PROMOTING COLLEGE AND CAREER READINESS
Recommendations for Illinois High Schools

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A fundamental purpose of school systems in the United States is to prepare students to lead productive lives as contributing members of our society. Implicit in this responsibility is an expectation that each student will graduate from high school having mastered the essential content knowledge and skills that are necessary for immediate success in the 21st century, regardless of whether he/she enrolls in postsecondary education, enters the workforce, or joins the armed services. In an era of increasing globalization, a high quality education is critical not only for an individual’s future earnings potential and personal well-being but also for our nation’s economic success and continuing global competitiveness.

Unfortunately, high schools not only in Illinois but also throughout the United States have a mixed track record with preparing students for college, workforce, and military career readiness, particularly with some student subgroups (Conley, 2010). Disaggregation of student achievement data discloses significant learning gaps, revealing diminished academic performance for children from underrepresented populations, including African American and Latino/a students, students with disabilities, and students from low socioeconomic backgrounds (Conley, 2010). Students who are not granted access to rigorous and challenging coursework during their high school years likely will find their goal of a college education to be unattainable (Tierney, Bailey, Constantine, Finkelstein, & Hurd, 2009). Many high school students also discover that military service is not a viable option, as 23% of individuals who applied for enlistment in the Army failed to achieve the qualifying score on the Armed Forces Qualification Test (Theokas, 2010).

During the mid-20th century the United States enjoyed prominence as having the most highly educated populace in the world, but our country has dropped below numerous other nations in educational attainment (Symonds, Schwartz, & Ferguson, 2011). The U.S. ranks 16th out of 36 member nations of the Organisation for Economic Co-operation and Development (OECD) in college completion rates for 25- to 34-year-olds and 12th out of 35 OECD nations in attaining at least an upper secondary education for the 25- to 34-year-old age group (OECD, 2011). In addition, U.S. schoolchildren regularly are outscores by their peers from other nations on international achievement tests (Snyder & Dillow, 2012). There is a need for U.S. high schools to prepare students more effectively for college and careers, not only for their personal success but also to ensure that the United States maintains its economic competitiveness and relevance on the world stage.

This report provides an overview of recent research on the effects of academic preparation for our nation, including the benefits and costs of education to society. Information also is shared on labor projections and concerns about changing workforce demands in the United States. The subsequent section describes the performance of high school students in Illinois and throughout the nation on standardized achievement tests, followed by a discussion of research related to the preparation of entering college students for academic success. The paper concludes with 10 recommendations for Illinois high school educators, to ensure that high school students have access to a rigorous, relevant curriculum that adequately prepares them for college and workplace success.
**Lifetime Earnings Potential**

It is no secret that the lifetime earnings potential of individuals increases steadily with higher levels of educational attainment. The median earnings of workers without a high school diploma or GED over a 40-year career are projected to be $973,000 in 2009 dollars, while high school graduates will earn 33% more ($1.34 million) (Carnevale, Rose, & Cheah, 2011). Simply attaining some postsecondary training without earning a college degree increases one's lifetime earnings potential to $1.547 million, and workers with an associate's degree can anticipate lifetime earnings of $1.727 million. With median lifetime earnings of $2.268 million, those with a bachelor's degree average 74% more than workers with only a high school diploma (Carnevale et al., 2011). Not surprisingly, earnings potential continues to rise with attainment of additional graduate degrees. Wage disparities do exist by gender and race/ethnicity. Males earn, on average, 25% more than females. Earnings of African Americans average 23% less than Whites, and Hispanics earn 34% less than Whites (Carnevale et al., 2011). Despite these inequities, the pattern is consistent across subgroups: The annual salary of workers rises consistently with increasing levels of education.

The disparity in lifetime earnings between workers with high school diplomas and those with bachelor's degrees is nearly $1 million (Symonds et al., 2011). Without question, “a college degree is key to economic opportunity, conferring substantially higher earnings on those with credentials than those without” (Carnevale et al., 2011, p. 1). For individuals who fail to graduate from high school, the consequences likely will extend far beyond diminished lifetime earnings potential. Compared to high school graduates, dropouts are significantly more likely to lead unhealthy lives (which contributes to increased health care costs for our overall citizenry), to be imprisoned, to become divorced, and to be single parents with children who themselves become high school dropouts (Bridgeland, DiIulio, & Morison, 2006).

The societal ramifications of dropouts are profound. Local, state, and national financial balances are negatively affected, due to a loss of revenues that would have been generated from enhanced income levels, in addition to increased societal costs for health care and social services (Bridgeland et al., 2006). In 2001, 4 in 10 young adults who were high school dropouts received some form of governmental assistance, and dropouts were eight times more likely than high school graduates to be incarcerated at some point within their lifetimes (Bridgeland et al.). The cost to our nation for each dropout who becomes entangled with crime and drugs ultimately can reach a staggering $2.3 million (Snyder & Sickmund, 1999). Stated another way: The monetary costs to our society for a dropout who becomes a criminal exceeds the lifetime earnings potential of a college graduate.

**Research on High School Dropouts**

Given the significant costs to society of an adolescent’s failure to graduate from high school, it is important to investigate more closely the dropout phenomenon. One factor influencing high school completion is the age at which states allow students to withdraw from school. Compulsory school attendance laws vary across the nation, with 23 states (including the District of Columbia) permitting students to drop out when they reach the age of 16, 8 states at the age of 17, and 18 states at the age of 18; the remaining state, New Mexico, requires all students to graduate from high school, with limited exceptions (Bridgeland et al., 2006). However, over half of the states provide exemptions that permit students to drop out sooner—as young as the age of 14 in five states. Permissible exemptions include parental consent, gainful employment, completion of the eighth or ninth grade, consent of school officials, and/or a familial hardship necessitating that the child obtain employment (Bridgeland et al., 2006). In Illinois, students may drop out at the age of 17, on the provision that they are lawfully employed and excused by a school official.

Students decide to terminate their high school educational experiences for a variety of reasons, many of which are outside the school’s control, such as family financial burdens, pregnancy, or the need to care for a family member. However, a significant proportion of dropouts cite issues that could be readily addressed by their high schools. For example, 69% of dropouts...
reported that they left school because they did not feel motivated or inspired to work hard, and 47% also withdrew because their classes were not interesting (Bridgeland et al., 2006, p. 4).

Fortunately, trend data over the past few decades indicate that a higher proportion of students are choosing to remain in high school and persist through graduation, although differences in some subgroups do exist. The annual U.S. high school dropout rate declined from 12.6% in 1989 to 7.4% in 2010, with declines identified for all racial/ethnic subgroups (Snyder & Dillow, 2012). Unfortunately, in 2008-09, the state of Illinois reported the highest annual dropout rate (11.5%) of all 50 states (Chapman, Laird, Ifill, & KewalRamani, 2011). Although differences for male and female subgroups were minimal (Chapman et al., 2011), dropout rates were higher in 2010 for African American (8.0%) and Latino/a (15.1%) students compared with White (5.1%) students (Snyder & Dillow, 2012). Furthermore, students from low-income families in 2009 were five times more likely than students from high-income families to withdraw from high school (Chapman et al., 2009). Although some progress has been made, the stark reality is that one in four adolescents across the U.S. does not graduate from high school (Snyder & Dillow, 2012). Only 71% of entering Illinois high school freshmen subsequently graduate from high school (Advance Illinois, 2012); the graduation rate in Chicago Public Schools in 2008-09 was lower, at 60.8% (Snyder & Dillow, 2012).

