

## Research on Outcomes Associated With Advanced Opportunities

Research on Academic Competencies	AP/IB/Dual Enrollment and Postsecondary Credit	SAT/ACT Minimum Scores	Minimum Grades in Required Courses; Specified Minimum GPA; Minimum Scores on End-of-Course or Graduation Exams	Advanced Coursework in Specific Subject; Minimum Sequence of Courses
	<p>Student earning a 3 or better on one or more AP exams in core subject areas are more likely to graduate from college on-time than non-AP students (controlling for prior academic achievement and other student-level demographics) (Dougherty, Mellor, &amp; Jian, 2006); however, this statistic may highlight how students taking AP courses demonstrate the characteristics needed for postsecondary success, rather than the effect of AP courses on student outcomes (Dougherty &amp; Mellor, 2010).</p> <p>Student participation in AP courses does not predict grades in college courses, perhaps because students are not prepared, because they do not retain their learning, or because course-taking patterns mask benefits of AP courses to students (Hershbein &amp; Ferenstein, 2016).</p> <p>IB curriculum has been positively associated with graduation rates (Saavedra, 2014).</p>	<p>SAT writing scores are predictive of college grades and course completion (Cornwall, Mustard, &amp; Parys, 2008).</p> <p>SAT results may predict college performance for academically selective schools, but high school grades and subject exam performance are better predictors for other college (Espenshade &amp; Chung, 2010).</p>	<p>A high GPA is a strong predictor of education and earnings in adulthood (French et al., 2015).</p> <p>Grades in high school are a stronger predictor of college performance than SAT or ACT results (Hiss &amp; Franks, 2014).</p> <p>There is little evidence that graduation exams benefit students, and some studies have shown negative effects from high school exit exams (Baker &amp; Lang, 2013; Marchant &amp; Paulson, 2005).</p>	<p>Intensity of high school coursework is predictive of college completion; specifically, taking advanced math coursework predicts postsecondary success in science, technology, engineering, and mathematics (STEM; Adelman, 1999, 2006).</p> <p>Students taking rigorous high school coursework are more successful in postsecondary, especially for disadvantaged youth; however, it is unclear whether this describes prediction rather than the influence of these courses (Long, Conger, &amp; Latarola, 2012).</p> <p>Taking 4 years of high school math strengthens postsecondary opportunities; however, accelerated math pathways do not help support students below proficiency by seventh grade, and student success in foundational math rests on them taking these courses when they are ready (Finkelstein et al., 2012).</p>

## Research on Outcomes Associated With Advanced Opportunities (cont.)

<b>Research on Academic Competencies (cont.)</b>	<p>Students in dual enrollment courses are more likely to enroll in and persist in college through the first and second year (Community College Research Center, 2012); also, low-income, lower achieving, and male students showed better college enrollment and grades (Teachers College, 2012). The research on the differences among postsecondary credit earned through AP, IB, or dual enrollment is unclear (Ewing, 2006).</p>			<p>Language coursework or experiences leading to multilingualism also may improve student outcomes, including better memory, cognitive processing, attention, and information retrieval (Bialystok, Craik, &amp; Luk 2012); employers also have indicated they are more likely to hire multilingual applicants (Gandara, 2014).</p> <p>Language learning is associated with higher academic achievement and skills, as well as higher SAT/ACT scores (ACTFL, 2017).</p>
<b>Research on Technical Competencies</b>	<p><b>Industry credential; Technical exam</b></p> <p>Industry credentials are associated with employment trends (ACTE, 2016).</p>	<p><b>Minimum Sequence of Courses in CTE</b></p>		
<b>Research on Employability Competencies</b>	<p><b>Service Learning</b></p> <p>Students engaged in service learning show better attitudes toward self, school, and learning, civic engagement, social skills, and academic performance, especially when these learning activities are embedded in curriculum and include reflection (Celio, Durlak, &amp; Dymnicki, 2011).</p> <p>Service learning can promote development of employability skills (Eyler, Giles, Stenson, &amp; Gray, 2001).</p>	<p><b>Work-Based Learning—Application in Real-World Situations</b></p>		
		<p>Work-based learning predicts student postsecondary enrollment, especially for students with disabilities (Wonacott, 2002).</p> <p>Project-based learning is linked to better content learning, demonstration of skills (including employability skills), and better student engagement in school (University of Indianapolis, 2009).</p>		

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