation college-going students.

GPAs similar to those of white students (2.2 for both groups of students). However, an examination of the types of classes that students take suggests variation in class type by minority status. A lower percentage of minority students' college courses were in core academic subject areas (42 percent), compared with courses taken by white students (48 percent). These finding might indicate, as suggested previously, that ECSs are successfully matching students to college classes. For example, perhaps students who are not doing as well in high school classes are more likely to take non-academic college classes. For minority students, this appears to be a possible explanation. Therefore, it appears that although minority students may start ECSs academically behind their peers, that deficit does not delay their entry into college classes but may affect the types of college classes in which these students enroll.

As described in the previous chapter, ECS students are more likely to be enrolled in electives in early grades and core academic classes in later grades. In addition, as discussed previously, students are likely to receive higher grades in electives than in core academic classes. Both of these factors likely explain the gradual decrease in college GPAs as students progressed through ECSs.[44] Based on the small sample of ECS transcripts, students in 9th grade had an average college GPA of 3.2 (above a B), and by 12th grade, that average was only 2.5 (between a B and a C). In other words, the decrease in GPA from 9th to 12th grade is likely an artifact of increasing participation in challenging college classes, rather than waning student performance.

College Credit Accrual

ECS students have made solid progress earning college credits, which is not surprising given students' high participation and completion rates in college courses. On the school survey, ECSs reported the number of college credits that students earned upon graduation in 2006–07, the most recent graduating class at the time the school survey was administered. At the 56 ECSs with graduates, students earned on average 23 college credits (or about seven to eight college classes).[45] In most college credit systems, this amount is more than a semester but less than a year of credits.

Some ECS graduates earned enough college credits to receive an Associate's degree. On the 2007–08 school survey, 19 ECSs had been open for at least 4 years. Of the 10 that reported this information about their 2006–07 graduates, nine reported that some of their graduates both completed a high school diploma and received 2 years of college credits. The largest of these schools had 24 students receiving 2 years of college credits (about half of the graduates). Two schools had 100 percent of the graduates earning dual degrees (i.e., a high school diploma and an Associate's degree), but they only graduated a few students.

Student transcripts are the best source for examining students' college credit accrual. Although there are not enough data to report graduates' total college credits, there are data to estimate the number of college classes that students take by graduation. Based on pooled data of 1,900 students at 21 ECSs who had taken

The evidence from different data sources showed that students graduated from ECSs with about a semester to a year's worth of college credits.

[44] These data exclude all ungraded schools (e.g., GtC ECSs).

[45] For the 16 ECSs that both provided these data on the school survey and were open at least 4 years, the mean is quite similar: about 23 college credits (about seven and a half college classes).

college classes between 2004–05 and 2007–08, students completed an estimated average of 10 college courses by the end of 12th grade.[46] In most college credit systems, this is equivalent to 1 year's worth of college courses. These two sources provide an optimistic picture of what ECS graduates can achieve: 1 year of college credits for high school graduates who were among the first students in ECSs. However, students' own expectations for how many college credits they will earn may not be met (see text box).

Students' College Credit Expectations

On the 2007–08 student survey, students' expectations for credit accrual were higher than what was actually achieved by the 2006–07 graduates: 78 percent thought they would earn at least 1 year of college credits (commonly 30 credits), and 46 percent thought they would earn at least 2 years of college credits (commonly 60 credits). In fact, these are almost identical to the aspirations reported by students in 2006–07 (79 percent for 1 year and 46 percent for 2 years of college credits). Consider these expectations in relation to the average of 23 credits earned by 2006–07 graduates. However, as students got closer to graduation, their expectations declined. In 9th grade, students believed they would accumulate about 1.5 years of college credits, on average. By 12th or 13th grade, students believed that they would accumulate 1 year of college credits (a rate that seems closer to actual accumulation, based on the 2006–07 graduates and the estimates from the transcript data).

One hypothesis is that perhaps students were correct: that students enrolled in the first years of the ECS opening (and subsequently in higher grades) had less access to college classes than students who enrolled in the same ECS after it had been open a few years. Certainly, this was the perspective of a few of the graduates interviewed in 2007–08, who noted that current students had access to more college classes than they did when they attended the ECSs. However, for students at the five ECSs in the 2007–08 student survey sample that had been open at least 4 years, the same pattern appeared; students in higher grades expected to earn fewer college credits than students in lower grades. Therefore, the persistence of this finding over time and at more mature ECSs suggests that this difference is not a result of school-level ECS program implementation but rather students' changing expectations. As they near graduation, their estimates become more accurate.

Students at ECSs located on a college campus expected to earn more college credits than students at other types of ECSs (adjusted means of 1.7 and 1.5 years of college credits, respectively). Irrespective of school characteristics, minority students had higher expectations (adjusted mean of 1.5 years of college credits), compared with white students (1.3 years of college credits). Low-income students had lower expectations, compared with other students (adjusted means of 1.4 and 1.5, respectively). Caution is warranted in interpreting these results, as none of these findings are replications of findings from the 2006–07 data; in fact, some findings are in the opposite direction.

Academic Progress

Before students can effectively put these college credits to use, they need to graduate from high school. The findings in this section demonstrate the degree to which ECS students are making the transition between grade levels to graduation. The first subsection provides grade-to-grade progression rates, the second subsection provides cumulative promotion index (CPI) estimates, and the third subsection provides estimated on-time graduation rates. Although the rates are lower than what most ECSs strive for, they are high compared with those of other area high schools.

[46] The calculation is the sum of the average number of college classes taken by students who took college-level classes in 9th, 10th, 11th, and 12th/13th grades. There were 461 students from 14 schools in 9th grade, 627 students from 15 schools in 10th grade, 490 students from 13 schools in 11th grade, and 322 students from 9 schools in 12th or 13th grade. Ungraded schools are excluded. Again, these data are limited and are not representative of the ECHSI population.

Grade-to-Grade Progression

Grade-to-grade progression rates are calculated based on the percentage of students who move from one grade to the next. These data are based on students' progression between 2006–07 and 2007–08. Progression rates show the number of students who progressed to the next grade (e.g., from 9th to 10th grade in 2007–08) divided by the number of students enrolled in a grade the previous year (e.g., 9th grade in 2006–07). Table 4.1 displays grade-to-grade progression rates for each grade transition.

On average, more than 85 percent of students progressed each year from one grade to the next. Despite almost twice the number of ECSs reporting progression rates in 2007–08, the rates remain remarkably similar to those reported in the previous evaluation report. Which students are leaving and why are matters for additional research.[47] Because the data for calculation of the 9th to 10th grade progression rate includes the most schools, this rate was used in the analysis to examine the relationship between school characteristics and progression rates. In this analysis, after controlling for other school characteristics, ECSs located on a college campus had higher progression rates than ECSs not on a college campus (adjusted means of 89 and 81 percent, respectively).

Table 4.1. Average Grade-to-Grade Progression and Transfer Rates Between 2006–07 and 2007–08

From	Progression Rates	Transfer Rates
9th to 10th grade	85%	9%
10th to 11th grade	86%	8%
11th to 12th grade	86%	7%
12th to graduation or 13th grade	87%	4%
13th grade to graduation	95%	3%
CPI*	66%†	
Cumulative estimated transfer rate		25%†

* Based on 4 years for 4-year programs and 5 years for 5-year programs and were only calculated for ECSs that have been open for 4 or 5 years.
† One ECS, an outlier, has been excluded from this mean. This school's CPI was 2 percent for all students.
n = 92 for 9th to 10th grade; *n* = 57 for 10th to 11th grade; *n* = 33 for 11th to 12th grade; *n* = 14 for 12th grade to graduation or to 13th grade; 13th grade to graduation *n* = 2; *n* = 12 for CPI.
Note: Although some of these sample sizes seem small, they represent at least 70 percent of schools that have been open long enough to have each progression rate. The one exception is the CPI, for which only 55 percent of ECSs that should have these data provided all the required data points for the calculation.
Source: 2007–08 ECHSI school survey

Research suggests that transfer rates should be considered as indicators of school performance, particularly schools of choice (Rumberger & Palardy, 2005). Table 4.1 displays the average transfer out rate for ECSs for each grade transition. As noted in the previous evaluation report, many students transfer away from ECSs between grades. Future research can investigate issues related to student transfers.

[47] The intermediaries wanted to better understand the transition and dropout status of their ECSs. Therefore, in 2008, they awarded a contract to a research team to investigate this issue. The award was made through the ECHSI research group, which is described in Chapter VI.

Cumulative Promotion Index

The CPI is the result of multiplying all of the grade-to-grade progression rates (Swanson, 2003). Twelve ECSs had been in operation long enough and had supplied enough data to calculate all grade-to-grade progression rates (4 or 5 years, depending on program length). In these ECSs, based on the number of students who progressed from each grade to the next, the average CPI estimates that 66 percent of the 9th-grade students will progress all the way to graduation on time (in 4 or 5 years).

The mean CPI is lower than what the ECHSI stakeholders aim for, but looking at comparison districts provides perspective for evaluating these rates. On average, these 12 ECSs had a CPI that was 14 percent higher than their districts' 2004–05 rates (Editorial Projects in Education Research Center, n.d.). Only three ECSs had rates lower than the comparison districts.

For 12 ECSs, the CPI estimate indicates that 66 percent of students entering 9th grade will graduate from their ECSs on time. These rates, on average, are higher than comparison district CPIs.

On-Time Graduation Rates

Ideally, student graduation rates are calculated by tracking individual students from one grade to the next. Although these data are collected in the SIS, by fall 2008, the SIS did not have 4 or 5 years of consistent data for multiple schools (the number of years it would take to track a student from 9th grade to graduation; see text box for these data across 3 years in a small sample of ECSs).

In addition to the CPI, another estimate method compares the number of graduates with the number of students enrolled in 9th grade 4 or 5 years earlier. Doing this estimate requires data from the 2007–08 school survey as well as from the school survey from 4 or 5 years prior. Based on this method, the average estimated on-time graduation rate was 73 percent for the seven ECSs with these data (of the 13 possible). For each ECS, its rate was equal to or higher than its district comparisons.

Progression Rates — A Look at Student-Level Data From the Student Information System

Findings from the SIS data offer a rich picture of how students progress through ECSs, because individual students can be tracked across time. However, only seven ECSs included the data to track students across 3 years (2004–05 to 2006–07). We assessed progression rates for students by examining how many 9th-grade students who began at these schools in 2004–05 continued to be in school and progress through grade levels as expected across 3 academic years, until 2006–07. Only two of these schools provided data the fourth year, into 2007–08. Thus, only two progression periods, 9th to 10th grade and 10th to 11th grade, had enough school data for analysis.

At these seven ECSs, a total of 456 9th-grade students enrolled in 2004–05. Three years later, 70 percent of these students were still in the same school and had progressed to either 11th or 12th grade.[48] Despite being based on data from only seven schools, this rate was close to the 73 percent progression rate estimated from the school survey data.[49]

Female students were slightly more likely to progress from grade to grade on time. Overall, 71 percent of female students and 68 percent of male students who started 9th grade completed 3 years of school to the 11th or 12th grade. Therefore, even in this small sample of schools, males appear that they will follow the national trend of having lower on-time graduation rates (Brint, 2006).

Minority students had different progression patterns than white students, though the picture is a bit complex. White students were more likely to progress from the 9th to 10th or 11th grade (80 percent of white students, compared with 75 percent for minority students), but minority students were more successful during the 10th to 11th grade transition (89 percent of minority students and 81 percent of white students progressed). As a result, over the 3-year period, minority students were slightly more likely than white students to progress successfully to 11th or 12th grade after 3 years in school (71 percent and 68 percent, respectively). In addition, these findings persist in the analysis of individual schools, meaning that an outlier school is not the driver of these findings. At six of the seven ECSs, minority students progressed at the same or higher rate than white students overall. Although caution is warranted because these data only represent seven schools over a short period of time, these are encouraging data considering that they do not replicate national trends, in which minority students have higher dropout rates (Greene & Winters, 2005; NCES, 2008a).

Thus far, the discussion of student outcomes has included a presentation of quantitative data on academic engagement, academic self-concept, attendance, academic performance, and academic progress. The next section presents both quantitative and qualitative data collected on ECS students' experiences in preparing for college, as well as their thoughts about transitioning to college after ECS.

Post-ECS Preparation and Experiences

Although the ECHSI has always explicitly encouraged students to earn as many college credits as possible while at the ECS, the push for college after graduation has been less direct, at least initially. However, since the revision of the ECHSI Core Principles in 2007–08, the goal for students to complete college has been made more explicit: An ECS is one that "provides traditionally underrepresented youth with a path to and through college" (JFF, 2008, p. 1).

[48] Of those who were not in 11th grade, eight students remained in 10th grade and one student was promoted to 12th grade.

[49] From the school survey data (displayed in Table 4.2), the estimate is 73 percent, based on multiplying the proportion of students who progressed from 9th to 10th grade (0.86) and the proportion of students who progressed from 10th to 11th grade (0.86).

In addition to the quantitative data collected in 2007–08, the evaluation team conducted telephone interviews with 16 ECS graduates selected by several ECSs for participation. All interviewed students were enrolled in college at the time. Although qualitative data in large quantities are not yet available, these graduates provided interesting insights on how the ECSs prepared them for life as college students.

The following sections summarize the preliminary data that are available about students' transition into college after ECSs, including postsecondary aspirations, applications, and experiences.

Postsecondary Aspirations

Educational aspirations are one aspect of academic identity, a major goal of the ECHSI. As noted earlier, students' academic self-concept includes seeing oneself as a capable learner who can be successful in school, including higher education (Nakkula & Foster, 2007). If students do not aspire to continue, they are unlikely to succeed while in college, even if momentum launches them into college. Table 4.2 depicts ECS students' expectations about how far they will continue their postsecondary education, which shows remarkable similarity to what students reported in 2006–07 (AIR & SRI, 2008).

Table 4.2. 2007–08 Students' Highest Educational Attainment Expectations

Graduate from college and pursue further education	33%
Graduate with a 4-year degree	43%
Graduate with a 2-year degree	7%
Complete job training program	2%
Get some college or training	6%
Graduate from high school	9%
Leave high school before graduating	1%

Number of students, n = 2,077; number of ECSs, n = 35
Source: 2007–08 ECHSI student survey

Three-quarters of students (76 percent) expected to complete a 4-year degree or higher.[50] When 2-year degree or certificate programs were included, 85 percent of students aspired to earn a postsecondary degree. In a 2004 national sample of 12th-grade students (NCES, 2008b), 69 percent expected to earn a 4-year degree or higher.[51] This finding mirrors findings in the previous evaluation report: Even though ECSs were enrolling larger numbers of students from populations underrepresented in postsecondary education compared to national averages, ECS students were just as interested as students in other schools in completing postsecondary degrees.

However, the high educational aspirations were not universal. First-generation college-going students, for instance, were less likely to aspire to a 4-year degree or higher than other students (adjusted percentages of 71 and 82, respectively). This relationship also was significant in the 2006–07 sample. Further, students at larger ECSs were more likely to aspire to a 4-year degree or higher than similar students attending smaller ECSs.[52] This finding is unexpected and may be

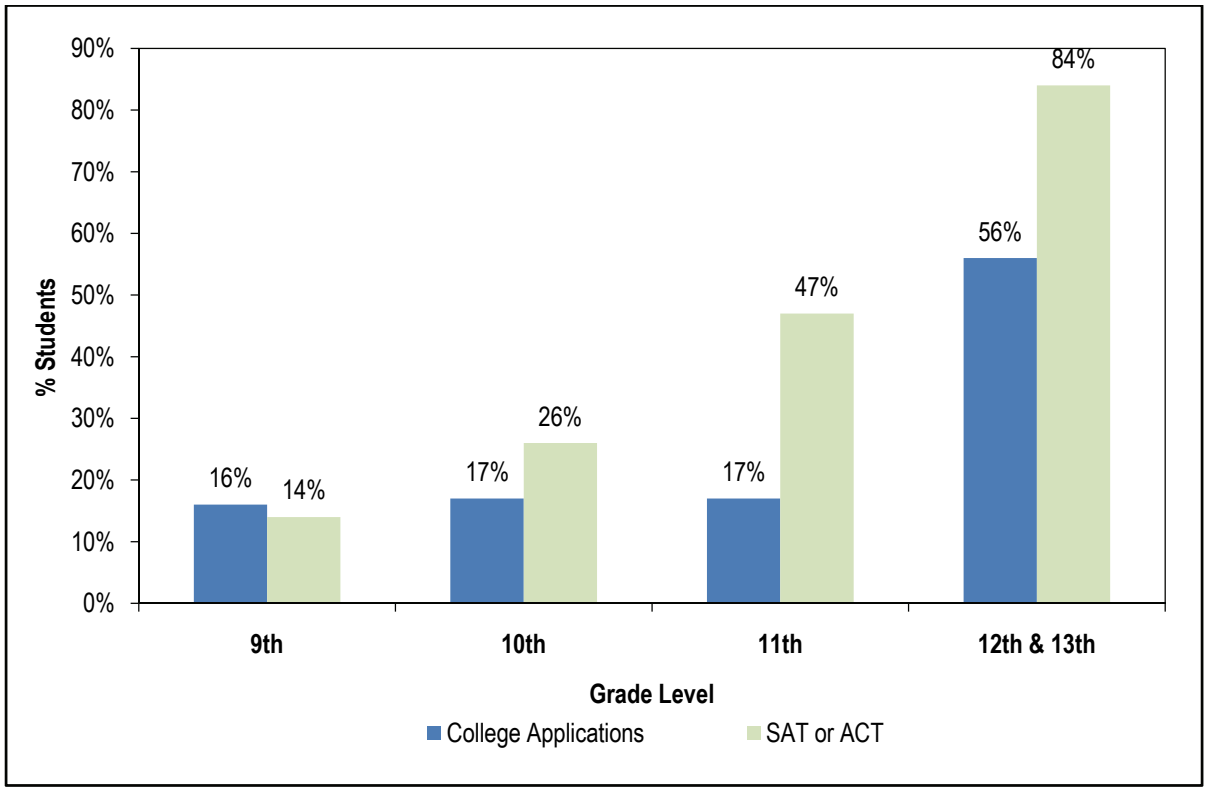
[50] In 2006–07, 75 percent of students expected to complete a 4-year degree or higher (AIR & SRI, 2008).
[51] For a more direct comparison, in the student survey sample, 77 percent of 12th- and 13th-grade students aspired to earn a 4-year degree or higher.
[52] A 100-student increase in school enrollment corresponds to a 15 percent increase in the odds for students to aspire to a 4-year degree or higher, after adjusting for various student and school characteristics.

related to the fact that the largest ECSs are programs within larger schools. Unlike findings from the evaluation report for 2006–07, students at ECSs with 4-year IHE partners were no more likely to aspire to a 4-year degree or higher than students at ECSs without this partner type. This is likely due to the difference in the analytic models used. For example, the model used for this analysis included HMHP status and enrollment as additional school-level predictors, which were not in the model used previously. The relationship between ECSs with 4-year IHE partners and students' higher educational aspirations found last year may more realistically be due to the size of ECSs (average enrollment for schools with 4-year IHE partners is 274 and without is 200). Once enrollment size was accounted for in the analysis, partner type was no longer significant.

Postsecondary Applications

Many ECS students completed college application activities to continue their college education after graduation. By spring 2008, 35 percent of students had completed college entrance exams and 23 percent had filled out college applications. The majority of 12th- and 13th-grade students had completed college entrance exams (84 percent) or filled out college applications (56 percent). Students in 9th and 10th grades also had been exposed to the college application process, although they were significantly less likely to have engaged in these activities than the students in upper grades (see Figure 4.3).

Figure 4.3. Percentage of Students That Engaged in Various College Application Activities, by Grade



Students: 9th grade, *n* = 608; 10th grade, *n* = 662; 11th grade, *n* = 392; 12th and 13th grades, *n* = 336
Note: Percentages adjusted based on HLM results. For SAT or ACT, students in 11th, 12th, and 13th grades were significantly more likely to have engaged in these activities than students in 9th grade. For college applications, students in 12th and 13th grades were significantly more likely to have engaged in this activity than students in 9th grade.
Source: 2007–08 ECHSI student survey

Students at ECSs with a 4-year IHE partner were significantly more likely to have taken either the SAT or ACT (adjusted means of 42 and 25 percent, respectively). In addition, as noted in the previous chapter, students at ECSs with a 4-year IHE partner were significantly more likely to have received support in preparing for college entrance exams. Students at ECSs with 2-year IHE partners may be more likely to plan to continue at a 2-year college, which does not require a college entrance exam. This hypothesis cannot be investigated with currently available data, as students were not asked about their immediate plans after graduating from the ECS. Also, students at larger ECSs were significantly less likely to have completed either the SAT or the ACT than students at smaller ECSs.[53]

Postsecondary Experiences

In the 48 ECSs with graduates in 2006–07 that reported these data, on average, 52 percent of graduates applied to attend a 4-year college and 48 percent of graduates were accepted into at least one 4-year college.[54] The average acceptance rate was quite steady. In the previous evaluation report, for 2005–06 graduates, schools reported that 46 percent of all graduates were accepted to a 4-year college.

On the school survey, schools reported that, on average, 88 percent of students continued on to college the next fall:[55] 41 percent of the graduates enrolled in a 4-year college or university, 43 percent enrolled in a 2-year college, and 4 percent enrolled in a certification program (see Figure 4.4). The reported average college attendance rate was higher than the national average in 2003–04, when 72 percent of students enrolled in college after graduating: 44 percent of high school graduates enrolled in a 4-year college or university, and 28 percent of students enrolled in a 2-year college (NCES, 2007b). The primary difference between the ECS and national enrollment rates was with respect to 2-year colleges, with ECS graduates much more likely than the general population to attend these types of institutions. A note of caution is needed, however. Many ECSs may have based their numbers on their students' intentions for college enrollment during the spring of their final year, and some students may not follow through and enroll the following fall (Roderick, Nagaoka, Coca, & Moeller, 2009; Washor, Arnold, & Mojkowski, 2008/2009).

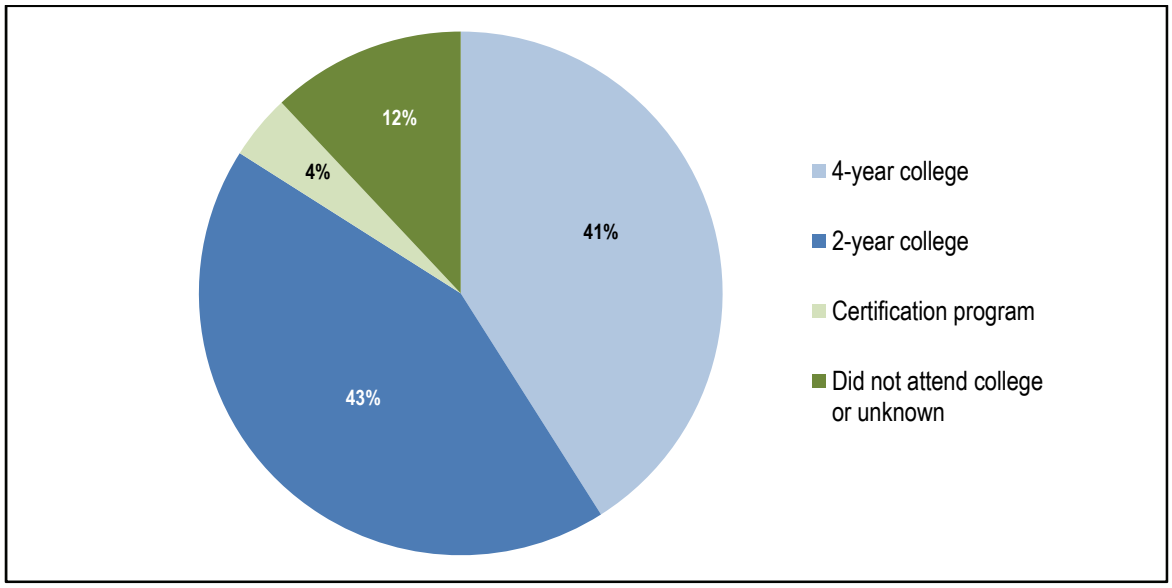
ECSs reported that 88 percent of their graduates attended college in the fall after graduation.

[53] A 100-student increase in school enrollment corresponds to a 13 percent decrease in the odds for students to take the SAT or ACT, after adjusting for various student and school characteristics.

[54] At the time of the school survey administration during winter 2007–08, 2006–07 was the most recent graduating class.

[55] Out of 56 ECs that indicated the number of graduates in 2006–07, 46 schools reported the number of students enrolling in a 4-year college, 47 schools reported the number of students enrolling in a 2-year college, and 25 schools reported the number of students enrolling in a technical or certificate program.

Figure 4.4. 2006–07 ECS Graduates' Type of College Enrollment



4-year college, *n* = 46 ECSs; 2-year college, *n* = 47 ECSs; technical or certification program, *n* = 25 ECSs; did not attend college or unknown, *n* = 47 ECSs
Source: 2007–08 ECHSI school survey

Of the 16 interviewed ECS graduates, only two students remained at their ECS's IHE partner after graduating. When asked why they stayed, both mentioned not wanting to move too far away from home and that the IHE partner had strong programs in their areas of interest. They also noted feeling comfortable at the IHE. However, one graduate reported that the transition turned out to be harder than expected because there were "no support systems," friends had moved on, and "as much as you think you are going to carry it over from high school, that doesn't really happen. It was just very different being in the same place but not with the same people and not the same environment anymore."

The remaining graduates attended colleges not affiliated with their ECS. These students attended vocational schools, public 2-year and 4-year colleges and universities, as well as accessible and elite private 4-year institutions. These students gave various reasons for not staying with the partner IHE. Some students switched because they wanted to go to a 4-year rather than a 2-year college. Others were looking for particular programs or, generally, new experiences. The remaining discussion is informed by these graduates' experiences upon embarking on new college environments.

Status Upon Transfer to College

One goal of the ECHSI is to not only to prepare students for college but also enable them to move through college more quickly. To achieve this goal, students need their ECS college credits to transfer. Several graduates noted being surprised at how few of their college credits transferred. One student who attended an Ivy League college said:

> *At the time, I thought [the college] would accept all of them. It wasn't really until about 2 weeks into my first semester when I tried to transfer the credits that they told me, 'OK, we'll only take 15.' That came as a shock to me because I felt if they would take all the credits at home [at the IHE partner], then they would take them all at [the college]. But that wasn't the case.*

Another graduate, aware of the challenges of credit transfer, noted being only interested in colleges where most of the student's 20 college credits would be accepted.

Many of the interviewed graduates applied to the colleges as freshmen rather than as transfer students, due to either wanting the full college experience or the number of credits that transferred. As one student explained, "I was only 17. I didn't want to rush, and I wanted to have the full experience rather than getting my degree so fast, you know?" Another student applied as a freshman, but was moved to sophomore status after arriving: "I took my college credit papers with me and they just looked at everything I had and labeled me as a sophomore."

Post-ECS College Life

Once at the college, most graduates felt they were more prepared for the experience than other new college students. This preparation included tackling college administrative bureaucracies, joining in community life, and keeping up with their coursework. One graduate felt the activities at the ECS were particularly helpful to learn how to get around a college:

> *I noticed the amount of kids that didn't know where the bursar's office was coming into college, so I just felt grateful that those were things [the staff at the ECS] drove into us. We had activities that forced us to go find different offices and things like that.*

Two students noted particularly that they felt more comfortable getting involved in campus life because of their ECS experiences. One of the graduates said, "[The ECS is] kind of like a family where you're not scared to come out and be yourself, and associate with different programs … and that's what I like a lot, really I took [that] with me to college."

With regard to academics, several students noted that they knew what to expect in a college class; their experience at the ECS prepared them for the writing, reading, and time management skills that would be required. One graduate reported:

> *I knew how to manage my time in a particular situation, whereas a lot of first-year students, this is their time to learn to do that. ... So the classes seemed hard to everyone else because they didn't have the time to get their work done.*

Interestingly, one graduate felt that the volume of work was higher at the IHE partner than at the current college because of the size of classes — in the smaller classes at the IHE partner, instructors could grade the work more easily, so they gave more frequent assignments and tests.

Even graduates who found the new college environment challenging noted that the ECS helped them to be ready for the challenge. One graduate explained it this way:

> *I was basically scared of going to college, even after I left [the ECS]. I thought a 4-year university would be so much harder. It's just crazy, but when I went here, it was harder than a community college, but at the same time I felt prepared because I went to [ECS].*

Generally, graduates reported that their current college courses were harder (more lectures, harder tests, more studying required) than the classes they took while at the ECS. Some of these differences might relate to the types of courses they were exposed to in the ECS (i.e., a lot of electives) versus what they were taking as traditional college students (moving into disciplines of study). One graduate noted that it would have been helpful for the ECS college courses to be "a little bit more rigorous."

Overall, the graduates interviewed were satisfied with their ECS experiences. They felt that enough credits transferred so that they could take fewer core academic courses and possibly complete coursework early, and that they had a strong college introductory experience. However, we have to keep in mind that these are not a representative group of students. These graduates came from just a few ECSs, all of them went on to college, and all were recommended by the ECSs to participate in the interviews.

Yet, the overall satisfaction with the ECSs noted by these graduates may reflect the general ECS student experience. This strong satisfaction was shared by the current ECS students who were surveyed. On the student satisfaction scale, the mean was 3.2 on a 4-point scale. Students in 12th and 13th grades were particularly happy with their ECSs, compared with 9th-grade students (adjusted means of 3.2 and 3.0, respectively). On the other hand, students at ECSs partnered with 4-year IHEs had lower satisfaction than students at other ECSs (adjusted means of 3.1 and 3.2, respectively), although this difference is small. Notably, given other findings involving students who are first-generation college-goers, this population was equally satisfied with the ECS as other students.