Concerns about the high-school dropout rate are particularly poignant, given the “skills gap” (Symonds et al., 2011, p. 1) that currently exists within the U.S. workforce, with many teens and young adults lacking the work ethic and skills necessary for success in the 21st century workforce and therefore finding themselves unable to secure and maintain employment or finding themselves employed in low-skilled and low-paying positions. The demand for college-educated workers in the U.S. has been continually increasing throughout the past 40 years: Whereas 72% of all jobs in 1973 did not require a college degree, that proportion significantly declined to 41% in 2007 and is projected to fall to 37% in 2018 (Carnevale et al., 2011). Unfortunately, the United States “has been underproducing college-educated workers for decades” (Carnevale & Rose, 2011, p. 8). Furthermore, occupations requiring master's degrees are projected to experience the fastest growth between 2010 and 2020, while those requiring high school diplomas will evidence the slowest increase (Bureau of Labor Statistics, 2012). Carnevale and Rose (2011) summarized the competing challenges for our nation:

Two of the most pressing challenges facing the United States in the coming decades are remaining competitive in the global economy and ensuring that we follow through on the promise of a decent living wage to those willing to work for it. Helping more students complete their college degrees is one way to address both of these challenges. (p. 38)

Although researchers highlight the importance of attaining at least a bachelor's degree, Symonds et al. (2011) explain that nearly half of projected job openings in the U.S. that require some form of postsecondary education will be filled by individuals who hold occupational certificates or associate's degrees. According to Symonds et al., many of these occupations—including electricians, police officers, dental hygienists, and paralegals—command higher wages than those requiring a bachelor's degree. Within the state of Illinois, 80% of jobs currently require training beyond high school (Advance Illinois, 2012). Thus, it is clear that a high school diploma is essential, as it serves as the gateway to postsecondary educational experiences that will provide teens and young adults with necessary skills for workforce success.

Graduates of our nation's high schools must be equipped with the academic knowledge and skills to transition easily into the next phase of their careers, whether they choose to enter the workforce or military, or to enroll in postsecondary training. How well prepared are our high school students? The next section presents data on academic attainment of high school students and their readiness for college and careers.
This section presents information on U.S. high school students’ performance on achievement testing, providing information on international comparisons of secondary school students, national assessment data, and the Illinois high school student performance. In addition, recent performance on college readiness assessments also is reviewed.

Performance on International Assessments

An analysis of the performance of secondary school students on international academic tests discloses that the United States typically ranks in the “middle of the pack.” Examining achievement scores of the 34 member nations of the Organization for Economic Cooperation and Development (OECD) in 2009, although the average reading and science literacy scores of U.S. 15-year-olds were slightly above the mean, it is disheartening that the U.S. ranked below 11 other nations in reading literacy and 16 in science literacy (Snyder & Dillow, 2012). U.S. students scored below the mean in mathematics, ranking below 24 of the 34 nations (Snyder & Dillow, 2012).

Performance on National Assessments

The No Child Left Behind Act of 2001 mandated that all states must participate in National Assessment of Educational Progress (NAEP) testing in the content areas of reading, mathematics, and science, so that state averages and national trend data could be maintained. Average reading and mathematics scores for 17-year-olds in 2008 were not significantly different from scores in 1971 (Snyder & Dillow, 2012); the science assessment recently was revised to align with a new framework, so current student performance in science cannot be compared to previous assessments. Chronic achievement gaps continue to persist across all three content areas, although the gaps have decreased slightly. In reading, White students outperformed Black and Hispanic students, and females outscored males in 2008. Similarly, White students recorded higher average scores than did Black and Hispanic students; males and females recorded nearly identical scores in 2008 (Snyder & Dillow, 2012). On the 2009 science assessment for twelfth graders, White and Asian/Pacific Islander students scored higher than Black, Hispanic, and American Indian/Alaska Native students; average scores for males were higher than those for females.

Performance of Illinois Students on Assessments

An analysis of statewide performance Prairie State Achievement Examination (PSAE), which is administered in the eleventh grade, indicates that only half of Illinois public school students demonstrate mastery of state learning standards. In 2011, “meets or exceeds” ratings were attained for 51% of students on the overall composite scores, with 51% earning these ratings in reading, 54% in writing, 51% in mathematics, and 49% in science (Illinois Interactive Report Card [IIRC], 2011b). Again, achievement gaps were noted for subgroups. Across all content areas, White and Asian students outperformed Black, Hispanic and American Indian students on the PSAE in 2011. In addition, Limited English Proficient (LEP) students, those with disabilities, and low-income students had significantly lower percentages of students earning “meets or exceeds” ratings than did their peers (IIRC, 2011b). Trend data discloses that a higher proportion of males consistently meet or exceed state standards in mathematics and science, while females consistently outperform males in reading and writing (IIRC, 2011b).

Performance on Assessments of College Readiness

Given the projections that nearly two thirds of future jobs in the U.S. will require postsecondary training, it is informative to investigate high school students’ performance on assessments of college and career readiness. Students who intend to apply to college typically will complete the ACT and SAT examinations. Although the SAT is the most widely used college admissions examination nationally, students in the Midwest are more likely to take the ACT exam.

The national average composite score on the ACT in 2011 was 21.1; however, the composite for Illinois was 20.9, placing our state 32nd out of 50 states (ACT, 2011b). However, it is important to note that, unlike
many other states, all eleventh-grade students in Illinois complete the ACT assessment. According to ACT (2011a), in 26 states, at least 60% of high school students completed the ACT.

The ACT organization has created College Readiness Benchmarks (CRBs), based upon the ACT subject areas, to provide meaningful information to students, parents, and school officials regarding students’ academic preparation. According to the ACT (2011b) officials:

ACT has long defined college and career readiness as the acquisition of the knowledge and skills a student needs to enroll and succeed in credit-bearing first-year courses at a postsecondary institution (such as a two- or four year college, trade school, or technical school) without the need for remediation. (p. 3).

This definition also has been adopted by the Common Core State Standards Initiative (ACT, 2011a). ACT asserts that the CRB for each subject area “represent the level of achievement required for students to have a 50% chance of obtaining a B or higher or about a 75% chance of obtaining a C or higher in corresponding credit-bearing first-year college courses” (ACT, 2011b, p. 3).

According to ACT (2011a), 66% of ACT-tested students in high schools in the United States met the College Readiness Benchmark in English in 2011, while 52% attained the CRBs in Reading, 45% in Mathematics, and 30% in Science. Only 25% of ACT-tested students met all four College Readiness Benchmarks in 2011, and 28% did not meet any CRBs. By subgroups, 31% of White, 41% of Asian, 15% of Pacific Islander, 11% of Hispanic, 11% of American Indian, and 4% of African American met all four benchmarks in 2011 (ACT, 2011a). Within the state of Illinois in 2011, 56% met the CRBs in English, 40% in Reading, 39% in Mathematics, and 26% in Science. Thirty percent of Illinois students met no CRBs in 2011 (ACT, 2011b). Although the performance of Illinois students was below that of ACT-tested students across the nation, as was noted previously, Illinois requires all high school juniors to complete this assessment whereas most states do not mandate the ACT examination for every student. Since students in other states that do not mandate the ACT are electing to complete this examination as a requirement for college admissions it is more likely that they will have completed college preparatory coursework and, therefore, comparisons of Illinois CRB averages to nationwide CRBs technically are not equivalent groupings. Students who have not completed advanced coursework in high school are unlikely to perform at levels of the ACT exam that indicate college readiness; thus, it is not surprising that Illinois CRB averages would be lower than national averages.

