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Pathways and Supports for College and Career Preparation: What Policies, Programs, and Structures Will Help High School Graduates Meet Expectations?

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INTRODUCTION

College and career readiness has become a key priority for the PK–20 education community and the nation at large. And although college and career readiness is a PK–20 issue, much of the attention has focused on secondary education, fueled by economic projections and secondary reform efforts. Recent projections indicate that within the next decade, 63 percent of all jobs in the United States will require some postsecondary education, and 90 percent of new jobs in growing industries with high wages will require some postsecondary training; however, institutes of higher education and the business community have long expressed concern over the inadequacy of a traditional high school education in preparing students for postsecondary education or training necessary to succeed in these careers (Alliance for Excellent Education, 2009; Carnevale, Smith, & Strohl, 2010; U.S. Department of Labor, 2008).

High schools face many challenges in ensuring that all students are college and career ready. Not only must high schools raise their expectations and help students set more ambitious postsecondary goals, but they must also provide a wider array of supports to help students meet their individual goals. Furthermore, the growing consensus on the importance of all students mastering a broad range of knowledge and skills—like the English language arts and mathematics standards within the Common Core State Standards; key learning skills such as social and emotional and academic success skills; and knowledge of and exposure to a diverse range of postsecondary pathways—is made even more challenging in that there is also subset of college and career readiness skills that are directly tied to individual postsecondary goals. As each student identifies postsecondary aspirations, he or she will require specific knowledge and skills to prepare for the identified pathway (Alliance for Excellent Education, 2009; Educational Policy Improvement Center, 2009; ACT, 2006).

The increased focus on college and career readiness, combined with the complexity of the challenges associated with the topic, has led to a rapidly expanding college and career readiness community that is rich with resources yet replete with confusion. The National High School Center recently conducted a scan of organizations that address college and career readiness and identified more than 70 such organizations, including those focused on policy, practice, advocacy, access, and research. Through this scan, the College and Career Development Organizer was created to help make sense of this increasingly complicated topic.

The purpose of this brief is to summarize and organize the college and career readiness pathways and supports that the National High School Center has collected as part of a scan of organizations involved in college and career readiness. This brief is a companion piece to the National High School Center’s College and Career Development Organizer and is the second in a series of briefs describing the three strands identified therein (see <http://www.betterhighschools.org/CCR/resources.asp> to download briefs):

- *Expectations and Goals for College and Career Readiness: What Should Students Know and Be Able to Do?*
- ***Pathways and Supports for College and Career Preparation: What Policies, Programs, and Structures Will Help High School Graduates Meet Expectations?***
- *Outcomes and Measures for College and Career Success: How Do We Know When High School Graduates Meet Expectations?*

In the pages that follow, the National High School Center briefly summarizes the pathways and supports of college and career preparation that have been collected and organizes this information into three key threads (see Exhibit 1):

- Personalized Learning Supports
- Rigorous Programs of Study
- Aligned Resources, Structures, and Supports.

Along with a brief description of each thread, key components are highlighted and examples of each type of pathway and support are provided. The brief concludes with key factors that schools, districts, and states may want to consider as they begin to build, analyze, and address pathways and supports specific to college and career readiness in their contexts.

Exhibit 1. College and Career Development Organizer: Pathways and Supports Strand.

