

# The Building Blocks of a GradNation:

## Assets for Keeping Young People in School

---

### Introduction

Young people who leave high school before graduating represent a public crisis with civic and economic costs for individuals, communities, and American society as a whole. Nearly one in five high school students in the United States does not complete high school on time, if ever.<sup>1</sup> School completion rates are even lower for young people of certain racial, ethnic and socioeconomic backgrounds: only 75.2 percent of Latino, 73.3 percent of low-income, and 70.7 percent of African American students graduate high school on time.<sup>2</sup> The rates among states vary greatly, as well. According to the 2015 *Building a Grad Nation* report, over 89 percent of students in Virginia, Nebraska, and Indiana graduated on time, whereas just 68.5 percent in New Mexico attained this goal.<sup>3</sup> Furthermore, over one million students (predominantly low-income students and students of color) attend high schools where fewer than 60 percent of their classmates graduate on time.<sup>4</sup>

Young people who do not complete high school cost American society in a number of ways. Non-completers have lower lifetime personal earnings, higher rates of public dependency and higher rates of arrest than their peers who finish high school.<sup>5</sup> Because of lower taxable income and a higher average reliance on social welfare programs, each person that drops out costs the United States an estimated \$292,000 more than the average high school graduate over his or her lifetime.<sup>6</sup> Additionally, youth who do not complete high school are less likely to vote and volunteer for community service than their peers who obtain high school diplomas, resulting in communities that are less vibrant and civically engaged.<sup>7</sup>

Low graduation rates, however, are not intractable. Recent innovations in dropout prevention and high school graduation promotion, such as the use of early warning and intervention systems to identify students at high risk for dropping out, have produced substantial gains in the nationwide high school graduation rate, which increased from 71.7 percent in 2001 to 81.4 percent in 2013.<sup>8</sup> ***A greater understanding of how and why students graduate from high school will help to ensure that this momentum continues.***

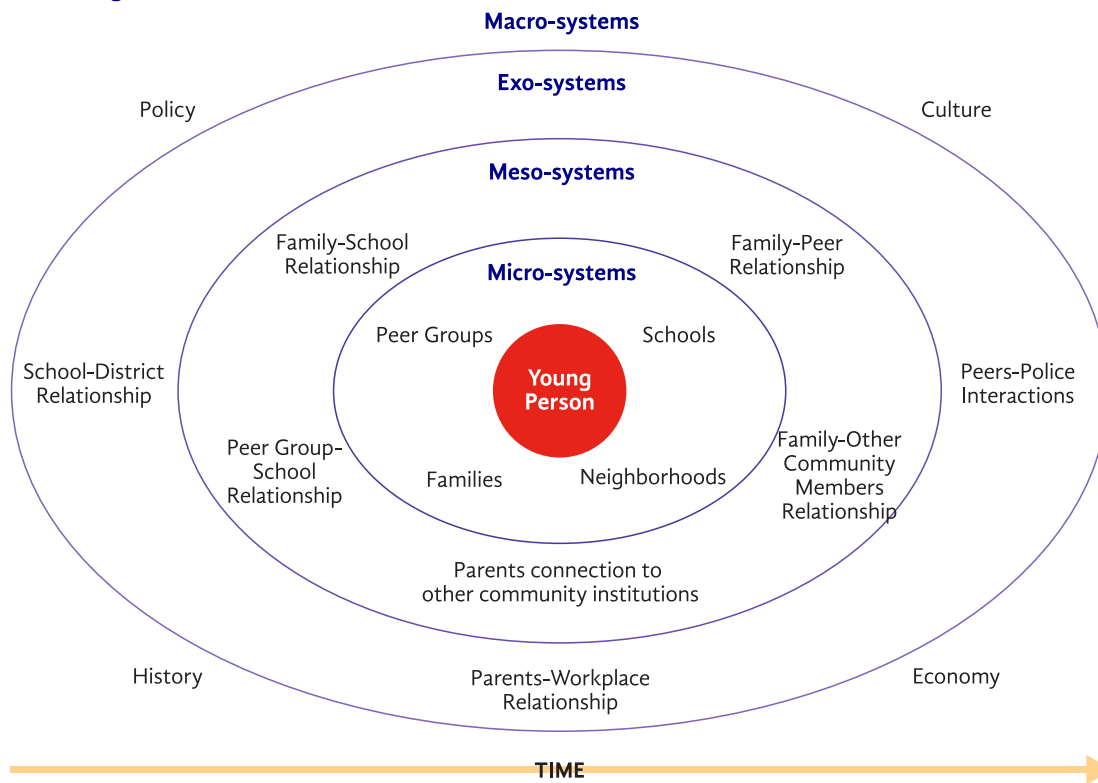
Recent research syntheses on high school graduation and drop out have focused on risk factors at the individual, family, school, and community levels that lower students' likelihood of finishing high school, such as grade retention, poor attendance, and behavioral problems.<sup>9</sup> Knowledge of these risks has been applied in order to develop and implement successful dropout prevention programs. However, no existing syntheses have brought together the extant research on the assets in young people's lives that promote graduation or, at least, continued enrollment in high school. The purpose of this report, therefore, is to bring together rigorous existing research on assets that predict whether students will stay in and graduate from high school to determine which, if any, may be leveraged to boost America's graduation rate.