The SAT examination also is used for college admissions decisions, and the College Board (2012) has established an SAT Benchmark score of 1550 (out of 2400) as a measure of college and career readiness. This benchmark “is associated with a 65 percent probability of obtaining a first year GPA (FYGPA) of a B- or higher, which in turn is associated with a high likelihood of college success” (College Board, p. 17). For the high school class of 2012, only 43% of students completing the SAT met the SAT Benchmark. According to the College Board, students who met the subject-level college readiness indicators in critical reading, mathematics, and writing were more likely to have completed a core curriculum, including honors or Advanced Placement courses. Only 5% of Illinois high school students in the class of 2012 completed the SAT examination, but this data is still informative for Illinois educators.
Research on secondary school students discloses a significant disconnect between their career aspirations and the depth and quality of their academic preparation. Analyses of high school transcripts have documented that the completion of rigorous curriculum is a significant predictor of bachelor’s degree completion, particularly for African American and Hispanic students (Conley, 2010). Despite the fact that only one fourth of the nation’s high school students meet college readiness standards (ACT, 2011a), a much larger proportion of graduates intends to continue with some form of postsecondary training. Sixty percent of U.S. high school students report that they intend to graduate from a 4-year college, and 70% of high school graduates enrolled in 2- or 4-year postsecondary institutions in the fall semester immediately after completing high school (Aud et al., 2012). In the state of Illinois, 55% of high school graduates enroll in some form of postsecondary education (Advance Illinois, 2012). However, disparities exist that restrict access for many groups. U.S. students from high-income families (82%) were much more likely in 2010 to enroll in college than those from low-income (52%) and middle-income (67%) families. Females (74%) were more likely to enroll in college than males (63%), and Asians (89%) were more likely to immediately transition to college than White (70%), African American (66%), and Latino/a (60%) students (Aud et al.).

Many school districts produce annual district report cards that include, as a point of pride, the percentage of their graduating students who subsequently enroll in colleges and universities. School district officials typically use as their metric of success the mere fact that their graduates enrolled in postsecondary education, but they do not engage in further exploration to assess whether their high school graduates were prepared for college and/or if they ultimately were successful in obtaining postsecondary degrees. Approximately 95% of the nation’s community colleges have open-admissions policies (Provasnik & Planty, 2008), because they have at the heart of their mission a long-standing commitment to access to postsecondary education. Enrollment in community colleges may simply speak to the fact that a high school graduate was allowed access to the institution and not whether the student was qualified for admission into college-level coursework. Therefore, public school officials who are sincere about the quality of their graduates’ academic preparation need to track student progress beyond their high school commencement ceremonies.

The stark reality is that significant numbers of entering college freshmen are inadequately prepared for the demands of postsecondary education. Approximately 4 in 10 students who enroll in postsecondary education are required to complete one or more remedial courses (Conley, 2010). Disaggregated by institution type, over half (51.7%) of entering students in 2-year colleges and 19.9% of those entering 4-year universities in Fall 2006 required remediation (Complete College America, 2012). African American, Hispanic, and low-income students are more likely to be assigned to such courses than are their White peers (Complete College America, 2012; Conley, 2010). Furthermore, as many as 80% of enrolled students on some community college campuses are placed in these developmental courses (Conley, 2010).

The effects of remedial placement, predictably, are not uniformly positive: Nearly 40% of remedial students fail to complete these courses (Complete College America, 2012). Because remedial courses do not accrue college transfer credits, students assigned to these courses incur additional postsecondary expenses and also take longer to complete their degrees—assuming that they actually remain in college. Fewer than 10% of students who begin their community college careers on the remedial pathway earned their associate’s degrees within three years (Complete College America, 2012). Furthermore, only 17% of individuals who were assigned to a remedial course in reading and only 20% of students who enrolled in two remedial classes (other than reading) subsequently earned a bachelor’s degree or higher (Conley, 2010).
The state of Illinois is committed to ensuring that each student has access to a quality curriculum that is rigorous and relevant to the knowledge and skills needed for workforce success in the 21st century. It is essential that Illinois school district educators work in collaboration with all stakeholders, including representatives from local businesses and industries and personnel in community colleges, colleges, and universities, to ensure that coursework is rigorous and relevant. Additionally, educational pathways must be fully articulated from secondary to postsecondary education so that students have relatively seamless transitions from high school into workforce and postsecondary settings. The remainder of this paper presents strategies and practices that can be adopted in Illinois high schools that can more fully prepare each student for college and career success. School administrators and their faculty members are encouraged to carefully consider and implement each recommendation within their high schools. References and recommended readings are provided at the end of this paper, so that school officials have additional resources available to support their implementation strategies.

**Recommendation 1: As the learning leader, the principal must assume primary responsibility for ensuring that the school organization promotes students’ readiness for college and careers.**

Exemplary school leaders do not merely “hire good teachers, get out of the way, and let them teach.” As the instructional leaders of their organizations, effective principals are actively engaged with their faculty, are a consistent and visible presence in the classrooms, and maintain an unwavering focus on student learning. Research confirms that principals who are learning leaders establish a building culture that is focused on learning, create organizational structures that support student learning, continually assist teachers with improving their craft, and provide resources that enable teachers to be effective in their classrooms (Leithwood & Jantzi, 2008; Leithwood et al., 2004). However, principals are not teachers: Because they are not working in the classrooms on a daily basis delivering instruction directly to students, their effects on student learning are indirect (Leithwood & Jantzi, 2008; Leithwood et al., 2004). Yet, when principals focus their efforts on improving teaching and learning practices, significant student achievement gains occur in their schools. Exemplary principals also do not operate as Lone Rangers; they provide opportunities for their faculty members to become actively involved in leadership roles, particularly related to guiding the organization’s collective efforts toward improved teaching and learning. When principals and teachers share leadership responsibilities, collegial relationships are strengthened and student achievement increases are further enhanced (Leithwood & Sun, 2012).

As learning leaders, principals must take an active role in promoting students’ college and career readiness. Principals must raise awareness within the faculty of the need to carefully assess the school curriculum, review course offerings for relevancy, and ensure that students are being given access to a 21st-century education that fully prepares them for workforce success. This does not happen in isolation—as teachers, counselors, students, parents, and community stakeholders also must be involved in the process and leadership roles may be assigned to others within the organization. Yet, the principal must be responsible for initiating building-wide and district-level conversations about workforce readiness, and also for creating structures and practices within the building that maintain a consistent focus on college and careers.

**Recommendation 2: Provide students with opportunities for career exploration.**

Students who are engaged in career exploration gain a comprehensive understanding of occupations that are aligned with their personal interests, talents, and academic skills. As a result, they are more likely to take college entrance examinations, Advanced Placement examinations, and to enroll in college (Visher, Bhandari, & Medrich, 2004). When they identify a career pathway, students discover which high school courses, postsecondary training, and work-based experiences are essential for them to obtain the skills and credentials necessary to be employable.
in their chosen field. Armed with this information, students understand the purpose of their high school educational experiences and their course selections will become more focused, coherent, and aligned with their career interests. Consequently, they may be more motivated to persist through high school graduation, because they recognize the importance and relevance of their courses to their ultimate workforce success (Williams, Bragg, & Makela, 2008).

