

# Research-Based Interventions to Improve High School Graduation Rates

— June 2019 —

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# Executive Summary

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**Research Question:**

**What can schools and school districts throughout Arizona do to help improve on-time high school graduation rates?**

The job market today requires more individuals to have a high school diploma than ever before. Research has consistently shown that one's potential for opportunity and achievement grows immensely after graduating high school. However, schools throughout Arizona and the United States still struggle to help all, or almost all, of their students graduate on time.

This whitepaper focuses on analyzing the preexisting research around which interventions are the most effective at advancing high school graduation rates, and how Arizona schools could adapt these findings to their own unique needs.

Generally, research shows that schools should deploy a mixture of system-wide and targeted Intervention programs that meet the needs of their individual schools. Notably, schools should be sure to create robust systems for regularly tracking students' progress - not only to identify students early to target for interventions, but also to track the effectiveness of interventions. For similar reasons, schools should also make sure that lines of communication are open between the students, teachers, staff, administration, and the rest of the community, through techniques like student advocacy, community involvement, and mentoring.

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# Background Information

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Now, possibly more than ever, high school graduation is tightly bound to a myriad of positive outcomes for students across the United States. On one hand, there are benefits to the high school graduates themselves, as research shows that high school graduates on average, are less likely to interact with the criminal justice system, and have fewer health problems than those who do not finish high school (Office of Disease Prevention and Health Promotion, 2017). On the other hand, the community at large benefits greatly from increasing high school graduation rates, as communities with high school graduates earn more in tax revenue, create more jobs, and have fewer people dependent on social programs (Public Citizens for Children and Youth, 2012). As such, everyone has a stake in improving upon our high school graduation rates.

The most up to date figures show that today's national high school graduation rates sit at around 84% for the overall population, although the graduation rates are significantly lower for students of color, English language learners, and students with disabilities. Arizona specifically has a 78% high school graduation rate overall (Arizona Department of Education, n.d.). While graduation rates have improved significantly over the past few decades - the 2015-16 school year saw the highest adjusted cohort graduation rate (ACGR) for public high school students at 84% - there are still a significant number of students who never graduate and 1 in 5 students do not graduate on time (Alliance For Excellent Education, 2016). Thus, we still have a long way to go.

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Analysts and researchers have linked a variety of factors as reasons why students don't graduate on time or drop out of high school altogether. The most significant reasons cited for why students are pushed out of school include attendance and disciplinary issues, while the top reasons for why students are pulled out of school include external responsibilities like jobs and family (Doll, Eslami, & Walters, 2013). Other qualitative research shows that the top reasons why students drop out are mobility, family, peers, school engagement and environment (health, crime, or some combination of multiple categories). More than half of respondents noted that the reason why they dropped out was related to school engagement and academics - like academic performance, academic behaviors, and attitudes about academics (McDermott, Donlan, & Zaff, 2018). As such, while there are many things that the community as a whole can do to address stressors that lead to high school dropout, schools should especially focus on addressing school engagement and academic issues.





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# Increasing High School Graduation

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There are countless ways that any given school or school district can aim to address issues of student engagement and the school environment as a whole. However, for this paper, we analyzed the available research around existing interventions and evaluated them based on the following factors:

- **Effectiveness:** Based on the available research, how likely is it that the given intervention will meet the goals set forth to improve student engagement and, ultimately, overall graduation rates?
  - **Costs:** What are the resources - financial and otherwise - necessary to implement the given interventions?
  - **Ease of implementation:** How difficult would it be to implement a given intervention in an average public school district in Arizona?
  - **Research participants:** In the available research, how similar are the research participants to the students that we serve in Arizona? Additionally, how many research participants were included in the studies, and is the sample size large enough to generalize the results to the broader Arizona population?
  - **Potential for Impact:** How did the given intervention impact student engagement, and to what extent did it affect the identified areas of impact?
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# Interventions and Policy Choices