Summary

Each year, more types of data become available, and these data consistently support the statement that students in ECSs, overall, are doing well. Some of the findings based on the most recent data are more preliminary than others but are no less encouraging. The main findings include:

- ECS students are engaged with their education and have **a positive academic self-concept.**
- Over several years, ECSs have had **high average daily attendance rates,** consistently averaging higher than 94 percent.
- ECSs **outperform their local district high schools on state assessments by almost 7 percentage points in both ELA and mathematics;** 74 percent of students reached proficiency in ELA and 67 percent did so in mathematics.
- In the 38 ECSs with transcript data, students' **average high school GPA was 2.7,** very similar to that found in a national transcript study.
- Students estimated that their **college GPA was about 3.1.** At the 30 ECSs with transcript data, the average college GPA was 2.2.
- On average, **about 85 percent of students made the progression each year** from one grade to the next.
- For 12 ECSs, the CPI estimate indicates that **66 percent of entering 9th-grade students will graduate** from their ECS on time. These rates, on average, are higher than comparison district CPIs.
- The evidence from different data sources showed that **students graduated from ECSs with about a semester to a year's worth of college credits.**
- ECSs reported that **88 percent of graduates enrolled in college in the fall after graduation.**

With the data collection and analytical methodology employed in this evaluation, several caveats should be reiterated. First, although population or representative sample data are reported whenever possible, findings from the nonrepresentative SIS data are presented to provide an additional level of detail. Second, although the analyses models account for many important factors that affect outcomes, some other factors (e.g., students' academic preparation prior to ECS enrollment) were not available for inclusion. Third, in comparisons to districts, states, or national figures, no student characteristics are taken into account. For example, ECSs may enroll students with high motivation, and these students would have done better than district averages in any high school setting.

Despite these caveats, the overall picture is promising. Students said they were engaged (and their attendance levels support that assertion), they were exposed to college courses, and they had expectations of continuing their postsecondary education. The level of participation in college courses bodes well for students' future achievements (Karp et al., 2007; Adelman, 2006). Also, alumni felt challenged by college after attending the ECSs, but they felt prepared for it and attributed this level of preparation to the ECS experience. ECSs appear to be successful in helping students from underrepresented populations prepare for college.

In Chapter VII, a summary is provided of the findings by various school and student characteristics presented in Chapters III and IV. Before that, however, there are two additional chapters that help to better explain the contexts in which these ECSs operate. The next chapter shifts to an examination of the ECS partnerships from the college partner perspective.

CHAPTER V. LOCAL PARTNERSHIPS: A VIEW FROM THE COLLEGE SIDE

Introduction

To date, the ECHSI has been considered a high school reform effort, and consequently much of the emphasis in previous evaluation reports has been on explaining how local partnerships work from the high schools' perspective. Yet the postsecondary partners are the most unique features of the ECSs and are integral to the ongoing implementation and sustainability of these schools. This chapter studies local partnerships through the college lens. The evaluation team examined the college perspective from interviews with 29 college instructors and administrators conducted between 2005–06 and 2007–08.[56] These data were augmented with findings from interviews with ECS administrators, intermediary representatives, and ECS alumni.

In previous evaluation reports, we have examined colleges' visions for ECSs and the ECHSI (AIR & SRI, 2007, 2008), but 2007–08 was the first year the evaluation team specifically collected data on the colleges' reasons and incentives for developing partnerships with ECSs. The first part of this chapter discusses why colleges have chosen to enter into a partnership with an ECS and what rewards and challenges have emerged as the ECSs have matured.

The partnership between the secondary and postsecondary systems serves as the foundation of an ECS. There are several key features of successful and effective partnerships: a common understanding of the goals and purposes of the ECS, an active and engaged college liaison, and close proximity of the IHE partner and ECS (AIR & SRI, 2007, 2008). In the second part of this chapter, we explore other features that our evaluation indicates are essential for a successful partnership: the significance of ongoing commitment of high-level college leaders, the importance of college faculty buy-in, and the specific skills that are required to be an effective and engaged college liaison.

The last section of this chapter focuses on the professional collaboration across the college and ECS faculties. Since the start of the ECHSI, there has been an assumption that the partnership could lead to a strong collaboration among the two faculties. The evaluation team found that the intensity and type of professional learning communities varied significantly among ECSs. The findings suggest that a range of possible collaborations is taking place and that not all college faculty and administrators view collaboration with the ECS faculty as a high priority.

Why Colleges Partner With an Early College School

College administrators and faculty reported a number of reasons for developing partnerships to implement and support ECSs. The most commonly identified benefits were: (a) increased student enrollment and the creation of a pipeline for future enrollment, and (b) positive publicity resulting from the college's involvement with an ECS. Other incentives included fulfilling the college's mission, which may include providing college opportunities for students who might not have been able to attend otherwise; providing a testing ground for student teachers; lowering high school dropout rates that consequently affect student retention at the colleges; and the financial and capital resources provided by the ECS.

> The most commonly identified benefit for developing partnerships to implement and support ECSs was increased student enrollment and the creation of a pipeline for future enrollment.

[56] Because the sample size for the 2007–08 data was six schools, the evaluation team also examined data from prior years for this analysis.

The desire to create a pipeline of future students is a logical incentive. Karp and Hughes (2006) reported that high school–college partnerships are valuable in their potential to assist all partnering entities in working together "to exert control over resource supply, increasing their prestige and institutional legitimacy, creating a pipeline for future students (and their tuition dollars), and gaining access to additional funds" (p. 6). Representatives from each of the IHE–ECS partnerships in 2007–08 reported that an increase in enrollment was an incentive for the college to be involved with an ECS; college leaders from previous years also expressed a similar sentiment. A college leader from a 2-year college hoped that the ECS would increase future enrollment. A college leader from a 4-year college reported:

> *From the university perspective, it was seen as a win–win situation to do something good for the county that provides more students to [this college] than any other county. And so you would have students that, when they finish, would already have a certain amount invested in the university. So while they could go anywhere and are certainly welcome to go anywhere and are encouraged to go where they can get in, you would still have a certain percentage of them out of sheer momentum coming to [this college]. It would be good for the university.*

These two college leaders were thinking about the future benefit of the IHE–ECS partnership, whereas two other colleges with more mature partnerships had already experienced ECS students matriculating at the college after graduation. One college enrolled 80 percent of the ECS graduates. Interviews with ECS graduates also provided evidence that the pipeline is working in some cases. A few of these students reported that they preferred to continue their college education at the IHE partner for reasons such as scholarships, being close to home, familiarity with the campus, the quality of the school, and other academic factors. One student summarized this rationale:

> *I didn't want to move too far away; I knew [the IHE partner] was a great school. I wanted to go into engineering, [the IHE partner] has a great engineering program, and I had been on their campus plenty of times. I knew it and felt comfortable there. They have a great community atmosphere.*

Few IHE partners in the ECHSI have yet determined whether their pipeline goals will be realized, but these early examples should be encouraging.

Although college leaders were enthusiastic about the potential of ECS students enrolling at their institution after graduation, that enthusiasm did not mean that they were without reservations about having ECS students on their campuses prior to graduating from high school. However, some initially skeptical college leaders have gained confidence in the ECS students' ability to be successful in college classes during their tenure at the ECS and, in some cases, to outperform traditional college students. The ECS students' performance translates into leaders' confidence that these students will continue to be successful once they transition into the "traditional" student body at the college.

The second incentive most frequently reported by colleges in 2007–08 was positive publicity or "positive press." This benefit was not reported in previous years, but that may have been because it was too early for colleges to reap the benefits of press about positive ECS outcomes. One college leader focused on the public relations and media attention that partnering with the ECS has garnered:

The second incentive most frequently reported by colleges in 2007–08 was positive publicity.

> *It's good publicity for us. This is a good partnership for [applying for] grants. We can always include [the ECS] in that. I know [the ECS has] been written up in [two newspapers]. It's kind of a feather in our cap that we invented this. Regularly, people come here from around the state and around the country to see how we do it.*

Good local and media publicity not only potentially increases enrollment for the colleges, but also serves as a reminder to the general public how integrated the college is with the larger community. In some cases, the ECS and its students have expanded the community's interest in the college. A college president at a 2-year college noted the potential for better connections with the city and better linkages with families, not only to motivate their children to take college classes, but also to open doors for parents and other family members who might consider enrolling in the college as an option. The college liaison at this college shared that ECS students' encouragement of their parents to enroll in the 2-year college was an unanticipated benefit of their participation in the partnership with the ECS. Another college leader at a 2-year college stated, "I think the college incentive is [that] it's another pathway for members of our community — Where would these kids go?" In previous years' interviews, college leaders maintained that the ECS exposed the community to what it means to be in college as more local students were enrolled in college courses. The increased involvement of area families enhanced community building and community-based partnerships.

The desire to fulfill the college's mission also prompted college involvement in an IHE–ECS partnership. Over the past 3 years, a number of colleges in the sample have emphasized a core vision to serve students who have traditionally not fared well in school and, as expressed by one college leader, the ECS is a "wonderful fit." This leader believed that the ECS addresses the low college-going and college-completion rates by giving students who might not otherwise have been able to or who might not have been successful the opportunity to go to college. Many community colleges have mission statements that include building relationships with public schools, so the opportunity to develop and improve relationships with ECSs meets that goal. As one college leader reported, "[The ECS on the campus] builds the bond between public schools and community colleges because we're working together." This leader also reported that the ECS is part of the community college's goal of helping students transition from high school to college. Finally, some leaders identified a desire to enhance the diversity of the student population.

Another benefit that college leaders reported was that ECSs help ensure that students graduate from high school. Because these students also are enrolled in college classes, the college benefits from this student retention. A college president at a 2-year college believed that the ECS was a major reason that the community college had such a low dropout rate. In addition, he maintained that the ECS allowed students to explore career opportunities without peer pressure, another factor that encourages students to stay in high school and, consequently, in the community college. A college leader at a 4-year college viewed the ECS as better preparing students for college than a traditional high school.

Lastly, college leaders and staff also noted the financial, capital, and professional development resources provided by the ECS, such as income from rent and tuition for college classes paid by the school district. One college leader reported that his college is "land rich and building poor," so partnering with a school district that pays rent has allowed the college to build additional space for joint use. Some college staff reported that having easy access to an ECS located on the college campus was a benefit to teacher preparation programs, because the ECS provided a testing ground for student teachers.

These rewards that have emerged from supporting ECSs do not alone result in the success and ongoing implementation of a partnership. The next sections focus on essential features of a strong partnership from the college perspective: the buy-in and commitment from college leaders and faculty, as evidenced by the involvement of high-level administrators, and the specific skills of effective college liaisons.

Ongoing Commitment of High-Level Leadership

Past research emphasizes the importance of high-level leadership commitment in high school–college partnerships. Greenberg (1991) provides recommendations for creating successful partnerships, including "carefully consider[ing] the demonstrated commitment of leadership" (p. 24). Miller and Hafner (2008) suggest strategies for implementing partnerships "guided by strategically representative leadership." Although it is important for ECSs to have the commitment of high-level leadership at the IHE partner, the ECS, and the school district (where relevant), as part of this chapter's focus on the college side of the partnership, this section will only focus on the commitment of the college leaders.

It appears to be key for the college leader to be involved in the planning of the ECS. Data suggest the importance of initial involvement of a high-level college leader for the success and ongoing implementation and sustainability of the partnership. As one college president reported:

Data suggest the importance of initial involvement of a high-level college leader for the success and ongoing implementation and sustainability of the partnership.

> *I was one of the founders. … I formed the partnership with [the original superintendent]. I was very, very active in the initial year, and maybe even the first 2 years. … And whenever there's a proposed change, there's some misunderstanding and some fears, and because it was such a systemic change, it was important that there was support from the very top. … So I was actively involved.*

Intermediary representatives agreed that a strong partnership can be largely dependent on the commitment of high-level college leaders. As one intermediary representative noted:

> *You have to have the leadership from as high up as possible. In [one ECS] we have the president that is committed to this, so that is a trickle-down effect where the provost is still very, very interested, who then [keeps] the deans of different colleges very interested, who then keeps department heads interested. So it's really a whole concerted effort. The higher you can go in getting support and also commitment, the more success that you can have across the board.*

The continued success of a partnership often relies on long-term commitment of top college leaders, and in some cases respondents at ECSs expressed concern that when key people leave, it might jeopardize the partnership. In other words, college leaders need to provide support over the long haul. In 2004–05, one established ECS partnering with a 2-year college was dissolved by a new college president who had not been involved in the creation of the school, and the partners had no agreement in place to prevent the dissolution from happening (AIR & SRI, 2006). At one 4-year college in 2007–08, as long as the current president remained, the partners did not view sustainability as a challenge because the president was such a strong advocate for the ECS. However, because the president clearly was the "driver" of the partnership, several of the staff interviewed wondered if the partnership would be sustained if the president left. The ECS leader said, "I would like to see an MOU [memorandum of understanding], because I am very well

aware that we exist the way we do because of the [college] president. If [the president] went away tomorrow, I don't know to what extent this would continue."

Clearly, it is important for college leaders to be committed to the partnership not only from the initial roll-out of the ECS, but also in the long run, for the sustainability of the ECS and the partnership. The next section focuses on another key player in the ongoing implementation and sustainability of the partnership: the college liaison.

What Makes a Good College Liaison?

It is already well known to all stakeholders in the ECHSI that along with commitment of high-level leadership, a college liaison plays a key role in facilitating the communication and coordination between the IHE partner and the ECS. Many players within the ECHSI consider it to be a necessary expense (AIR & SRI, 2007, 2008). College liaisons are typically staffed from the college rather than the ECS and often hold high-level positions such as vice-president, dean, or department head, although in at least a few instances over the past 3 years, the ranks included some graduate students. In 2007–08, college and ECS leaders and faculty expressed that the liaison is "priceless," a "God-send," "outstanding," and "vital to helping [ECS students] make the transition." The liaison is seen as "removing administrative roadblocks" and in some cases, when the ECS is located on the college campus, facilitating the operation of the ECS. Some intermediary representatives reported that a "dedicated" college liaison is key to a successful partnership and has helped to improve the working relationship between the ECS and the IHE partner.

Although the value-added role of the college liaison in the IHE–ECS partnership has been reported in previous evaluation reports (AIR & SRI, 2007, 2008), we now have a better understanding about what it takes to be a good liaison. One strategy for a successful high school–college partnership is a focus on identifying a "partnership liaison" through *existing* networks rather than by creating new relationships (Greenberg, 1991). A liaison at one college was an alumnus of the college and had a good working relationship with the college faculty, and as a result he knew which college instructors to steer the students toward or away from. Because of this pre-existing relationship, the college faculty members were willing to work with him. He also taught a freshman seminar class, which helped the students make the transition to college. In addition, interviewed college and ECS staff concurred that a college liaison who has been involved in the ECS prior to and early in the planning stage, and who has an interest in the program and/or high school, contributes to a successful partnership.

College and ECS staff concurred that a college liaison who has been involved in the ECS prior to and early in the planning stage, and who has an interest in the program and/or high school, contributes to a successful partnership.

In addition to having a pre-existing relationship, respondents shared that effective college liaisons were successful recruiters (of both students and faculty), able to "connect" with the students while also advising them, and supportive of the college faculty. A college instructor commented: "This year, having [the liaison] has been great. I have a good relationship with her and she has a good relationship with the teachers. She is new and her position [is] too."

A liaison does not necessarily have high-level decision-making power in this role, but strong communication and problem-solving skills are essential. One full-time college liaison, formerly a department chair, succinctly stated: "I don't consider [the position of liaison as] power — I consider it the ability to talk to the person who has the power."

There is a huge variation in how much of the college liaison's time and effort is dedicated to the ECS, ranging from 5 to 10 percent to full-time. As the evaluation team has reported previously (AIR & SRI, 2007), both college and ECS staff maintained that the amount of time that the liaison devotes to the ECS is crucial; a 5–10 percent time commitment may be the result of a "low-maintenance" situation or because the liaison has a competing workload. Despite praise from many respondents about the college liaison, there were instances in which the ECS staff were dissatisfied with the individual placed in the position, and turnover of the liaison became an issue (see text box).

Turnover of the College Liaison

One college had a difficult time retaining a college liaison who could adequately address the needs of the ECS. The first college liaison had two other high-level roles and thus was not able to focus on the responsibilities of the college liaison role and as a result was considered to be ineffective. The ECS counselor shared that the liaison was not connected to the students, although she made sure that the high school staff had access to everything that was needed, including registering students for class. For the next school year, the school had a different college liaison who was well-liked by students and who also had a strong, collegial relationship with the college faculty. This college liaison was not able to continue in the position through the end of the school year, which added a burden to the high school staff, especially the guidance counselor.

To this point, we have discussed the significance of ongoing commitment of high-level college leadership to the IHE–ECS partnership and having a staff member with specific skills and adequate time assigned to facilitate the partnership. Another way an IHE demonstrates its commitment to the ECS is through its faculty's buy-in to and collaboration with the ECS around rigorous and relevant instructional practice at both levels. We next turn our college lens to view the range of collaboration that exists between college and high school instructors and how in some cases it may not be possible to integrate the two faculties in a meaningful way.

Professional Collaboration Among College and ECS Faculties

The so-called "powerful collaboration" that characterizes professional learning communities is a "systemic process in which teachers work together to analyze and improve their classroom practice" (DuFour, 2004). At many of the ECSs, collaboration among the high school faculty was taking place, but not across the faculties from both institutions.

Professional collaboration between the college and ECS seems to happen at the leadership levels, but there is little trickle-down to the faculty level.

Professional collaboration between the college and ECS seems to happen at the leadership levels, but there is little trickle-down to the faculty level. In a previous evaluation report (AIR & SRI, 2007), interviewed staff in the majority of the sampled schools reported limited collaboration among ECS and college faculties, and the collaboration that staff did report was often not formally or regularly integrated within the faculty schedule. Some schools had no collaboration, while others had a few instructors meeting on occasion regarding content and curriculum. At that time, ECSs were just beginning to add college classes or planning them, so not as much collaboration was occurring and/or it was not a focus for the partners, and at 60 percent of the ECSs, college classes were being taught off the college campus. Yet, in 2007–08, although more college classes were offered across the ECHSI, findings were similar and indicated that structural and organizational considerations may limit, or impede, the possibilities for collaboration among the college and ECS faculties.

College Faculty Buy-In and Integration

College faculty buy-in is a feature of a good IHE–ECS partnership, and interviewed college administrators concurred that buy-in at all levels of the partnership is important to ensure its sustainability. In 2007–08 and in previous evaluation reports (AIR & SRI, 2007, 2008), findings indicated that there were varying levels of college faculty buy-in across colleges and within each department, which naturally affected the level of collaboration that took place. Lack of buy-in often was a result of college faculty not being properly introduced to or informed about the ECS.

Many of the college instructors interviewed in the past 3 years reported that they received little orientation to expectations for teaching ECS students, if any. In some cases, they did not even know that they had ECS students in their classes or what an ECS was. As one college instructor stated in 2007–08:

> *We should be educated about what [the ECS] vision is, what their mission is. … If we're going to have a program like this, we should know, where did it spring from? What's the pedagogy of this Early College High School Initiative? It's really helpful to understand. I'd love to have teaching about that, or just information about that.*

These college instructors were not yet ready to collaborate with high school instructors because they wanted to first understand what the ECS was. As one college leader reported: "Probably some faculty would not know we [the ECS] are here. I think it's probably just the fact that many people aren't familiar and [it] will take some time to build that."

Lack of familiarity was caused by the late announcement of an ECS at one 2-year college. In this case, the college faculty members were resistant because the decision to house the ECS on the college campus was not communicated to them until the last minute. According to the college liaison, the faculty members felt "betrayed" initially because "they didn't know it was coming." This feeling of distrust resulted in little communication between faculties at the college and high school. As one college instructor from this college pointed out:

> *I believe there is a breakdown in the horizontal connection of the two institutions. Say I'm an English teacher on the high school side, I've worked with students to get them ready for college-level English. Then, they go to college and take a college-level English class. I don't necessarily know who the college English teachers are.*

Other factors contributing to low buy-in were faculty concerns about the ECS student population. At one college, faculty were apprehensive about behavior issues and feared that the school district might use the school as a "dumping ground" for at-risk students. In general, if the college faculty members were resistant to either ECS students in their college classes or the whole concept of an ECS, they were not interested in collaborating with the ECS faculty. Over time and with evidence that the ECS was successful in terms of student outcomes, there were examples of growing support among college faculty for the ECS and the IHE–ECS partnership.

Other Barriers to Collaboration

Obstacles to collaboration include adjunct status of college faculty, the location of college classes, conflicting schedules among faculties from both institutions, and the lack of meaningful professional development.

In addition to college faculty buy-in, IHE–ECS partnerships face other challenges that can either limit or prevent collaboration among the college and ECS faculties. These obstacles include the adjunct status of college faculty, the location of college classes, conflicting schedules among faculty members from both institutions, and the lack of meaningful professional development.

Collaboration may be affected by the location of college courses and by whom they are taught. Many community college classes are taught by adjunct faculty, potentially limiting collaboration with ECS instructors. Adjunct faculty members are often transient and come to the college campus to teach only one or two classes, and they are not compensated for collaboration activities. As for location, some ECSs offer college classes that are off campus (i.e., on a high school campus) and taught by a high school instructor who is certified to teach college classes. In these cases, collaboration might take place to make sure that the ECS is meeting the college standards, but it would likely be a low priority for college faculty (if it is receiving attention at all). When asked whether any collaboration existed between faculty at the college and faculty at the ECS, a college liaison responded: "Not that often. Honestly they don't. I wish I could say yes, and I've tried to make that happen. I felt like someone setting up blind dates for a few years, but what's in it for the college people?" The distance between the two campuses also might preclude meetings (see below for a discussion about how close proximity may facilitate collaboration).

As in previous evaluation years (AIR & SRI, 2007), in 2007–08 time and scheduling constraints were cited as barriers to collaboration. In many cases, the two institutions' calendars were different in several ways; for example, the college term ends earlier in the year than the high school term, the schedules for professional development conflict, and the breaks were often not the same. So even if faculty members have a desire to collaborate, coordination is challenging.

Given these difficulties, intermediaries often take the lead in bringing high school and college faculties together through structured professional development activities (e.g., conferences, visits to other ECSs) and other networking activities (e.g., online communities, regular phone or in-person meetings) (AIR & SRI, 2007, 2008). An intermediary representative in 2007–08 reported on faculty collaboration across two institutions:

> *It varies from site to site; some sites have a partnership and others have cohabitation with high school and college. We work really hard to try to develop stronger relationships, because it is very obvious at these sites that the strong relationship makes a huge difference with the students' success and accessibility. … We see the partnership becomes a reciprocal one where we are providing the professional development to the high school teachers and the college professors are facilitating that.*

A few college and ECS administrators and faculty members gave examples of joint faculty professional development opportunities, although there were mixed feelings about their usefulness. Several college leaders found intermediary conferences to be "powerfully re-energizing" because they had the opportunity to meet people in similar positions. In contrast, a college liaison at a 2-year college commented that college instructors attended a few intermediary conferences, but the focus was largely on the high school perspective, and they lost interest in

attending future conferences. The evaluation team heard little from college representatives about professional development offered specifically for college faculty.

To make the professional development more relevant, one 4-year college leader described an attempt to provide joint professional development that pertained to the ECS, but college faculty participation was low, and efforts were not continued. In another case, the college dean indicated that they intentionally did *not* provide professional development for college faculty regarding ECS students because he feels that the ECS students should "learn to be college students" and not the reverse:

> *We haven't done any [professional development for college instructors] to teach high school. And I don't want to do it. They don't teach high school classes. They teach college classes with five high school kids in it with a bunch of college kids. So why would you teach the class differently? … Philosophically, it's a bad idea because the whole goal is to have the kids be successful in college. … What we do instead is we focus on teaching the high school kids to be college kids.*

Rather than learning how to teach high school students, as noted above, college faculty are interested in learning what the ECS is and what its mission is, including learning more about the student population.

Facilitators to Collaboration

Barriers and challenges aside, some collaboration occurred among college and ECS faculties. It was typically informal in nature, rather than a result of more formalized structures. Facilitators to this collaboration included close proximity of the IHE partner and ECS and a culture of sharing curricula within departments across both institutions. The partnership type (2-year versus 4-year IHE partner) and how the college classes are taught (cohort or not) also appeared to affect the level of collaboration between the college and ECS faculties.

> Facilitators to collaboration among ECS and college faculties included close proximity of the IHE partner and ECS and a culture of sharing curriculum with departments across both institutions.

Although there were typically no formal mechanisms for a professional learning community across the two institutional types, collaboration happened informally. It tended to occur through email and to focus largely on issues with individual students, though it also touched on topics such as curriculum alignment, course content, classroom management issues, skills ECS students need, struggling students, and rubrics. One 4-year college instructor reported:

> *[Collaboration has] been casual and informal. We've talked about having some sessions where a few of us who have taught the high school students come in and talk to the high school faculty and say that these are the skills that are most required of students: how to study, how to organize, and what attitude you should be trying to reinforce at the high school level. But that is something that hasn't been formalized as far as, 'here is a roundtable discussion.' But we've had casual conversations.*

In most cases, formal collaboration was administrative or operational in nature. It was less common at the instructional/curricular level, although there were some isolated examples (i.e., not systemwide) where college and ECS faculties were engaged in meaningful collaborations regarding instruction. (See the text box below for a specific example of meaningful collaboration.) When it did occur, collaboration appeared to be within subject areas or departments, e.g., English, mathematics, and chemistry; this mirrored previous evaluation report

findings (AIR & SRI, 2007). At a 4-year college in 2007–08, where high school seniors took college classes on the college campus, college and high school instructors in mathematics and science spent time co-planning lessons while teaching together or separately and provided each other with feedback. The college instructors shared scoring rubrics with high school instructors who used them in their classes, so that students could get used to the scoring scheme. The 2007–08 school survey indicated that 43 percent of schools have "working groups that include high school and college instructors by content-area specialty," a figure higher than might be expected from the qualitative data. However, we must keep in mind that the survey respondents might be referring to any kind of interaction, regardless of quality or frequency.

Meaningful Collaboration

An ECS partnered with a 2-year college provided a strong example of meaningful collaboration among the college and high school English instructors on issues of curricular alignment. The instructors in both institutions recognized the need to effectively bridge the transition from high school to college classes for the ECS students and worked together to focus their curricula in a way that accomplished this. Interestingly, the college instructor spearheading the effort to collaborate was a new adjunct who secured a grant to support the collaboration and initiated the conversations with the high school faculty. She felt that writing was important, so they decided to start with the English department before other disciplines:

> *We're hoping to use English as a model and then bridge it out. …. One of the things we're doing is workshopping student essays, and one of the things we're doing is norming and saying, 'Okay, what would you give this essay?' And that led to discussion of a formalized rubric that maybe encompasses all of our standards for what we expect of a student in an essay. We did that with [ECS] teachers and two [college] instructors who are full time.*

All respondents interviewed at both the ECS and IHE partner identified this as a great improvement in the partnership, and the effectiveness of this collaboration inspired instructors in the mathematics and science departments to begin developing similar partnerships. The college liaison reported:

> *My job had been and remains to engage the faculty here at the [college] in hooking up with the faculty and the curriculum at [the ECS]. We've had really good luck with the English department. In the last few months, we've had some major forward movement with the science faculty. When we first started, we had some old-guard science faculty who have since retired who were adamantly opposed to this. They didn't want these kids in their labs; they were very resistant. It was a very old-school way of thinking. They're gone, and we have some new faculty that are supportive and excited. I think next year we'll bear some fruit with that. It will look a little bit like what's happened with the English [department]. And I had nothing to do with that, it just happened.*

As indicated by the college liaison, there was resistance from some college faculty members. The college instructor who initiated the collaboration stated that once the instructors started doing activities and presented at a conference together, their relationship became more "real." Some of the college instructors who were initially hesitant about ECS students wanted to get more involved and have been meeting on a weekly basis, albeit for a limited amount of time.

When collaboration did occur, close proximity was identified as a facilitator, as it enabled face-to-face interaction between ECS and college faculties. A college leader at a 2-year college was emphatic that the collaboration between the ECS and college faculties was strong and improving every year due to their close proximity:

> *The college and high school science teachers ... probably have the closest relationship out of any of our teachers [on the college campus], and it's come about through necessity. They share the same classroom and the same lab, so they have to coordinate. And they have become really good friends. So some of [the collaboration] comes that way. We have more every year.*

The benefit of close proximity for faculty collaboration further speaks to the "power of place," which refers to the additive effects of being located directly on a college campus (also mentioned in previous chapters). For ECSs situated on a college campus, proximity also can refer to the specific location of the ECS on the campus. The college liaison at a 4-year college noted that her interactions with the two dual-credit instructors had changed because of changes in their office location. The office was first moved down the hall and then to another building, and in 2007–08 they only occasionally met.

Collaboration also seems to be fostered by how the courses are structured. In 2005–06 and 2006–07 (AIR & SRI, 2007, 2008), there was evidence of more collaboration when college instructors taught college classes with cohorts of ECS students than if ECS students took classes with traditional college students, e.g., within subject areas or departments, as stated above.

Collaboration seems to be fostered by how the courses are structured, i.e., cohort versus noncohort college classes.

Preliminary evidence suggests a relationship between the curriculum plan and/or college course sequence and how much collaboration would be expected between the college and ECS faculties. For example, at an ECS that was not well integrated within its partner college's campus, the students took only a few college classes, and it appeared that little, if any, collaboration existed between the two faculties. If a student is given free reign and can select any college course from the college's course catalog, we can hypothesize that the student will likely take some college classes in which the instructor has little to no relationship to the ECS. On the contrary, if the ECS students are required to follow a course sequence, and cohorts of ECS students take classes with particular college faculty, the college faculty may be more interested in collaborating with ECS faculty.