STRAND 2: Pathways and Supports for College and Career Preparation		
<i>What policies, programs, and structures will help high school graduates meet expectations?</i>		
THREADS	COMPONENTS	EXAMPLES
Personalized Learning Supports	Individualized Learning Strategies	Individual learning plans ▶ Flexible grouping and differentiated instruction ▶ Mentoring and counseling
	Targeted Interventions	Content/credit recovery and tutoring ▶ Health and wraparound family services ▶ Tiered interventions/positive behavioral interventions and supports ▶ Student, family, and community engagement
Rigorous Programs of Study	Rigorous and Relevant Curriculum, Instruction, and Assessment	Middle school preparation and pathway selection (career exploration, academic preparation) ▶ Accelerated learning programs ▶ Blended learning
	Well-Defined Pathways With Postsecondary Alignment	PK–20 initiatives ▶ Multidisciplinary programs of study ▶ Alternative pathways and Graduate Equivalency Diploma (GED) Pathway
	Postsecondary Experiences and Preparations	College visits and career fairs ▶ Dual enrollment, internships, and work experience ▶ Enrollment and financial aid applications and enrollment preparation
Aligned Resources, Structures, and Supports	Physical and Organizational Structures	Block scheduling, increased learning time, and advisories ▶ Career academies and smaller learning communities
	Human Capital	Recruitment and hiring ▶ Professional development and support ▶ Supervision and evaluation
	Community Partnerships and Resources	Tutoring/mentoring programs and service learning ▶ Internships
	Fiscal Resources	Funding, facilities, and equipment

PERSONALIZED LEARNING SUPPORTS

Personalized Learning Supports comprise the first thread of the Pathways and Supports strand. Though preparing *all* students for college and career success should be the goal for high schools, it must be acknowledged that students arrive at high school with varying knowledge and skills. For this reason, high school students require very different pathways and supports to master their college and career readiness goals and expectations. *Individualized Learning Strategies* are often used to provide support to all students to ensure that they both define and meet their unique college and career aspirations. For students who may need more support, such as students with disabilities, English language learners, or other students who struggle to meet expectations, *Targeted Interventions* can be provided to ensure goals are being met.

Mastery-based learning can be formalized into school-wide or programmatic competency-based pathways. Competency-based pathways allow students to work through academic standards at their own pace, moving forward to new content when they have demonstrated mastery. Explicit and measurable learning objectives are set, and assessments are developed to accurately assess whether those objectives are met. This pathway allows for quicker completion of coursework and may lead to better outcomes, especially for students who are overage for grade and who are off track in obtaining credits for graduation. For these students, competency-based pathways increase the likelihood of graduation, ensure skill mastery, provide motivation, and allow them to move forward without having to repeat courses (Sturgis, 2010).

TARGETED INTERVENTIONS

Targeted Interventions is the second component within the Personalized Learning Supports thread. For some students, individual planning and classroom-based supports are insufficient to ensure that they can meet college and career readiness expectations. Students may require additional intervention to meet rigorous academic standards; additional supports; or more explicit instruction in social, emotional, or other lifelong learning skills to ensure preparedness for an effective transition to a postsecondary environment (Alwell & Cobb, 2007; 2009).

A growing number of high schools attempt to address both the needs of struggling students and the needs of the remainder of the high school population through multi-tiered systems of support, which use assessments to identify appropriate instruction and interventions to meet the needs of all students. In most multi-tiered systems, there is a primary level of prevention (i.e., high-quality instruction or behavioral support) that is provided to all students. Assessments are used to identify students who may be at risk for poor learning or behavioral outcomes, enabling schools to provide interventions to meet student needs. Students' progress within interventions is monitored, and the intervention is removed or altered to address student concerns as needed (National Center on Response to Intervention, 2010).

Students who are identified as needing supports may receive a wide range of services. Students who have the most chronic and severe behavioral problems and students who are involved in the juvenile justice system or mental health system often receive wraparound services. Many districts have now expanded wraparound services to those students who have not yet made contact with these agencies but who are considered at risk for chronic behavioral problems. Multiple parties, including teachers, behavioral specialists, community representatives, and other professionals, come together with the student and the student's family to identify goals, make a plan, and measure progress. The perspective of the student and his or her family is valued, and the plans that are developed build on student strengths instead of deficits (Eber, 2002).