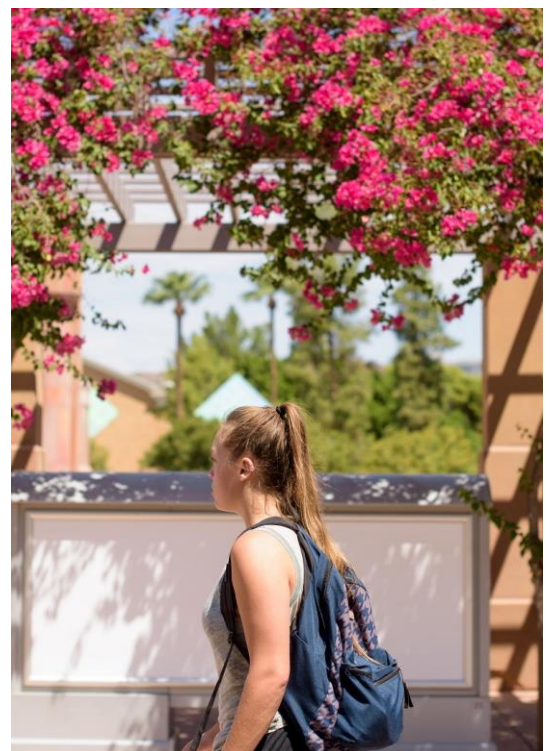
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There are two main categories in which the majority of interventions can be divided: system-wide interventions and targeted interventions.

School- or system-wide interventions are ones that are utilized for all students to monitor and improve upon the greater student population no matter their risk of dropping out. Targeted interventions, however, are specifically created to help students who are most at risk of dropping out.

While either category of intervention may be helpful for some schools, studies show that the most effective interventions are ones where schools utilize a combination of system- wide and targeted interventions (Hanover Research, 2013). The following pages include examples of interventions that have worked well and are strongly supported by research.



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# System Wide Interventions

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## 1. Early Warning Indicators

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Early Warning Indicators (EWIs) are metrics that are tracked throughout the school in order to identify those who are most at risk for dropping out. These indicators are used to improve students' educational attainment by:

- Identifying those in need of intervention before it is too late,
- Systematically focusing, guiding, and assessing school improvements, and
- Holding schools accountable to their students' outcomes.

Examples of research-backed EWIs include attendance rates, low grades, course failures, disciplinary problems, grade retention, low standardized test scores, GPA, and other indicators of college knowledge. However, most high schools tend to focus on 3 main components known as the ABCs or BAG - Attendance, Behavior, and Course Performance / Grades. While alone these predictors may not be the most accurate, the combination of grades and attendance lead to the best predictions of who may not graduate (Allensworth, Nagaoka, & Johnson, 2018).

This type of intervention can be extremely effective in a variety of areas and may require fewer school financial resources to implement. While programming the initial system to track variables can be a significant district investment, time and strategic resources should be dedicated to this type of intervention before implementing others, as effective data tracking is essential for evaluating the performance of any future interventions. If a district would like to get started implementing an early warning indicator system, a good starting place is the [Implementation Guide](#) and other resources from the American Institutes for Research. This site can help districts learn about how you can take the first steps to identify, validate, and utilize localized indicators for students.

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## 2. Increasing Relevance in Curricula

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Some schools have implemented school-wide changes to the curricula to further engage their students through personalization. An example of this kind of intervention are Career Academies, where schools developed smaller learning communities within the school to create more supportive and personalized learning environments. Each community would combine both academic and career/technical topics centered around a career theme and they would also partner with local employers to bring more career awareness and work-based learning opportunities (Hanover Research, 2013).

A large randomized study, including over 1,000 students in 8 urban areas across 6 states, showed that this type of intervention had potentially positive effects on completing school. The estimated cost for this particular program in 2004 was \$600 per student (What Works Clearinghouse, 2015 a). There are a variety of ways one could implement this technique in practice, but some easy ways to get started include making the curriculum more student-directed (e.g. allowing students to select the topics of their projects or assignments) and directly connecting the topics to what students already know - whether that's through their other classes, interests, or daily life (Briggs, 2014).



### 3. Maintaining & Increasing Rigor

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Some may consider “lowering the bar” for those who appear to be struggling in school. However, both the National Dropout Prevention Center (n.d.) and other researchers recommend against decreasing academic rigor as this may cause gifted students to disengage further from school (Hanover Research, 2015) and leave students less prepared for post-secondary education and employment (Civic Enterprises & Everyone Graduates Center, 2018). Additionally, as noted previously, one of the main reasons why students choose to leave school is because they 'feel bored' or simply are not engaged with their coursework (McDermott, Donlan, & Zaff, 2018). Research has shown that academic rigor is a key component to engaging students in their classes (Cooper, K. S., 2014).