In 2007–08, professional collaboration was an area that some partners wanted to improve as their partnerships continued to evolve, and some efforts were already in place toward that end. At one college, respondents at all levels expressed an interest in improved professional collaboration. More formalized collaboration already existed across the chemistry faculties, and both institutions were looking to reshape their physics and biology curricula with both faculties. At another college, most of the summer courses were to be team-taught and, according to a college leader, this would be "the first step toward broader collaboration between the high school and the college." A third site was at the beginning stages of facilitating collaboration between the faculties and wanted to first determine where its students were falling short, and what the school needed to do before focusing on professional collaboration. At a small sample of ECSs in which the evaluation team interviewed respondents at the same schools in 2 consecutive years (2005–06 and 2006–07), there appeared to be more collaboration as the schools matured.

Summary

Because the ECHSI is part of the foundation's portfolio on improving high schools, it is only natural to focus attention on the high school perspective. However, the IHE partners play a very significant role in this initiative, and it would not exist without them. As such, this chapter has examined the IHE–ECS partnerships primarily through the college lens to better understand the colleges' experiences and roles in the ECHSI.

Although we already know that the commitment of high-level college administrators and the presence of a college liaison are essential components of a strong partnership, we are beginning to better understand how that commitment evolves. College leaders shared that they engage in and support the IHE–ECS partnership because it serves several purposes: it creates a pipeline of future students, generates positive press for the college, fulfills the college's mission statement, and provides resources to the college. Maintaining the college commitment from the initial planning stage to the ongoing implementation is crucial to the sustainability of the ECS. Evidence also indicates that a college liaison who has been involved in the ECS early in the planning stage, has pre-existing relationships with the college, and has an interest in the program and/or high school contributes to a successful partnership.

A college's commitment to the IHE–ECS partnership also is exhibited through the level of faculty buy-in and collaboration with ECS instructors. A range of possible collaborations is taking place among the ECS and college faculties, but, in fact, collaboration may not be a priority for some or even many ECSs. Barriers to collaboration included conflicts in schedules, adjunct college instructors who do not spend much time on the college campus, and college faculty's general lack of interest in joint professional development opportunities. Factors such as close proximity of the IHE partner and ECS and opportunities to talk about curricula facilitated collaboration. Meaningful collaboration was taking place in a few ECSs in the site visit sample in 2007–08.

The next chapter shifts in focus away from the local partners to the overall ECHSI key stakeholders — in particular, how these stakeholders, including the foundation, JFF, intermediaries, and the ECSs, keep the initiative moving forward.

CHAPTER VI. MAINTAINING THE MOMENTUM OF THE ECHSI

To this point, the report has focused on school- and partner-level characteristics and outcomes. However, the ECSs exist within the larger network of ECHSI-funded schools and intermediaries. This chapter takes a macro view of the initiative to understand how stakeholders within the ECHSI are working to support the continued operation and success of the individual ECSs and the networks in which they reside. In 2007–08, the foundation was undergoing organizational changes that had the potential to influence its strategic priorities, and JFF's role involved less direct technical assistance to intermediaries and their ECSs. As these changes continue to unfold, it is conceivable that the ECHSI's future success will depend more and more on the intermediaries and on the ability of ECSs to adhere to the Core Principles and produce positive outcomes related to the initiative's goals. And these successes may take place in the context of reduced funding for the intermediaries and ECSs.

Facing the reality that it cannot fund intermediaries and ECSs in perpetuity, the foundation — with JFF — has sought alternate ways to ensure the schools' and the initiative's continuation. For example, in 2007–08, the foundation and JFF took exploratory steps to shift more ECHSI leadership toward the intermediaries. For their part, the intermediaries and ECSs have heightened their focus on their ability to sustain themselves and have taken a variety of steps to do so, including eliciting external support. This chapter describes these efforts, which are designed to maintain the initiative beyond the life of the foundation funding.

The Changing Role of Intermediaries

From the outset of the ECHSI, the intermediaries' work to create viable networks of ECSs has been foundational. In the early stages, the intermediaries were largely focused on developing partnerships and opening schools. Some intermediaries were well suited for this role because of their history as school developers. Others needed more guidance and assistance, which JFF provided, for example, by creating planning documents and templates for the intermediaries to use. As the intermediaries gained experience in opening and supporting schools, JFF's focus shifted more toward advocating for state and federal policies that are supportive of ECSs, and the bulk of JFF's direct assistance to the intermediaries centered on organizing annual meetings and other initiativewide concerns.

In 2007–08, the intermediaries faced an ever-evolving set of demands, both within their own networks and at the initiative level. For example, a growing number of ECSs has reached the end of foundation funding, even as some intermediaries continue to open new schools and support others well past the startup phase. Most intermediaries have ECSs in multiple stages of development, requiring them to develop strategies for providing a range of supports and to organize and staff themselves accordingly (see Table 2.1 in Chapter II for a snapshot of the total number of schools opened by each intermediary each year). At the same time, important changes were taking place to begin shifting ECHSI leadership from the foundation and JFF to the intermediaries. These changes place an additional set of demands on intermediaries by asking them to help create a self-sustaining network of intermediary organizations that can propel the ECHSI forward.

ECHSI Working Groups

As a first step toward helping the intermediaries become a more self-sufficient network, in 2007–08 the foundation, with input from JFF, supported the creation of three ECHSI working groups.

Each intermediary was invited to appoint at least one member to each group. These groups include the following, each with its own purposes and responsibilities:

- Research Working Group — to set research priorities for the ECHSI and to commission and oversee research
- Communications Working Group — to craft a national message about the ECHSI
- Directors Working Group — to consider a variety of overarching issues

The working groups place more responsibility for decision-making on the intermediaries. As one intermediary director said, with the working groups, the intermediaries will be "masters of their own fate."

To support the transfer of ownership to the intermediaries, JFF convenes and often facilitates meetings, but the intermediaries plan and now lead segments of them. An intermediary representative felt that the move to working groups was resulting in the ECHSI being more of a partnership that is not driven by any one person or organization. She said:

The working groups place more responsibility for decision-making on the intermediaries. As one intermediary director said, with the working groups, the intermediaries will be "masters of their own fate."

> *I do believe that what this is going to mean is, while I think there was definite buy-in before, I think the buy-in is going to be significantly greater because the partnerships that are being formed and the leadership is really distributed, and I think that's really important.*

Several other intermediaries shared this positive view about the shift in leadership responsibility, in part because the intermediaries have the most expertise with ECSs. In addition, at least one intermediary believes that the working groups have the potential to leverage the growth and accomplishments of all of the intermediaries' collective schools to "help the greater movement" of the ECHSI.

Concerns exist, however, about intermediaries' capacity to move the ECHSI forward. Citing the vast differences among intermediaries, a JFF representative believes that there must be a "center" for this structure to work. As he explained, "There needs to be some organism or some organization that can consider the broader issues of sustainability of the initiative." Several intermediaries cited the need for JFF to have an ongoing role in the working groups. For instance, one intermediary discussed the difficulty of coming to consensus and making progress amidst many voices that are not perfectly aligned but that have equal weight. At least one other intermediary representative also sees a continued role for JFF as outside experts who can provide guidance, for example, "on the benchmarks, to have the people who are really responsible for measuring against those benchmarks. … How will we do it, how will we have definitions so everyone's doing it the same way?"

Additionally, some JFF and intermediary representatives voiced the concern that intermediaries do not have the time to both lead their own networks well and participate in all of the working groups. One intermediary representative explained, "I think all the directors across the intermediaries are amazing people, but we can't go to every meeting and be in charge of everything and run good networks." Intermediaries that have enough staff are splitting responsibilities for working group participation among staff members. A JFF representative agreed that "borrowing time from already overtaxed people is not sustainable" and cited the need

for careful consideration of how the foundation and JFF ask the intermediaries to be involved in the working groups. Recognizing the adjustment that will be required for the intermediaries to help create a network of networks, the foundation piloted a peer review process in 2007–08 (see text box for more information).

Peer Review Process

The peer review process was intended to help the intermediaries begin relying on each other more. Four intermediaries, all national in scope, participated in this voluntary process. Over 4 days, they met in pairs to share questions and answers related to how they conceptualize and approach supporting their networks, their challenges, and strategies for overcoming those challenges.

Although the directors said it was difficult to find time to engage in the peer review process, all participants praised it. They particularly appreciated the time to share ideas with each other, gain insight into methods they might want to adopt or change, and work together to solve problems. For instance, an intermediary representative valued the opportunity for reflection, noting that the process "gave us a way to talk about what our program is in a very focused way. In looking at what our program does, … it allowed us to think through what some of the issues were." Another representative appreciated being able to have a significant block of time with peers and said, "There's something really powerful about getting a small group of committed people, morning 'til night, talking about this work." JFF representatives agreed that the experience was powerful, and noted that because the participating intermediaries were "perfectly matched," they were able to quickly understand each other's challenges and strategies.

It is too early to tell how successfully the coordinating work of JFF can be transferred to the intermediaries. In the short term, though, JFF continues to explore other national models to inform the new vision of the ECHSI network. JFF is considering models along a continuum, from a loose model in which a small group of directors periodically convenes to manage an initiative to a more formal organization that has membership criteria and fees.

Intermediaries' Responses to Changing Responsibilities

Increasing demands from the top down (the foundation and JFF) and from the bottom up (the ECSs) have implications for intermediaries' organization and staffing. At a minimum, intermediaries need enough funding to maintain adequate staff to simultaneously support their networks and attend to broader issues such as outreach and dissemination.

Across the board, the intermediaries recognized the need to look beyond the foundation to continue their efforts, including securing outside funding. Most intermediary representatives reported that they are looking to private organizations for grants. Following the footsteps of other intermediaries, CNE and GtC, both originally affiliated with colleges, have begun the process of becoming independent 501(c)(3) organizations to bolster their ability to secure external funding. As a CNE representative explained, "We feel that as our own independent, autonomous organization, … we'll be able to attract money that people want to give us and can't give us … with our current organizational structure." That approach also enables these intermediaries to broaden their work across the nation, rather than remaining affiliated with a college or university in one geographic area. Three intermediaries (CNE, KWF, and WWNFF) also are starting to charge fees for their services.

Despite concerns about adequate intermediary staffing in the face of declining foundation funding and increasing responsibilities, many intermediaries have increased their staff size. Additionally, the intermediaries are looking for other ways to increase their capacity to support schools. At least four intermediaries have created or are part of work groups, advisory groups, or councils.

For example, all of the ECS partners in Texas are part of regional P-16 councils that aim to improve college access and success by aligning secondary and postsecondary education (e.g., curricula and assessments), which can serve as guiding groups that will carry forward the idea of ECSs. Similarly, GtC has created a leadership team comprising elected directors who represent all of the partners in its network. According to the GtC representative, the leadership team is an advisory body intended to "share governance of the model and the spread and improvement of the model." CNE is utilizing a consortium of sites as well as an IHE work group and a tribal work group within its network. The CNE director said that members of the work group "have to be representative back in their communities to implement these things to benefit the schools." The consortium includes representatives from veteran sites who serve as an advisory board and read and score the proposals for new schools. In 2007–08, the two work groups discussed strategies to implement the Core Principle focused on supporting students. Although intermediaries are facing new and greater responsibilities within the larger initiative, it is still incumbent upon them to ensure that their ECSs are exhibiting the fundamental principles of the ECHSI. It is those principles that will guide ECSs toward meeting the ultimate goals of the ECHSI: producing high school graduates who have a large number of college credits and then matriculate on to college. The following section describes the efforts of the intermediaries and ECSs to maintain those features.

Maintaining the Unique Features of ECSs

ECSs need to be successful both as high schools in general and as ECSs in particular. With state funding based on ADA, most ECSs appear positioned to survive as schools. However, maintaining the unique features of the ECHSI, defined by the Core Principles outlined in Chapter I, is more difficult, particularly as foundation funding expires. The ability of ECSs to retain those often expensive features (e.g., providing funding for tuition and textbooks) and to produce evidence that they are achieving the intended outcomes is critical to the ECHSI's ability to be a recognized and replicable network of schools.

The initiative's funding structure is such that the foundation provides initial funding to intermediaries that they then allocate to schools to cover startup costs; this funding typically lasts for the first 3 years. As the schools mature, they cease to receive any foundation funding. At the same time that the level of funding provided to schools decreases, the expectations for schools to exhibit the characteristics and outcomes of an ECS increase. One ECS leader warned, "You'll see some of these schools, and the funding will dry up, and they'll be hard pressed to make the outcomes that all people want to make."

At the same time that the level of funding provided to schools decreases, the expectations for schools to exhibit the characteristics and outcomes of an ECS increase.

As previous evaluation reports mentioned (AIR & SRI, 2007, 2008), providing access to college courses and materials for a large population of high school students is financially complicated. States can provide some financial support in the absence of or to supplement foundation funding. In addition to per-pupil funding, some states provide line items in their budgets for ECSs and funding for student tuition or require the colleges to cover the cost for ECS students. Few states allocate funding for college textbooks or transportation (see Appendix C for more information on states' specific funding policies). As the number of high school students enrolled in college courses increases, lack of available funding becomes a greater issue.

One JFF representative cautioned about the difficulty of maintaining the features of the ECS model with fewer resources, especially when ECSs reside in districts where the ECS is just one program within a larger portfolio of programs:

> *Early college is not necessarily the most important of those programs [in a district], and so maintaining some integrity for these schools in the face of declining resources — I mean, who pays for the tuition? It's too expensive, maybe we'll just give them one class, maybe we'll just give them a couple elective classes, maybe we give them a Summer Bridge experience on the campus so that they get a taste of college, so those issues of integrity are our big challenge right now…*

This JFF representative asserted the need for centralized support for these schools so that they are not isolated. At this stage of the ECHSI, most ECSs still rely on their intermediary network for this support. Intermediaries focus on obtaining financial resources for their schools; most also shared intentions to continue supporting ECSs and to allow them to remain in their network of schools even after the foundation funding ends. They allowed, encouraged, and sometimes provided funding for these schools to attend the intermediary's network meetings, institutes, and professional development. They also continued to share best practices, tools, and strategies with the schools. Some intermediaries require schools to continue providing data to the intermediaries if they want to keep participating in the network events.

Apart from intermediary support, ECSs' ability to continue to adhere to the Core Principles, and in turn meet the intended outcomes of the ECHSI once grant funding ends often relies on the fortitude and retention of invested leaders who have the connections and drive to secure support and resources, formal plans outlining how schools' needs will be met, and the existence and support of the IHE partner (which is a Core Principle in and of itself). When any of these components are weak or gone, the result can be an ECS becoming more like a traditional high school. As discussed in Chapter V, this situation remains a real threat, considering that the most frequently heard concern was about turnover of a leader at one or both of the partner institutions. The loss of a leader may signify the loss of understanding and relationships that are critical to the partnership and the ECS's adherence to the Core Principles. However, having MOUs in place can help ensure that the Core Principles will continue to be met by maintaining the partnership and securing resources in the face of leadership turnover and the loss of funding. As a THSP representative said, "We have MOUs in place, and they will extend far beyond the cycle of the grant. [The ECS partners] will try to keep true to that. They are still under the premise that when we are gone, the Core Principles will still be in place. That is going to be their testament." By insisting that ECSs adhere to the Core Principle regarding partnerships, the intermediaries play a role in helping schools deal with leadership turnover and securing necessary support and resources.

However, mixed views existed across the intermediaries about whether they can or want to hold the schools that are no longer receiving foundation funding accountable for meeting the Core Principles. Holding them accountable can help ensure that ECSs continue to exhibit those agreed-upon ECHSI features, but the intermediaries have less leverage to ensure adherence after funding ends. USG plans to continue to ask schools to meet the non-negotiables. A representative said:

> *The discussion has always been that if you want to consider yourself an early college today or in 20 years, you need to maintain the principles of an early college. While we have no legal right to make them not call themselves an early college any more after the funds run out, we suggest that it would not be a positive move on their behalf to change the scope of the school after the funding is out.*

Several intermediaries believed that the Core Principles become ingrained enough in the schools that they will not be easily lost. For example, a TACC representative observed that because the principals of the ECSs know what it takes to implement the Core Principles, they are unlikely to

unravel those steps they have taken (thus underscoring again the difficulties that can result when there is leader turnover at the ECSs).

Intermediaries recognize that by meeting the Core Principles, ECSs will be better able to produce the intended outcomes that are necessary for the ECHSI to meet its goals. Thus, intermediary support is crucial to ECSs being able to produce the positive results that are necessary for both the ECSs' long term viability and the ECHSI's ability to publicize and replicate its model and generate external support.

The Role of Community, State, and Federal Support

Although the local partners and intermediaries are largely responsible for maintaining the Core Principles and promoting the ECHSI as it evolves, interviews from 2007–08 provided more concrete examples of ECHSI representatives citing the value of having someone beyond the local partners care about the initiative (or, at the very least, the ECHSI's goals). As one intermediary said, "We've learned that these public and private investors are becoming champions of our work and are trying to sponsor more work." Intermediaries cited the importance of both local community engagement in and state- and federal-level support for ECSs and the outcomes the ECHSI strives to achieve.

The local community can help ECSs progress in the face of leadership changes or resource deficits. For example, in one community there was a question of whether the superintendent would open an ECS. The vast community support, including the presence of local congressmen, small business owners, the mayor, members of the city council and school board, and parents, persuaded the superintendent to open this school. Community support is also important to keeping ECSs around after they have been opened. One intermediary representative said:

The local community can help ECSs progress in the face of leadership changes or resource deficits.

> *I think the community engagement effort is key to keeping those schools in existence. The average tenure across the country for a superintendent is 3 years, and we know that they all come in with new agendas and new programs that are their favorites, and things shift and change, but if there's that community buy-in, it would be difficult to eliminate the early college.*

On a broader scale, the high school reform efforts in some states help push the ECHSI agenda. Several state initiatives are closely connected to the ECHSI, as a number of intermediaries are sponsored by both the foundation and state governments — for example, in Georgia, North Carolina, and Texas.[57] In Georgia, ECSs, and GtC schools specifically, are recognized strategies to meet the state's top-priority goal to increase high school graduation and college enrollment rates.

The influence of the ECHSI also is spreading the concept of the ECS model to other states and localities. These places are implementing reforms that are not tied directly to the ECHSI but include the ECS model. For example, ECSs and dual enrollment are included as a strategy in the District of Columbia Public Schools' master education plan — according to the plan, high

[57] North Carolina's Learn and Earn initiative, which is backed by the Cooperative Innovative High Schools statute of the Innovative Education Initiative Act (Senate Bill 656, 2003), seeks to create 75 ECSs across the state. In Texas, Senate Bill 1146 (2005) created the Early College Education Program to provide at-risk and other students with accelerated high school graduation and college credits, and House Bill 1 (2006) requires all schools, by fall 2008, to offer students the opportunity to earn 12 semester hours of college credits.

schools will expand their accelerated offerings (through a broader choice of AP courses, the 3-year graduation pathway, and dual enrollment) and expand the early college model offered to 11th-grade students starting in 2008–09 (District of Columbia Public Schools, 2006). In Michigan, the Department of Education worked with the National Governor's Association (NGA) Leadership Team to develop recommendations on early college credit-earning opportunities. These recommendations were submitted and approved by Michigan's State Board of Education in June 2006, and included doubling the number of students participating in early/middle college high schools by the end of the 2008–09 school year (Michigan Department of Education, 2006). Finally, South Carolina convened a High School Redesign Commission that recommended strategies to help schools better meet students' needs, including implementing ECS programs and the GtC program (South Carolina State Department of Education, 2006).

Other states have not adopted ECSs explicitly as their high school reform strategy, but are moving toward initiatives that include aspects of the ECS model. For example, in New York, the Board of Regents (appointed by the state legislature to oversee all K–16 education) is interested in expanding ECSs or similar dual-enrollment programs. A state policy-maker explained, "I think we are at the point now where people see the value in reducing the time for a degree, reducing the cost of postsecondary education, and creating access for kids [who] may not have access otherwise." The 2008–09 Regents' budget proposal lists one of the state's reform foci as the creation of a Smart Scholars program for 12,000 at-risk students. The program will involve partnerships between colleges, schools, districts, Boards of Cooperative Education Services, and other educational and community organizations and agencies. They will provide supports starting in 9th grade to enable "students in grades 11 and 12 to take early college courses so that by graduation from high school, these students will have completed the necessary coursework to enter a baccalaureate program at the second-year level" (University of the State of New York & New York State Education Department, 2008). Similarly, in his 2008 State of the State Address, the Ohio governor announced the Seniors to Sophomores program. It allows high school seniors who meet academic standards to take college courses that will transfer to public colleges in the University System of Ohio. Students who take a full college course load will be able to enter college as sophomores and have free tuition for the year (Ohio Office of the Governor, 2008).

Although state reforms that include models similar to the ECS, but are not part of the ECHSI, raise concerns about branding and fidelity, they show strong support for programs like ECSs. With that support comes the hope, and in some cases the reality, of changes to or adoption of state policies that would further facilitate ECSs, including policies related to student eligibility, funding, teacher certification, course alignment, graduation requirements, and credit articulation (see Appendix C for an in-depth discussion of these state policies). In other words, ECSs in those states could draw on the policies that are enabling the state's other reform initiatives to be implemented.

Like recent state high school reform efforts, the federal government has recently introduced legislation that supports ECSs by providing funding and guidelines for dual-enrollment opportunities. In September 2008, the House of Representatives drafted the Fast Track to College Act of 2008 (H.R. 6926). This bill recommended appropriations totaling $50 million to support ECSs, including a matching figure for other dual-enrollment programs for fiscal year (FY) 2009 (with similar appropriations recommended for FYs 2010 through 2014). Although the bill did not make it through the House of Representatives before the change in Congress in 2009, it speaks to the federal attention being given to ECSs. The August 2008 reauthorization of the Higher Education Act provides funding for Pell Grants and the Early Intervention and College Awareness Grants, which ECS students may be eligible to receive. The latter provide additional financial support for programs (such as GEAR UP) that assist low-income students and students

who have disabilities in completing secondary education and transitioning successfully to postsecondary programs.

To secure more support from the federal government, however, ECSs need to continue to prove that they are a successful mechanism for promoting college among traditionally underrepresented populations. Making data transparent and available is one way the ECHSI can get its message across to potential supporters.

The Importance of Data

Data have become increasingly important to the success of ECSs and the ECHSI as a whole, particularly as data reveal whether all players are meeting the goals of the ECHSI. Continuing to produce positive outcomes is one way the ECHSI can generate the support of the district, the college, the community, the state, and the federal government that is important to its continued survival. Positive results are newsworthy and gain the attention of such stakeholders.

Continuing to produce positive outcomes is one way the ECHSI can generate the support of the district, the college, the community, the state, and the federal government that is important to its continued survival.

As mentioned earlier, ECSs need to survive as ECSs (not merely as small high schools) for the ECHSI to be successful. An ECS's survival depends on the strength of its partnership with the IHE. According to several respondents, the district and IHE would be less likely to disengage from the partnership if the ECS could show positive student outcomes. One college leader said:

> *[The partnership] has proven itself. It's been successful. I know there was a presentation given to the [school district], and they were very impressed with the results, especially as this first group graduates from high school and graduates with an average of 63 hours of college credits. … And then many of them have been accepted to top universities as transfer students, so they're very pleased with the experiment and the results, so I see it continuing and improving.*

As Chapter V first indicated, it is easier to get college faculty and district staff on board with the ECS, and both entities would likely be more willing to invest, if the program exhibits positive results and brings publicity to them.

Intermediaries are using positive outcomes to secure more funding and to advocate for their ECSs. A GtC representative said, "We, as an intermediary, want data to understand how to continuously improve the model, how to tell the story of the model nationally, and how to go after funding." Similarly, USG is hoping to show that its ECSs are graduating more students from high school and enrolling more in college than a traditional high school so that the state will support a statewide initiative. Another intermediary is working with districts to use the data to their advantage. An NCNSP representative said, "We help them [the local education agency] turn their own school data into a strong case to sustain the school." THSP is hoping to present "a cohesive message" during the 2009 legislative session to gain attention that will lead to more funding from private and public organizations and the development of ECSs in communities that currently do not have them.

Gathering data on ECS students is easier in states that have longitudinal data systems in place. These data systems increase the capacity for accurate tracking of students as they move across schools or districts, and as they progress from P-12 to postsecondary education. However, the

P-12 and college sectors have traditionally worked in separate spheres with different policy guidelines and data systems and little to no ability to share student information. JFF takes a particularly emphatic stance on the necessity for such seamlessness in state systems supporting ECSs by stating that "more states must develop the capacity to collect data on dual enrollment and to link this high school data with students' later college performance" (Hoffman, Vargas, & Santos, 2008). (See Appendix C for more information on states' longitudinal data systems.)

The primary source of data for the overall ECHSI is the SIS. As introduced in Chapter I, the SIS is an online data collection system that has the potential to house data, including students' academic progress, background characteristics, attendance, and performance on assessments, from every school in the ECHSI. JFF requests these data from districts, schools, and IHEs, but as in previous years, JFF and intermediaries are still experiencing ongoing challenges with populating and using the SIS data. Some of these challenges extend from the many different formats in which school data are submitted, as the SIS may not align with existing district and/or state data systems. Submitting the data also puts a strain on districts' — and in some cases ECSs' — time, expertise, and resources, and response rates have not been consistent across the schools or years. JFF and several intermediaries have made concerted efforts to boost the submission rates, including conducting Webinars and site visits and hiring data coordinators to help schools. Not surprisingly given these challenges, schools' and districts' use of the SIS data has been limited. Nevertheless, early outcomes data, as presented in Chapters III and IV, show positive results of the ECHSI.

Data from the SIS are important for the initiative as a whole to garner support, move forward, and replicate ECSs. As one JFF representative noted, the ECHSI Communications Working Group needs data to bolster its communication platform. To develop the big-picture message for the ECHSI, JFF plans to craft some messages based on data and solicit intermediary input. This strategy will encourage the intermediaries to engage in the process of creating a shared message. The need for data goes hand-in-hand with the shift in focus in the ECHSI, from opening and developing schools to making sure they are successful and replicable. A JFF representative reported, "We spent a lot of time on what the promise [of the ECHSI] is, but now that we have early results, we need to craft messages around that." This strategy relies on the premise that exhibiting and sharing positive outcomes will generate external support for both the ECHSI as a whole and for individual schools.

The need for data goes hand-in-hand with the shift in focus in the ECHSI, from opening and developing schools to making sure they are successful and replicable.

Summary

For the ever-evolving ECHSI to keep growing and pushing forward, its players — the foundation, JFF, intermediaries, and ECSs — must all be able to adapt to changing conditions. As a movement, the ECHSI's focus has shifted from opening ECSs to now maintaining and sustaining those ECSs. As such, JFF, the intermediaries, and the ECSs have been facing changing roles and new responsibilities.

In 2007–08, for JFF and the intermediaries, the changes involved a shift in governance of the ECHSI. To make the ECHSI a self-sustaining network, the initiative moved toward working groups comprised of representatives from intermediaries to lead the initiative. Although some intermediaries feel it is appropriate for them to lead the ECHSI because they know the ECSs best, there are concerns about intermediary capacity to both participate in the working groups and lead their networks of ECSs.

Intermediaries also continue to support their schools to remain in the ECHSI. However, it is incumbent upon the ECSs to maintain adherence to the Core Principles and achieve the outcomes the ECHSI hopes to attain. ECSs face the difficulty of having to produce positive results while their foundation funding diminishes. It is these data (the positive results) that can help generate support from IHEs, communities, and other external partners. Positive outcomes have the potential to lead to more funding for ECSs and the support the ECHSI needs to grow and spread across the nation.

The changes the ECHSI underwent in 2007–08 underscore the importance of the initiative and its players being adaptable to changing demands and circumstances. To sustain and spread, the ECHSI must rely on its own network of intermediaries and schools as well as supportive state policies and reforms. To this point, we have seen progress in the intermediaries' and ECSs' ability to adapt to changing conditions and to support themselves.

CHAPTER VII. SUMMARY

This annual ECHSI evaluation report covers the sixth implementation year of a new, blended high school–college model of education designed to help students who are traditionally underrepresented in higher education set and achieve ambitious goals. Because ECSs are a 4- or 5-year undertaking, waiting for data on desired student outcomes — for example, accumulation of significant college credits while in high school, high school completion, enrollment in college after high school — has required patience. We are now at a point in the evaluation when data for the indicators of most intense interest to the field are beginning to be available. This is exciting, but the evaluation team strongly cautions that this year's findings about the potential and possibilities of the early college model should still be considered preliminary. The number of ECSs that have graduated an initial cohort and the total number of graduates remain quite small, and the data on students' postgraduation activities are very limited. A complete and more reliable summative accounting of the initiative's outcomes is still years away.

One finding from last year's evaluation report (covering the 2006–07 academic year) illustrates the need to use restraint in drawing potentially premature conclusions about either student outcomes or their correlation with the characteristics of ECSs. Based on data from a very small number of ECSs that had students who had completed their high school programs, we hypothesized last year that ECSs affiliated with 4-year IHEs might have better outcomes than those partnered with 2-year IHEs. With data now available from more ECSs, that finding does not appear to be confirmed. Rather, other factors seem to be more relevant. The main point to be made here is that although an evaluation may report what the data show in any given year, we have a responsibility to remind readers of any caveats related to the quality of the data. In this concluding chapter of our report, we identify and report emerging patterns in the available data, but we do not assert that these are the final conclusions about the achievements of the ECHSI.

Sustained Findings

As this report has pointed out, some descriptive variables about the schools themselves and the programs that they offer are longitudinally stable.

> *Two-thirds of ECSs are startup schools — that is, they are newly created specifically to implement the early college model.*

The remaining third of the schools either have previously existed as another type of high school or are programs within a school. Under the current auspices of the ECHSI, these proportions seem unlikely to change greatly, since the intermediaries, for the most part, are in the business of developing new schools centered on newly developed or enhanced secondary–postsecondary partnerships. Over the long term, however, assuming that the outcomes of attending an ECS prove to be robust, we can imagine increased interest in converting other types of high schools (e.g., magnet schools or career academies) to the early college model. Similarly, more comprehensive high schools might become interested in adding early college as a school-within-a-school.