Ideally, career awareness and exploration activities will begin at the elementary and middle school levels and continue into high school, exposing students to an array of career information, including an overview and description of career fields, academic preparation and experiential learning experiences that are required, annual salary and career earnings projections, and long-range trends and projections of workforce needs for each career area. This information assists students and their parents, as they engage in the process of identifying what careers likely will be in demand when students graduate from high school and are reaching decisions about high school coursework, employability skills, and postsecondary training. Some high schools provide access to online career resources, such as What’s next, Illinois (Illinois Student Assistance Commission, n.d.), and also have students complete career interest inventories to assist them with career exploration. In addition, some Illinois community colleges and Education for Employment (EFE) systems provide career exploration software at no cost to their local high schools; therefore, school leaders are encouraged to consult their community college partners about resources that may be accessible for use by their students.

Students with one or more college-educated parents may already feel comfortable with the process of identifying a potential career and making wise course choices in high school in order to best prepare the student for career success. Therefore, these students may need minimal support from the school counselors and faculty, because their parent(s) are familiar with the process of career exploration and are providing personalized guidance to their students at home. However, students who do not have immediate family members with college degrees may have little awareness of career options and, consequently, may not be knowledgeable of essential high school courses they should complete in preparation for their intended careers (Williams et al., 2008). These students may believe that they are on educational pathways that fully prepare them for college and careers, when in reality they are not (Messersmith & Schulenberg, 2008). Unless the high school administration and faculty provide regular, structured opportunities for students to explore career options and to deliberately identify high school courses that will position them for postsecondary training and workforce success, students who are not from college-educated families may not, of their own volition, make correct high school course selections. The reality is career exploration simply cannot be left to chance for any student—because every student is deserving of career guidance and support from the school system. The high school faculty must be committed to providing resources and personalized support, so that each student can make informed career choices and correct high school course selections.

**Recommendation 3: Implement the Illinois Career Cluster Model for all students.**

The Illinois State Board of Education and Illinois Community College Board have adopted the Illinois Career Cluster Model (Nicholson-Tosh & Bragg, 2013), which is based upon the National Career Clusters™ Framework (National Association of State Directors of Career Technical Education Consortium, 2012). The 16 career clusters, which are grouped in accordance with the knowledge and skills that workers will require, are as follows: Agriculture, Food and Natural Sciences; Architecture and Construction; Arts, A/V Technology and Communications; Business Management and Administration; Education and Training; Finance; Government and Public Administration; Health Science; Hospitality and Tourism; Human Services; Information Technology; Law, Public Safety, Corrections and Security; Manufacturing; Marketing; Science, Technology, Engineering and Mathematics; and Transportation, Distribution and Logistics. Table 1 provides a brief description of each cluster.
## Table 1: The 16 Career Clusters™

<table>
<thead>
<tr>
<th>Career Cluster</th>
<th>Description</th>
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<tbody>
<tr>
<td>Agriculture, Food &amp; Natural Resources</td>
<td>The production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.</td>
</tr>
<tr>
<td>Architecture &amp; Construction</td>
<td>Careers in designing, planning, managing, building and maintaining the built environment.</td>
</tr>
<tr>
<td>Arts, A/V Technology &amp; Communications</td>
<td>Designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.</td>
</tr>
<tr>
<td>Business Management &amp; Administration</td>
<td>Careers in planning, organizing, directing and evaluating business functions essential to efficient and productive business operations.</td>
</tr>
<tr>
<td>Education &amp; Training</td>
<td>Planning, managing and providing education and training services, and related learning support services such as administration, teaching/training, administrative support, and professional support services.</td>
</tr>
<tr>
<td>Finance</td>
<td>Planning and related services for financial and investment planning, banking, insurance, and business financial management.</td>
</tr>
<tr>
<td>Government &amp; Public Administration</td>
<td>Planning and executing government functions at the local, state and federal levels, including governance, national security, foreign service, planning, revenue and taxation, and regulations.</td>
</tr>
<tr>
<td>Health Science</td>
<td>Planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.</td>
</tr>
<tr>
<td>Hospitality &amp; Tourism</td>
<td>Preparing individuals for employment in career pathways that relate to families and human needs such as restaurant and food/beverage services, lodging, travel and tourism, recreation, amusement and attractions.</td>
</tr>
<tr>
<td>Human Services</td>
<td>Preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care, and consumer services.</td>
</tr>
<tr>
<td>Information Technology</td>
<td>Building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support and management of hardware, software, multimedia and systems integration services.</td>
</tr>
<tr>
<td>Law, Public Safety, Corrections &amp; Security</td>
<td>Planning, managing, and providing legal, public safety, protective services and homeland security, including professional and technical support services.</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>Planning, managing and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance and manufacturing/process engineering.</td>
</tr>
<tr>
<td>Marketing</td>
<td>Planning, managing, and performing marketing activities to reach organizational objectives such as brand management, professional sales, merchandising, marketing communications and market research.</td>
</tr>
<tr>
<td>Science, Technology, Engineering &amp; Mathematics</td>
<td>Planning, managing, and providing scientific research and professional and technical services (e.g., physical science, social science, engineering) including laboratory and testing services, and research and development services.</td>
</tr>
<tr>
<td>Transportation, Distribution &amp; Logistics</td>
<td>The planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.</td>
</tr>
</tbody>
</table>

High school teachers in Career and Technical Education (CTE) fields will be familiar with the career clusters through their involvement with the Carl D. Perkins Career and Technical Education Improvement Act of 2006 (Perkins IV). Illinois high schools receive Perkins IV funding for qualifying CTE courses within their schools, which are distributed through their Education for Employment (EFE) regional delivery systems. It is unfortunate that within some high schools, some teachers and administrators may consider their CTE courses as separate from the academic core curriculum of their schools. Students in these schools may be counseled and sorted into two distinct tracks: an academic or “college preparatory” curriculum for individuals who intend to pursue postsecondary education upon graduation, and a CTE or “career” curriculum for individuals who do not plan to enroll in college. One of the important themes of the Perkins IV legislation is the assertion that academic and CTE curricula are fully integrated and coordinated throughout the P-20 system. Thus, in a carefully designed and articulated high school curriculum, students will have access to an array of courses that incorporate the academic and technical skills that they need to succeed in a 21st century knowledge- and skills-based economy. As an initial step in the formation of this integrated curriculum, high schools must implement career clusters, so that faculty, students, and parents become aware of high school courses that students are recommended to complete in order to have foundational academic preparation within their chosen career cluster. Students should be required to select a career cluster, with the understanding that they are not locked rigidly into the cluster and its curriculum. The cluster serves as a mechanism to guide students’ course selections and curricular experiences; if the student’s career interests change, then he/she will change affiliation to the appropriate career cluster.

School administrators should lead thoughtful conversations among their school faculty and staff members, promoting an understanding that the students’ selection of college preparatory and CTE courses is not an “either/or” decision. All courses should be developed with appropriate levels of rigor and relevance, integrate academic content with real-world applications, and be viewed within the overall framework of their applicability within the identified career cluster.