Programs that focus on providing targeted academic assistance or accelerated learning programs for non-gifted and gifted students can ensure that each student feels sufficiently challenged while also being provided the support that they need.



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The Edmonds School District in Washington leveraged a variety of opportunities to challenge gifted students in more academically rigorous environments. Students in the district are regularly evaluated based on their academic performance, cognitive abilities, and evidence of creative thinking. If students were found eligible for their Highly Capable (Hi-Cap) program, students could then elect to:

- Attend Honors and/or IB classes in their traditional high school,
- Earn credits at an accelerated pace through their Contracted Learning through Independent Pacing (CLIP) program, or
- Attend an alternative high school (Scribner Lake High School) which had more flexible class schedules and had a variety of specialized curricula for the 250 students attending the school.

Students at the school also had the option to attend their local community college while still in high school to obtain college credits (Hanover Research, 2015).

Another school, University High School in Boston, leverages this technique to serve a different type of student. Students enrolled in this school must have either previously dropped out of high school or be at least one grade level behind in their expected progress. While many of the students may be traditionally identified as at-risk of dropping out, their students are still challenged to complete an internship, paid employment, or community service experience in order to complete a Career Development project. Additionally, students at this school are provided with the option to earn college credit through dual enrollment at their local community college. Lastly, the school provides intense social and academic support through tutoring, counseling, and training to ensure students are proficient in all areas of life before graduation (Hanover Research, 2017).

While one school does not necessarily have to integrate all of these strategies to engage their at-risk students, these are examples of what a school can do to ensure that all of their students feel adequately challenged by their coursework.

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# Targeted Interventions

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## 1. Dual Enrollment

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Dual Enrollment programs - otherwise known as dual credit or early college programs - provide students challenging classes in high school and allow students to take college courses and earn college credit throughout high school to help boost college access and higher education attainment. This is often beneficial because students can gain experience in college-level classes, prepare for the social and academic requirements of college, and often do so at a discounted or free rate.

The 5 studies cleared by the What Works Clearinghouse (2017) demonstrated that such programs had positive effects on high school completion, general academic achievement in high school, college degree attainment, college access and enrollment, and credit accumulation. They also showed potentially positive effects for staying in high school, college readiness, and high school attendance. None of the included studies referenced the financial costs of implementing these programs, but they were conducted with over 77,000 high school students across the United States.

While not a unique program, this type of intervention may help engage students who don't feel their high school classes are rigorous enough. This program is also especially helpful to students from low-income backgrounds, as this provides an opportunity for them to accrue credits at much lower costs than they would otherwise have to pay.

If a school district is looking to get started with this intervention but worried about the cost, one notable option is to look into utilizing online programs like [ASU Prep Digital](#) as a supplemental resource for earning college credit.





## 2. Check & Connect

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Check & Connect is a program where high school students are assigned an adult monitor working within the school who regularly reviews the student's engagement information and intervenes when problems are identified. The monitor thereby works to advocate for the students as well as provide ongoing feedback, coordination of services, and encouragement - all while emphasizing the importance of staying in school. The What Works Clearinghouse (2015b) approved two randomized studies which included 238 students in Minneapolis high schools receiving special education services for learning, emotional, or behavioral disabilities. Overall, the program was found to have very positive impacts in keeping students in school, as well as potentially positive impacts on helping students progress in school (Hanover, 2013). In 2001-02, the approximate cost of implementation was \$1400 per student per year.

This program provides a good example of how regular student monitoring and relationship building can help students progress and stay in school, even if they are at-risk or have disabilities.

If a school is looking to get started with implementing Check & Connect, the University of Minnesota has provided a [useful implementation guide](#) to help you identify and hire mentors as well as some possible funding opportunities.



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# Recommendations

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The examples in the previous sections are just a select few of the possible interventions that any given school could implement. Notably, every school has unique needs, strengths, and resources available, so what has been shown to work for some schools may not work for others. One should be sure to read over each study with a critical eye to ensure the study could be replicated within one's own school.