> *Two-thirds of the students enrolled in ECSs nationwide are from minority backgrounds — more than half of them of either African-American or Hispanic origins.*

Further, three-fifths of students are from low-income families. Given the ECHSI's commitment to serve high school students who are traditionally underrepresented in postsecondary education,

these proportions represent seemingly stable indicators that the initiative is achieving its goal in this area. Each individual school is, of course, set in its own particular context, and some are dedicated to serving one particular minority population (for example, the Center for Native Education's focus on American Indian students or the National Council of La Raza's focus on students of Hispanic heritage). Nevertheless, the ECHSI overall appears to be consistently serving a high proportion of low-income students and students of color. If summative outcomes for these students prove to be exemplary, then the ECHSI may make a significant contribution to our understanding of how to stimulate the pipeline for postsecondary success for underserved students.

Another finding that appears stable initiativewide over time is the adequacy of academic, social, and personal supports to help students succeed in their early college programs.

The data show that these supports are universally available to students. Data also confirm that the supports that students take advantage of are primarily accessed through the ECS rather than through the college, even though partnership agreements often make college supports available to ECS students. It may be the case that the newest schools still struggle with issues of adequate support services due to small enrollments and limited funding during the first year or two, but on average, the ECSs are doing a good job of supporting students to persevere in their educational programs — as attested to by the students themselves as well as by school survey data.

The stable findings alluded to in the previous paragraphs point to factors that are positively associated with the goals of the ECHSI. There is one stable finding, however, that is less positive.

Initiativewide, strong collaboration between high school and college instructors has been infrequent.

The original theory within the ECHSI posited that ECSs would result in increased collaboration, at many levels, between secondary and postsecondary educational institutions. Over the years, the evaluation's qualitative data have documented that collaboration and commitment are high at top administrative levels of ECS partnership agreements, but these relationships do not ordinarily develop between classroom instructors at the high school and college levels. We can cite individual examples of collaboration at the instructor level, but we cannot assert that this characterizes the initiative. The reasons for this are multiple: separate physical locations of high school and college campuses, a tendency for college instructors teaching ECS students to be adjuncts and therefore less connected to the postsecondary partner, decisions about whether ECS students will take college courses as cohorts or as individual course enrollees, and so on. The bottom line is that the ECHSI does not seem destined to offer a significant opportunity to change the paradigm with respect to high school and college teaching.

New Qualitative Findings

The evaluation's qualitative data collection in 2007–08 was limited and targeted. We primarily sought to understand why colleges would be interested in participating in the establishment and ongoing support of an ECS. The evaluation team heard the details of many individual stories about the importance of college participation, but in the end, two primary reasons emerged — pipeline and publicity.

Common factors motivating college participation in supporting an ECS are establishing a pipeline for post-high school matriculation of students and the positive local publicity attendant on an IHE–ECS partnership.

A question remains as to whether these reasons for participation are sustainable in the face of a national economic crisis, state economic crises, and the inevitable churn in educational leadership at both postsecondary and secondary levels. According to recent mass media reporting on the effects of the economic downturn, some community colleges are experiencing increased enrollment of students who can no longer afford 4-year colleges, perhaps making the early college pipeline less important to some institutions. For 2-year colleges in other geographic areas with many lower income families and severely depressed economies, the early college pipeline may become even more important in promoting the importance of postsecondary education as local job markets inevitably change. At this point in time, all kinds of institutions, including those involved with ECSs, are simply reacting to circumstances in ways that ensure their continued survival and success. On the issue of leadership turnover, however, the ECHSI can be proactive in establishing broad support for ECSs within each partnership so that change at the top is not an inevitable threat.

Observers of the ECHSI have wondered for some time how graduates of ECSs would rate their preparation for continuation in college as a result of participating in this new kind of high school education. In 2007–08, the evaluation team interviewed a sample of ECS alumni.

Among a small group of ECS alumni interviewees, the great majority had chosen to continue their college educations at an institution other than the one partnered with their ECS — for the most part matriculating at 4-year colleges.

Interestingly, ECS alumni who continued college work at the ECS's IHE partner reported some discomfort with their new status as college students now unconnected to their ECS "home."

The ECHSI has hypothesized that its model would afford students the opportunity to move through postsecondary education more quickly and at less expense to themselves or their families because of college credits earned at no cost during high school. By extension, therefore, the expectation might be that ECS graduates would apply for advanced status when they matriculate in college, but that may not be the case.

Most of the alumni interviewees chose to apply to college as freshmen rather than seeking accelerated status based on the college credits that they accumulated during high school.

In general, the colleges that ECS graduates were attending accepted some, but not all, of the college credits that they had earned. While some students were surprised or perplexed by this, the more important outcome of their ECS experience seemed to be the fact that they felt that they were better prepared for both the requirements of college classes and the complexities of negotiating college bureaucracies than their new peers on campus.

Analyses of Variation in School Characteristics and Student Outcomes

The basic ECS model and the Core Principles of the ECHSI provide clear factors that must be considered in any analytic models for examining the outcomes and effects of attending these schools. A non-negotiable characteristic of an ECS is the partnership with a postsecondary institution. Within this parameter, however, there is considerable variation. Based on the 2007–08 school survey data, the location of an ECS on a college campus (whether 2-year or 4-year) seems to be very important.

> *Location of the school on a college campus has significant relationships with key student outcomes such as attendance rate, achievement in ELA and mathematics, expected college credit accumulation, and the student progression rate from 9th to 10th grade.*

This supports, though does not prove, an assumption underlying the ECHSI — that early exposure to the actual college atmosphere can convince student populations who are traditionally underrepresented in postsecondary education that they can in fact become successful college students themselves.

Chapter IV of this report discusses the results of student outcomes analyses that the evaluation team conducted this year — certainly a larger and more robust set of analyses than we have been able to do in the past, but still not the definitive findings that require time to pass when many students will have completed their ECS careers and moved on to the next stage of their lives. Chapter IV focuses primarily on findings about outcomes initiativewide and for all students, with occasional reference to differential outcomes for subgroups of the student population. Here, in this summary chapter, some patterns are highlighted among student subgroups.

Regardless of school characteristics like location, ECS students differed from each other in a variety of ways that reflect the common dimensions on which education-related databases are stratified: gender, minority status, poverty, and language spoken at home. This year, females and language minority students stand out as success stories.

> *Females seem to be having more positive experiences in ECSs than their male counterparts.*

There has been considerable passionate and public debate in recent years about whether American schools are shortchanging American boys. Balanced examination of education indicators comparing males and females (such as Education Sector's report *The Truth About Boys and Girls)* suggests that both groups have made longitudinal gains in achievement and attainment but that female gains have been greater.[58] Further, females seem to be more persistent in both high school and college, patterns that ECSs should track for themselves as more students reach high school graduation and college matriculation stages. Future data can help determine whether boys are succeeding to the same degree as girls.

Another subgroup of students — those from homes where English is not the primary language spoken — seems to have a particularly strong affinity with the ECS culture.

> *Students from homes where a language other than English dominates appear to be thriving in ECSs — perhaps more so than any other subgroup.*

[58] See http://www.edsector.org/research/research_show.htm?doc_id=37805.

These students ranked significantly higher on scales of academic interest and persistence, and they feel very well supported by their instructors. They also reported higher high school GPAs. Already evident in two student survey samples, the intermediaries, the evaluation, and the schools themselves should begin to look for an explanation. It is important to remember that this subgroup does not represent English language learners per se, although some ELLs may be included. Rather, these students are immigrants, or the children of immigrants, whose families have not fully assimilated. It is possible that these students find in the ECS model a seriousness of educational purpose that is more like attitudes toward education in a family's country of origin.

For other subgroups, the findings are mixed. For example, when compared with white students, students from minority backgrounds had lower high school GPAs, were less likely to take college classes on a college campus, and felt less supported by their instructors (in both their relationships with ECS faculty and how well prepared they felt for college classes). Additionally, low-income students rated their schools highly on the "respect and responsibility" scale but had lower high school GPAs and lower expectations for college credit accumulation. Note also that both these subgroups were more likely to report that they attended available tutoring opportunities.

The subgroup that seems to struggle most, according to self-reported views of the ECS experience, is students who reported that they would be the first in their families to attend college.

> *When compared with all the other students in the sample, students who reported that they would be the first in their families to go to college are both doing more poorly and feeling less positive about their ECSs.*

This subgroup had lower high school GPAs, lower academic self-concept and educational aspirations, and lower academic engagement than other students. The first-generation college-going students also were more negative about the rigor of their instruction and did not feel connected to as many staff. When thinking about these analytic outcomes, it is important to remember that this subgroup includes all students who reported that they will be the first in their families to attend college, and these findings remain even after considering whether they are minority, regardless of their socioeconomic status, and whether they live in homes where English is not the primary language.

Overall, we were able to run many more analyses in 2007–08 because of larger amounts of data. However, one challenge that we faced was a lack of "accumulated variables," i.e., multiple variables that together represent an aspect of ECSs that must be taken into account to evaluate the whole. For example, there were multiple variables about ECS supports, but these did not meaningfully come together to represent "supports at ECSs."

Wrapping Up Year 6

Important and celebratory achievements to highlight during the year covered by this evaluation report include:

- Refinement and ratification of a set of Core Principles that define the standards the ECHSI has established for itself;
- Sustained evidence that the ECHSI is serving the intended population — students who are traditionally underrepresented in postsecondary education;
- Continued growth in the number of ECSs;

- Increasing numbers of graduates, many with significant college credits on their records; and
- An intention to maintain the ECHSI's identity as an initiative and increase the visibility of its positive outcomes.

While still a very new movement, the ECHSI appears to be on a steady course of growth and development.

REFERENCES

Adelman, C. (2006). *The toolbox revisited: Paths to degree completion from high school through college.* Washington, D.C.: U.S. Department of Education.

American Institutes for Research (AIR), & SRI International (SRI). (2006). *Early College High School Initiative: 2003–2005 evaluation report.* Washington, D.C.: AIR. Available at http://www.gatesfoundation.org/learning/Documents/ECHS_Eva_Synthesis_Report_2003-2005.pdf

AIR, & SRI. (2007). *Evaluation of the Early College High School Initiative: Select topics on implementation.* Washington, D.C.: AIR. Available at http://www.gatesfoundation.org/learning/Documents/ECHSI_Synth_Report.pdf

AIR, & SRI. (2008). *2003–2007 Early College High School Initiative Evaluation: Emerging patterns and relationships.* Washington, D.C.: AIR. Available at http://www.gatesfoundation.org/learning/Documents/ECHSI_Evaluation_2003-07.pdf

Anderla, G., & Aaron, B. (2006). *Pell Grant future.* Litchfield Park, AZ: American Student Financial Aid. Retrieved from http://www.thepellgrant.com/pell-grant-future.shtml (accessed February 18, 2009).

Bill & Melinda Gates Foundation. (2008). *College-ready* [booklet]. Seattle, WA: Author.

Brint, S. (2006). *Schools and societies* (2nd ed.). Stanford, CA: Stanford University Press.

Cavalluzzo, L., Corallo, C., & Jordan, W. (2002). *Case studies of high schools on college campuses: An alternative to the traditional high school program.* Charleston, WV: AEL.

Clotfelter, C., Ladd, H.F., Vigdor, J., & Wheeler, J. (2006). *High poverty schools and the distribution of teachers and principals.* Durham, NC: Duke University Terry Sanford Institute of Public Policy.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc., Publishers.

Cokley, K., & Chapman, C. (2008). The roles of ethnic identity, anti-white attitudes, and academic self-concept in African American student achievement. *Social Psychology of Education: An International Journal, 11,* 349–365.

Cunningham, C., & Matthews, R.S. (2007). Lessons from the field: A tale of two Early College High Schools. In N. Hoffman, J. Vargas, A. Venezia, & M.S. Miller (Eds.), *Minding the Gap: Why integrating high school with college makes sense and how to do it* (pp. 123–132). Cambridge, MA: Harvard Education Press.

Data Quality Campaign. (2007). *Results of 2007 NCEA survey of state P-12 data collection issues related to longitudinal analysis.* Austin, TX: NCEA. Retrieved from http://www.dataquality campaign.org/survey_results/ (accessed October 7, 2008).

District of Columbia Public Schools. (2006). *All students succeeding: A master education plan for a system of great schools* (Section III). Washington, D.C.: Author. Retrieved from http://www.k12.dc.us/master/inclusivesystem.htm (accessed December 12, 2008).

DuFour, R. (2004). What is a "professional learning community"? *Educational Leadership, 61*(8): 6–11.

Dweck, C.S. (2007). The perils and promises of praise. *Educational Leadership, 65*(2), 34–39.

Editorial Projects in Education Research Center. (n.d.) *2004–05 graduation rates map.* Retrieved from http://www.edweek.org/apps/maps/ (accessed December 2008).

Education Trust. (2008). *Core problems: Out-of-field teaching persists in key academic courses and high-poverty schools.* Washington, D.C.: Author. Retrieved from http://www2.edtrust.org/NR/rdonlyres/0D6EB5F1-2A49-4A4D-A01B-881CD2134357/0/SASSreportCoreProblems.pdf (accessed January 28, 2009).

Foster, K., & Nakkula, M. (2005). *Early College High School: Igniting and sustaining educational identity development.* Cambridge, MA: Harvard Graduate School of Education.

Goldberger, S. (2007). Doing the math: What it means to double the numbers of low-income college graduates. In N. Hoffman, J. Vargas, A. Venezia, & M. Miller (Eds.), *Minding the gap: Why integrating high school with college makes sense and how to do it* (pp. 27–42). Cambridge, MA: Harvard Education Press.

Greenberg, A.R. (1991). *High school–college partnerships: conceptual models, programs, and issues.* Washington, D.C.: George Washington University.

Greene, J.P., & Winters, M.A. (2005). The effect of residential school choice on public high school graduation rates. Manhattan Institute for Policy Research. *Peabody Journal of Education, 81*(1): 203– 216.

Harris, D.N. (2007). High-flying schools, student disadvantage and the logic of NCLB. *American Journal of Education, 113,* 367–394.

Heck, R.H., & Mahoe, R. (2006). Student transition to high school and persistence: Highlighting the influences of social divisions and school contingencies. *American Journal of Education, 112*(3): 418–446.

Hoffman, N., & Webb, M. (2009). Early-college high school: Modest experiment or national movement? *Education Week,* published online June 11, 2009; http://www.edweek.org/ew/articles/2009/06/11/35hoffman.html (accessed July 24, 2009).

Hoffman, N., & Vargas, J. (2005). *Integrating grades 9 through 14: State policies to support and sustain Early College High Schools.* Boston: Jobs for the Future.

Hoffman, N., Vargas, J., & Santos, J. (2008). *On ramp to college: A state policymaker's guide to dual enrollment.* Boston: Jobs for the Future.

High School Survey of Student Engagement. (2006). *Voices of students on engagement: A report on the 2006 High School Survey of Student Engagement.* Bloomington: Indiana University.

Ingels, S., Burns, L., Charleston, S., Chen, X., & Cataldi, E. (2005). *A profile of the American high school sophomore in 2002: Initial results from the base year of the longitudinal study of 2002* (NCES 2005-338). Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.

Intercollege Relations Commission (ICRC). (2004). *The ICRC handbook.* Retrieved from http://www.washingtoncouncil.org/icrc/resources/documents/icrchandbook.pdf (accessed June 27, 2008).

Izrael, D., & deFriesse, F.A. (2006). *School survey on crime and safety: 2003–04 public-use data file codebook* (NCES 2007-333). Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.

Jobs for the Future (JFF). (2004). *Early College High School Initiative Core Principles.* Retrieved from http://www.earlycolleges.org/Downloads/CorePrinciples.pdf (accessed January 21, 2008).

JFF. (2008). *Early College High School Initiative Core Principles.* Retrieved from http://www.jff.org/Documents/ECHSI_Core_principles.pdf (accessed June 27, 2008).

Karcher, M.J. (2005). The effects of developmental mentoring and high school mentors' attendance on their younger mentees' self-esteem, social skills, and connectedness. *Psychology in the Schools, 42*(1): 65–77.

Karp, M.M., Calcagno, J.C., Hughes, K.L., Jeong, D.W., & Bailey, T.R. (2007). *The postsecondary achievement of participants in dual enrollment: An analysis of student outcomes in two states.* St. Paul, Minnesota: National Research Center for Career and Technical Education, University of Minnesota.

Karp, M., & Hughes, K. (2006, August). *High school-college collaborations: A resource dependency perspective.* Paper presented at the annual meeting of the American Sociological Association, Montreal, Quebec, Canada. Retrieved from http://ccrc.tc.columbia.edu/Presentation.asp?uid=137 (accessed January 28, 2009).

Kirst, M.W. (2004). The high school/college disconnect. *Education Leadership, 62*(3), 51–55.

Kirst, M., Antonio, A.L., & Bueschel, A.C. (2004). *Improving the transition from high school to postsecondary education.* Policy Analysis for California Education. Working Paper Series 04-1. Retrieved from http://gse.berkeley.edu/research/pace/reports/WP.04_1.pdf (accessed January 28, 2009).

Lederman, D. (2006). *Gripes about grants.* Inside Higher Ed Web site. Retrieved from http://www.insidehighered.com/news/2006/08/18/grants (accessed November 6, 2008).

Levine, R., Huberman, M., Allen, J., & DuBois, P. (2001). *The measurement of home background indictors: Cognitive laboratory investigations of the responses of fourth and eighth graders to questionnaire items and parental assessments of the invasiveness of these items* (NCES 2001-19). Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.

Lundberg, C.A., Schreiner, L.A., Hovaguimian, K.D., & Miller, S.S. (2007). First-generation status and students race/ethnicity as distinct predictors of student involvement and learning. *NASPA Journal, 44*(1): 57–83.

Michigan Department of Education. (2006). *Memorandum: Report on early college/dual enrollment.* Retrieved from www.michigan.gov/documents/Item_I_161048_7.pdf (accessed June 27, 2008).

Miller, P.M., & Hafner, M.M. (2008). Moving toward dialogical collaboration: A critical examination of a university-school-community partnership. *Education Administration Quarterly, 44*(1): 66–110.

Nakkula, M., & Foster, K. (2007). Academic identity development: Student experiences in two Early College High Schools. In N. Hoffman, J. Vargas, A. Venezia, & M. Miller (Eds.), *Minding the gap: Why integrating high school with college makes sense and how to do it* (pp. 151–158). Cambridge, MA: Harvard Education Press.

Nasim, A., Roberts, A., Harrell, J.P., & Young, H. (2005). Non-cognitive predictors of academic achievement for African Americans across cultural contexts. *Journal of Negro Education, 74*(4): 344–358.

National Center for Educational Statistics (NCES). (2005). *Dual enrollment of high school students at postsecondary institutions: 2002–03* (NCES 2005-008). Washington, D.C.: Author. Retrieved from http://nces.ed.gov/pubsearch/ (accessed January 28, 2008).

NCES. (2006). *User's guide to computing high school graduation rates, Volume 1: Technical Reports: Review of current and proposed graduation indicators* (NCES 2006-604). Washington, D.C.: Author. Retrieved from http://nces.ed.gov/pubs2006/2006604.pdf (accessed April 12, 2008).

NCES. (2007a). *2004/06 Beginning postsecondary students longitudinal study data analysis system* (NCES 2007-185). Washington, D.C.: Author. Retrieved from http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2007185 (accessed January 28, 2009).

NCES. (2007b). Table 193. Graduation rates of previous year's 12th-graders and college attendance rates of those who graduated, by selected high school characteristics: 1999–2000 and 2003–04. In *Digest of Education Statistics: 2007 (Public School Questionnaire, 1999–2000 and 2003–04)*. Washington, D.C.: Author. Retrieved from http://nces.ed.gov/programs/digest/d07/tables/dt07_193.asp (accessed January 6, 2009).

NCES. (2008a). *Dropout and completion rates in the United States: 2006. Compendium report* (NCES 2008-053).Washington, D.C.: Author. Retrieved from http://nces.ed.gov/pubs2008/2008053.pdf (accessed January 2009).

NCES. (2008b). Table 3.5. Percentage of 2003–04 high school seniors, by the highest expected level of educational attainment and race/ethnicity: 2004. In *Status and trends in the education of American Indians and Alaska Natives: 2008* (NCES 2008-084). Washington, D.C.: Author. Retrieved from http://nces.ed.gov/pubs2008/nativetrends/tables/table_3_5.asp (accessed January 2009).

Ohio Office of the Governor. (2008, February 28). *Strickland announces early adopter grants for Seniors to Sophomores Program* [press release]. Columbus, OH: Author. Retrieved from http://governor.ohio.gov/Default.aspx?tabid=594 (accessed January 8, 2009).

Pike, G.R., & Kuh, G.D. (2005). First and second-generation college students: A comparison of their engagement and intellectual development. *The Journal of Higher Education, 76*(3): 277–300.

Roderick, M., Nagaoka, J., Coca, V., & Moeller, E. (2009). *From high school to the future: Making hard work pay off. The road to college for students in CPS's academically advanced programs.* Chicago, IL: Consortium on Chicago School Research. Retrieved from http://ccsr.uchicago.edu/publications/Making%20Hard%20Work%20Pay%20Off.pdf (accessed on July 30, 2009).

Rumberger, R.W., & Palardy, G.J. (2005). Test scores, dropout rates, and transfer rates as alternative. http://aer.sagepub.com/cgi/reprint/42/1/3 (accessed December 2008).

South Carolina State Department of Education. (2006, March 22). *Redesign Commission recommends personalized high school experiences* [press release]. Columbia, SC: Author. Retrieved from http://ed.sc.gov/news/more.cfm?articleID=630 (accessed January 13, 2009).

Swanson, C.B. (2003). *NCLB implementation report: State approaches for calculating high school graduation rates.* Washington, D.C.: The Urban Institute. Retrieved from http://www.urban.org/publications/410848.html (accessed May 3, 2006).

University of the State of New York, & New York State Education Department. (2008). *2008–2009 Regents budget proposal.* Albany, NY: New York State Education Department. Retrieved from http://www.oms.nysed.gov/budget/bud0809/2009proposal.htm (accessed January 8, 2009).

Walthers, K., & Robinson, J. (2006). *Concurrent enrollment: Funding in Utah.* Center for Public Policy & Administration. Retrieved from http://www.cppa.utah.edu/publications/higher_ed/Policy_Brief_5_24_06_funding_of_concurrent_enrollment.pdf (accessed January 8, 2009)

Washor, E., Arnold, K., & Majkowski, C. (2008/2009). Data beyond high school. *Educational Leadership, 66*(4), 60–64.

Appendix A. ECHSI Evaluation 2007–08 Data Collection and Analyses

Introduction

Since 2002, the American Institutes for Research (AIR) and SRI International (SRI) have worked together in a joint effort to evaluate the national Early College High School Initiative (ECHSI) for the Bill & Melinda Gates Foundation. For this purpose, the evaluation team has collected qualitative and quantitative data from various sources since the pilot year in 2002–03 through 2007–08, summarized in Table A.1.

Table A.1. Overview of ECHSI Evaluation Qualitative and Quantitative Data Collection Activities and Samples, 2002–08

Data Collection Activity	2002–03 (Pilot Year)	2003–04	2004–05	2005–06	2006–07	2007–08
Foundation interview				1	1	
Jobs for the Future interviews		1	1	1	1	1
Intermediary interviews	7	13	14	17	17	17
State policy Web searches					12 states	12 states
State policy interviews					5 states	
Early College School site visits	1	12	14	10	20	6
Early College School leader telephone interviews	0	10	10	14	0	0
Student Information System (SIS)				18[b,c]	28[b,c]	84[b,c]
School survey		22[a]	50[a]	60[b]	120[b]	151[b]
Student survey					20 schools 1,396 students	35 schools 2,102 students
ECS alumni interviews						16 graduates from 5 ECSs[a]
Extant data			All available			

[a] Collected by AIR/SRI.
[b] Collected by Jobs for the Future.
[c] Number of Early College Schools for which AIR/SRI received or collected at least some data.

The focus of this technical appendix is on the qualitative and quantitative data collected in 2007–08 and on the analysis methods used with these data.

Qualitative Data

During 2007–08, qualitative data collection focused on the college perspective of ECSs, as well as ongoing implementation and sustainability of the schools and the ECHSI.

Intermediary and Jobs for the Future Interviews

In 2007–08, the evaluation team conducted 1- to 2-hour interviews with a representative from each of the 13 intermediaries and the four subintermediaries and a group of representatives from Jobs for the Future (JFF). These interviews covered topics such as vision, grant distribution, partnership development, technical assistance, policy and advocacy, grant management, organizational capacity, data use, and sustainability.

Site Visits

In 2007–08, AIR/SRI visited six ECSs. The six sites were selected according to whether they were old enough to have one graduating class and were not part of either the 2006–07 site visit sample or the 2007–08 student survey sample. In addition, sites were selected according to the type of partnerships they had (with 2-year or 4-year institutions), with some input in the selection from intermendiaries. Two-person teams visited each school over a period of 2 to 3 days in spring 2008. School site visits included interviews with the ECS leader(s), college leader(s), the college liaison (at either the school or the IHE partner, or both), district or charter management organization (CMO) representative(s), guidance counselors, and two college instructors. When all site visits were completed, the site visit team held a debriefing to identify emerging themes. Following is a description of each of the interviews:

- *ECS and college leader interviews and college liaison interviews* — Site visit teams interviewed ECS leaders, college leaders, and college liaisons from the college or high school. These interviews covered topics such as ECS vision, implementation, partnering agreements, resources, supports and decision-making at the college and district, student recruitment, staffing, professional community, curriculum, instruction, student supports, student outcomes, policies, and sustainability. Of particular interest was the college perspective on the partnership.
- *District or CMO interviews* — Site visit teams conducted interviews with a district or CMO representative(s) at the ECSs that had district or CMO partners. These interviews covered topics such as vision, district policies, partnerships, district supports, governance, ECS implementation, capacity, and sustainability.
- *Instructor interviews* — Site visit teams interviewed two college instructors at each school. Instructor interviews covered topics such as vision for the initiative, faculty buy-in, and vision of instruction, as well as professional development and collaboration.
- *Guidance counselor interviews* — Site visit teams conducted interviews with a guidance counselor at each ECS that had someone in this role. These interviews covered topics such as vision, student recruitment, feeder school involvement, course sequence, student academic and social supports, climate, professional community, and student outcomes.

ECS Alumni Interviews

A new source of data for this year's report are interviews with ECS alumni. Members of the evaluation team conducted phone interviews with 16 graduates from five different ECSs. The purpose of the alumni interviews was to gather anecdotal evidence to add depth to the quantitative analyses of ECS student outcomes after high school graduation and to describe students' experiences from a post-ECS experience perspective. In order to recruit participants, site visitors asked school leaders from the 2007–08 site visit sample to provide contact information for graduates who had enrolled in college after graduation from the

ECS. This is not a representative sample of students from the schools or schools from the initiative. Some schools contacted their graduates to request their permission before the evaluation team made any contact. All of the graduates interviewed were enrolled in college and had graduated from an ECS in 2007.

The main purpose of the interviews was to learn whether students thought they had been prepared for college after graduation, to learn about the perceived effectiveness of the academic and nonacademic supports students received while in the ECS, and to learn whether graduates continued to receive support from the ECS after graduation. In addition, graduates were asked to describe the supports they received for completing college and scholarship applications as well as what credits transferred to the colleges they attended.

State Policy Data

The evaluation team collected data regarding state-level policies that influence how ECSs operate. The evaluation team examined state Web sites and publicly available documents focusing on policies related to dual enrollment, course alignment, credit transfer, funding, facilities, student eligibility, teacher certification, and accountabilityin the 12 states in which a sample of ECSs and/or intermediaries were located. In addition, the evaluation team asked intermediaries questions related to states' policy environments, including questions about the impact of state policies on ECSs and the work participants in the ECHSI have undertaken to change or shape state policies to better enable implementation of ECSs.

Qualitative Data Analysis

For all qualitative data collected, the evaluation team members coded the data using ATLAS.ti. Coders cross-coded data to ensure reliability. For example, the codes for the intermediary interviews included policy and advocacy, ECS and ECHSI partnerships, intermediary capacity and sustainability, accountability, data and outcomes, and target population. When the coding was complete, analysts then ran queries using codes to conduct the analysis, identifying trends and patterns in the data.

One additional step accompanied each site visit analysis. Following each site visit, the site visit team wrote a brief summary based on data collected at the school. The summary focused on themes that were relevant to the college perspective and was used for the debriefing that all site visitors attended.

Quantitative Data

This section describes the various quantitative data sources used for analyses presented in this report. Data are primarily from the 2007–08 academic year, but some data are presented from earlier years, if these data are relevant for conducted analyses. For example, analyzing progression rates required data from multiple earlier years. Table A.2 provides an overview of the quantitative data sources for this report.

Table A.2. Quantitative Data Sources

Data Source	Sample	Data Collection Timeframe
School survey	All ECSs (*n* = 157)	Spring 2008
Student survey	Representative sample of 35 ECSs, random sample of 25 student per grade	Spring 2008
Extant achievement data	All ECSs that have grade levels that are tested (and their districts) (*n* = 133)	Winter 2008
Student Information System (SIS)	All ECSs	All data available through October 31, 2008

School Survey Data

JFF administered the school survey online in spring 2008. Data were collected from the universe of ECSs. The intermediaries identified all of the schools they considered to be in the initiative, and all schools (157 in total) received a request to participate. Ultimately, representatives from 151 of the ECSs in the initiative completed at least some of the survey, resulting in a response rate of 96 percent.