**Recommendation 4: Ensure that everyone within the school is knowledgeable of key career concepts and terminology.**

It is essential that every individual within the school consistently uses a common vocabulary, so that students, parents, teachers, faculty, administration, and staff members have a shared understanding of career terminology. Care should be taken to include the correct terms and to include their definitions in school documents, including student handbooks and course selection guides.

Within each of the 16 career clusters are career pathways, which are multi-year programs that prepare students for a range of postsecondary options. At the present time, there are 79 nationally recognized career pathways (Jankowski, Kirby, Bragg, Taylor, & Oertle, 2009). Programs of Study (POS), which start no later than ninth grade and continue at least through two years of postsecondary training, are an integrated progression of courses and experiences that include both coursework and CTE content. Table 2 provides a more comprehensive description of these key concepts and definitions; Figure 1 provides a visual representation of the 16 career clusters and 79 career pathways.

When students are considering their career options, they likely will begin their exploration at the career cluster level, seeking information about the range of career pathways that could be available to them within each cluster. Once students have identified the cluster, they can begin to explore career pathways related to that cluster area and determine how much postsecondary education may be required. As the review Programs of Study, they will be able to identify high school courses that they are required and are recommended to complete to be fully prepared within the various career pathways. The Illinois Programs of Study Guide (Taylor et al., 2009) is a helpful resource to
assist the faculty with understanding key terminology, in addition to the guiding POS principles.

The typical POS will include coursework at least through the first two years of postsecondary education, so that students and parents can observe the progression of high school coursework and note how it aligns with postsecondary courses. It is essential for the POS to be designed in collaboration with local community colleges, colleges, and universities, so that the curriculum is aligned and articulated, so that students can transition into postsecondary settings without gaps in their educational experiences or expectation to repeat course content in college that they mastered while in high school. Students should not have to play a guessing game when making course selections; when the high school curriculum is situated within the 16 career clusters and Programs of Study are carefully developed, students have a clear understanding of what courses are necessary for them to progress smoothly into their intended career pathways. The National Association of State Directors of Career Technical Education Consortium website (http://www.careertech.org/career-clusters/resources/plans.html) contains templates with sample plans of study, which include possible secondary and postsecondary courses and educational experiences within the 16 career cluster areas.

Table 2: Key Concepts and Definitions

Career Clusters are groups of occupations and industries that have in common a set of foundational knowledge and skills. There are 16 nationally recognized clusters within which are multiple career pathways.

**Cluster Level Knowledge and Skills:** The cluster level knowledge and skills set is built on a common core required for career success in the multiple occupations included in the cluster. This shared core consists of the following elements: academic foundations; communication; problem solving and critical thinking; information technology applications; systems; safety, health, and environment, leadership and teamwork, ethics and legal responsibilities; employability and career development, and technical skills.

Career Pathways are multi-year programs of academic and technical study that prepare high school students for a full range of postsecondary options within each of the 16 clusters. Currently, there are 79 nationally recognized pathways, each with specific pathway level knowledge and skills. These pathways provide a context for exploring career options at all levels of education and a framework for linking learning to the knowledge and skills needed for future education and employment.

**Pathway Level Knowledge and Skills:** The pathway level knowledge and skills set is built on a common core of knowledge and skills required for career success in all programs of study aligned with the pathway. This core is specific to the pathway and consists of elements selected by secondary and postsecondary educators with input from business and industry and other stakeholders.

Programs of Study (POS) are sequences of courses that incorporate a non-duplicative progression of secondary and postsecondary elements which include both academic and career and technical education content. Programs of study should start no later than the ninth grade and continue through at least two years of postsecondary education. Programs of study include opportunities to earn college credit (dual credit) in high school, an industry-recognized credential or certificate at the secondary/postsecondary level, and an associate or baccalaureate degree.

Recommendation 5: Work collaboratively with businesses, industries, local community colleges, colleges, and universities to ensure that the curriculum is current and robust within each career cluster.

Once the faculty becomes knowledgeable of the 16 career clusters and 79 career pathways, they can begin to assess the quality, depth, alignment, and progression of the high school curriculum within each of the clusters. One goal should be to work toward an aligned P-14 or P-16 curriculum within selected career pathways that are of interest to larger portions of the student body, so that students are not required to repeat coursework, do not have gaps in their educational preparation, or must complete remedial courses in order to meet academic requirements for college admission. The CTE teachers and school counselors may have worked with the local community college faculty to develop Programs of Study for some career pathways; in this instance, these educators already have engaged in the process of analyzing, sequencing, and assessing the quality of some high school coursework and have made necessary revisions to their curriculum and/or course sequences.

As noted previously, the website of the National Association of State Directors of Career Technical Education Consortium (http://www.careertech.org/career-clusters/glance/clusters-occupations.html) provides sample Plans of Study for the 79 career pathways, as well as knowledge and skills for each career cluster and pathway. This information is an excellent resource for the faculty, as they review their course offerings and curriculum content within the 16 career clusters. It also will be helpful to examine workforce projections, so that the faculty can have an understanding of predicted demands (or lack thereof) for varying careers, within the state, nationally, and internationally. In addition, the Illinois Department of Commerce and Economic Opportunity (www.commerce.state.il.us/dceo) and Illinois Department of Employment Security (http://www.ides.illinois.gov) websites are helpful resources to assist the faculty with career information and employment projections.

When reviewing the high school’s curricular offerings within the career clusters, it is essential to involve key individuals from local businesses and industries, as well as parents, through the formation of a local advisory council. These individuals can provide insights into knowledge and skills that their applicants must possess to be successful in their workplaces, and they also can explain what skills typically are lacking in their employees when they are hired. Additionally, local businesspersons can share their hiring projections for various occupations within their firms, noting the credentials that are needed for these positions. Some occupations may require no additional training other than a high school diploma, other jobs may require specialized coursework in high school, and other positions may require limited postsecondary training, associate’s degrees, or bachelor’s degrees. Given this information, the high school faculty can work closely with parents, local employers, and with key businesspersons engaged through advisory councils or as members of curriculum committees to examine and revise the high school curriculum. An added benefit is that other relationships can be established with the local businesses and industries—such as identifying after-school employment opportunities and internship experiences for students, permitting the faculty’s access to facilities and equipment made available by the local employers, providing summer work experiences for faculty, and developing opportunities for businesspersons to serve as guest lecturers in the classroom. The Strengthening Partnerships Workbook (Office of Community College Research and Leadership, 2012) can assist high school faculties with establishing effective partnerships.

Faculty members from the local community colleges and colleges also should be involved as the high school faculty reviews the curriculum, because they are aware of foundational coursework that their incoming students should have completed to be fully prepared for success in their initial years of postsecondary education. If they have not been in communication with their local postsecondary institutions, high school educators may be surprised to discover the proportion of their graduates who are required to complete remedial coursework when they enroll in
their local community colleges and colleges. Once they have this information, the high school faculty can work collaboratively with their postsecondary partners to identify factors that contributed to students’ lack of success. For example, did the students complete the prerequisite coursework in high school? If not, were they unaware of the requirements, or were they discouraged from enrolling in these courses? Were unnecessary prerequisites set, which restricted students’ access? If the students did complete the required course sequence in high school but were unsuccessful in college, was the curriculum outdated, irrelevant, or lacking in rigor? Were there insufficient course offerings within the career cluster to give the students an adequate foundation prior to entering college? Secondary and postsecondary educators can work together to identify appropriate secondary-to-postsecondary course sequences that are desirable within each career pathway.