RIGOROUS PROGRAMS OF STUDY

Individual supports are essential to ensuring that each student meets college and career readiness expectations, but these supports should be part of a larger system of *Rigorous Programs of Study* – the second strand within the Pathways and Supports strand – that, if followed, will help students achieve their postsecondary aspirations. Rigorous instruction is at the core of these pathways. Such instruction empowers teachers to hold students to high standards, aligned with postsecondary expectations. Rigorous pathways also provide a wide range of postsecondary experiences, enabling students to identify skills and preferences to inform their postsecondary goals. Well-defined pathways facilitate the learning of both core content and individualized content necessary to meet postsecondary aspirations while providing multiple entrance and exit points, allowing students to shift to a new pathway should they change their goals.

WELL-DEFINED PATHWAYS WITH POSTSECONDARY ALIGNMENT

Well-defined pathways with Postsecondary Alignment, the second component within the Rigorous Programs of Study thread, provide students with the opportunity to tailor their coursework to help meet individual college and career goals. Well-defined pathways can focus on specific content areas, such as business, health, or STEM, or enable students to accelerate their rate of learning, helping them master a more rigorous set of general education skills. All pathways must be based on a set of rigorous standards that are aligned with postsecondary expectations (Jardine, Klein, & Schoelkopf, 2010), but they must also be flexible, allowing students to shift to new pathways as their college and career goals change. Career-focused pathways are often known as programs of study. Curriculum within a program of study will be scaffolded, allowing students to develop knowledge and skill sets that are relevant to every pathway in the early years of high school, including rigorous instruction in English language arts and mathematics, and becoming increasingly tailored to industry-specific technical standards as students become more sure of their path (Programs of Study Joint Technical Working Group, 2011).

Maryland has developed a comprehensive set of Career and Technology Education (CTE) programs of study. Each of these programs of study is part of one of ten career clusters, developed in concert with an advisory board of industry representatives. The programs of study available reflect the growth industries within Maryland's labor community. The programs offer pathways to a diverse set of careers, some of which require additional postsecondary education and some of which enable students to enter the workforce upon graduating. All programs of study begin with core content and in sophomore or junior year allow students to begin exploring targeted career options based on interests and goals. Students who set college goals have the opportunity to take Advanced Placement (AP) courses or to earn college credits through dual enrollment coursework. Students interested in beginning a career immediately following high school have the opportunity to enroll in pre-apprenticeship programs. Regardless of postsecondary aspirations, all students can participate in a supervised, work-based learning experience (Maryland State Department of Education, 2011).

Offering a diverse range of programs of study can help engage students in their high school experience, but the traditional high school model is not a good fit for all students to actualize college and career readiness or, in some cases, even to complete high school. Providing alternative pathways to high school graduation, such as attaining a GED test credential or participating in a blended learning program, allows for greater flexibility so that students may pursue a high school degree at their own pace and in their own learning environment. Because there is limited research on the effectiveness of blended learning and great variability in the postsecondary experiences and outcomes of students with GED test credentials, more work must be done to determine if these programs can truly be considered alternative pathways to college and career readiness (American Council on Education, 2011; Vignare, 2002).

POSTSECONDARY EXPERIENCES AND PREPARATIONS

Preparing students for postsecondary education extends beyond imparting essential academic knowledge. Rich *Postsecondary Experiences and Preparations*, the third component in the Rigorous Programs of Study thread, are also necessary to provide students with diverse opportunities that help inform their postsecondary goals and facilitate future transitions. A 2008 Chicago Consortium on School Research report found that college-going climate in high schools was a strong predictor of college enrollment for students. A college-going culture may include teacher- and counselor-supported exploration for best match programs, college fairs to build a better sense of the postsecondary landscape, early explanations of the educational requirements at a variety of postsecondary institutions, and dual enrollment experiences through partnerships with local community colleges (Orr, 1999; Roderick et al., 2008).

Similarly, high schools can enhance students perspectives by providing career-related experiences, including career fairs, job shadowing, workplace tours, informational interviews, and internships. These experiences contribute to students’ understanding of labor market requirements and timely setting of career-specific goals. Work-based experiences have the added benefit of accommodating various learning styles and providing a myriad of learning opportunities that have shown to contribute to significantly higher school attendance rates, high school graduation rates, and earnings after graduation (Bishop & Mane, 2004).