The school survey was developed to collect important information about the diverse range of early college characteristics and designs, including items about structural features, curricular and extracurricular offerings, IHE partners, and student enrollment, achievement, and progress. For three variables, data from other sources were used in conjunction with survey data:

- *Year opened as an ECS* — Data were collected for all 157 ECSs, not just the 151 that completed the school survey. Each school's response to this question in the school survey was validated against data available from other sources, including JFF, school Web sites, and site visit staff. Where there were discrepancies between the school survey and other sources, the year supported by the greatest number of data sources was used.
- *IHE partners* — Data on IHE partners were collected from the JFF Web site (www.earlycolleges.org) for all 157 ECSs, not just the 151 that completed the school survey. Partner type information was obtained through IHE partner and ECS Web sites.
- *ECS location* — Data were collected for all 157 ECSs, not just the 151 that completed the school survey. Each school's response to this question in the school survey was validated against data available from other sources, including JFF, school Web sites, and site visit staff. Where there were discrepancies between the school survey and other sources, the location supported by the greatest number of data sources was used.

School-Level Independent Variables

Several of the variables from the school survey serve as bases of analysis throughout the synthesis report, particularly to describe the ECS school sample and to be used as independent variables in the regression models. (See Table A.3 for more detail on these variables.)

Table A.3. School-Level Independent Variables

Variable	Description
Startup school	A dichotomous variable indicating whether an ECS was a new startup (1) or evolved from an existing school, including conversion, adaptation, and program ECSs I (0); 96 schools belong to this category.
Number of years the ECS has been part of the ECHSI	A variable indicating the number of years an ECS had been open as part of the ECHSI. Values ranged from 1 (opened in 2007–08) to 6 (opened in 2002–03) (mean = 2.82; SD = 1.31).
On-campus location	A dichotomous variable indicating whether an ECS was located on a college campus; 83 schools belong to this category.
4-year IHE partner	A dichotomous variable indicating whether an ECS had at least one 4-year IHE partner; 55 schools belong to this category.
School without grade levels	A dichotomous variable used to indicate schools that do not have regular grade levels (e.g., no 9th or 10th grade); 12 schools belong to this category.
High-minority/high-poverty school	A dichotomous variable indicating whether a school is high-minority/high-poverty (HMHP), defined as 75 percent or more of students identified as minority students *and* 75 percent or more of students identified as eligible for free or reduced-price lunch (FRPL). 35 schools belong to this category.
Total enrollment/100	The number of students enrolled in the ECS divided by 100. Values ranged from 0.20 to 13 (mean = 2.11, SD = 1.76).

School Survey Dependent Variables

Following is a list of dependent variables based on the school survey items. These variables are analyzed either descriptively or by using ordinary least squares (OLS) regression or logistic regression (logit) analysis.

Average Daily Attendance

Schools reported their average daily attendance (ADA) in the school survey. ADA is a measure showing what percentage of the student body is present, on average, each day during the school year (mean = 94.0; SD = 8.93). Schools had to be open during the 2006–07 school year to answer this question in 2007–08. Also, in some states, reporting or collecting ADA is not required; hence, some schools have missing values (n = 90).

Admission Rates

Schools reported both the number of applications and the number of students accepted. The admission rate variable is created by dividing the number of students who applied and were accepted by the number of total applications (mean = 0.63, SD = 0.28).

Admissions Criteria

Schools reported whether they required at least one of the following for application or admission: minimum/maximum assessment scores, minimum/maximum GPA, written work, recommendations, interviews, or parent interviews. Of the 151 schools that responded to the survey, 108 had at least one of these admissions criteria (71.5 percent).

Progression Rates

The school survey includes items that make tracking progression rates from grade to grade possible. These items identify the status of students from one grade to the next. For example, for the 9th grade to 10th grade transition, of the 9th-grade students enrolled in 2006, by fall 2007, how many …

- were enrolled in 10th grade?
- were still enrolled in 9th grade?
- had transferred to another school or another learning community within the same school?
- were expelled or placed in other nonschool, institutional settings (e.g., juvenile justice)?
- had dropped out of school?
- have current status unknown?
- have some other current status?

The ratio of the number of students who progress relative to the number of students enrolled is the basis for progression rates. Progression rates are calculated including students who have transferred out during the school year in the base year numbers. Progression rates were calculated for the following grades:

- Progression rate 9th to 10th = number of students who enrolled in 10th grade / number who started 9th grade
- Progression rate 10th to 11th = number of students who enrolled in 11th grade / number who started 10th grade
- Progression rate 11th to 12th = number of students who enrolled in 12th grade / number who started 11th grade
- Progression rate 12th to graduation or 13th = number of students who graduated or enrolled in 13th grade / number who started 12th grade
- Progression rate 13th to graduation = number of students who started 13th grade and graduated / number who started 13th grade

However, because small numbers of the schools have been open long enough to have the higher grade levels, only the progression rate from 9th to 10th grade is used in the regression analysis.

Cumulative Promotion Index

In addition to progression rates from grade to grade, these data allow proxy estimation of overall progression rate from 9th grade to graduation/13th grade. Swanson (2004; see also NCES 2006b and 2006c for more on various graduation rate measures) provides an approach to estimating rates with the cumulative promotion index (CPI). One of the advantages of using the CPI is the availability of comparison data (Editorial Projects in Education Research Center, n.d.).

For ECSs with four-year high school programs, the following formula was used:

> 4-year CPI = Progression rate 9th to 10th * Progression rate 10th to 11th * Progression rate 11th to 12th * Progression rate 12th to graduation

We used a slightly modified version of the CPI for schools with a 5-year high school program:

> 5-year CPI = Progression rate 9th to 10th * Progression rate 10th to 11th * Progression rate 11th to 12th * {[Number of students from 12th grade to graduation + (Number of students from 12th to 13th grade * Progression rate 13th to graduation)] / Number of students at the beginning of grade12}

On-Time Graduation Rate

For the on-time graduation rate, the number of students who entered the ECS is used as the total number of students who should be graduating by the end of a 4- or 5-year program. This number is then compared with the number of students who actually graduate 4 or 5 years later. This calculation may overestimate the graduation rate (for example, if an ECS admits new students after the first year of the program) or may underestimate it (for example, if students leave the ECS but finish their degrees elsewhere).

Below is an explanation of the data sources and calculations for estimating the on-time graduation rates for both 4-year and 5-year programs.

4-Year ECSs

- 2007–08 survey: number of graduates in grade 12 in 2006–07
- 2003–04 survey: number of 9th-grade students enrolled in 2003–04

On-Time Graduation Rate: $\dfrac{\text{12th-grade graduates in 2006–07}}{\text{9th-grade students enrolled in 2003–04}}$

5-Year ECSs

- 2007–08 survey: number of graduates in grade 13 in 2006–07
- 2006–07 survey: number of graduates in grade 12 in 2005–06
- 2002–03 survey: number of 9th-grade students enrolled in 2002–03

On-Time Graduation Rate: $\dfrac{\text{12th-grade graduates in 2005–06 + 13th-grade graduates in 2006–07}}{\text{9th-grade students enrolled in 2002–03}}$

Student Survey Data

The student survey data presented in this report come from a survey administered in spring 2008. The survey was administered at a systematic stratified sample of 35 ECSs in the initiative. All schools that were open by fall 2006 and enrolled high school grades in 2007–08 were eligible for selection (eligible n = 122). Three of the originally sampled ECSs were replaced because they no longer participated in the initiative.

The student survey was administered to 25 randomly selected students at each grade level in each high school grade offered at the school. In schools with fewer than 25 students per grade, all students were sampled. All students were eligible for selection, provided they were part of the school or the ECS program and were eligible for state standardized testing.

The survey was administred online or, if the school requested, as a paper and pencil survey. Each school had a site coordinator to identify eligible students. Each student who logged in to the survey had a chance to win a gift card.

The overall response rate for the survey was 89 percent. The response rate at 31 of the 35 ECSs was at least 80 percent. The maximum response rate was 100 percent, while the minimum was 32 percent. In total 2,102 students completed the survey.

For our analyses, student survey responses were weighted to be representative of their grade level at their school. For example, if 25 students from a class of 100 were surveyed, each student received a weight of 4. If 25 students from a class of 50 were surveyed, each student received a weight of 2. With this weighting, student responses are representative of the full population of students at their school.

The majority of items included in the student survey were from the spring 2007 student survey (detailed in AIR & SRI, 2008). In addition, a few new items related specifically to students' experiences regarding ECS instructors were added to the spring 2008 student survey.

Student Survey Independent Variables

Six demographic variables based on student survey data are used as independent variables in the analyses presented in Chapters III and IV. These variables include students' grade level and whether a student was from a minority group, first-generation college-going, female, having a language other than English spoken at home at least half the time, low income, or started at the ECS after 9th grade. In addition, several control variables were included to account for low response rates on two items. Descriptions of these variables are presented in Table A.4. As noted in the full results tables in Appendix B, many of these demographic characteristics were related to student outcome variables. Differences based on student demographics are examined in detail in Chapters III and IV.

Table A.4. Student-Level Independent Variables

Variable	Description
Female	A dichotomous variable indicating students who identified themselves as female (1) or male (0); 55.0 percent of the surveyed students are female.
First-generation college-goer	A dichotomous variable indicating whether a student would be a first-generation college student (neither parent attended college = 1) or had at least one parent who had attended college (0). The variable was coded based on students' survey responses about both parents. 40.3 percent of the surveyed students would be first-generation college students.
First-generation college-goer, missing	A dichotomous control variable indicating students with missing data for First-generation college-goer (including students who did not know their status). All missing values for this variable were coded as 1. 11.9 percent of the surveyed students had missing data for this item.
FRPL qualify	A dichotomous variable indicating students who responded that they qualified for the free or reduced-price lunch program (1) or did not qualify for the free or reduced-price lunch program (0). 53.3 percent of the surveyed students were qualified for the free or reduced-price lunch program. This item is used as an indicator of a "low-income" student.
FRPL, missing	A dichotomous control variable indicating students with missing data for free or reduced-price lunch status (including students who did not know their status). All missing values for this variable were coded as 1. 15.7 percent of surveyed students had missing data for this item.
Grade 9	A dichotomous variable indicating whether a student was in the 9th grade. This variable is the omitted category in the regression analyses. 32.8 percent of the surveyed students were in the 9th grade.
Grade 10	A dichotomous variable indicating whether a student was in the 10th grade. 31.7 percent of the surveyed students were in the 10th grade.
Grade 11	A dichotomous variable indicating whether a student was in the 11th grade. 18.1 percent of the surveyed students were in the 11th grade.
Grade 12/13	A dichotomous variable indicating whether a student was in the 12th or 13th grade. These two groups were combined, because the number of 13th-grade students in the sample is low. 16.3 percent of the surveyed students were in grade 12 or 13th grade.
Non-English speaking home environment	A dichotomous variable indicating whether a language other than English was spoken at least half of the time at home; 43.1 percent of the surveyed students indicated that a language other than English was spoken at home.
Late start	A dichotomous variable indicating students who described themselves as starting in the ECS after the fall of 9th grade; 14.7 students started ECS after the 9th grade.
Minority	A dichotomous variable indicating students who described themselves as minorities (multiracial and/or nonwhite = 1) or as white (0); 78.1 percent of the surveyed students described themselves as minorities.

Student Survey Dependent Variables

The student survey-based measures focus on students' ECS experience (including measures of student supports, school climate, instruction, and college course exposure), ECS academic outcomes, and outcomes about preparation for post-ECS life. The student survey dataset includes scales developed by other evaluations and scales developed specifically for this evaluation. Table A.5 displays all of the scales used in the report as dependent variables and includes the underlying items and scale characteristics. In addition to the scales, individual items from the student survey have been used as additional dependent

variables. These items, some of which have been recoded to create meaningful numeric values from categorical data, are listed in Table A.6.

Table A.5. Student Survey Scales, Items Used in the Scales, and Descriptive Statistics

Scale and Survey Items	Min	Max	Mean	SD	Reliability (α)
ACADEMIC ENGAGEMENT — INTEREST This school year, I have: Asked questions in class or contributed to class discussions. Talked to my family about what I am working on in school. Asked my friends for advice about something I am working on in school. Worked with classmates outside of class or school on schoolwork. Asked my instructors to meet with me to talk about grades, assignments, or my work on projects. *Response scale: 1 = never; 2 = a few times this year; 3 = once or twice a month; 4 = once or twice a week; 5 = almost every day*	1.00	5.00	3.47	1.53	0.76
ACADEMIC ENGAGEMENT — PERSISTENCE I got frustrated and gave up when my schoolwork became too hard.* When my schoolwork became difficult, I found a way to get help. I gave extra effort to challenging assignments or projects. I kept trying to do well on my schoolwork even when it wasn't interesting to me. I tried really hard to do a good job. I really found my schoolwork interesting. I really did not care too much about my schoolwork.* *Response scale: 1 = never; 2 = a few times this year; 3 = once or twice a month; 4 = once or twice a week; 5 = almost every day*	1.00	5.00	3.76	1.21	0.80
ACADEMIC SELF-CONCEPT I am good at: Asking instructors for help when I get stuck on schoolwork. Working in a group with other students. Taking part in class or group discussions. Understanding what I read for classes. Writing papers or stories. Learning mathematics. *Response scale: 1 = strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree*	1.00	4.00	3.12	0.87	0.70

Table A.5. Student Survey Scales, Items Used in the Scales, and Descriptive Statistics (continued)

Scale and Survey Items	Min	Max	Mean	SD	Reliability (α)
HIGH EXPECTATIONS The instructors I have had at this school: Believe that all students in this school can do well. Have given up on some of their students.* Care about only the smart students.* Expect very little from students.* Work hard to make sure that all students are learning. *Response scale: 1 = strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree*	1.00	4.00	3.23	1.04	0.80
INSTRUCTIONAL RELEVANCE This school year, I have solved problems based on real life. My instructors have let students decide on the projects or research topics they will work on. My instructors have let students decide how to work on their assignments or projects (e.g., read on their own, do research in the library). How much does your instructor emphasize making connections: Between what goes on inside and outside of school? Between what's covered in your class and what you've covered in other classes? *Response scale: 1 = never; 2 = a few times this year; 3 = once or twice a month; 4 = once or twice a week; 5 = almost every day*	1.00	5.00	3.34	1.33	0.70
INSTRUCTIONAL RIGOR During this school year, how often have your instructors done the following things? Expected me to learn some topics well enough to be able to teach others about them. Assigned projects or presentations that let us show what we have learned. Encouraged us to find multiple solutions to problems rather than just one. During this school year, how often have your instructors Asked you to explain your thinking? Asked you to apply what you have learned to solve a new problem? Had you engage in in-depth discussions about what you have read or learned? Explained expectations of what you needed to do on an assignment to get a good grade? Given you feedback or comments on your work before you turned it in for a grade? *Response scale: 1 = never; 2 = a few times this year; 3 = once or twice a month; 4 = once or twice a week; 5 = almost every day*	1.00	5.00	3.72	1.47	0.86

Table A.5. Student Survey Scales, Items Used in the Scales, and Descriptive Statistics (continued)

Scale and Survey Items	Min	Max	Mean	SD	Reliability (α)
INSTRUCTOR CONNECTEDNESS I care what my instructors think of me. I want to be respected by my instructors. I try to get along with my instructors. I always try hard to earn my instructors' trust. *Response scale: 1 = strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree*	1.00	4.00	3.27	1.00	0.81
INSTRUCTOR SUPPORT — COLLEGE The instructor for this class: Is willing to give extra help on schoolwork if I need it. Helps to catch me up if I am behind. Notices if I have trouble learning something. Helps me improve my work if I do poorly on an assignment. *Response scale: 1 = strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree*	1.00	4.00	2.95	1.21	0.89
INSTRUCTOR SUPPORT — HIGH SCHOOL The instructor for this class: Is willing to give extra help on schoolwork if I need it. Helps to catch me up if I am behind. Notices if I have trouble learning something. Helps me improve my work if I do poorly on an assignment. *Response scale: 1 = strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree*	1.00	4.00	3.21	1.16	0.89
PERSONALIZATION How many adults in your school: Would be willing to help you with a personal problem? Really care about how well you are doing in school? Would be willing to give you extra help with your schoolwork if you needed it? Helped you think about whether you are meeting the requirements for graduation? Helped you think about what you need to do to prepare for college or for a career? *Response scale: 1 = no adults; 2 = one adult; 3 = two or three adults; 4 = four or five adults; 5 = six or more adults*	1.00	5.00	3.80	1.43	0.81

Table A.5. Student Survey Scales, Items Used in the Scales, and Descriptive Statistics (continued)

Scale and Survey Items	Min	Max	Mean	SD	Reliability (α)
STUDENT RESPECT AND RESPONSIBILITY Many students in my school don't respect one another. There are groups of students in this school who don't get along. How many students in your school feel it's okay to: Make racist or sexist remarks? Cheat? Get into physical fights? Steal things from other students? Destroy or steal school property? *Response scale: 1 = all or almost all; 2 = most; 3 = about half; 4 = a few; 5 = none or almost none*	1.00	5.00	3.89	1.12	0.79
STUDENT SATISFACTION I feel I have a better sense of what college is like since I started attending I feel more sure about my ability to be successful in college since attending If I could start over again, I would go to [ECS] again *Response scale: 1 = strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree*	1.00	4.00	3.16	1.20	0.81

* Item was reverse coded for inclusion in the scale.

Table A.6. Item-Based Student-Level Dependent Variables

Variable	Response Options	Recoded Values	Item Statistics
HIGH SCHOOL GPA: What have most of your grades been in your courses that count ONLY for high school credit since you have been at this school?	Mostly A's	3.9	Mean = 3.03
	Mixed A's and B's	3.5	SD = 1.29
	Mostly B's	3.0	
	Mixed B's and C's	2.5	
	Mostly C's	2.0	
	Mixed C's and D's	1.5	
	Mostly D's	1.0	
	Below D's	0.5	
	Grades not used; I haven't taken courses for just high school credit at this ECS; I don't know	Missing	
COLLEGE GPA: What have most of your grades been in your college courses since you have been at this school?	Mostly A's	3.9	Mean = 3.10
	Mixed A's and B's	3.5	SD = 1.29
	Mostly B's	3.0	
	Mixed B's and C's	2.5	
	Mostly C's	2.0	
	Mixed C's and D's	1.5	
	Mostly D's	1.0	
	Below D's	0.5	
	Grades not used; I haven't taken courses for just high school credit at this ECS; I don't know	Missing	
COLLEGE CREDIT: How much college credit do you think you will have by the time you graduate from this school? If you aren't sure, just make your best guess. (recoded to years)	None	0	Mean = 1.48
	Less than 1 year	0.5	SD = 1.37
	1 year	1	
	More than 1 year but less than 2 years	1.5	
	2 years	2	
	More than 2 years	2.5	
COLLEGE PLANS: Right now, what is your best guess about how far you will go in school? I plan to … (recoded to take values 0 = Les than 4-year college, 1 = 4-year college)	Leave high school before graduation; Graduate from high school; Get some college or other training; Complete a job-training program (such as technical school or military training); Graduate from a 2-year community college	0	Mean = 0.76
	Graduate from a 4-year college; Graduate from college and take further training (such as graduate school)	1	SD = 0.77
ATTEND TUTORING: Do you attend the tutoring sessions?	Yes	1	Mean = 42.0
	No	0	SD = 88.7
HELP WITH SAT/ACT: Have you received help at your school for the SAT or ACT?	Yes	1	Mean (% Yes) = 39.4
	No	0	SD = 88.3

Table A.6. Item-Based Student-Level Dependent Variables (continued)

Variable	Response Options	Recoded Values	Item Statistics
HELP WITH COLLEGE APPLICATIONS: Have you received help at your school for college or vocational/tech school applications?	Yes	1	Mean (% Yes) = 27.0
	No		SD = 80.2
PREPARED FOR COLLEGE: How well did your high school classes prepare you for this college class?	Very well prepared or mostly prepared	1	Mean = 0.43
	Somewhat prepared or not at all prepared	0	SD = 0.84
COLLEGE CLASS ON CAMPUS: Where does your 1st college class of the week take place?	In a high school classroom on a college campus or on a college campus	1	Mean = 0.82
	On a high school campus	0	SD = 0.65
STUDENT COMPOSITION IN COLLEGE CLASS: Approximately what percentage of the students in your 1st college class of the week are ECS students (i.e., students that are not traditional college students).	I am the only ECS student	1	Mean = 4.15
	Few students are ECS students	2	SD = 3.17
	25 percent are ECS students	3	
	50 percent are ECS students	4	
	75 percent are ECS students	5	
	All students are ECS students	6	
ENROLLED IN COLLEGE CLASS: Have you ever taken any college classes since starting at [ECS]?	Yes	1	Mean (% Yes) = 61.0
	No	0	SD = 88.0
ACADEMIC COLLEGE CLASS: The 1st college college class you take for the week is in what subject area?	English/Reading/Writing, Foreign Language, History/Social Science, Math, and Science	1	Mean (% Yes) = 0.61
	All other subject areas	0	SD = 0.83
TOOK SAT OR ACT TEST: Which of the following have you done during high school: Taken the SAT or ACT?	Yes	1	Mean (% Yes) = 35.4
	No	0	SD = 86.5
APPLIED TO COLLEGE: Which of the following have you done during high school: Filled out vocational/technical school or college applications?	Yes	1	Mean (% Yes) = 23.3
	No	0	SD = 76.5

Web Site Demographic and Assessment Data

To examine the ECSs' demographic composision, we compared ECSs with their feeder districts. Therefore, we collected district demographic data for all ECSs.

For assessment analyses, we used college English language arts (ELA) and mathmatics acheivement assessment data for both ECSs and their feeder districts. All ECSs (n = 157) were targeted for assessment data collection from district and state sources regarding ELA and mathematics. However, because standardized achievements tests are not administered in every grade in high school (usually the tests are administered for 10th-grade students), only 133 ECSs were in the eligible sample. We were able to locate assessment results for 113 ECSs in ELA and 112 ECSs in mathematics, the response rates being 85 percent and 84 percent, respectively.

Using achievement data in an evaluation that includes multiple states has its limitations. Because different states use different types of achievement tests, the scores across states are not comparable. To alleviate this problem partially, we collected proficiency rates instead of scale scores. However, the definitions of proficiency rates also are likely to vary across states. Therefore, in all analyses regarding student assessment performance, each ECS is compared with its respective school district(s). This approach both creates a common metric across schools and allows for comparisons between ECSs with their districts.

Because students attending a particular ECS could come from multiple school districts, the final measures of average district achievement and demographic measures should mirror the student composition in the ECSs. When an ECS draws students from multiple districts, the district comparison is based on the proportion of students attending the ECS from each district (a weighted average).

In the regression analyses, the final sample for ELA and mathematics had 104 and 103 ECSs because nine schools were excluded due to missing covariate data.

Student Information System Data

The analysis related to types of classes and student-level progression in this report comes from the database of the Student Information System (SIS) collected from districts and schools by JFF.[59] All districts, and in some cases schools, were asked to provide extant data for the SIS. As data are provided on a rolling basis, the analyses include all data in the system as of October 31, 2008. In addition, the evaluation team at AIR received additional files from JFF that had not yet been uploaded to the SIS to increase the number of schools that could be included in the analyses.

Transcript Data

The SIS data for transcript analyses were pooled together from school years 2004–05, 2005–06, 2006–07, and 2007–08. Although ECSs had transcript data for 661,430 courses by October 2008, the analyses in this report are based on 72,198 courses for 5,649 students from 38 schools with usable data. The remaining data were excluded for the following reasons:

- 552,654 course records were missing school information, were records from non-ECS schools (schools not participating in the ECHSI), or were records for students that could not be identified with the student information file.

[59] Progression rates also were calculated using school survey data.

- Of the remaining 108,776 records, 19,392 records had missing or unstable information regrading course name, course level (high school/college), and/or course grade.
- Finally, double records were eliminated from the dataset, resulting in 72,198 courses.

The following variables were created for analyses:

- *Course name* — Course names were coded into the following 12 categories: study skills/college orientation, English/reading/writing, arts/humanities, foreign language, health/physical education, history/social science, mathematics, science, technology, business, vocational/career development, and other.
- *Mean course grades (GPA) for high school and college courses by dicsipline* — GPA variable is a combination of two variables, final letter mark and final numeric mark. The final course grades variables have the following values:
  - 4 = A
  - 3 = B
  - 2 = C
  - 1 = D
  - 0 = F
  - W = withdrawn

Progression Rates Data

The progression rates were studied using a sample in which the same students are followed over 3 years. The SIS data available included seven schools for which data existed consistently through years 2004–05 to 2006–07 regarding students who were in the 9th grade in 2004. The total number of students incuded in the analysis was 456 students at baseline (9th-grade students in 2004).

Quantitative Data Analysis

Several statistical methods were used to analyze quantitative data. The methods used for each of the quantitative data sources are presented below.

Analysis of School-Level Data

School survey data were summarized using descriptive statistics to describe the ECSs. In addition to univariate analyses conducted for descriptive purposes, four multivariate techniques were used in modeling school- and student-level outcomes: OLS regression analysis, logistic regression, hierarchical linear modeling (HLM), and multilevel logit modeling. OLS regression and logistic regression analyses were used in analysing school-level dependent variables, whereas hierarchical linear modeling and multilevel logit modeling were used for student-level dependent variables.

Table A.7 shows the independent and dependant variables used in regression-based analyses. The school-level outcomes were analyzed by using either OLS regression or logistic regression. The outcomes of interest, such as progression rates, were predicted by school characteristics, to examine whether school characteristcs are related to these outcomes. Appendix B includes the results tables of these regression analyses. Some independent variables of interest are not relevant for ungraded schools. When analyzing such a dependent variable, this independent variable was not included in the model.

Table A.7. OLS and Logistic Regression Dependent and Independent Variables

Dependent Variables	*Independent Variables (School Level)*
Admissions criteria	Number of years the ECS has been part of the ECHSI
Admission rate	On-campus location
Average daily attendance	4-year IHE partner
Progression rates from 9th to 10th grade	Startup school
	High-minority/high-poverty school
	School without grade levels
	Total enrollment/100

Extant achievement data regarding ELA and mathematics were collected for 113 and 112 ECSs. Because ECSs in the initiative come from multiple states and school districts, the achievement data are not comparable across all schools (the data would be comparable only across schools that use the same tests and the same cutoff points for proficiency). The dependent variables in the achievement analyses are difference scores. For example, on ELA, the variable is:

ELA achievement = % proficient on ELA assessment in ECS – District average % proficient ELA achievement

The independent variables in the school-level regression analyses are a modified from what is described above. Specifically, two new independent variables are included, and the poverty and minority measures are modified. The new measures are the average district ELA and mathematics proficiencies. The poverty and minority measures were created in the same way as the dependent measures — by subtracting the district average poverty and minority values from each ECS's poverty and minority values, respectively. Table A.8 lists the variables and basic descriptive statistics for variables used in the student achievement analyses.

Table A.8. Descriptive Statistics of Variables in Student Achievement Analyses

Variable	N	Mean	SD	Minimum	Maximum
ELA achievement	104	0.07	0.22	–0.56	0.60
Mathematics achievement	103	0.07	0.25	–0.70	0.63
District average ELA proficiency	104	0.67	0.15	0.17	0.91
District average mathematics proficiency	104	0.60	0.16	0.13	0.89
Minority difference*	104	0.06	0.16	–0.29	0.66
Poverty difference*	104	0.04	0.19	–0.35	0.79
Total enrollment	104	257.46	289.76	31	2,500
Number of years the ECS has been part of the ECHSI	104	4.03	1.21	1	6
Startup school	104	0.61	0.49	0	1
On-campus location	104	0.47	0.50	0	1
4-year IHE partner	104	0.35	0.47	0	1

* "Difference" refers to the school data minus the weighted average of the feeder districts' data.

Due to the fact that student achievement is measured at the school level, the relationship between school-level characteristics and the achievement measures is estimated by using OLS regression. The dependent

variable is a continuous achievement measure (the difference between ECSs and districts on ELA or mathematics), and the independent variables are school-level characteristics.

Analysis of Student-Level Data

Table A.9 shows the independent and dependant variables used in regression-based analyses. When both school- and student-level characteristics were examined for their effects on student-level outcomes such as students' academic engagement, HLM models were employed. The primary benefit of HLM is that it explicitly takes into account the nested data structure (i.e., students nested within ECSs) and therefore produces less biased standard errors of estimates, compared with conventional regression analytic techniques. This multilevel analytic technique allowed for examinations of the effects of school-specific characteristics (such as an ECS's age, total enrollment, location, and partner type) on each dependent variable. Student-level weights were used in all the data analyses.

Table A.9. HLM and Multi-Level Logit Regression Dependent and Independent Variables

Dependent Variables	*Independent Variables (Student Level)*
Personalization	Female
Student respect and responsibility	First-generation college-goer
High expectations	First-genaration college-goer, missing
Instructional rigor	FRPL qualify
Instructional relevance	FRPL, missing
Instructor connectedness	Grade 10
How well HS classes prepare for college classes	Grade 11
Instructor support — high school	Grade 12/13
Instructor support — college	Non-English speaking home environment
Students attend tutoring	Late start
Ever enrolled in college class	Minority
Student composition in the class	***Independent Variables (School Level)***
College class is on campus	Number of years the ECS has been part of the ECHSI
Academic engagement — interest	On-campus location
Academic engagement — persistence	4-year IHE partner
Academic self-concept	Startup school
High school GPA	High-minority/high-poverty school
College GPA	School without grade level
Expected number of college credits	Total enrollment/100
College plans	Ungraded school
Student satisfaction	
Received help in taking SAT/ACT	
Received help with college applications	
Took the SAT/ACT test	
Applied to college	

Note: The above scales and variables were created from student and school survey items and are described in more detail in Tables A.5 and A.6. The sample for the HLM analyses consisted of 35 schools in total, all schools targeted in student survey data collection. In this sample, on average, these ECSs had been open 3.2 years, and 20 of them were startup schools. Of the 35 schools, 11 were classified as high-minority/high-poverty schools, two schools were ungraded, and the average enrollment was 245 students. A total of 17 ECSs were located on college campuses, and 11 schools had at least one 4-year IHE partner. The student- and school-level independent variables used in HLM models are listed in the results tables in Appendix B. It should be noted that some of the items in the surveys on which the dependent variables are based were not relevant for students in ungraded ECSs. When such a dependent variable is analyzed, the variable identifying ungraded schools is not included as an independent variable.