Having access to these data, and collecting additional data through high school transcript analyses, curriculum reviews, and interviews of students and teachers, will be helpful as the high school faculty examines the depth of their curriculum within each of the career clusters. It would not be surprising to learn that students have an array of course offerings within some career clusters but relatively few within others. In that instance, faculty would need to determine how to provide more extensive learning opportunities for students who have career interests in areas that have fewer course offerings. Arrangements with local community colleges and colleges can be helpful to expand students’ access and preparation within the cluster area, such as developing articulation agreements and/or offering dual-credit coursework, permitting students to leave the high school campus in their senior year to enroll in college coursework, and completing online courses. In addition, high school educators should remain current on articulated credit agreements that are being implemented through the Illinois Articulation Initiative (IAI). Students need to be informed about Illinois community colleges, colleges, and universities that are participating in the IAI, so they know whether any college credit they may earn during their high school years can transfer to postsecondary institutions to which they are considering applying for admissions.

**Recommendation 6: Encourage every student to complete a rigorous curriculum, and include options for endorsements to the high school diploma.**

Each high school should create a challenging curriculum within each career cluster that provides extensive course options to fully prepare students for postsecondary education and the workforce. The high school administration and faculty should discuss various course options to make available to students, to ensure that they are exposed to rigorous course offerings, including Honors, dual-credit, International Baccalaureate (IB), and Advanced Placement (AP) courses. Recent data indicates that in the state of Illinois, only 29% of high school students completed at least one AP examination or were enrolled in the IB Programme, and only 19% of students received at least one score of 3 or higher on an AP examination (Advance Illinois, 2012).

The faculty should hold consistently high expectations for student performance for every student. Students should be encouraged to go beyond minimum high school graduation requirements and to complete a challenging course sequence that will fully prepare them for college and career success. Working with business leaders and also using job skills assessment materials such as ACT WorkKeys (ACT, n.d.), the faculty can identify appropriate coursework and training for students based upon their skill levels and career interests.

Students should not be scheduled into rigid academic tracks, with one track reserved for college-bound students and a distinct option for non-college-bound students. Course offerings should be carefully analyzed, and the principal should lead the faculty in deliberate conversations regarding what prerequisites, if any, are necessary to qualify for enrollment. (For example, why must only those students who earned a B+ or higher in Chemistry be permitted to enroll in AP Chemistry?) If the school has implemented a weighted grading system, the faculty also may wish...
to explore whether highly challenging weighted courses, which affect Grade Point Averages (GPAs) and class rank, provide incentives or disincentives for students to enroll in more rigorous courses. (For example, should Honors and AP courses receive a heavier weighting than other courses? Do weighted courses encourage or discourage students from taking challenging courses? Does the weighted course system encourage or discourage students from taking other courses that may be of interest to them, such as music and art?)

Table 3 lists minimum requirements for Illinois high school graduation; this table also lists the curriculum requirements recommended by High Schools That Work, as well as the college preparatory curriculum suggested by ACT. According to the Education Commission of the States (ECS, 2008a), 21 states in 2008 either offered or intended to offer a college preparatory or honors diploma. The high school faculty also may wish to explore other designations for the diploma, such as a Career/Technical diploma or endorsement; 12 states offered such Career/Technical designations for their diplomas in 2008 (ECS, 2008b). The state of Illinois does not offer college preparatory or Career/Technical diplomas, but local Illinois school boards are not precluded from developing these diploma options for the high schools within their districts. Students should not merely settle for completing the minimum graduation requirements to attain their high school diploma. Providing enhanced diploma options provides students with concrete guidance regarding what high school coursework is necessary to prepare them for college and career success, and it can serve as a mechanism to motivate students to achieve at higher levels. Students who complete more rigorous course experiences leading to these enhanced diplomas will be better positioned when applying to college, military service and/or job opportunities.

Table 4 lists courses that are required for admission to public universities in the state of Illinois. Faculty may find this information to be helpful, should they wish to explore creating a college preparatory diploma option. Parents and students certainly will find this information invaluable as they explore Illinois public universities for the students’ postsecondary enrollments.
<table>
<thead>
<tr>
<th></th>
<th>State of Illinois Minimum Graduation Requirements</th>
<th>High Schools That Work Recommended Curriculum</th>
<th>ACT College Preparatory Curriculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>4 years</td>
<td>4 years</td>
<td>4 years</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3 years (Algebra I and one course with geometry content)</td>
<td>4 years (rigorous Algebra I, Geometry, Algebra II, and higher level course). Students completing Algebra I in grade 8 complete additional 4 years of math.</td>
<td>3 years (rigorous Algebra I, Geometry, Algebra II)</td>
</tr>
<tr>
<td>Science</td>
<td>2 years</td>
<td>3 years of college-prep science (Biology, Chemistry, Physics or Applied Physics, Anatomy/Physiology)</td>
<td>3 years (rigorous Biology, Chemistry and Physics)</td>
</tr>
<tr>
<td>Social Studies</td>
<td>2 years (one year U.S. History or combination of U.S History and American Government)</td>
<td>3 years of college-prep social studies courses</td>
<td>3 years</td>
</tr>
<tr>
<td>Additional requirements</td>
<td>1 year Elective (art, music, foreign language, or vocational education).</td>
<td>Career or academic concentration (at least four courses in Humanities, Mathematics and Science, Career/Technical.</td>
<td>At least one computer course or demonstrated proficiency in computer technology beyond simple keyboarding.</td>
</tr>
<tr>
<td></td>
<td>2 years Writing (1 year must be an English course and 1 year may be provided as a part of any course offered).</td>
<td></td>
<td>One semester (18 weeks) Health Education.</td>
</tr>
<tr>
<td></td>
<td>4 years Physical Education (daily PE, while not a graduation requirement, is required).</td>
<td>At least one computer course or demonstrated proficiency in computer technology beyond simple keyboarding.</td>
<td>One quarter (9 weeks) Consumer Education.</td>
</tr>
</tbody>
</table>

Southern Regional Education Board. (2009). High Schools That Work: An enhanced design to get all students to standards. Atlanta, GA: Author.

<table>
<thead>
<tr>
<th>University</th>
<th>Total</th>
<th>English</th>
<th>Social Studies</th>
<th>Mathematics</th>
<th>Science</th>
<th>Additional Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago State University</td>
<td>15</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2 years of electives</td>
</tr>
<tr>
<td>Eastern Illinois University</td>
<td>15</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2 years of academic or vocational electives</td>
</tr>
<tr>
<td>Illinois State University</td>
<td>15</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2 years of one foreign language or fine arts; 2 years of electives</td>
</tr>
<tr>
<td>Northeastern Illinois University</td>
<td>15</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2 years of fine arts</td>
</tr>
<tr>
<td>Northern Illinois University</td>
<td>15</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2 unit (foreign language, art, music); up to one year of required coursework in science, social studies, foreign language, art, or music can be distributed in any of these five subject areas</td>
</tr>
<tr>
<td>Southern Illinois University at Carbondale</td>
<td>15</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2 years of electives in foreign language, art, fine arts, music, or vocational education; foreign language must include two semesters of the same language</td>
</tr>
<tr>
<td>Southern Illinois University at Edwardsville</td>
<td>15</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2 years of electives</td>
</tr>
<tr>
<td>University of Illinois at Chicago</td>
<td>15</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2 years foreign language</td>
</tr>
<tr>
<td>University of Illinois at Springfield</td>
<td>15</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2 years of one foreign language; or two years of fine arts, (art, music, dance, theater)</td>
</tr>
<tr>
<td>University of Illinois at Urbana-Champaign</td>
<td>15 or 15.5</td>
<td>4</td>
<td>2</td>
<td>3 (3.5 years for agricultural, consumer and environmental sciences, business, engineering, fine and applied arts, liberal arts and sciences)</td>
<td>2</td>
<td>2 years of one foreign language; or two years of fine arts (art, music, dance, theater)</td>
</tr>
<tr>
<td>Western Illinois University</td>
<td>15</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2 years electives (art, film, foreign language, music, speech, theatre, journalism, religion, philosophy, vocational education)</td>
</tr>
</tbody>
</table>