**“The purpose of this report, therefore, is to bring together rigorous existing research on assets that predict whether students will stay in and graduate from high school to determine which, if any, may be leveraged to boost America's graduation rate.”**

## A Framework for Our Study

We framed our search using Urie Bronfenbrenner’s Bioecological Framework.<sup>10</sup> Bronfenbrenner was a world-leading developmental scientist whose framework has become foundational for studies of children’s well-being. He recognized that young people are influenced by multiple layers of the environment within which they are embedded. These layers of influence range from more proximal influences (e.g., families, peers, teachers), to more distal influences (e.g., historical events, public policies, cultural norms). For example, a student is located within a classroom within a school within a school district. Conditions at any of these levels can influence the students’ development. According to this framework, young people are also considered active players in their own development, capable of making decisions and taking actions to shape their own outcomes. In other words, youth are embedded within an “ecology” that influences their development—an ecology that includes their environment and themselves.

Figure 1. The Bioecological Framework

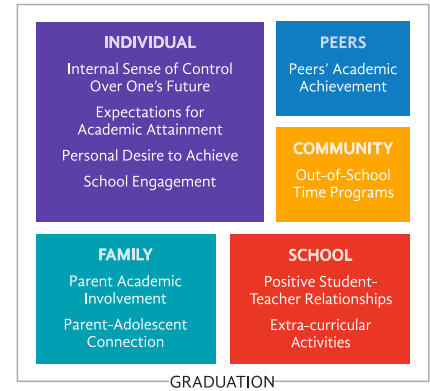


From a bioecological perspective, young people’s internal attitudes, beliefs, expectations, and competencies are critical for success in school and in life. For example, being intrinsically motivated has been associated with numerous positive outcomes for young people, such as academic achievement.<sup>11</sup> At the same time, their different ecologies (e.g., schools, families, and after-school programs) provide youth with key sources of positive norms and supportive relationships, also associated with academic achievement. Thus, understanding how all of these facets of a young person and his or her environment influence educational attainment is critical for determining why students do or do not obtain a high school diploma.

The purpose of our review, consistent with a public health or *prevention science* approach, is to identify *upstream levers* that can potentially impact *downstream outcomes*. Once *upstream levers* have been identified, they can be incorporated with greater confidence into program designs.<sup>12</sup> Numerous community-wide interventions have utilized a *prevention science* approach to effectively combat a variety of youth risk behaviors, such as teen pregnancy, substance abuse, and

youth violence.<sup>13</sup> As an example, a Communities that Care (CTC) initiative in Pennsylvania successfully brought together key community stakeholders to identify *upstream levers* (e.g., risks such as individual attitudes toward drugs/alcohol and family anti-social behavior), intervene through programs that focused on those levers, and ultimately lower rates of adolescent substance abuse, a *downstream outcome*.<sup>14</sup>

In line with both the *bioecological* and *prevention science* perspectives, we examined longitudinal research from the last 25 years related to many aspects of young peoples’ lives. Within the data, we searched for assets at multiple levels of the human “ecology” that may act as *upstream levers* for the *downstream outcome* of high school graduation. We focused on malleable factors, where access to external resources (e.g., relationships) or development of internal competencies (e.g., attitudes) can theoretically be improved via program or policy interventions. We found that access to individual psychological, institutional, and social assets within a young person’s ecology in early adolescence can promote continued school enrollment and high school graduation. ***Specifically, after reviewing 182 studies of dropout and graduation, we found 42 articles providing evidence for the existence of 10 assets that met our stringent quality criteria.***<sup>15</sup>



**Table 1. Summary of Findings**

We reviewed 182 articles on high school graduation. We found 42 articles that met our criteria for inclusion.