Using a two-level HLM model, we performed a separate analysis for each of the student-level dependent variables. We ran two different models: an unconditional model and a full model, including both student- and school-level independent variables. The two models allowed us to see how the variation in the dependent variables was distributed between student- and school-levels and whether the decrease in the amount of variation was significant between the nested models. The results of the HLM analyses on the effects of school- and student-level independent variables on these outcomes are shown in tables in Appendix B. The results are fully discussed in Chapters III and IV.

For the purpose of illustration, we specify a two-level HLM model that examines the effects of school- and student-level characteristics on students' engagement-interest, as follows:

Level-1 Model (Student Level)

$Y_{ij} = \beta_{0j} + \beta_{1j} * (\text{Grade 10}) + \beta_{2j} * (\text{Grade 11}) + \beta_{3j} * (\text{Grade 12/13}) + \beta_{4j} * (\text{Late Start}) + \beta_{5j} * (\text{Female}) + \beta_{6j} * (\text{Minority}) + \beta_{7j} * (\text{Non-English speaking home}) + \beta_{8j} * (\text{First-generation college-goer}) + \beta_{9j} * (\text{First-generation college-goer, missing}) + \beta_{10j} * (\text{FRPL qualify}) + \beta_{11j} * (\text{FRPL, missing}) + r_{ij}$

Level-2 Model (School Level)

$\beta_{0j} = \gamma_{00} + \gamma_{01} * (\text{Total enrollment}) + \gamma_{02} * (\text{ECS "age"}) + \gamma_{03} * (\text{Startup school}) + \gamma_{04} * (\text{High-minority/high-poverty}) + \gamma_{05} * (\text{On-campus location}) + \gamma_{06} * (\text{4-year IHE partner}) + \gamma_{07} * (\text{Ungraded}) + u_{0j}$
$\beta_{1j} = \gamma_{10}$
$\beta_{2j} = \gamma_{20}$
$\beta_{3j} = \gamma_{30}$
$\beta_{4j} = \gamma_{40}$
$\beta_{5j} = \gamma_{50}$
$\beta_{6j} = \gamma_{60}$
$\beta_{7j} = \gamma_{70}$
$\beta_{8j} = \gamma_{80}$
$\beta_{9j} = \gamma_{90}$
$\beta_{10j} = \gamma_{10}$
$\beta_{11j} = \gamma_{11}$

where

- Y_{ij} is the level of engagement-interest of student *i* in school *j*
- β_{0j} is the mean level of engagement-interest in school *j*
- β_{1j}–β_{3j} stand for the differentiating effect of grade level in school *j* (i.e., the degree to which grade-level difference relates to engagement-interest)
- β_{4j} is the difference between students who started at the 9th grade and those who started later in school *j* (i.e., the mean difference between the engagement-interest of students who started at 9th grade and late starters)
- β_{5j} is the difference between genders in school *j* (i.e., the mean difference between the engagment-interest of female and male students)
- B_{6j} is the difference between minority and white students in school *j* (i.e., the mean difference between the engagment-interest of minority and white students)
- B_{7j} is the difference between students who speak languages other than English at home and students who speak English at home in school *j* (i.e., the mean difference between the engagment-interest of "non-English speaking" and "English speaking" students)
- B_{8j} is the difference between first-generation college-going students and non-first-generation college-going students.

- B_{9j} is the difference between students who did not provide first-generation college-going information and those who did in school *j* (i.e., the mean difference between the engagment-interest of students who did not provide first-generation college-going information and those who did)
- B_{10j} is the gap between students who qualify for FRPL and those who do not in school *j* (i.e., the mean difference between the engagment-interest of students who qualified for FRPL and those who did not)
- B_{11j} is the gap between students who did not provide free- or reduced-price lunch status information and those who did in school *j* (i.e., the mean difference between the engagment-interest of students who did not provide free- or reduced-price lunch status information and those who did)
- γ_{00} is the overall mean level of student engagment-interest across all schools
- γ_{01} is the marginal effect of ECS enrollment on student engagment-interest
- γ_{02} is the marginal effect of ECS age on student engagment-interest
- γ_{03} is the marginal effect of being a startup ECS (1) on student engagment-interest, compared with an existing ECS (0)
- γ_{04} is the marginal effect of being a high-minority/high-poverty school (1) on student engagment-interest, compared with an existing ECS (0)
- γ_{05} is the marginal effect of the ECS being located on a high school campus (1) on student engagment-interest, compared with the ECS not being located on a college campus (0)
- γ_{06} is the marginal effect of the ECS partnering with a 4-year IHE (1) on student engagment-interest, compared with the ECS not partnering with a 4-year IHE (0)
- γ_{07} is the marginal effect of the ECS being a school without grade levels (ungraded) (1) on student engagment-interest, compared with an ECS with regular grade levels (0)
- r_{ij} and u_{0j} are random errors at the student and school levels, respectively

Lastly, we used a multilevel logit model to examine student-level dependent variables that are dichotomous variables, hence requiring a logit model. The model specification is the same (i.e., the same set of school- and student-level variables are included in the model), but a different link function and distributional asumptions are used in estimation:

Level-1 Model (Student Level)

$$\text{Prob}(\text{FOUR-YEAR COLLEGE} = 1|\beta) = \varphi$$

$$\text{Log}[\varphi/(1-\varphi)] = \eta$$

$$\eta = \beta_{0j} + \beta_{1j} * (\text{Grade 10}) + \beta_{2j} * (\text{Grade 11}) + \beta_{3j} * (\text{Grade 12/13}) + \beta_{4j} * (\text{Late Start}) + \beta_{5j} * (\text{Female}) + \beta_{6j} * (\text{Minority}) + \beta_{7j} * (\text{Non-English speaking home}) + \beta_{8j} * (\text{First-generation college-goer}) + \beta_{9j} * (\text{First-generation college-goer, missing}) + \beta_{10j} * (\text{FRPL qualify}) + \beta_{11j} * (\text{FRPL, missing}) + r_{ij}$$

Level-2 Model (School Level)

$$\beta_{0j} = \gamma_{00} + \gamma_{01} * (\text{Total enrollment}) + \gamma_{02} * (\text{ECS "age"}) + \gamma_{03} * (\text{Startup school}) + \gamma_{04} * (\text{High-minority/high-poverty}) + \gamma_{05} * (\text{On-campus location}) + \gamma_{06} * (\text{4-year IHE partner}) + \gamma_{07} * (\text{Ungraded}) + u_{0j}$$

Coefficients represent the amount of change in the logit (log odds) of a student's expectation for graduating from a 4-year college per unit change in each of the predictors in the model.

Tables in Appendix B report the results of the multilevel logit models, which are also discussed in Chapters III and IV.

Subgroup means on dependent variables of interest were computed based on HLM results. Using the gender subgroups as an example, we present the weighted unadjusted mean for females and adjusted mean for males that represent the mean for males if they had similar background characteristics as females from the same school. For continuous dependent variables, the adjusted male mean was computed by subtracting the HLM coefficient for "FEMALE" from the unadjusted female mean. For dichotomous dependent variables, the adjusted male mean was computed by first dividing the unadjusted odds for females by the odds ratio associated with "FEMALE" from the HLM analysis and then converting the adjusted male odds to an adjusted proportion.

Analysis of Student Information System Data

Transcript Data

The analyses performed with the SIS data are purely descriptive. Descriptive analyses were conducted with four different "samples" or approaches:

- Analysis that includes the available sample as a whole
- Analysis that includes only the core courses (mathematics, science, English, history)
- Subgroup analyses, including two separate subgroups, namely gender (female vs. male) and minority (nonwhite vs. white)
- Analysis by grade level

Progression Rates

Each 9th-grade student from seven different schools was tracked over 3 academic years. After getting a list of 9th-grade students in 2004–05, the frequencies were run again for these students in the next school year (2005–06) to assess how many progressed to the 10th grade, remained in the 9th grade, jumped to the 11th grade, or left the school/had a missing record. In school year 2006–07, the frequencies were run again for the original 9th-grade cohort to see how many of last year's 10th-grade students progressed to 11th grade, remained in 10th grade, jumped to 12th grade, or left the school/had a missing record. The progression rates also were calculated for two subgroups: gender (female vs. male) and minority (nonwhite vs. white). For example, the progression rate from 9th to 10th grade was calculated by using the following formula:

> Progression rate from 9th to 10th grade = (number of students in 10th grade in 2005–06 / number of students in 9th grade in 2004–05)

In addition to progression rates, we also calculated the percentage of students who had stayed in school (even if not progressing), instead of dropping out or transferring.

Appendix B. Statistical Tables

Table B.1. Effects of ECS and Student Characteristics on Taken a College Class

Measure	Model 1 (Base)				Model 2 (Full)				
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Odds Ratio	Sig.
Student-Level									
Grade 10					1.034	0.371	2.79	2.81	0.006
Grade 11					2.699	0.368	7.34	14.87	0.000
Grade 12/13					3.266	0.331	9.87	26.21	0.000
Late start in ECS					–0.952	0.259	–3.68	0.39	0.000
Female					–0.053	0.182	–0.29	0.95	0.771
Minority					–0.086	0.148	–0.58	0.92	0.562
Non-English home					0.087	0.231	0.38	1.09	0.707
First generation					–0.352	0.160	–2.19	0.70	0.028
First gen — Missing					–0.340	0.359	–0.95	0.71	0.345
FRPL qualify					0.065	0.166	0.37	1.07	0.692
FRPL— Missing					0.094	0.206	0.46	1.10	0.649
School-Level									
Intercept	0.948	0.399	2.37	0.023	1.764	0.337	5.24	5.84	0.000
Years open					–0.150	0.354	–0.42	0.86	0.675
Startup school					0.610	0.666	0.90	1.82	0.375
HMHP					–1.081	0.712	–1.52	0.34	0.141
4-year IHE partner					–1.688	0.827	–2.04	0.18	0.051
On-campus location					1.216	0.923	1.32	3.37	0.199
Ungraded					2.020	1.160	1.74	7.54	0.093
Total enrollment/100					–0.092	0.098	–0.94	0.91	0.357
Degrees of Freedom									
Student level					2,011				
School level	34				27				
Variance Components									
Between students									
Between schools	4.07 (0.000)				4.13 (0.000)				
Percentage school-level									

SE = standard error
Note*: N* of schools = 35; *N* of students (unweighted) = 2,091
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.2. Effects of ECS and Student Characteristics on Having 1st College Class of the Week on College Campus in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)				
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Odds Ratio	Sig.
Student-Level									
Grade 10					1.760	1.027	1.71	5.81	0.087
Grade 11					1.561	0.593	2.63	4.76	0.009
Grade 12/13					2.414	0.970	2.49	11.18	0.013
Late start in ECS					–2.237	0.567	–3.95	0.11	0.000
Female					–0.405	0.243	–1.67	0.67	0.095
Minority					–1.239	0.367	–3.37	0.29	0.001
Non-English home					0.138	0.309	0.45	1.15	0.654
First generation					–0.157	0.306	–0.51	0.85	0.607
First gen — Missing					–1.583	0.393	–4.03	0.21	0.000
FRPL qualify					0.619	0.353	1.76	1.86	0.079
FRPL— Missing					0.173	0.515	0.34	1.19	0.736
School-Level									
Intercept	1.819	0.512	3.55	0.001	2.885	0.480	6.01	17.91	0.000
Years open					–0.142	0.300	–0.47	0.87	0.639
Startup school					–0.326	0.945	–0.35	0.72	0.732
HMHP					–2.422	0.847	–2.86	0.09	0.008
4-year IHE partner					–0.615	1.151	–0.53	0.54	0.597
On-campus location					3.039	1.033	2.94	20.88	0.007
Ungraded									
Total enrollment/100					–0.159	0.218	–0.73	0.85	0.474
Degrees of Freedom									
Student level					1,065				
School level	34				28				
Variance Components									
Between students									
Between schools	6.66 (0.000)				5.20 (0.000)				
Percentage school-level									

SE = standard error
Note*: N* of schools = 35; *N* of students (unweighted) = 1,109
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.3. Effects of ECS and Student Characteristics on College Class Composition in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)			
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Sig.
Student-Level								
Grade 10					–0.487	0.189	–2.58	0.010
Grade 11					–1.304	0.245	–5.32	0.000
Grade 12/13					–1.769	0.418	–4.23	0.000
Late start in ECS					0.335	0.311	1.08	0.282
Female					–0.143	0.076	–1.88	0.060
Minority					–0.038	0.145	–0.26	0.793
Non-English home					0.106	0.121	0.87	0.383
First generation					0.034	0.104	0.33	0.742
First gen — Missing					0.373	0.231	1.62	0.106
FRPL qualify					–0.006	0.127	–0.05	0.962
FRPL— Missing					–0.092	0.130	–0.71	0.477
School-Level								
Intercept	4.212	0.221	19.07	0.000	4.162	0.163	25.55	0.000
Years open					–0.016	0.124	–0.13	0.900
Startup school					–0.065	0.450	–0.15	0.886
HMHP					0.735	0.420	1.75	0.091
4-year IHE partner					0.484	0.433	1.12	0.274
On-campus location					0.013	0.383	0.03	0.973
Ungraded					–2.015	0.442	–4.55	0.000
Total enrollment/100					0.051	0.078	0.66	0.516
Degrees of Freedom								
Student level					1,066			
School level	34				27			
Variance Components								
Between students	2.25				2.01			
Between schools	1.29 (0.000)				0.99 (0.000)			
Percentage school-level	36.6				33.0			

SE = standard error
Note: *N* of schools = 35; *N* of students (unweighted) = 1,112
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.4. Effects of ECS and Student Characteristics on Having an Academic College Class in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)				
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Odds ratio	Sig.
Student-Level									
Grade 10					2.145	0.608	3.53	8.54	0.001
Grade 11					2.509	0.743	3.38	12.30	0.001
Grade 12/13					2.417	0.716	3.38	11.22	0.001
Late start in ECS					–0.407	0.378	–1.08	0.67	0.282
Female					–0.328	0.188	–1.74	0.72	0.082
Minority					–0.499	0.327	–1.52	0.61	0.128
Non-English home					0.015	0.223	0.07	1.02	0.946
First generation					0.057	0.198	0.290	1.06	0.772
First gen — Missing					–0.271	0.283	–0.96	0.76	0.338
FRPL qualify					–0.044	0.249	–0.18	0.96	0.859
FRPL— Missing					–0.489	0.352	–1.39	0.61	0.165
School-Level									
Intercept	0.889	0.245	3.62	0.001	0.999	0.258	3.88	2.71	0.001
Years open					0.041	0.243	0.17	1.04	0.868
Startup school					–0.642	0.658	–0.98	0.53	0.338
HMHP					0.984	0.759	1.30	2.67	0.207
4-year IHE partner					0.036	0.700	0.05	1.03	0.959
On-campus location					–0.853	0.566	–1.51	0.43	0.143
Ungraded					3.658	0.681	5.37	38.78	0.000
Total enrollment/100					0.129	0.170	0.76	1.14	0.455
Degrees of Freedom									
Student level					1,063				
School level	34				27				
Variance Components									
Between students									
Between schools	1.371 (0.000)				1.538 (0.000)				
Percentage school-level									

SE = standard error
Note*: N* of schools = 35; *N* of students (unweighted) = 1,109
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.5. Effects of ECS and Student Characteristics on Respect and Responsibility Scale in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)			
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Sig.
Student-Level								
Grade 10					–0.072	0.037	–1.93	0.053
Grade 11					0.003	0.062	0.04	0.967
Grade 12/13					0.090	0.057	1.57	0.115
Late start in ECS					0.019	0.085	0.23	0.821
Female					–0.071	0.034	–2.12	0.034
Minority					–0.077	0.043	–1.78	0.074
Non-English home					0.086	0.043	2.00	0.045
First generation					–0.004	0.024	–0.18	0.856
First gen — Missing					0.093	0.046	2.01	0.045
FRPL qualify					0.160	0.047	3.39	0.001
FRPL — Missing					0.114	0.062	1.85	0.064
School-Level								
Intercept	3.866	0.058	66.53	0.000	3.954	0.041	97.40	0.000
Years open					–0.028	0.037	–0.76	0.454
Startup school					–0.126	0.089	–1.41	0.170
HMHP					–0.153	0.087	–1.77	0.088
4-year IHE partner					0.057	0.087	0.66	0.518
On-campus location					0.001	0.102	0.01	0.994
Ungraded					0.553	0.095	5.80	0.000
Total enrollment/100					–0.053	0.015	–3.63	0.001
Degrees of Freedom								
Student level					2,017			
School level	34				27			
Variance Components								
Between students	0.328				0.320			
Between schools	0.080 (0.000)				0.053 (0.000)			
Percentage school-level	19.6				14.2			

SE = standard error
Note*: N* of schools = 35; *N* of students (unweighted) = 2,100
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.6. Effects of ECS and Student Characteristics on High Expectations Scale in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)			
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Sig.
Student-Level								
Grade 10					–0.026	0.042	–0.62	0.536
Grade 11					0.021	0.045	0.47	0.640
Grade 12/13					0.082	0.067	1.23	0.221
Late start in ECS					–0.059	0.059	–0.99	0.319
Female					0.011	0.028	0.40	0.692
Minority					–0.093	0.066	–1.43	0.153
Non-English home					0.091	0.033	2.75	0.006
First generation					–0.077	0.030	–2.57	0.011
First gen — Missing					0.013	0.048	0.26	0.796
FRPL qualify					0.065	0.030	2.20	0.027
FRPL — Missing					0.084	0.040	2.12	0.034
School-Level								
Intercept	3.227	0.037	88.22	0.000	3.258	0.032	101.20	0.000
Years open					–0.042	0.025	–1.65	0.110
Startup school					–0.069	0.061	–1.13	0.268
HMHP					–0.141	0.057	–2.45	0.021
4-year IHE partner					–0.013	0.063	–0.20	0.843
On-campus location					–0.105	0.071	–1.48	0.150
Ungraded					0.168	0.081	2.06	0.048
Total enrollment/100					–0.015	0.009	–1.62	0.117
Degrees of Freedom								
Student level					2,015			
School level	34				27			
Variance Components								
Between students	0.307				0.303			
Between schools	0.032 (0.000)				0.026 (0.000)			
Percentage school-level	9.4				7.9			

SE = standard error
Note*: N* of schools = 35; *N* of students (unweighted) = 2,096
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.7. Effects of ECS and Student Characteristics on Instructional Rigor Scale in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)			
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Sig.
Student-Level								
Grade 10					–0.010	0.049	–0.20	0.840
Grade 11					0.070	0.092	0.76	0.450
Grade 12/13					–0.002	0.096	–0.02	0.986
Late start in ECS					–0.071	0.081	–0.88	0.380
Female					0.027	0.040	0.68	0.499
Minority					0.011	0.070	0.16	0.873
Non-English home					0.100	0.045	2.24	0.025
First generation					–0.128	0.047	–2.69	0.008
First gen — Missing					–0.132	0.094	–1.39	0.163
FRPL qualify					0.080	0.065	1.23	0.218
FRPL — Missing					0.005	0.044	0.11	0.911
School-Level								
Intercept	3.727	0.057	65.50	0.000	3.740	0.043	86.31	0.000
Years open					–0.053	0.035	–1.51	0.141
Startup school					0.009	0.088	0.10	0.924
HMHP					–0.050	0.097	–0.51	0.611
4-year IHE partner					–0.149	0.101	–1.47	0.153
On-campus location					0.024	0.098	0.25	0.805
Ungraded					0.192	0.096	2.01	0.055
Total enrollment/100					0.036	0.016	2.24	0.033
Degrees of Freedom								
Student level					2,016			
School level	34				27			
Variance Components								
Between students	0.602				0.588			
Between schools	0.061 (0.000)				0.054 (0.000)			
Percentage school-level	9.2				8.5			

SE = standard error
Note*: N* of schools = 35; *N* of students (unweighted) = 2,097
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.8. Expected College Credit Accumulation in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)			
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Sig.
Student-Level								
Grade 10					–0.081	0.034	–2.37	0.018
Grade 11					–0.252	0.031	–8.07	0.000
Grade 12/13					–0.513	0.069	–7.45	0.000
Late start in ECS					–0.271	0.0749	–3.62	0.001
Female					–0.014	0.034	–0.43	0.667
Minority					0.128	0.048	2.65	0.008
Non-English home					0.045	0.048	0.94	0.347
First generation					–0.095	0.039	–2.45	0.014
First gen — Missing					–0.077	0.053	–1.46	0.144
FRPL qualify					–0.091	0.024	–3.82	0.000
FRPL — Missing					0.038	0.061	0.62	0.536
School-Level								
Intercept	1.516	0.076	19.84	0.000	1.556	0.040	38.74	0.000
Years open					–0.066	0.038	–1.73	0.094
Startup school					0.161	0.079	2.03	0.052
HMHP					–0.143	0.075	–1.91	0.066
4-year IHE partner					–0.187	0.097	–1.93	0.064
On-campus location					0.197	0.089	2.21	0.036
Ungraded					–0.466	0.106	–4.41	0.000
Total enrollment/100					–0.005	0.018	–0.27	0.788
Degrees of Freedom								
Student level					2,007			
School level	34				27			
Variance Components								
Between students	0.432				0.383			
Between schools	0.147 (0.000)				0.055 (0.000)			
Percentage school-level	25.4				12.6			

SE = standard error
Note*: N* of schools = 35; *N* of students (unweighted) = 2,080
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.9. Effects of ECS and Student Characteristics on Instructional Relevance Scale in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)			
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Sig.
Student-Level								
Grade 10					0.003	0.043	0.07	0.942
Grade 11					0.060	0.065	0.92	0.360
Grade 12/13					0.246	0.076	3.25	0.002
Late start in ECS					–0.100	0.043	–2.30	0.022
Female					0.039	0.032	1.23	0.218
Minority					–0.086	0.062	–1.39	0.164
Non-English home					0.104	0.039	2.68	0.008
First generation					–0.060	0.048	–1.27	0.205
First gen — Missing					–0.025	0.082	–0.31	0.758
FRPL qualify					0.043	0.071	0.60	0.548
FRPL — Missing					0.028	0.050	0.56	0.572
School-Level								
Intercept	3.343	0.040	83.10	0.000	3.354	0.034	98.39	0.000
Years open					–0.029	0.030	–0.97	0.343
Startup school					0.015	0.069	0.21	0.832
HMHP					–0.119	0.073	–1.63	0.114
4-year IHE partner					–0.104	0.079	–1.31	0.202
On-campus location					0.041	0.068	0.60	0.553
Ungraded					0.199	0.085	2.36	0.026
Total enrollment/100					0.032	0.014	2.27	0.032
Degrees of Freedom								
Student level					2,017			
School level	34				27			
Variance Components								
Between students	0.512				0.498			
Between schools	0.035 (0.000)				0.032 (0.000)			
Percentage school-level	6.4				6.0			

SE = standard error
Note: *N* of schools = 35; *N* of students (unweighted) = 2,099
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.10. Effects of ECS and Student Characteristics on Instructional Relationships Scale in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)			
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Sig.
Student-Level								
Grade 10					–0.020	0.028	–0.71	0.477
Grade 11					0.037	0.041	0.91	0.364
Grade 12/13					0.080	0.040	1.98	0.047
Late start in ECS					–0.098	0.044	–2.23	0.026
Female					0.171	0.021	80.97	0.000
Minority					–0.090	0.037	–2.42	0.016
Non-English home					0.100	0.042	2.33	0.020
First generation					–0.056	0.025	–2.27	0.023
First gen — Missing					–0.186	0.038	–4.93	0.000
FRPL qualify					0.010	0.036	0.27	0.791
FRPL — Missing					–0.050	0.049	–1.01	0.314
School-Level								
Intercept	3.271	0.036	90.20	0.000	3.300	0.025	130.60	0.000
Years open					–0.025	0.020	–1.25	0.221
Startup school					–0.046	0.053	–0.87	0.395
HMHP					–0.164	0.043	–3.83	0.001
4-year IHE partner					–0.046	0.049	–0.95	0.352
On-campus location					0.060	0.054	1.11	0.279
Ungraded					0.231	0.052	4.48	0.000
Total enrollment/100					0.008	0.006	1.33	0.197
Degrees of Freedom								
Student level					2,014			
School level	34				27			
Variance Components								
Between students	0.288				0.271			
Between schools	0.028 (0.000)				0.013 (0.000)			
Percentage school-level	8.9				4.6			

SE = standard error
Note: *N* of schools = 35; *N* of students (unweighted) = 2,097
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.11. Effects of ECS and Student Characteristics on High School Classes Prepared Me for College in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)				
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Odds ratio	Sig.
Student-Level									
Grade 10					–0.135	0.168	–0.81	0.87	0.421
Grade 11					0.152	0.272	0.56	1.16	0.576
Grade 12/13					0.375	0.260	1.45	1.46	0.149
Late start in ECS					–0.086	0.194	–0.45	0.92	0.656
Female					–0.186	0.116	–1.60	0.83	0.110
Minority					–0.465	0.178	–2.61	0.63	0.009
Non-English home					0.469	0.148	3.16	1.60	0.002
First generation					–0.055	0.112	–0.49	0.95	0.625
First gen — Missing					–0.367	0.283	–1.30	0.69	0.194
FRPL qualify					0.003	0.155	0.02	1.00	0.986
FRPL — Missing					–0.257	0.239	–1.08	0.77	0.282
School-Level									
Intercept	–0.258	0.121	–2.13	0.040	–0.203	0.118	–1.73	0.82	0.095
Years open					–0.176	0.126	–1.41	0.84	0.171
Startup school					–0.479	0.277	–1.73	0.62	0.095
HMHP					0.332	0.277	1.20	1.39	0.240
4-year IHE partner					0.275	0.289	0.95	1.32	0.349
On-campus location					0.113	0.280	0.40	1.12	0.689
Ungraded					0.889	0.267	3.33	2.43	0.003
Total enrollment/100					–0.005	0.062	–0.08	0.99	0.940
Degrees of Freedom									
Student level					1,066				
School level	34				27				
Variance Components									
Between students									
Between schools	0.199 (0.000)				0.262 (0.000)				
Percentage school-level									

SE = standard error
Note: *N* of schools = 35; *N* of students (unweighted) = 1,111
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.12. Effects of ECS and Student Characteristics on Personalization Scale in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)			
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Sig.
Student-Level								
Grade 10					–0.005	0.041	–0.12	0.907
Grade 11					0.160	0.076	2.09	0.036
Grade 12/13					0.262	0.073	3.58	0.001
Late start in ECS					–0.114	0.057	–2.00	0.046
Female					–0.008	0.046	–0.18	0.855
Minority					–0.050	0.061	–0.83	0.409
Non-English home					0.089	0.044	2.02	0.043
First generation					–0.153	0.048	–3.21	0.002
First gen — Missing					–0.178	0.087	–2.04	0.041
FRPL qualify					0.006	0.054	0.11	0.910
FRPL — Missing					–0.000	0.091	–0.01	0.996
School-Level								
Intercept	3.803	0.052	73.33	0.000	3.842	0.042	91.96	0.000
Years open					–0.022	0.035	–0.63	0.536
Startup school					–0.058	0.094	–0.61	0.546
HMHP					–0.246	0.083	–2.95	0.007
4-year IHE partner					–0.062	0.101	–0.61	0.547
On-campus location					–0.107	0.091	–1.18	0.249
Ungraded					0.174	0.097	1.80	0.083
Total enrollment/100					–0.013	0.021	–0.63	0.533
Degrees of Freedom								
Student level					2,018			
School level	34				27			
Variance Components								
Between students	0.576				0.562			
Between schools	0.058 (0.000)				0.049 (0.000)			
Percentage school-level	9.1				8.0			

SE = standard error
Note*: N* of schools = 35; *N* of students (unweighted) = 2,100
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.13. Effects of ECS and Student Characteristics on Perceived Instructor Support in High School in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)			
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Sig.
Student-Level								
Grade 10					–0.017	0.045	–0.38	0.707
Grade 11					–0.010	0.061	–0.17	0.867
Grade 12/13					0.110	0.083	1.31	0.190
Late start in ECS					0.001	0.081	0.01	0.990
Female					0.106	0.036	2.95	0.004
Minority					–0.131	0.039	–3.32	0.001
Non-English home					0.156	0.042	3.69	0.000
First generation					0.039	0.038	1.01	0.313
First gen — Missing					0.006	0.052	0.11	0.916
FRPL qualify					–0.022	0.050	–0.44	0.662
FRPL — Missing					0.097	0.058	1.68	0.093
School-Level								
Intercept	3.215	0.030	105.69	0.000	3.195	0.027	120.41	0.000
Years open					–0.016	0.022	–0.72	0.478
Startup school					0.035	0.061	0.58	0.565
HMHP					–0.053	0.060	–0.88	0.385
4-year IHE partner					0.047	0.068	0.70	0.491
On-campus location					–0.065	0.047	–1.39	0.177
Ungraded								
Total enrollment/100					0.014	0.010	1.41	0.171
Degrees of Freedom								
Student level					1,331			
School level	32				26			
Variance Components								
Between students	0.390				0.378			
Between schools	0.014 (0.000)				0.011 (0.000)			
Percentage school-level	3.5				2.8			