* This table indicates the minimum number of units required for admission for the Fall 2013 freshman class. Applicants should consult each university’s website for a complete description of required courses, additional requirements for specific programs, as well as additional units that are recommended to strengthen an applicant’s potential for admission.
Recommendation 7: Create and support an effective advising system.

The American School Counselor Association (ASCA, n.d.) recommends a student-to-counselor ratio of 250:1 for effective program delivery, and the Illinois State Board of Education (ISBE, 2002) supports this recommendation. However, ISBE regulations currently do not require that counselors must be placed within every school. Data from the U.S. Department of Education disclosed a nationwide student-counselor ratio of 459:1 in 2009-2010; however, the state of Illinois reported the fifth-highest ratio of the 50 states, at 667:1 in grades K-12 (ASCA, n.d.). Analyzed by grade levels in Illinois public schools, the ratio is 1,419:1 in grades K-8 and 314:1 in high schools (Advance Illinois, 2012). High school principals must advocate to their district administrators and school boards for student-counselor ratios that are aligned with the ASCA recommendations, so that each student receives personalized guidance services and support. Unfortunately, in the current economic climate many school districts are experiencing significant budget deficits, and many school boards may find it difficult to justify hiring additional school counselors when other teaching positions and school services are being eliminated. Therefore, high school faculties may need to consider other advising models, so that students and parents receive effective career guidance.

Student advising should not be the exclusive responsibility of the school counselor; in numerous high schools in Illinois and throughout the nation, administrators and teachers have provided career guidance and recommended course selections on an informal basis to their students throughout their professional careers. In fact, Conley (2005) reported that over half of freshman students and 23% of juniors had not talked to their school counselors about college. Students who wait until their final years of high school to discuss college options most likely will learn that they have made inappropriate course choices that will limit their access to postsecondary options. Many students and parents naturally talk with teachers with whom they have established close relationships, seeking guidance about potential careers and their suggestions for high school course selections.

Additionally, high school students regularly consult with their teachers concerning their recommendations of colleges and universities to which they should apply, and their teachers serve as references on their college applications. But this informal support may not be universally provided for all students: Some students may be more proactive in seeking support from their teachers, while other students—particularly those who are most in need of assistance—may not. Thus, high schools can build upon these existing teacher-student relationships to develop more formalized advising supports.

Schools with high student-counselor ratios (and even those with adequate counselor staffing levels) may consider establishing a Teacher Advisory (TA) program, in which each professional staff member (teachers, administrators, social workers, psychologists, library media specialists, etc.) is assigned a small group of students as advisees (Giles & Hargreaves, 2006). TA programs can serve numerous purposes, including (but not limited to) helping each student to establish caring relationships with one faculty member and a small group of classmates; assisting incoming freshmen and transfer students with acclimating to the school culture, structure, rules, and procedures; providing initial support for students who are experiencing problems or stress within the school; promoting career awareness and exploration; identifying career interests; exploring workforce projects in their areas of career interest; identifying postsecondary training and high school coursework required in their career field; providing assistance with students development of Individualized Learning Plans and their course selections; determining admissions requirements and tuition costs at various colleges and universities; assisting students with preparing for college admissions examinations; helping students complete and submit college application materials; assisting students and parents with completing the Free Application for Federal Student Aid (FAFSA) forms, other financial aid applications, and scholarship applications; and writing letters of recommendation in support of college or employment applications.

PROMOTING COLLEGE AND CAREER READINESS
TA meetings should be scheduled regularly within the high school schedule, with teachers and their advisory groups meeting on a daily, weekly, or monthly basis. The intent of TA programs is not for Teacher Advisors to replace the school counselor—instead, the advisors become a valuable resource and supplement to the counseling department. Many faculty members may be uncertain about college admissions requirements and processes outside of their own state institutions, and they may be uncertain about FAFSA applications processes. Therefore, the teachers will need to have training, not only on their roles and responsibilities as Teacher Advisors, but also on the content to be included in the meetings. Ideally, TA activities are under the supervision and support of the counseling staff, or a Teacher Advisory Team consisting of counselors, teachers, and administrators provides oversight to TA activities. Through TA programs, all students receive consistent, timely, and accurate information regarding career possibilities and college options. An additional benefit is that every faculty member will become more knowledgeable of college requirements and career skills, and potentially will make revisions to their course content to incorporate this information.

The high school principal must ensure that sufficient resources are available to support the TA program, providing teachers and students with ready access to college and career materials for use during their advisory meetings. In addition, time should be regularly set aside at faculty meetings for Teacher Advisors to discuss the effectiveness of the TA program, consider changes that need to be made, and report on feedback from students and parents. Finally, principals must provide professional development to teachers, so that they continue to expand their knowledge and skills as Teacher Advisors.

Recommendation 8: Require all students to identify a career interest and develop an Individualized Learning Plan, with an identified career cluster.

It is not sufficient for students to merely be aware of the career clusters: In order to maximize their learning experiences in high school, students must be required to select a career cluster and develop an Individualized Learning Plan (ILP) within that cluster. The ILP should encompass grades 9-12 and continue into postsecondary, so that students are informed about learning expectations from grades 9-14, 9-16, or beyond and understand what courses and learning experiences will be needed to adequately prepare them for their intended career. When students identify a career area, they understand what occupations are represented within the cluster and can make informed decisions about required and elective courses that will best prepare them for career success within their chosen cluster. Completion of appropriate high school courses will reduce the likelihood that students will be placed in remedial courses, should they continue on to postsecondary education. When students have a visual representation of their entire four years of high school coursework and beyond, they see how each course builds upon the previous one and the importance of solid academic performance each year so that they are prepared for success the subsequent year. If the high school faculty has worked closely with their community college and college/university partners to develop Programs of Study that include at least two years of postsecondary training, students can extend their plans of study into their college years, transitioning seamlessly to this next stage of their educational experiences. Additionally, schools can develop Programs of Study that permit students to engage in work-based learning experiences, including job shadowing, student projects, and internships, and to earn workplace credentials while they are completing their high school coursework. Students also should have opportunities to participate in career-related student organizations, both at the secondary and postsecondary level. With effective community college and college/university partnerships, schools can develop dual-credit and dual-enrollment agreements, so that students can earn college credits while they are still in high school. Working with school personnel to develop their ILPs, students will have a more complete understanding of the sequence of courses and learning experiences that are necessary to adequately prepare them for success in their intended career areas.