In addition to exploratory opportunities, postsecondary experiences include supports to help students navigate complicated college admissions and workplace entry processes. According to a study of Chicago graduates, low-income students in particular lack vital information necessary to complete college and financial aid applications (Nagaoka, Roderick, & Coca, 2009). High schools can help by ensuring that students prepare for and take necessary admissions tests, such as the SAT or ACT; by assisting students in completing college applications and the Free Application for Federal Student Aid (FAFSA); and by providing guidance on post-admissions decision making (Roderick et al., 2008; Tierney et al., 2009).

ALIGNED RESOURCES, STRUCTURES, AND SUPPORTS

Aligned Resources, Structures, and Supports compose the third thread in the Pathways and Supports strand. Though preparing students for college and career is complex work, state education agencies (SEAs), and local education agencies (LEAs), and schools have an array of resources that can be leveraged to help implement strategies and initiatives. Innovative scheduling and programmatic structures can be designed to focus on postsecondary success; fiscal and human capital resources can be thoughtfully assigned to efficiently support college and career readiness efforts; and community partnerships can be fostered in an effort to create comprehensive systems of services to help students actualize college and career readiness. Thoughtful use of resources is not specific to college and career readiness programs and supports; however, lessons learned on the importance of resource alignment can be taken from high school improvement efforts and applied to work in this field.²

Exhibit 4: College and Career Development Organizer, Pathways and Supports Strand, Aligned Resources, Structures, and Supports Thread

THREADS	COMPONENTS	EXAMPLES
Aligned Resources, Structures, and Supports	Physical and Organizational Structures	Block scheduling, increased learning time, and advisories ▶ Career academies and smaller learning communities
	Human Capital	Recruitment and hiring ▶ Professional development and support ▶ Supervision and evaluation
	Community Partnerships and Resources	Tutoring/mentoring programs and service learning ▶ Internships
	Fiscal Resources	Funding, facilities, and equipment

¹ The National High School Center recognizes that local policies and other contextual factors may introduce challenges to leveraging many of these resources effectively, and further information on strategies and initiatives for high school improvement can be found in the National High School Center’s *Eight Elements of High School Improvement* at <http://www.betterhighschools.org/pubs/documents/EightElementsMappingFramework.pdf>

PHYSICAL AND ORGANIZATIONAL STRUCTURES

High schools are increasingly turning toward more innovative uses of *Physical and Organizational Structures*, the first component in the Aligned Resources, Structures and Supports thread, to help ensure the college and career readiness of students. Use of innovative structures encourages high schools and school districts to take components of the traditional high school model, such as seat time requirements, classroom organization and space, and teacher assignments, and alter them to better address student needs within a school or district. High schools can make use of both innovative physical and organizational structures by creating small learning communities or other similar models to help provide student resources and supports. Often, small learning communities take the form of Career Academies, which are schools-within-a-school that focus on targeted career pathways. These Career Academies offer students instruction in academic core content and pathway-specific coursework as well as the opportunity to participate in work-based learning opportunities. Career Academies make use of innovative physical structures by arranging classrooms and workspaces to allow for more student and teacher collaboration or more technology-based work. Career Academies can also be mapped out separately within a single school building to create close communities with more teacher-student interaction. Though research on the impact of small learning communities on academic achievement has shown mixed results (Bomotti & Dugan, 2005; Kemple & Snipes, 2000), these non-traditional structures contribute to some promising student outcomes. Because students remain with the same set of teachers over the course of their career academy experience, teachers can provide increased levels of interpersonal support. Students who attend Career Academies that are successful in providing these supports often show increased school engagement. Students who were at risk of dropping out when they entered a career academy showed increased attendance and academic course-taking and decreased dropout rates. Career Academies also contributed to an increased rate of applying to college among all student groups. This research confirms that while use of innovative organizations and physical structures can lead to improved college and career readiness outcomes, to be truly effective, they should be aligned with other effective academic and interpersonal supports designed to target student needs (Kemple & Snipes, 2000).