SE = standard error
Note*: N* of schools = 33; *N* of students (unweighted) = 1,340
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.14. Effects of ECS and Student Characteristics on Perceived Instructor Support in College in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)			
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Sig.
Student-Level								
Grade 10					–0.027	0.115	–0.23	0.816
Grade 11					–0.002	0.092	–0.03	0.981
Grade 12/13					0.088	0.108	0.81	0.418
Late start in ECS					0.002	0.054	0.03	0.974
Female					0.059	0.042	1.37	0.170
Minority					–0.115	0.046	–2.49	0.013
Non-English home					0.042	0.059	0.70	0.486
First generation					–0.014	0.035	–0.41	0.685
First gen — Missing					0.038	0.090	0.42	0.675
FRPL qualify					0.071	0.062	1.16	0.249
FRPL — Missing					–0.063	0.079	–0.79	0.428
School-Level								
Intercept	2.995	0.049	59.92	0.000	2.993	0.041	72.95	0.000
Years open					–0.095	0.040	–2.37	0.025
Startup school					0.084	0.127	0.66	0.515
HMHP					0.135	0.118	1.14	0.263
4-year IHE partner					0.111	0.130	0.85	0.401
On-campus location					0.014	0.090	0.16	0.877
Ungraded					0.284	0.133	2.12	0.043
Total enrollment/100					0.036	0.030	1.19	0.245
Degrees of Freedom								
Student level					1,067			
School level	34				27			
Variance Components								
Between students	0.690				0.479			
Between schools	0.199 (0.000)				0.031 (0.000)			
Percentage school-level	22.4				5.9			

SE = standard error
Note: *N* of schools = 35; *N* of students (unweighted) = 1,112
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.15. Effects of ECS and Student Characteristics on Attending Tutoring in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)				
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Odds ratio	Sig.
Student-Level									
Grade 10					–0.021	0.159	–0.13	0.98	0.894
Grade 11					0.032	0.229	0.14	1.03	0.889
Grade 12/13					–0.732	0.351	–2.09	0.48	0.037
Late start in ECS					0.212	0.227	0.94	1.24	0.349
Female					0.060	0.229	0.26	1.06	0.794
Minority					0.426	0.154	2.76	1.53	0.006
Non-English home					0.264	0.166	1.59	1.30	0.112
First generation					–0.221	0.175	–1.26	0.80	0.208
First gen — Missing					0.010	0.306	0.03	1.01	0.975
FRPL qualify					0.504	0.130	3.88	1.66	0.000
FRPL — Missing					0.392	0.193	2.03	1.48	0.042
School-Level									
Intercept	–0.363	0.152	–2.38	0.023	–0.392	0.113	–3.45	0.68	0.002
Years open					0.031	0.105	0.30	1.03	0.767
Startup school					0.143	0.260	0.55	1.15	0.587
HMHP					–0.177	0.247	–0.72	0.84	0.480
4-year IHE partner					0.236	0.321	0.74	1.27	0.469
On-campus location					0.029	0.292	0.10	1.03	0.921
Ungraded					–0.581	0.564	–1.03	0.56	0.312
Total enrollment/100					–0.105	0.045	–2.35	0.90	0.027
Degrees of Freedom									
Student level					1,630				
School level	34				27				
Variance Components									
Between students									
Between schools	0.516 (0.000)				0.421 (0.000)				
Percentage school-level									

SE = standard error
Note: *N* of schools = 35; *N* of students (unweighted) = 1,700
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.16. Effects of ECS and Student Characteristics on Receiving Support for Taking SAT/ACT in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)				
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Odds ratio	Sig.
Student-Level									
Grade 10					0.741	0.317	2.34	2.10	0.020
Grade 11					1.865	0.298	6.26	6.45	0.000
Grade 12/13					2.677	0.354	7.55	14.54	0.000
Late start in ECS					0.324	0.210	1.54	1.38	0.123
Female					–0.058	0.132	–0.44	0.94	0.660
Minority					0.372	0.223	1.66	1.45	0.096
Non-English home					0.185	0.111	1.66	1.20	0.096
First generation					–0.205	0.130	–1.59	0.81	0.113
First gen — Missing					–0.046	0.232	–0.20	0.95	0.843
FRPL qualify					–0.135	0.140	–0.96	0.87	0.336
FRPL — Missing					0.3903	0.157	2.49	1.48	0.013
School-Level									
Intercept	–0.694	0.173	–4.01	0.000	–0.760	0.124	–6.10	0.47	0.000
Years open					0.231	0.112	2.05	1.26	0.050
Startup school					–0.239	0.300	–0.80	0.79	0.432
HMHP					0.021	0.263	0.08	1.02	0.938
4-year IHE partner					0.633	0.271	2.33	1.88	0.027
On-campus location					–0.228	0.291	–0.78	0.80	0.441
Ungraded					0.035	0.431	0.08	1.04	0.936
Total enrollment/100					–0.10	0.062	–1.53	0.91	0.137
Degrees of Freedom									
Student level					1,972				
School level	34				27				
Variance Components									
Between students									
Between schools	0.856 (0.000)				0.566 (0.000)				
Percentage school-level									

SE = standard error
Note*: N* of schools = 35; *N* of students (unweighted) = 2,042
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.17. Effects of ECS and Student Characteristics on Receiving Support for College Applications in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)				
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Odds ratio	Sig.
Student-Level									
Grade 10					0.053	0.205	0.26	1.05	0.797
Grade 11					0.435	0.181	2.40	1.55	0.016
Grade 12/13					1.839	0.273	6.74	6.29	0.000
Late start in ECS					0.013	0.219	0.06	1.01	0.954
Female					0.121	0.173	0.70	1.13	0.485
Minority					0.183	0.234	0.78	1.20	0.433
Non-English home					0.182	0.174	1.05	1.20	0.296
First generation					–0.200	0.199	–1.00	0.82	0.316
First gen — Missing					–0.548	0.287	–1.91	0.58	0.056
FRPL qualify					0.157	0.151	1.04	1.17	0.300
FRPL — Missing					–0.027	0.223	–0.12	0.97	0.903
School-Level									
Intercept	–1.032	0.098	–10.44	0.000	–1.174	0.101	–11.63	0.31	0.000
Years open					0.020	0.090	0.23	1.02	0.822
Startup school					0.321	0.178	1.81	1.38	0.082
HMHP					0.058	0.236	0.25	1.06	0.808
4-year IHE partner					0.072	0.199	0.36	1.08	0.718
On-campus location					–0.275	0.263	–1.05	0.76	0.306
Ungraded					–0.636	0.281	–2.27	0.53	0.032
Total enrollment/100					–0.010	0.031	–0.34	0.99	0.737
Degrees of Freedom									
Student level					1,837				
School level	34				27				
Variance Components									
Between students									
Between schools	0.223 (0.000)				0.246 (0.000)				
Percentage school-level									

SE = standard error
Note*: N* of schools = 35; *N* of students (unweighted) = 1,899
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.18. Effects of ECS and Student Characteristics on Academic Engagement — Interest in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)			
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Sig.
Student-Level								
Grade 10					–0.038	0.060	–0.64	0.522
Grade 11					0.088	0.063	1.39	0.164
Grade 12/13					0.026	0.110	0.24	0.810
Late start in ECS					–0.069	0.075	–0.91	0.361
Female					0.178	0.039	4.62	0.000
Minority					–0.125	0.078	–1.59	0.111
Non-English home					0.138	0.041	3.37	0.001
First generation					–0.149	0.043	–3.46	0.001
First gen — Missing					–0.178	0.083	–2.15	0.032
FRPL qualify					0.121	0.072	1.66	0.096
FRPL — Missing					–0.102	0.067	–1.52	0.128
School-Level								
Intercept	3.462	0.059	59.12	0.000	3.464	0.043	78.89	0.000
Years open					–0.051	0.040	–1.26	0.219
Startup school					–0.023	0.104	–0.23	0.824
HMHP					–0.156	0.105	–1.48	0.150
4-year IHE partner					0.041	0.117	0.35	0.726
On-campus location					0.090	0.099	0.91	0.371
Ungraded					0.134	0.187	0.72	0.479
Total enrollment/100					0.023	0.020	1.15	0.260
Degrees of Freedom								
Student level					2,014			
School level	34				27			
Variance Components								
Between students	0.663				0.640			
Between schools	0.068 (0.000)				0.058 (0.000)			
Percentage school-level	9.3				8.3			

SE = standard error
Note: *N* of schools = 35; *N* of students (unweighted) = 2,097
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.19. Effects of ECS and Student Characteristics on Academic Engagement — Persistence in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)			
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Sig.
Student-Level								
Grade 10					–0.051	0.036	–1.41	0.158
Grade 11					0.060	0.066	0.91	0.362
Grade 12/13					0.041	0.061	0.67	0.503
Late start in ECS					–0.087	0.058	–1.49	0.136
Female					0.187	0.027	6.94	0.000
Minority					–0.076	0.059	–1.30	0.195
Non-English home					0.156	0.054	2.87	0.005
First generation					–0.100	0.039	–2.66	0.008
First gen — Missing					–0.060	0.055	–1.07	0.287
FRPL qualify					0.033	0.036	0.93	0.355
FRPL — Missing					–0.034	0.072	–0.48	0.634
School-Level								
Intercept	3.763	0.038	98.00	0.000	3.780	0.032	115.11	0.000
Years open					–0.031	0.028	–1.11	0.276
Startup school					–0.031	0.076	–0.41	0.689
HMHP					–0.116	0.060	–1.94	0.063
4-year IHE partner					0.002	0.084	0.03	0.978
On-campus location					0.051	0.071	0.73	0.474
Ungraded					0.337	0.108	3.13	0.005
Total enrollment/100					0.014	0.016	0.88	0.386
Degrees of Freedom								
Student level					2,018			
School level	34				27			
Variance Components								
Between students	0.429				0.414			
Between schools	0.031 (0.000)				0.027 (0.000)			
Percentage school-level	6.7				6.1			

SE = standard error
Note*: N* of schools = 35; *N* of students (unweighted) = 2,100
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.20. Effects of ECS and Student Characteristics on Academic Self-Concept in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)			
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Sig.
Student-Level								
Grade 10					–0.023	0.021	–1.08	0.281
Grade 11					0.008	0.035	0.23	0.822
Grade 12/13					0.079	0.040	1.99	0.046
Late start in ECS					–0.045	0.043	–1.05	0.294
Female					0.026	0.029	0.92	0.358
Minority					–0.031	0.032	–0.98	0.326
Non-English home					–0.037	0.045	–0.81	0.418
First generation					–0.059	0.021	–2.81	0.005
First gen — Missing					–0.150	0.055	–2.74	0.007
FRPL qualify					0.054	0.024	2.19	0.029
FRPL — Missing					–0.032	0.044	–0.74	0.461
School-Level								
Intercept	3.119	0.023	137.38	0.000	3.132	0.018	170.51	0.000
Years open					–0.008	0.017	–0.50	0.618
Startup school					–0.023	0.043	–0.53	0.603
HMHP					–0.059	0.042	–1.39	0.175
4-year IHE partner					0.018	0.044	0.41	0.688
On-campus location					0.017	0.041	0.40	0.689
Ungraded					0.226	0.099	2.29	0.030
Total enrollment/100					0.009	0.008	1.11	0.276
Degrees of Freedom								
Student level					2,017			
School level	34				27			
Variance Components								
Between students	0.225				0.216			
Between schools	0.008 (0.000)				0.007 (0.000)			
Percentage school-level	3.4				3.2			

SE = standard error
Note: *N* of schools = 35; *N* of students (unweighted) = 2,100
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.21. Effects of ECS and Student Characteristics on High School GPA Estimate in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)			
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Sig.
Student-Level								
Grade 10					–0.093	0.049	–1.91	0.056
Grade 11					0.016	0.046	0.35	0.727
Grade 12/13					0.128	0.074	1.74	0.082
Late start in ECS					–0.052	0.059	–0.87	0.384
Female					0.106	0.037	2.87	0.005
Minority					–0.182	0.045	–4.07	0.000
Non-English home					0.156	0.044	3.52	0.001
First generation					–0.137	0.036	–3.87	0.000
First gen — Missing					–0.189	0.059	–3.22	0.002
FRPL qualify					–0.095	0.031	–3.10	0.002
FRPL — Missing					–0.074	0.082	–0.91	0.365
School-Level								
Intercept	3.014	0.053	57.30	0.000	2.988	0.041	73.14	0.000
Years open					0.059	0.031	1.88	0.072
Startup school					0.121	0.088	1.38	0.178
HMHP					–0.300	0.070	–4.28	0.000
4-year IHE partner					–0.044	0.071	–0.62	0.54
On-campus location					–0.114	0.078	–1.47	0.155
Ungraded								
Total enrollment/100					0.028	0.016	1.75	0.092
Degrees of Freedom								
Student level					1,828			
School level	32				26			
Variance Components								
Between students	0.434				0.417			
Between schools	0.076 (0.000)				0.042 (0.000)			
Percentage school-level	14.7				9.2			

SE = standard error
Note*: N* of schools = 33; *N* of students (unweighted) = 1,900
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.22. Effects of ECS and Student Characteristics on College GPA Estimate in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)			
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Sig.
Student-Level								
Grade 10					–0.083	0.055	–1.50	0.133
Grade 11					–0.226	0.089	–2.52	0.012
Grade 12/13					–0.108	0.131	–0.83	0.409
Late start in ECS					–0.018	0.082	–0.22	0.826
Female					0.065	0.041	1.59	0.111
Minority					–0.101	0.052	–1.93	0.054
Non-English home					0.062	0.038	1.65	0.099
First generation					–0.195	0.076	–2.55	0.011
First gen — Missing					–0.362	0.094	–3.86	0.000
FRPL qualify					–0.074	0.055	–1.35	0.177
FRPL — Missing					–0.001	0.068	–0.01	0.991
School-Level								
Intercept	3.045	0.070	43.61	0.000	3.066	0.037	83.02	0.000
Years open					0.012	0.034	0.37	0.718
Startup school					0.057	0.082	0.70	0.491
HMHP					–0.353	0.065	–5.41	0.000
4-year IHE partner					0.091	0.087	1.04	0.307
On-campus location					0.091	0.082	1.12	0.274
Ungraded					0.024	0.213	0.11	0.912
Total enrollment/100					0.002	0.016	0.15	0.882
Degrees of Freedom								
Student level					1,253			
School level	34				27			
Variance Components								
Between students	0.517				0.496			
Between schools	0.075 (0.000)				0.031 (0.000)			
Percentage school-level	12.7				5.9			

SE = standard error
Note: *N* of schools = 35; *N* of students (unweighted) = 1,308
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.23. Effects of ECS and Student Characteristics on ECS Satisfaction in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)			
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Sig.
Student-Level								
Grade 10					0.001	0.045	0.03	0.974
Grade 11					0.124	0.066	1.88	0.060
Grade 12/13					0.189	0.055	3.43	0.001
Late start in ECS					–0.196	0.072	–2.70	0.007
Female					0.014	0.041	0.33	0.742
Minority					–0.045	0.082	–0.55	0.583
Non-English home					0.046	0.040	1.13	0.261
First generation					–0.025	0.036	–0.70	0.487
First gen — Missing					–0.075	0.062	–1.20	0.230
FRPL qualify					0.091	0.039	2.32	0.020
FRPL — Missing					0.007	0.051	0.14	0.888
School-Level								
Intercept	3.153	0.041	76.04	0.000	3.196	0.033	95.49	0.000
Years open					0.004	0.028	0.16	0.875
Startup school					–0.005	0.071	–0.07	0.948
HMHP					–0.209	0.067	–3.10	0.005
4-year IHE partner					–0.154	0.062	–2.47	0.020
On-campus location					0.034	0.072	0.47	0.641
Ungraded					0.336	0.153	2.19	0.037
Total enrollment/100					–0.000	0.010	–0.00	0.998
Degrees of Freedom								
Student level					2,012			
School level	34				27			
Variance Components								
Between students	0.401				0.394			
Between schools	0.049 (0.000)				0.031 (0.000)			
Percentage school-level	10.9				7.3			

SE = standard error
Note*: N* of schools = 35; *N* of students (unweighted) = 2,083
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.24. Effects of ECS and Student Characteristics on College Plans in 2007–08

	Model 1 (Base)				Model 2 (Full)				
Measure	**Coefficient**	**SE**	**t-stat**	**Sig.**	**Coefficient**	**SE**	**t-stat**	**Odds ratio**	**Sig.**
Student-Level									
Grade 10					0.202	0.189	1.07	1.22	0.286
Grade 11					0.313	0.346	0.90	1.37	0.367
Grade 12/13					0.259	0.254	1.02	1.30	0.309
Late start in ECS					0.067	0.214	0.31	1.07	0.753
Female					0.438	0.215	2.04	1.55	0.041
Minority					0.147	0.160	0.91	1.16	0.361
Non-English home					–0.091	0.202	–0.45	0.91	0.653
First generation					–0.604	0.150	–4.04	0.55	0.000
First gen — Missing					–0.825	0.330	–2.50	0.44	0.013
FRPL qualify					–0.456	0.206	–2.21	0.63	0.027
FRPL — Missing					–0.742	0.186	–3.98	0.48	0.000
School-Level									
Intercept	1.214	0.122	9.93	0.000	1.245	0.107	11.68	3.48	0.000
Years open					0.048	0.088	0.55	1.05	0.584
Startup school					0.321	0.213	1.51	1.38	0.143
HMHP					–0.300	0.242	–1.24	0.74	0.226
4-year IHE partner					–0.539	0.274	–1.97	0.58	0.059
On-campus location					0.078	0.253	0.31	1.08	0.759
Ungraded					0.209	0.795	0.26	1.23	0.794
Total enrollment/100					0.150	0.057	2.62	1.16	0.015
Degrees of Freedom									
Student level					2,003				
School level	34				27				
Variance Components									
Between students									
Between schools	0.304 (0.000)				0.272 (0.000)				
Percentage school-level									

SE = standard error
Note*: N* of schools = 35; *N* of students (unweighted) = 2,077
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.25. Effects of ECS and Student Characteristics on Taking ACT or SAT Test in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)				
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Odds ratio.	Sig.
Student-Level									
Grade 10					0.685	0.293	2.33	1.98	0.020
Grade 11					1.754	0.429	4.08	5.78	0.000
Grade 12/13					3.609	0.481	7.50	36.94	0.000
Late start in ECS					0.054	0.148	0.37	1.06	0.713
Female					–0.060	0.082	–0.74	0.94	0.463
Minority					0.502	0.326	1.54	1.65	0.124
Non-English home					0.217	0.129	1.68	1.24	0.092
First generation					–0.167	0.120	–1.39	0.85	0.166
First gen — Missing					–0.044	0.263	–0.17	0.96	0.867
FRPL qualify					–0.196	0.140	–1.40	0.82	0.162
FRPL — Missing					0.303	0.215	1.41	1.35	0.159
School-Level									
Intercept	–0.822	0.172	–4.76	0.000	–0.818	0.132	–6.20	0.44	0.000
Years open					0.213	0.117	1.82	1.23	0.080
Startup school					–0.092	0.323	–0.29	0.91	0.777
HMHP					0.007	0.313	0.02	1.01	0.982
4-year IHE partner					0.750	0.323	2.32	2.12	0.028
On-campus location					0.082	0.321	0.26	1.09	0.801
Ungraded					0.495	0.499	0.99	1.64	0.331
Total enrollment/100					–0.131	0.055	–2.39	0.88	0.024
Degrees of Freedom									
Student level					1,994				
School level	34				27				
Variance Components									
Between students									
Between schools	0.837 (0.000)				0.645 (0.000)				
Percentage school-level									

SE = standard error
Note: *N* of schools = 35; *N* of students (unweighted) = 2,067
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.26. Effects of ECS and Student Characteristics on Applying to College in 2007–08

Measure	Model 1 (Base)				Model 2 (Full)				
	Coefficient	SE	t-stat	Sig.	Coefficient	SE	t-stat	Odds ratio	Sig.
Student-Level									
Grade 10					0.092	0.200	0.46	1.10	0.644
Grade 11					0.262	0.278	0.94	1.30	0.347
Grade 12/13					2.238	0.330	6.78	9.37	0.000
Late start in ECS					–0.221	0.259	–0.85	0.80	0.395
Female					–0.132	0.201	–0.66	0.88	0.509
Minority					0.502	0.386	1.30	1.65	0.194
Non-English home					–0.096	0.177	–0.54	0.91	0.590
First generation					–0.206	0.204	–1.01	0.81	0.312
First gen — Missing					–0.402	0.185	–2.17	0.67	0.030
FRPL qualify					–0.079	0.140	–0.57	0.92	0.569
FRPL — Missing					–0.091	0.203	–0.45	0.91	0.652
School-Level									
Intercept	–1.239	0.100	–12.39	0.000	–1.275	0.112	–11.41	0.28	0.000
Years open					–0.081	0.094	–0.85	0.92	0.401
Startup school					0.167	0.188	0.89	1.18	0.384
HMHP					0.040	0.266	0.15	1.04	0.883
4-year IHE partner					0.044	0.262	0.17	1.04	0.870
On-campus location					0.019	0.275	0.07	1.02	0.945
Ungraded					–0.328	0.546	–0.60	0.72	0.553
Total enrollment/100					–0.045	0.044	–1.02	0.96	0.319
Degrees of Freedom									
Student level					1,994				
School level	34				27				
Variance Components									
Between students									
Between schools	0.214 (0.000)				0.320 (0.000)				
Percentage school-level									

SE = standard error
Note: *N* of schools = 35; *N* of students (unweighted) = 2,067
Source: 2007–08 ECHSI student survey; 2007–08 ECHSI school survey

Table B.27. Results of Regression Analyses Examining the Relationships Between School Characteristics and Average Daily Attendance in 2007–08

Independent Variable	Average Daily Attendance		
	Coefficient	SE	Sig.
Intercept	90.963	3.399	0.000
Total enrollment	0.013	0.008	0.106
Number of years the ECS has been part of the ECHSI	–0.836	0.862	0.335
New school (not a conversion)	–1.161	2.154	0.592
HMHP	0.594	2.280	0.795
On-campus location	5.193	2.089	0.015
4-year IHE partner	2.922	2.121	0.172
School without grade levels	–7.503	5.299	0.161
Adjusted R^2	0.05		

SE = standard error
Note: *N* of schools = 90
Source: 2007–08 ECHSI school survey

Table B.28. Results of Regression Analyses Examining the Relationships Between School Characteristics and Admission Rates and Admissions Criteria in 2007–08

Independent Variable	Dependent Variable						
	Admission Rates			Admissions Criteria			
	Coefficient	SE	Sig.	Coefficient	SE	Odds ratio	Sig.
Intercept	0.786	0.078	0.000	1.789	0.706	0.67	0.011
Total enrollment/100	–0.017	0.016	0.283	–0.399	0.164	1.11	0.015
Number of years the ECS has been part of the ECHSI	–0.015	0.020	0.459	0.102	0.177	0.55	0.565
Startup school	–0.014	0.051	0.791	–0.593	0.488	0.50	0.225
HMHP	0.035	0.057	0.547	–0.700	0.484	3.77	0.148
On-campus location	–0.088	0.055	0.111	1.328	0.514	0.89	0.010
4-year IHE partner	–0.039	0.052	0.451	–0.120	0.462	0.67	0.795
School without grade structure	–0.058	0.097	0.553				
Adjusted R^2/Chi-square	0.00			27.71 (0.000)			

SE = standard error
Note: *N* of schools: Admission Rates = 14; Admissions Criteria = 145
Source: 2007–08 ECHSI school survey

Table B.29. Results of Regression Analyses Examining the Relationships Between School Characteristics and Progression Rates in 2007–08

Independent Variable	Dependent Variable		
	Progression from 9th to 10th		
	Coefficient	SE	Sig.
Intercept	0.778	0.043	0.000
Total enrollment/100	0.004	0.009	0.678
Startup school	0.030	0.033	0.372
HMHP	–0.040	0.035	0.259
On-campus location	0.071	0.034	0.042
4-year IHE partner	0.053	0.034	0.127
Adjusted R^2	0.09		

SE = standard error
Note: *N* of schools = 92
Source: 2007–08 ECHSI school survey

Table B.30. Results of Regression Analyses Examining the Relationships Between School Characteristics and Student Achievement in 2007–08

Independent Variable	Dependent Variable					
	ELA Achievement			Mathematics Achievement		
	Coefficient	SE	Sig.	Coefficient	SE	Sig.
Intercept	0.222	0.119	0.066	0.215	0.122	0.080
Minority difference*	–0.126	0.146	0.392	–0.248	0.171	0.151
FRPL qualify difference*	–0.282	0.120	0.021	–0.182	0.132	0.171
District average ELA/mathematics proficiency	–0.351	0.132	0.009	–0.515	0.143	0.001
Total enrollment/100	0.018	0.012	0.126	0.020	0.013	0.126
Number of years the ECS has been part of the ECHSI	–0.006	0.017	0.724	0.000	0.020	0.992
Startup school	0.041	0.042	0.334	0.085	0.047	0.073
On-campus location	0.153	0.044	0.001	0.179	0.049	0.000
4-year IHE partner	–0.044	0.043	0.306	–0.002	0.050	0.968
Adjusted R^2	0.25			0.27		

SE = standard error
Note: *N* of schools: ELA Achievement = 104; Mathematics Achievement = 103
Source: 2007–08 ECHSI district extant achievement data

Table B.31. Correlations for the New 3R's Scales With Intermediary Student Outcomes Scales in 2007–08

	Academic Engagement–Interest	Academic Engagement–Persistence	Academic Self-Concept
Instructional Rigor	0.57 *n* = 2092	0.48 *n* = 2097	0.43 *n* = 2095
Relationships	0.37 *n* = 2092	0.49 *n* = 2095	0.39 *n* = 2095
Instructional Relevance	0.48 *n* = 2094	0.42 *n* = 2098	0.40 *n* = 2097

Source: 2007–08 ECHSI student survey

Appendix C. State and Federal Policy Environment for the ECHSI

Introduction

Because Early College Schools (ECSs) aim to enable students who are traditionally underrepresented in college to earn up to 2 years of college credits while in high school, they rely on a supportive state and federal policy environment in areas such as college course eligibility, affordability, and credit accumulation and transfer. Although many of the policies that enable high school students to take college courses must be enacted at the state level, the federal government has recently introduced legislation to support these opportunities. This appendix outlines the key state policies that are critical to the success of the ECSs, focusing on 12 states or localities: Alabama, California, Washington, D.C., Georgia, Michigan, New York, North Carolina, Ohio, South Carolina, Texas, Utah, and Washington. The primary sources of data are state legislation, publicly available documents,[60] and interviews with state-level representatives, intermediaries, and school administrators.[61] This appendix also includes information on federal policies that have recently been introduced that have the potential to affect ECSs nationwide.

State Policies Critical to ECS Success

With more states across the nation implementing ECSs, it is becoming more apparent which policies are important to the successful operation of these schools. All states in which ECSs are located must first and foremost allow high school students to take college courses. How that happens, however, is determined by the policies states adopt in other critical areas. Publications from Jobs for the Future (JFF) and the American Institutes for Research/SRI International (AIR/SRI) that are related to the Early College High School Initiative (ECHSI) (see, for example*, Integrating Grades 9 Through 14: State Policies to Support and Sustain Early College High Schools* and *Smoothing the Path: Changing State Policies to Support Early College High School — Case Studies from Georgia, Ohio, Texas, and Utah*) have identified policy areas that are particularly critical to implementing ECSs, including:

- Student eligibility
- Funding
- Teacher certification
- Course alignment
- Graduation requirements
- Articulation and credit transfer
- Autonomy
- Longitudinal data systems

[60] The Education Commission of the States Web site provides dual-enrollment information for the 50 states and the District of Columbia: http://mb2.ecs.org/reports/Report.aspx?id=950.

[61] This policy discussion builds upon the policy review conducted in summer 2007, which included a review of publicly available documents in the 12 states/localities that had an ECS or intermediary in the 2006–07 evaluation sample and interviews with state-level representatives in the five focus areas for the foundation's work: California, New York, North Carolina, Ohio, and Texas. Because it takes time for substantive changes in legislation to occur, we did not expect much change in policy from the 2006–07 to 2007–08 evaluation years. Thus, in 2007–08 we again reviewed publicly available documents and policies to determine whether there were any updates to dual-enrollment or early college policies, but did not conduct follow-up interviews.

This section identifies the range of policies the 12 states have adopted in these areas, providing specific examples of impacts on the ECSs where appropriate. It is important to note that these policies do not necessarily apply to ECSs exclusively; rather, the policies most often refer to dual-enrollment courses generally (i.e., courses for which high school students are simultaneously enrolled in high school and college).

Student Eligibility

With the goal of having students earn up to 2 years of college credits while in high school, it is important that ECS students be able to start taking college courses as early in their high school careers as possible. State eligibility guidelines (e.g., age, grade level, academic proficiency) for dual-enrollment courses range from being very permissive to very restrictive. Restrictive policies can severely limit the number of college courses students can take, and often the students who are most affected are the very ones whom the ECHSI seeks to serve.

States vary on the types of guidelines they have for high school student enrollment in college courses. Below are some examples of policies in our sample sites, which illustrate the breadth of the types of guidelines:

No eligibility requirements. New York has no statewide eligibility requirements; the state gives individual colleges and high schools the discretion to determine eligibility.

Age requirements. Eligibility is based on age in Georgia and Washington, with both states excluding 9th-grade students from participating. In Georgia, students must be in 11th or 12th grade to be eligible for the ACCEL[62] grant program and all associated funding.[63] Washington's Running Start and College in the High School Programs are for students in 11th and 12th grades, although school districts and colleges have some latitude to establish standards for admission.[64]

Age requirements, but with exceptions. While dual enrollment in Utah typically involves students in 11th or 12th grade, younger students can take courses with approval from the high school and the college.[65]

Age requirements plus grade point average (GPA) requirements and recommendations. In Alabama, students must be in 10th, 11th, or 12th grade, have a "B" average in completed high school courses, and have written approval of the principal or superintendent to enroll in college courses. Students who do not have a "B" average can become eligible by demonstrating competency on approved assessments.[66]

[62] The ACCEL grant program allows 11th- and 12th-grade students in Georgia accredited public or private schools to enroll in dual-credit college courses at approved Georgia colleges. If the courses are on the approved course list and are taken at a public college, the program pays for tuition and fees and provides a textbook allowance. For students who take courses at private colleges, the program pays $125 per semester hour, or $84 per quarter hour. The students must cover all other expenses, including transportation and tuition.

[63] Students can begin college classes earlier than 11th grade, but they must find funding from other sources.