That being said, of the targeted and system-wide interventions that have been studied, there are some commonalities that schools could examine, customize, and implement even without implementing the full intervention programs listed above:

- **Regular tracking and checking in with students:** Very successful intervention programs like Check & Connect have all focused on creating systems to better track students' progress. It is important to establish systems for tracking specified indicators so that the school can (a) understand where they currently are, (b) evaluate any intervention they implement, and (c) identify students who require even more targeted interventions for their unique needs (Allensworth, Nagaoka, & Johnson, 2018; Hanover Research, 2013). If your school does not currently have any tracking systems in place, then start here.
  - **Mentoring:** Many successful programs had some mentoring component - whether the mentor was simply an older student, a teacher, or just another community member. Having a mentor can help provide more one-on-one support for the student and more closely monitor their progress, which may help in identifying if the student needs more targeted interventions. Studies also show that effective mentoring can help significantly increase college-going rates (Carrell & Sacerdote, 2017).
  - **Tutoring & Academic Assistance:** Students struggle to stay engaged if they cannot keep up with the class. However, this does not mean schools should make classes any less rigorous for these students, as that may lead the students to disengage even further and only put them at a disadvantage after high school (Civic Enterprises & Everyone Graduates Center, 2018). Instead, interventions which include tutoring and/or other forms of academic assistance before, after, or even during school can help students catch up to their peers (Hanover Research, 2013).
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# Recommendations

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- **Increasing College/Secondary Education Knowledge:** Having a future goal dependent on graduating high school, such as going to college or getting specific career training, can help keep students on track. One of the obstacles keeping students from pursuing college or other forms of higher education is the lack of access to information. Some successful interventions have included college tours, information sessions, and even one-on-one assistance in filling out important paperwork like the FAFSA. This type of assistance may not only increase college-going rates, but it may also help students find their other classes more relevant if they know they can and would like to pursue advanced education (Goodwin, Li, Broda, Johnson, & Schneider, 2016). It has been shown that even providing guidance via text message can help (Carrell & Sacerdote, 2017).
  - **Personalizing curriculum to students' interests or future professional aspirations:** Students may struggle to engage with their courses if they do not understand how the topics connect to their daily lives and future aspirations. Interventions that personalize the curriculum based on the students' personal and professional interests can help them more easily connect with the topics at hand (Hanover Research, 2013; National Dropout Prevention Center, n.d.).
  - **Community involvement:** There is only so much that a school alone can do to shift students' perspectives and help them overcome adversities. Some interventions have found success by engaging the students' families and other local community members to help inform everyone about ways that they can help make a more welcoming environment for students to learn and graduate from high school successfully (Porche, Zaff, & Pan, 2017; National Dropout Prevention Center, n.d.).
  - **Student advocacy & relationship building:** When determining a student's future within a school, it's important to make sure their voice is also present at the table. Programs that have actively included student advocates in their decision making processes have seen quite a bit of success, as these advocates open up more direct lines of communication between the students and the administration. It's also important that students feel that they are a part of the community they are in, so make sure students develop a strong relationship with at least one adult in their school (Hanover Research, 2013; Jones, Flanagan, Zeff, McClay, Hynes, & Cole, 2016).
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# Conclusion

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While it is unlikely for any one school to implement all of these components into their desired interventions, it may still be helpful for personnel to be aware of these available options to help improve graduation rates in the future. The United States has already come a long way in improving high school graduation rates, and hopefully, with these research-based techniques in your toolkit, we can continue to improve upon our graduation rates so that every student can achieve their maximum potential.



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for Educational Excellence  
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## Arizona State University

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The goal of the Decision Center for Educational Excellence *Powered by Helios Education Foundation* at Arizona State University is to help empower all Arizona students to maximize their potential, experience an excellent quality of life and contribute to healthy and vibrant communities. Partnering with ASU's Decision Theater and other ASU researchers, we will bring together data and convene key stakeholders to examine the education system and model and visualize the impact of potential new policies and innovative solutions on education outcomes. The Decision Center for Educational Excellence will:

- Collect local and national data on student performance, schools and the current education system
- Leverage ASU resources, content knowledge, analytics, computational modeling, and visualization
- Drive stakeholder involvement among educators, parents, students, policymakers, civic groups, business leaders, and others