High schools are also turning to increased learning time in an effort to provide additional student supports. Though Carnegie units and seat time requirements have long provided a barrier to high school reform, many schools, districts, and states have begun to alter the master schedule to provide additional time for students to learn the knowledge and skills necessary to meet college and career readiness expectations. Many high schools use expanded learning time options in an effort to meet student needs. Block scheduling is a popular strategy, allowing for double-dosing in core content areas, such as mathematics and English language arts, to ensure that students are meeting rigorous college and career readiness standards in those subjects. Similarly, many high schools are adding a zero hour or after-school block to allow students with academic challenges to seek extra help. In addition to extra core content, some high schools are also adding time to the school day to include an advisory period that allows for explicit instruction in lifelong learning skills and facilitation of the college and career application and enrollment processes. Although the uses of extended learning time mentioned previously have been identified as practices that show promise, it is important to note that use of time must be targeted to concrete learning goals based on student data for it to be an effective strategy (National Center on Time and Learning, 2011; Tierney et al., 2009).

HUMAN CAPITAL

Human Capital is the second component in the Aligned Resources, Structures and Supports thread. Effective teachers and leaders have long been acknowledged as one of the most important school-level factors associated with student performance (Hanushek, 2002). School staff members create the culture of college and career readiness standards and

expectations; they implement rigorous instruction to ensure those standards are met; and they leverage other available resources to provide supports in an effort to meet student needs. Schools and districts can help ensure effective use of human capital by recruiting and hiring teachers who have received adequate preparation and have a history of success (Jacob, Kane, & Rockoff, 2009; Kane, Rockoff, & Staiger, 2008; Strategic Data Project, 2011). Once hired, teachers and other staff must be provided with rigorous and relevant professional development. All professional development should be aligned with school goals and should include modeling of teaching strategies for targeted content. College and career readiness professional development should also be aligned with college and career readiness expectations and measures. Any professional development should be paired with continuous monitoring and follow-up to ensure that teachers master necessary skills (Archibald, Coggsall, Croft, & Goe, 2011).

Because most schools have just begun to implement college and career readiness standards, most of what we know about professional development comes from the broader teacher effectiveness literature; however, several states have begun to implement strategies for training teachers and school staff to teach to college and career readiness standards. The Kentucky Department of Education has been working with teacher education programs in the state to communicate new college and career readiness standards to ensure that new teaching candidates enter the field equipped with knowledge of rigorous instruction. Similarly, Texas has been working with institutions of higher education to provide professional development to veteran teachers to ensure that standards taught in high school align with what those students will be expected to have mastered when they get to college (Southern Regional Education Board, n.d.). Professional development opportunities that promote continuous improvement allow teachers and other school staff to better utilize other resources at their disposal to help students maximize postsecondary attainment.

COMMUNITY PARTNERSHIPS AND RESOURCES

Students are not educated in a vacuum. Just as student performance is influenced by family- and community-related factors, family and *Community Partnerships and Resources*, the third component in the Aligned Resources, Structures and Supports thread, can be leveraged to help students meet their goals. Research has long linked student performance in school to family and community involvement, citing higher grade point averages, better attendance, and improved behavior as a result of strong external supports (Henderson & Mapp, 2002). Similarly, community-based organizations can have a powerful impact on students' social and emotional skills, helping students with self-monitoring, risk avoidance, and other coping behaviors that contribute to postsecondary success (Forum for Youth Investment, 2010). Not surprisingly, community-based resources are found to be most beneficial when aligned with successful school-based interventions, including rigorous standards and strong teachers and leaders (Henderson & Mapp, 2002).