[64] For Georgia, see *Implementation Guide for Dual Enrollment* (November 2005), prepared by the Georgia Department of Education; for Washington, see Revised Code of WA (RCW) 28A.600 and Senate Bill (SB) 6846 (1999–00).

[65] See http://www.schools.UT.gov/curr/Early_College/documents/CE_Student%20FAQ.pdf.

[66] See Alabama Department of Education Supp. No. 98-4, 290-3-1-.02(c)2, 290-3-1-.02(10)(a)3.

Age requirements plus passing scores on college entrance exams. In Michigan, school districts must support dual enrollment for students in 11th and 12th grades if they have achieved a qualifying score in all subjects on the state's high school test (the Michigan Merit Examination), the ACT, the ACT PLAN, or the College Board PSAT readiness assessment.[67]

GPA requirements. Ohio allows students in high school grades to enroll in college courses, but maintains that students must have a 3.0 GPA in the subject they wish to pursue at the college.[68] Similarly, South Carolina places academic restrictions on students that require them to have a 3.0 GPA and a principal recommendation.[69]

In addition to individual student requirements, some states restrict the type of college courses in which students can enroll. For example, California policy mandates that dually enrolled students may not account for more than 10 percent of a college physical education course or for more than 5 percent of a summer school course. In North Carolina, students cannot take developmental courses for college credit. A North Carolina state policy-maker discussed the purpose of the requirements as a way to put the onus on the high schools to prepare their students for college courses. North Carolina recently passed legislation that gives ECSs that follow the Gateway to College (GtC) model, which focuses on dropout recovery and relies on developmental courses, permission to use and receive state funding for developmental college courses. However, according to a GtC representative, the allocation is based on a declining formula, which is detrimental to schools that increase in size from year to year.

Within the ECHSI context, restrictions on course eligibility have negatively affected the number of college courses students can take. An intermediary representative reported that the requirements in Alabama (based on age, GPA, and recommendation) deterred the progress of students at an ECS in that state. These students planned to address the state legislature about these issues. The California and North Carolina intermediaries successfully lobbied for waivers to some of the restrictions in their states. In North Carolina, ECSs received a waiver to allow students to take college courses beginning in 9th grade. California ECSs were granted an exemption from the 5 percent enrollment cap for certain types of summer courses: (a) lower division, for-credit, college-level courses from the Intersegmental General Education Transfer Curriculum, which can satisfy general education requirements at both the University of California and California State University systems, or (b) certain for-credit, college-level career and technical education courses that are part of a sequence leading to a degree or certificate in that subject area.[70] The ECHSI also led to changes in Texas policies. ECS students there are now permitted to take college courses as early as 9th grade.

Several states are discussing or have included virtual ECSs as a way to attract more students from rural and other underrepresented areas. Such ECSs allow students in those areas to connect to dual-enrollment courses at state colleges through the Internet. In our sample, virtual ECSs have already been established in North Carolina and are the subject of conversations in Ohio. Similarly, in a Michigan Department of Education memorandum (2006) outlining its comprehensive plan for expanding college credit opportunities for high school students, the department recommended that the state offer online college credit courses.[71]

[67] See Michigan State Legislature's Postsecondary Enrollment Options Act (1996 PA 160) and Career and Technical Preparation Act (2000 PA 258).
[68] Amended Substitute House Bill 215 of the Ohio General Assembly expanded dual enrollment to grades 9–12; Rule 2201-44-03 (H) restricted eligibility by GPA.
[69] See http://www.che.sc.gov/AcademicAffairs/DualEnrollment.pdf.
[70] See California Assembly Bill 967, 2005.
[71] See http://www.michigan.gov/documents/Item_I_161048_7.pdf.

Funding

State policies that provide per-pupil average daily attendance (ADA) funding, average daily membership (ADM) funding, or full-time equivalency (FTE) funds for both the school district and the college reward all parties involved in providing dual-enrollment courses. States that only allow one entity to receive funding, or that decrease the amount of funding by a proportional formula, may have a harder time encouraging both K–12 and higher education partners to participate. In many states, 2-year colleges can receive FTE funds, but 4-year colleges cannot (Hoffman & Vargas, 2005). In addition, the added costs (e.g., textbooks and college tuition) for high school students taking college courses can be prohibitive if the state does not cover them. Several states provide scholarships or grants to offset these costs.

Funding policies vary across the states. In North Carolina, South Carolina, and Texas, the state provides per-pupil funding to both the K–12 and higher education sectors. In California and Utah, districts receive a proportional amount of funding. California students must be enrolled in high school classes for at least 240 minutes per day for the district to receive full funding. The district receives three-quarters funding if a student is enrolled for at least 180 minutes per day. According to a representative from the Foundation for California Community Colleges (FCCC), districts are requiring students to be in the high school for 240 minutes each day, even those who take additional college classes as they move through the grades, resulting in those students being in school for more hours each day. FCCC is working with the California Department of Education (CDE) to try to change the policy or to get a waiver for ECSs such that the districts would receive full ADA funding for students who are enrolled for 180 minutes per day. In Utah, the state uses a prorated formula to appropriate funds to districts for dual-enrollment courses. Districts receive funding based on the number of successfully completed semester hours in the district in the previous year, compared with the state total of completed semester hours.[72] The district and institution of higher education (IHE) negotiate how that funding will be shared,[73] and typically two-thirds of the funds go to the institution that physically hosts the course and one-third goes to the partner (Walthers & Robinson, 2006).

Other states' policies, e.g., in Ohio[74] and Washington, require the state funding to follow the student (Hoffman & Vargas, 2005). In other words, only the high school receives state funds while the student is taking high school courses, and only the college receives state funds while the student is taking college courses. Thus, the high school loses some state funds that it would normally receive if the student did not participate in college courses. States may choose this funding strategy as a way to avoid "double dipping," or paying twice for the same student.

Often the per-pupil funding is not enough to cover the costs of tuition and textbooks. The states included in this evaluation offer a range of (often complicated) scenarios for covering tuition. Only three states explicitly assume the cost of tuition for dually enrolled students (see Table C.1 for the states' policies about who covers students' tuition). In four states or localities, the district pays students' tuition costs; in 2007–08, a representative from the National Council of La Raza reported that the District of Columbia passed a provision for tuition after the intermediary, an ECS, and the ECS's IHE partner lobbied for the funding.[75] In cases where colleges have the choice to waive tuition, it may be easier for 2-year colleges

[72] See Utah Administrative Code R277-713-9.

[73] See Utah State Board of Regents Policy R165-11.

[74] This funding policy applies to the Post-Secondary Enrollment Options program (Ohio Revised Code, Title XXXIII, Chapter 3365). In early 2008, Ohio piloted the Seniors to Sophomores program, a model that allows eligible high school seniors to take college-level courses that will be transferable to public colleges and universities in the University System of Ohio. Through this grants program, participating public high schools receive up to $100,000 to support students in taking college courses while in high school. See http://governor.ohio.gov/Default.aspx?tabid=594.

[75] We were unable to find supporting documentation for this policy.

than 4-year colleges to do so. In addition to using state funds, in some states 2-year colleges can draw funding from their local tax base, and they have more freedom in how their money is spent. Four-year colleges do not typically have this flexibility. Instead, they must rely on other funding sources (e.g., scholarship funds in North Carolina schools). For example, in Texas one 2-year IHE partner waived tuition and fees completely for ECS students, while a 4-year IHE partnered with another ECS was not able to waive all of the tuition and instead charged the ECS $50 per credit hour. As a result, the ECS that was partnered with the 4-year IHE did not have the funding for additional supports, such as extra staff, that ECSs with waived tuition had.

Table C.1. State Tuition Policies: Who Covers Tuition

State	State Assumes Cost	College Choice to Waive	District Pays	Student Pays
Alabama				✓
California		✓		
D.C.			✓	
Georgia	✓			
Michigan			✓	
North Carolina	✓			
New York				✓
Ohio			✓	✓
South Carolina				✓
Texas		✓		
Utah	✓			
Washington			✓	

Note: Georgia provides funding through a grant program for students and courses meeting specific criteria. Students who are not part of this program must pay the tuition themselves. In Ohio, students participating in the Post-Secondary Enrollment Options program either pay the tuition themselves (if they take courses outside of the regular school day), or the school pays for their tuition through a reduction in their basic aid payment. With the recently adopted Seniors to Sophomores program, tuition is negotiated between the school district and the college. In Washington, districts must reimburse colleges based on a formula; the college may have to pick up some costs if the costs exceed the district reimbursement rates.

Very few states cover the cost of college textbooks. At most, states will pay for textbooks on the state adoption list for grades K–12, and college texts are rarely included. Only Georgia, Ohio, and Utah provide grants or scholarships that will cover textbook costs.[76] Texas, where the local districts are typically responsible for funding textbooks,[77] passed legislation that provides a High School Allotment of $275 per student to each district that can be used to cover college textbooks (among several possible uses).[78] In Michigan, districts are required to pay for students' textbooks. However, in a Michigan Department of Education memorandum (2006) outlining its comprehensive plan for expanding college credit opportunities for high school students, the department recommended that the state provide new funds for textbooks and other fees for students (including transportation and exam fees) based on a sliding scale (in other words, students with the most financial need would receive the most funding).[79] Students

[76] These programs include the ACCEL grant program in Georgia, the Post-Secondary Enrollment Options program in Ohio, and the New Century Scholarship Program in Utah.

[77] The Texas Administrative Code (19 TAC § 102.1091) mandates that districts or charters in which ECS students are enrolled are required to pay for the tuition, fees, and textbooks related to an ECS course that is counted toward high school graduation credit, unless they are waived by the IHE.

[78] See Texas House Bill 1, 2006.

[79] See http://www.michigan.gov/documents/Item_I_161048_7.pdf.

would have to apply for the funding. In all other states, students must pay for textbooks unless the school or district has found a way to cover those costs. In cases where textbooks are not funded by the state, intermediaries and ECSs have convinced some IHE partners to keep the same textbooks for several years. A Texas intermediary also hopes to modify college scholarship opportunities so that ECS students can be eligible for them and use that funding to cover textbooks and other expenses.

The state funding policies for dual-enrollment courses discussed above are not specific to ECSs. However, in at least three states, including North Carolina, Ohio, and Utah, the state budget now includes a line item specifically for ECSs. These funds can help pay for the startup of an ECS or other costs associated with students who are taking college courses. Michigan's comprehensive plan also recommended that the state provide startup funds for early and middle colleges.

As the number of students taking dual-enrollment courses increases, lack of available funding becomes a greater issue. The uncertainty about financial sustainability is an impetus for conversation at the state level, and many states and intermediaries are looking for alternative ways to fund ECSs. Due to the higher costs of college courses taken on the college campuses, several states discussed programs in which ECS students take the majority or all of their college courses at the ECS. For example, the Ohio Department of Education's Ohio Return on Investment study aimed to assist with developing sustainable financing strategies for ECSs. One model involved certifying high school instructors as adjunct professors so that they can teach dual-enrollment courses. Although a state policy-maker acknowledged the diversion from the goal of getting students onto a college campus, he said this plan could make up the $7,000 difference between teaching college courses to an ECS student on the college campus and teaching that student in a typical high school setting.

Teacher Certification

Certifying high school instructors to teach college courses can help facilitate the process of high school students taking college courses. It is often less expensive and logistically easier for high school instructors to teach the college courses at the high school (as students do not have to be transported to the college). On the other hand, students may be more exposed to the college-going experience if they take courses from traditional college instructors. State policies do not specify a preference for who teaches dual-enrollment courses, but some outline what certification or qualifications high school instructors must have to teach college-level courses.

Most states, including Alabama, California, Georgia, North Carolina, South Carolina, and Texas, require high school instructors who teach college courses to have at least a master's degree in the subject in which they are teaching. All of those states except California utilize the Southern Association of Colleges and Schools (SACS) accreditation standards for qualified instructors, which require a master's degree in the discipline and 18 qualifying teaching hours to teach any college class — including classes that will count for dual enrollment. Other states are less restrictive in their certification mandates. In Ohio, for example, the decision is left to the specific site and is based on the requirements of the district and the college.

Although high school instructors must meet some higher qualifications to teach college courses, college instructors typically do not need to have high school certification to teach dual-enrollment college courses. According to Title II of the Elementary and Secondary Education Act, a college faculty member who teaches core academic subjects to secondary school students must be "highly qualified if the [local education agency (LEA)] directly employs him or her."[80] If the instructors are not employees of the LEA,

[80] See No Child Left Behind Act of 2001, Pub. L. No. 107–110, title II. To be considered highly qualified, teachers must (a) have earned at least a bachelor's degree, (b) have demonstrated content knowledge in each core content area in which they teach, and (c) not have any waivers of full state certification requirements in the state in which they teach.

as is the case with community college instructors, then they are not subject to the highly qualified teacher requirements.

Course Alignment

Aligning high school and college courses has been suggested as a strategy to ensure that students are being adequately prepared for college — that is, that what they are learning in high school is directly aligned with what they will need to know for college. This subject has been somewhat controversial, as many colleges fear that blending coursework will change the structure or reduce the rigor of college courses. However, several states have started the conversations around better aligning high school and college educations. In Texas, legislation called for the creation of vertical alignment teams to create college readiness standards that can be integrated within the high school content standards.[81] Similarly, in the state-mandated review of the learning requirements for K–12 education over the next 5 years, New York is including postsecondary educators.

South Carolina also has started to address course alignment issues. In December 2007, the state kicked off the South Carolina Course Alignment Project, a statewide collaboration initiative created in response to the state's Education and Economic Development Act of 2005. It involves a partnership between the South Carolina Commission on Higher Education, the South Carolina Department of Education, and the South Carolina Technical College System. This project brings together high school and college faculties to examine the degree of alignment between high school exit courses in English, mathematics, and science and entry-level college courses in the same disciplines to create a seamless transition.[82]

Graduation Requirements

Compressing the time it takes students to earn a high school diploma and a college degree is one of the primary goals of the ECHSI. If students cannot count college credits toward high school graduation requirements, this already challenging goal becomes more out of reach. Nearly half of the states in this sample have a policy statement in place to determine whether, and under which circumstances, college credits can be used to fulfill high school graduation requirements.

In at least seven of the states examined — California, Georgia, Ohio, South Carolina, Texas, Utah, and Washington — high school credit can be awarded for the successful completion of a college course and applied toward high school graduation requirements. For example, Georgia's ACCEL grant program stipulates that local school systems must accept postsecondary credit if a student successfully completes approved courses at an eligible institution and must count that credit toward state and local high school graduation requirements and subject-area requirements of the state board of education. In Washington, if a student successfully completes a college course, the school district can grant high school credits, and those credits can be applied to graduation and subject-area requirements.[83]

For ECSs in other states, such as North Carolina, dual-enrollment courses cannot be counted toward high school graduation requirements or diplomas. ECSs that face this type of policy must go through extra efforts, such as applying for waivers, to make certain that the dual-enrollment courses can count. Students in North Carolina must also pass end-of-course (EOC) exams associated with particular high school courses in order to graduate from high school. Several ECSs have applied for and received an exemption to the policy, so that students can now take a related college course and take the EOC exam without having taken the high school course.

[81] See Texas House Bill 1, 2006.
[82] For more information, visit https://www.epiconline.org/south_carolina.
[83] See RCW 28A.600.360 and SB 6846 (1999–00).

In cases where students can earn dual credit (e.g., both college credit and high school credit), the credit equivalencies for college and high school classes can prove challenging for students. For example, in Georgia, an intermediary reported that currently for many courses, students must take two college courses to receive credit equivalent to one high school course. Credit equivalencies are determined either through state or local articulation agreements or local negotiations between the district or high school and college. The equivalencies can be prohibitive if students do not have enough time in their schedules to use college courses to fulfill the necessary number of high school credits for graduation.

Articulation and Credit Transfer

To reduce the cost and the time it takes to earn a college degree, students need to be able to transfer the credits they earn through dual-enrollment courses when they actually matriculate to college. Articulation agreements that stipulate what courses can be transferred to all public institutions across the state is one way that states can ensure the acceptance of dual-enrollment credits. Typically, these agreements cover transferability among 2-year colleges and between 2-year and 4-year colleges. However, it is traditionally more difficult for dual-enrollment credits to transfer to 4-year colleges. Whether credits are accepted at the college students attend after high school affects a student's standing (e.g., enrolling as a sophomore or junior rather than a first-year student) at the college. Student status can have ramifications for how quickly and cost-effectively students can complete their college degrees.

North Carolina, Ohio, South Carolina, Texas, and Washington all have or are working toward either some level of a statewide articulation agreement or a common numbering system for courses (which facilitates the transfer of credits). In Texas, a common course numbering system had been in place for nearly a decade prior to the ECHSI.[84] An Ohio policy-maker reported that the state has a list of general education courses that are guaranteed to transfer to the public 4-year colleges or universities, as well as a set of courses in each discipline that are guaranteed to apply to that major. In South Carolina, dual-enrollment courses must transfer to other state public colleges and universities as long as they are on the list of transferable courses in the statewide transfer and articulation policies.[85] In Utah, all credits must be accepted by public colleges and universities.[86] Washington's Higher Education Coordinating Board sets the transfer policies, which are contained in the Intercollege Relationships Commission (ICRC) handbook. It states, "College-level courses offered by regionally accredited colleges and universities in the State of Washington shall normally be accepted in transfer by the receiving institution" (ICRC, 2004, p. 17). In addition, an Associate's degree from a Washington community college can satisfy the lower division general education requirements of 4-year colleges in the state.

For several states, including California and New York, articulation occurs at the local level. This gives partner institutions flexibility in what courses they can offer, but it creates more work for each partnership and can limit the number of college courses students can take. The lack of a statewide articulation agreement also can limit the number of institutions to which students' credits can transfer, and often ECS graduates are restricted to the partnering institution if they want all of their credits to transfer. A California policy-maker said that articulation is a local decision to ensure that the dual-enrollment course meets the standards for credit of both the high school and the college. However, any course developed at the high school that is accepted at the college for dual enrollment would be able to transfer to that credit-granting college but may not be accepted at other colleges. Similarly, a New York policy-maker reported that colleges have their own authority to accept courses based on the level and rigor of the particular programs in which the students enroll.

[84] See SB 148 and Texas Education Code (TEC) § 61.821–61.832.
[85] See http://www.che.sc.gov/AcademicAffairs/DualEnrollment.pdf.
[86] See http://www.schools.UT.gov/curr/Early_College/documents/CE_Student%20FAQ.pdf.

The number of credits accepted at the colleges that students want to attend will determine their status at the college (e.g., sophomore or junior standing). If students' credits are not accepted, students will not be able to fully realize the hypothesized cost-saving benefits of an ECS education. On the other hand, if students meet the highest goals of the ECHSI and transfer to 4-year colleges as juniors, they may not be eligible for federal or state financial aid or housing. State policies do not mandate student standing; that is determined by the individual colleges. But some states have begun to think about this issue.

Autonomy

In practice, it is easier for ECSs to operate when they have autonomy to make the decisions that will best serve the students at their school. Although ECSs are a relatively new and rare type of school, and many states do not have consistent policies or structures in place to support them, representatives from six states or localities (California, New York City, North Carolina, Ohio, Texas, and Utah) reported that their ECSs do operate with a high level of autonomy. Autonomy in California and Texas is due primarily to a policy structure that allows localities to have primary decision-making power with regard to schools. In North Carolina, ECSs can apply for waivers that will exempt them from restrictive policies. Although North Carolina is not required to grant a waiver to each school that applies, the waiver system gives schools greater flexibility than they otherwise would have within the state policy environment. In other states, many ECSs have opened as state or district charter schools to allow themselves more flexibility. In contrast, Washington does not allow for charters, and many ECSs have had to open as parts of comprehensive high schools and consequently enjoy less autonomy.

New York City is making strides in allowing more autonomy through the establishment of the Empowerment Schools Initiative,[87] which grants the included schools more authority over such domains as curriculum, budgets, and professional develoment. All but one of the foundation-funded ECSs in New York City are included in the Empowerment Schools Initiative and thus can make more decisions about structure at their sites. In return, these schools also are more directly accountable to the New York City school district.

Longitudinal Data Systems

Educators and policy-makers increasingly recognize current, relevant, and valid information as an invaluable tool. Particularly for ECSs, data illustrate whether the ECHSI model is having the intended effects. Data also can aid states in determining whether policies need to be instituted or changed. The most effective model supporting easy access to this information is longitudinal data systems at the state level that track students as they move across schools or districts, and as they progress from P-12 to postsecondary education. However, the P-12 and college sectors have traditionally worked in separate spheres with different policy guidelines and data systems and little to no ability to share student information. Research supports the potential for longitudinal data collected through these systems to allow states to conduct more precise evaluation of reform initiatives (Hoffman, Vargas, & Santos, 2008).

States in the evaluation sample were assessed in terms of their progress in developing their capability for longitudinal data systems based on 10 essential elements identified by the national Data Quality Campaign (DQC). The DQC was launched, supported by a Longitudinal Student Data System Task Force, to assist states in implementing longitudinal data systems to improve student achievement.[88] Table C.2 displays the essential elements that each of the sample states have as part of their statewide data systems.

[87] For more information on the Empowerment Schools Initiative, see http://schools.nyc.gov/Offices/Empowerment/default.htm.

[88] Both the DQC and the Longitudinal Student Data System Task Force are funded by the Bill & Melinda Gates Foundation.

Table C.2. Essential Elements of States' Longitudinal Data Systems

State	Unique Student Identifier	Demographic and Participation Data	State Test Scores	Data on Untested Students	Matching Students to Teachers	Transcript Data	College Readiness Scores	Graduation and Dropout Data	Matching P-12 and Higher Ed Data	Data Audit System
Alabama		✓	✓		✓	✓	✓	✓	✓	✓
California	✓	✓	✓	✓			✓	✓		✓
D.C.	✓	✓				✓		✓	✓	
Georgia	✓	✓	✓		✓	✓	✓	✓	✓	✓
Michigan	✓	✓	✓					✓		✓
North Carolina		✓	✓	✓		✓		✓	✓	✓
New York	✓	✓	✓	✓				✓		
Ohio	✓	✓	✓	✓	✓		✓	✓		✓
South Carolina	✓	✓	✓		✓	✓		✓		
Texas	✓	✓	✓	✓		✓	✓	✓	✓	✓
Utah	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Washington	✓	✓	✓	✓		✓		✓	✓	✓

Source: Data Quality Campaign (2007)

Based on these data, Utah is the only state in the sample with a longitudinal data system featuring all 10 of the essential elements. However, this finding should not undervalue the accomplishments of the other states in updating, combining, and improving their existing data toward the development of a single longitudinal data system in the future.

Featuring all but one of the essential elements, Texas's Public Education Information Management System (PEIMS) encompasses all data related to the state's public education system, both P-12 and postsecondary, including student demographic and academic performance, personnel, financial, and organizational information. Set to be in place by 2010, the California Longitudinal Pupil Achievement Data System (CALPADS) seeks to integrate data currently contained in seven separate tracking systems to provide a comprehensive longitudinal data system for California students. Once fully operational, CALPADS will have the capability to track student-level data across all districts in the state and through California's three public higher-education sectors: the community college, California State University, and University of California systems. According to an FCCC representative, the CDE will require any district or college that wants to participate in CDE special projects to be a member of CALPADS.

Michigan also is developing a plan to link the student, personnel, school, district, and finance data the state has collected in various sources into a comprehensive longitudinal data system. The state now uses unique student identifiers to connect student state-level assessment results longitudinally and is seeking to add analysis capability related to student transcripts, performance on college readiness exams, and performance in postsecondary institutions. In addition, South Carolina has adopted a Student Unique Numbering System for Testing (SUNS) to create efficient and accurate management of core state test score data for all P-12+ students. This system represents an ongoing effort in the state to enable the easy electronic transfer of student records and transcripts across districts and between districts and colleges.

These examples also highlight some of the major barriers to the achievement of longitudinal data systems. To operate in compliance with the Family Educational Rights and Privacy Act (FERPA) law requiring unique student identifiers, many states must transfer data stored under students' Social Security numbers

to other codes that can individually identify students. States seeking to reconcile data housed in multiple locations into a single system may be faced with having to match the records of students housed under multiple identifiers. States must implement quality checks and auditing systems to ensure that the data contained within these systems are accurate and easy to interpret. As these tasks are directly related to the expressed purposes of student data collection and tracking, these issues serve as further evidence for the need for development of longitudinal data systems that include all 10 of the essential elements outlined by the DQC.

Federal Policy Environment for the ECHSI

Because education policy is controlled at the state level, the primary ways the federal government can support any educational program are by providing funding, technical assistance, or suggested guidelines for states to follow. The federal government has recently introduced legislation aimed directly at providing funding and guidelines for states to create additional dual-enrollment opportunities for high school students.

Federal Funding for ECSs

The need to create environments supportive of dual-enrollment initiatives has prompted the introduction and amendment of several federal-level policies. In September 2008, the House of Representatives introduced the Fast Track to College Act of 2008 (H.R. 6926). This bill recommended appropriations totaling $50 million to support ECSs, including a matching figure for other dual-enrollment programs for fiscal year (FY) 2009 (with similar appropriations recommended for FYs 2010 through 2014). Priority for funding is proposed for entities serving a student body of which more than 40 percent are low-income students, as defined under § 1113(a)(5) of the Elementary and Secondary Education Act (ESEA), and those in states that provide additional financial assistance for such programs. Although this bill did not get passed by the House of Representatives before the change in Congress in 2009, it speaks to the federal attention being given to ECSs.

The August 2008 reauthorization of the Higher Education Act also provides support for several areas of funding relevant to ECSs and dual enrollment. The Early Intervention and College Awareness Grants provide additional financial support for programs (such as GEAR UP) that assist low-income students and students who have disabilities in completing secondary education and transitioning successfully to postsecondary programs. In addition, this legislation includes the Pell Grants, awarded to students to cover higher education costs based on their financial need. The reauthorized Higher Education Act, as well as the recently passed American Recovery and Reinvestment Act (2009), have served to increase the maximum Pell Grant awards individual students can receive, with both including provisions to potentially allow more substantial increases in the future. Requirements associated with the awarding of Pell Grants that recipients cannot have obtained any postsecondary diplomas previously and must have completed a qualifying high school program have led to the exclusion of graduates of many dual-enrollment programs in past years. The language of legislation related to Pell Grants has been revised in reauthorized versions of the law to eliminate these exclusions.

One group of potential ECS graduates that does not benefit from these revisions, however, is undocumented immigrants. Current federal legislation bars these students from receipt of any federal grant funding for higher education. One ECHSI intermediary has been extremely active in advocating for the DREAM Act (The Development, Relief and Education for Alien Minors Act), which would create a potential funding stream for undocumented students. This measure would allow undocumented students who have lived and attended school in the United States (whether in dual-enrollment programs or not) for at least 5 years and who qualify for college admission based on their high school records to qualify for federal tuition aid for college.

Despite the support offered by these and other federal programs, funding challenges often persist for ECS graduates as they attempt to transition to postsecondary education. American Student Financial Aid, an advocacy group for financial aid information, concluded that Pell Grants in 2006 covered only about 33 percent of students' total cost of attending college (Anderla & Aaron, 2006). Therefore, these students often require additional funds to fulfill all the financial requirements of higher education.

Additional sources for grant monies are available at the federal level; however, language dictating the requirements can be interpreted as prohibitive for ECS and dual-enrollment students. Two grant programs falling into this category are the Academic Competitiveness Grants (ACG), which provide up to $750 for first-year college students and $1,300 for second-year students from low-income families, and the Science and Mathematics Access to Retain Talent (SMART) Grants, which are given to college juniors and seniors in the science, technology, engineering, and mathematics (STEM) fields and are valued at up to $4,000 each. The most pronounced barrier to students' qualifying for these funds relates to the requirement for completion of a "rigorous" secondary school program (Lederman, 2006). The specific designation of coursework from programs such as AP and International Baccalaureate (IB), and the omission of discussion of early college and other dual-enrollment programs, may contribute to the impression that only students coming from AP or IB programs have completed the required "rigorous" course of study, when in fact students from other programs also may qualify for these grants.

An additional challenge has been cited in terms of these funds' applying only toward degree-granting programs, thereby eliminating from eligibility students in programs that terminate in certificates. Legislators responsible for the language of these laws have maintained their preference for these funds to be available only to programs resulting in a 4-year degree, and no change to this priority is anticipated.

An intermediary representative touched on the need for revision to federal funding guidelines for both K–12 and higher education to allow the funds to be more transferrable. Such modifications would remedy many of the issues related to funding at both the high school and college levels for ECS students. Specifically, this intermediary suggested that states and districts be given greater leverage to "mix up the funds between higher ed and K–12" so that funds could essentially follow students throughout their educational endeavors.

Summary

Overall, state and federal legislation creates a complex policy environment for the implementation of ECSs. States have developed a range of policies that influence how ECSs are implemented, with some states having more dual-enrollment policies than others. States that have multiple policies related to dual enrollment clearly have such programs on their radar screens and may have structures in place to support the implementation of ECSs (e.g., full funding for both the district and the college). On the other hand, policies that states have in place may not be the most supportive (e.g., student eligibility restrictions). Nevertheless, policies that have been codified and passed can be discussed and amended. States that do not have many policies may provide schools with more flexibility, but in cases where explicit policies seem necessary, it may take more time for them to be established from the ground up.

Given the complicated nature of policy-making, state governments can only do so much, and changes to policies often take many years to take effect. However, the federal government has begun to take notice of ECSs and the goals of the ECHSI, and its recently proposed legislation supports them with funding and guidelines for implementing pathways similar to the ECS model.

Because state policies can change with each legislative session, because ECHSI partners are continually working to make state policies more amenable to ECSs, and because the federal government has recently taken more interest in ECSs, these trends should be tracked in future research. As more ECSs are

implemented throughout the nation and as more outcome data become available for ECSs, it seems likely that more states will take notice and find the need to accommodate the blending of secondary and postsecondary education in the policies that they enact.