As the faculty develops suggested coursework within each cluster, flexibility must be provided to permit
students to participate in other elective courses that are of interest to them and also to explore other career fields. For example, a student who has designated the Science, Technology, Engineering and Mathematics career cluster may wish to enroll in elective courses in music and dramatics because he enjoys these activities, and he should be encouraged to do so. Obviously, not every entering freshman starts the high school experience with a clear vision of her/his career goals. Consequently, it is important for students to view the career cluster as a mechanism to guide their academic course selections, but one that is sufficiently pliable so that they can adjust their ILP to another career cluster, should their interests change.

**Recommendation 9: Replace the traditional Course Description Handbook with a Career Planning Guide.**

Many high schools create a Course Description Handbook, which contains information on the high school graduation requirements and a brief description of each course that is offered in the school, including grade levels for which the course is offered and any prerequisites. Students and their parents then are asked to select their course choices for the upcoming year. The quality of advising can vary from school to school; some students may receive intensive support from the counselors and teachers, who are available to answer any questions to ensure that the student selects the best possible courses that are in alignment with his/her career goals. In other schools, the student may simply be given the handbook and course registration form, with very little explanation, and asked to return the form within the next few days. Students and parents are left to their own devices, hoping that they have made wise decisions.

The Career Planning Guide extends beyond merely being a tool for selecting next year’s classes and assists students and parents with identifying career options. This guide will contain information on the 16 career clusters, occupations within each cluster, an indication of which occupations require postsecondary training, and how much postsecondary training is required. The guide includes an Individualized Learning Plan template for each career cluster, so students know what courses meet high school graduation requirements, which satisfy requirements within the career cluster, and which are recommended for a college preparatory diploma. Among the materials included is information on high school graduation requirements; College Preparatory and Career/Technical diploma requirements; opportunities to earn workplace credentials through carefully developed Programs of Study; an explanation of how GPAs are calculated and formulas for weighted courses; public university admissions requirements; requirements for ACT and SAT testing; and information on dual-credit and dual-enrollment courses, AP course requirements, and other college courses that may be made available to high school students.

Reviewing this information, entering freshmen students identify their career cluster and formulate course choices throughout their four-year high school careers. While they have finalized their freshman courses, it is understood that course selections for their sophomore, junior, and senior years are tentative and that they will have an opportunity to review and revise their Individualized Learning Plan at any time. For example, if in November a freshman student decides to transfer from the Finance career cluster and into the Human Services cluster, he/she will develop a revised ILP and will revise the projected sophomore, junior, and senior course choices based upon his new cluster. That spring, when students and parents contemplate courses for the upcoming year, he/she will re-examine his ILP and finalize the sophomore choices, while also making any additional revisions to his/her tentative junior and senior selections. Thus, the ILP becomes the student’s academic roadmap, with the ability to be modified as career interests change. In addition, the ILP should permit sufficient flexibility so that students have an opportunity to select elective courses each year, so that they can continue to explore potential career areas, participate in disciplines that they enjoy (such as music, dramatics, and art), and simply experience the joy of learning about new and different fields.

**Recommendation 10: Collect and analyze the information from students’ Individualized Learning Plans to determine future course needs.**
The students’ ILPs contain invaluable information that can be used to inform curricular offerings and future course planning. Although it is understood that course selections beyond the upcoming year are tentative and that students most likely will revise their plans each year as their personal interests change, the administration can tentatively analyze the collective ILP data from the student body and share this information with their teachers. As a first step, the faculty will have data on the proportion of students who have aligned with each of the 16 career clusters. Given this information, the administration and faculty can review the curricular offerings within each cluster, for appropriate balance based upon students interests, determining whether too many courses are being offered within low-demand clusters while high-demand clusters suffer from a dearth of course offerings. In some schools, the teachers’ personal interests may drive the curriculum; for example, a music teacher might propose the addition of a music theory course to the curriculum not because students have expressed an interest in the class but because the teacher has a personal desire to teach it. Within schools in which teachers drive the decisions about courses to be included in the school schedule, counselors may feel compelled to gently nudge or coerce students to sign up for courses with low enrollments, simply because more bodies are needed to meet minimum enrollments and not because the student should take the course because it is aligned with her/his career or personal interests.

The use of Individualized Learning Plans gives school officials access to three years of data beyond the upcoming year, providing administrators with ability to make tentative projections regarding upcoming course offerings and future staffing needs. As an example, if increasing numbers of students intend to enroll in AP Calculus within two years, the principal can begin to plan to incorporate one or two additional sections in the schedule. Assuming that student enrollments are projected to remain stable for the coming years, it is likely that sections of other courses will be reduced or eliminated, and the principal can analyze the students’ course selections to identify the areas in which their interests are waning. Having several years of projected course enrollments allows the principal to easily see which courses appear to have been filled merely because of teacher interest. When students are permitted to identify their courses based upon their career needs and personal interests, they will not be forced into courses simply to fill a class section.

Having several years of data also assists the faculty and administration with identifying trends related to interest within the career clusters. The principal and faculty can pinpoint the clusters that are gaining interest within the student body, as well as those that are diminishing in students’ interests. These trend data may prompt further investigation, such as surveying students and parents to determine reasons for heightened or decreased interest in certain clusters. For example, the anticipated opening of a new factory within a community or region that is projected to employ large numbers of high school graduates may stimulate students’ interests in employment opportunities within that career area. Conversely, if an existing factory is closed, resulting in the loss of scores of highly skilled jobs within the community, some high school students may decide to explore other career cluster areas. Discovering these trends, and having conversations with local business representatives and faculty with expertise in the emerging student interest areas, will be helpful, as the faculty collectively begins to identify clusters where course expansions and/or eliminations might be necessary, based upon changing community needs and student interests.

The analysis of Individualized Learning Plan data, together with projected course selections for upcoming years and anticipated employment needs in the community and region, allows principals to more effectively anticipate staffing needs. Therefore, school leaders can reach informed decisions when making employment decisions. For example, rather than simply replacing a retiring teacher with one with the same certification, the administration and faculty may identify teaching needs based upon students’ emerging interests in another career cluster. Hiring a teacher with expertise within a cluster area that is trending upward in terms of student interest increases the capacity of the school to offer additional courses in that cluster.
Conclusion

It is hoped that this publication provides information that will motivate high school principals and their faculty members to engage in dialogue about their school's effectiveness in preparing their students for college and career success. The Illinois Career Cluster Model provides a useful mechanism to promote career awareness for students and their parents, and it can be helpful to school administrators and teachers as they examine the rigor and relevance of their school curriculum and make necessary revisions to their curriculum and advising practices. High school educators are encouraged to seriously consider implementing these 10 recommended practices within their schools, so that their students will be more fully prepared for success in their chosen careers. Personnel at the Office of Community College Research and Leadership at the University of Illinois at Urbana-Champaign are available to provide resource support and consultation as Illinois high school faculties engage in these reforms.
References


References


Recommended Readings


OCCRL’s Mission

OCCRL researchers study policies, programs, and practices designed to enhance outcomes for diverse youth and adults who seek to transition to and through college to employment. OCCRL’s research spans the P-20 education continuum, with an intense focus on how community colleges impact education and employment outcomes for diverse learners. Results of OCCRL’s studies of pathways and programs of study, extending from high school to community colleges and universities and to employment, are disseminated nationally and internationally. Reports and materials are derived from new knowledge captured and disseminated through OCCRL’s website, scholarly publications, and other vehicles.

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