Ecological Level	Assets	# of Studies	# of Data Sources	Implications for Intervention
Individual (psychological factors such as attitudes or beliefs).	Internal Locus of Control	3	3	Interventions aimed at preventing drop out and promoting graduation can and should focus on promoting socio-emotional competencies such as love of learning, active engagement in school, young peoples’ belief in their own abilities to exercise control over their lives, and high academic aspirations which can promote educational attainment.
	Expectations for Academic Attainment	5	3	
	Intrinsic Academic Motivation	5	3	
	School Engagement	3	2	
Family	Parent Academic Involvement	5	4	Interventions aimed at preventing drop out and promoting graduation can and should focus on increasing parent involvement in their adolescent children’s education, e.g. through fostering consistent communication between parents and schools. Additionally, intervention design should take into account ways in which the quality of parent-child communication and support can be fostered during adolescence.
	Parent-Adolescent Connection	7	4	
Peers	Peer Academic Norms	5	4	Promoting a peer culture of high academic aspirations can increase the likelihood that students will stay in and ultimately graduate from high school.
School	Positive Student-Teacher Relationships	12	7	Schools can foster students’ integration into the school community by promoting mutually respectful and caring relationships between teachers and students, as well as by offering opportunities for students to participate in activities with peers and teachers outside of the school day.
	Extra-Curricular Activities	8	5	
Community (refers to non-school, community-based institutions)	Out-of-School Time Programs	7	5	Community-based OST programs can provide students at high risk for drop out with access to positive adult relationships and academic support that can improve their likelihood of staying in and finishing high school.

## Method

**Databases Used:** Proquest, PsycInfo, JSTOR, Project Muse, Academic OneFile, PubMed, Web of Science, and Google Scholar.

**Search Terms:** See Appendix A.

**Number of Articles Derived from Search Terms:** 182

**Final Number of Articles that Met Inclusion Criteria:** 42

**Number of Assets Identified:** 10

**Datasets:** See Appendix B.

## Criteria for Inclusion in Literature Review

In order to be considered eligible for inclusion in our review, articles had to meet five criteria for determining if the specific factor promoted high school graduation and if the findings would be valid for current students in the United States.

1. **Domestic**—Studies were conducted exclusively with U.S. students.
2. **Current**—Articles were published in or after 1993.
3. **Direct**—Articles provided evidence of a direct link between the factor in question and students' likelihood of staying in or graduating from high school.
4. **Focus on Adolescence**—Studies assessed predictors of graduation during adolescence (e.g., 6th grade or later).
5. **Over Time**—Studies were longitudinal with at least two years passing between the assessment of the predictor and the assessment of whether students stayed in school or graduated.

## Determining Assets that Predict Retention in or Graduation from High School

In order to be considered an evidence-based predictor of continued enrollment or graduation, potential assets had to meet three criteria:

1. **Malleability**—The asset had to be at least theoretically changeable so as to constitute a potential lever for intervention. Therefore, unchangeable factors such as race/ethnicity were not considered.
2. **Critical Mass**—The asset's ability to promote continued enrollment or graduation had to be attested to by at least three independent findings.
3. **Diversity of Data Sources**—Findings supporting an asset's ability to promote graduation or prevent drop-out had to be derived from at least two different independent samples of students.

## Findings

From the reviewed evidence that met our criteria, we identified 10 assets that represent the most thoroughly researched potential *upstream levers* for intervention available to educators and other practitioners. We acknowledge that some of our findings are intuitive to experienced educators and youth development professionals; for instance, few teachers would be surprised to learn that good relationships between students and teachers play a role in keeping young people in school. Yet, not everything that is intuitive plays out in research. For example, support from peers is theoretically linked with positive outcomes for young people; however, some research suggests that certain forms of peer connection, such as being considered “popular” may have adverse effects in terms of educational attainment.<sup>16</sup> We therefore stress the importance of keeping the evidence base in mind when considering strategies for promoting graduation.