Community leaders in Austin, Texas, partnered with the Forum for Youth Investment to develop a tool to help schools, parents, and others in the Austin Independent School District access available community resources. In 2009, the *Youth Services Mapping System* was released as a tool to allow stakeholders to search for support services designed to address student needs ranging from college and career readiness and exploration supports to crisis management and substance abuse rehabilitation. The system further permits users to select a number of filters to refine their search, allowing them to explore when programs are offered, which special populations resources are designed to serve, and whether the interventions used have a research or evidence base. Beyond helping students and families find necessary resources, this tool also serves as a data and monitoring system for the Austin Independent School District and supporting community-based organizations, allowing staff and stakeholders to advocate for increased resources in areas of student need where pre-existing support organizations are not available (CommunitySync and DeepCoolClear, LLC, 2009; Forum for Youth Investment, 2011).

FISCAL RESOURCES

Fiscal Resources is the fourth component in the Aligned Resources, Structures, and Supports thread. Funding is a challenge for any school system. As a result, it is particularly important that SEAs, LEAs, schools, and other organizations explore and align funding streams and other fiscal resources, such as facilities and equipment, to ensure that these resources can be used efficiently. Schools must consider the level of student need as well as the breakdown of student postsecondary goals to help plan for the resources that will be necessary (Education Resource Strategies, 2010a). Though funds are increasingly being made available by foundations and the federal government to focus on college and career readiness work, most schools and districts will need to channel existing fiscal resources toward meeting college and career readiness expectations. Furthermore, funding and other resources for college and career readiness programs and supports must be allocated within larger funding conversations in which all school improvement strategies and initiatives must be carefully considered, aligned, and prioritized in recognition of the reality of limited funds.

The Memphis Public School District implemented “Budget Hold ’Em,” a strategy developed by Education Resource Strategies (ERS) as a method of aligning and prioritizing fiscal resources. The “game” requires district personnel to carefully consider how programmatic outcomes should be prioritized given limited funds. Through previous work, ERS had discovered that a flat percentage of budget cuts for each department was not necessarily an effective way to save resources. Though departments would cut their budgets by the mandated amount, they would also add new projects, rendering a net increase in the budget as a result. Memphis school system officials began “Budget Hold ’Em” by listing the line item budgets for Title I, Race to the Top, and other grant funds the district was receiving. They also provided staff with a resource list showing the budget for all equipment and staff. When district personnel proposed a diversion of Title I or other funds for a new initiative, they were forced to consider the line item budgets and couch their proposal in terms of what they would propose giving up. Though Memphis’s experience was not solely focused on college and career readiness, it highlights the importance of framing resource allocation for college and career readiness in the larger context of district and school funding as a whole (Education Resource Strategies, 2010b).

KEY CONSIDERATIONS

This brief summarized the pathways and supports of college and career success that the National High School Center has collected through a scan of more than 70 organizations and the research and policy literature. The goal of this brief, as well as the College and Career Development Organizer and the other briefs in the series, is to help key stakeholders traverse the vast college and career readiness landscape by mapping its terrain. Through development of the organizer and briefs, we have identified key landmarks that stakeholders may want to consider as they work through college and career readiness outcomes and measures within their local contexts:

- Student pathways and supports must provide students with opportunities to master a common set of skills while still allowing them to tailor individualized learning programs to pathway-specific goals and expectations based on their postsecondary aspirations.
- Though student pathways will vary greatly based on postsecondary goals, all students must be provided the supports necessary to meet similarly rigorous standards. Pathways must be determined based on student aspirations and capabilities rather than on existing levels of performance.

- Pathways and supports must be flexible, allowing students to alter programs of study to align with changing postsecondary goals.
- Student supports must be aligned and based on comprehensive, coherent plans for school improvement and maximizing each student's attainment. Student supports should not be piecemeal and disjointed programmatic additions designed to address each new policy or priority. A key step in ensuring this alignment is to design student supports that enable each student to meet well-defined college and career readiness goals and expectations.

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