Most of the assets we identified had small to moderate effects on students’ chances of staying in or graduating from high school.<sup>17</sup> Given the importance of a high school diploma and difficulty involved in ensuring that high-risk students graduate, we suggest that even small effects can make an important difference for some students. We now turn to a brief review of our findings.

“...even small effects can make an important difference for some students.”

## Individual Assets

Individual level assets include psychological factors, such as attitudes or beliefs, which promote positive outcomes for young people. For example, individuals’ motivation and level of school engagement have been found to predict whether they persist at difficult tasks or are able to recover from significant setbacks.<sup>18</sup> Accordingly, we found four individual assets that increase the likelihood students would continue their enrollment in school or graduate from high school: *intrinsic academic motivation, school engagement, high expectations for academic attainment, and having an internal locus of control.*

***Intrinsic academic motivation.*** Intrinsic academic motivation refers to the extent to which students are motivated to do well in school because they enjoy school, rather than being motivated by external forces, such as parental expectations.<sup>19</sup> Theoretically, intrinsic motivation is important for preventing dropout and promoting graduation because it affects students’ beliefs that they can succeed in school and promotes their academic persistence.<sup>20</sup> We found three studies containing evidence that students who are intrinsically motivated to succeed at school are more likely to continue to attend school and more likely to graduate from high school than students who are extrinsically motivated.

Table 2. Intrinsic Academic Motivation

Citation	Sample Description	Outcome	Size of Effect on Outcome
Abar et al., 2012	Nationally representative sample of 15,362 youth	Drop out	Moderate
Tenenbaum et al., 2007	76% White, 25% Low-income sample of 44 youth living in Boston, MA	Drop out	Small
Zimmerman & Schmeelk-Cone, 2003	681 African American students in one Midwestern city	Graduation	Moderate

**School engagement.** School engagement describes an individual’s commitment to, and participation in, activities related to school. Academic engagement can be behavioral (e.g., having good attendance), emotional (e.g., feeling a bond with school), or cognitive (e.g., having a strategic approach to learning).<sup>21</sup> Engagement may promote graduation because it fosters resilience in the face of stressors and academic setbacks.<sup>22</sup> We found six studies containing evidence that gains in school engagement can increase a student’s likelihood of staying in and graduating from high school.

Table 3. School Engagement

Citation	Sample Description	Outcome	Size of Effect on Outcome
Connell et al., 1995	443 African-American students from one public school district in New York State	Drop out	Moderate
Fall & Roberts, 2012	Nationally representative sample of 14,781 youth	Graduation	Moderate
Finn & Rock, 1997	1,803 African-American and Hispanic students sampled from NELS:88 participants	Drop out	Moderate
Rumberger, 1995	Nationally representative sample of 17,424 youth	Drop out	Large
Stearns et al., 2007	Nationally representative sample of 13,356 youth	Drop out	Small
Wang & Fredericks, 2014	58% African American, 36% White sample of 1,272 students from one school district in northeast U.S.	Drop out	Small

**Expectations for academic attainment.** The extent to which students believe they will achieve academically, finish high school, and continue on to college are collectively known as their expectations for academic attainment. Individuals tend to act and interpret events according to their expectations, and student achievement in school is no exception.<sup>23</sup> For example, students who expect to finish school may be more likely to increase effort or try new strategies aimed at completing school in the face of academic and social setbacks compared to those who do not necessarily expect themselves to finish.<sup>24</sup> These more persistent and resilient students are subsequently more likely to attain a high school diploma. We found five studies containing evidence that students who have a clear expectation of finishing high school *do*, in fact, finish high school at higher rates than students with lower or less clear academic expectations.

Table 4. Expectations for Academic Attainment

Citation	Sample Description	Outcome	Size of Effect on Outcome
Driscoll, 1997	1,781 Hispanic youth	Drop out	Small
Ou & Reynolds, 2008	94% African-American, 83% Low-income sample of 1,286 youth in Chicago, IL	Graduation	Moderate
Rumberger, 1995	Nationally representative sample of 17,424 youth	Drop out	Moderate
Stearns et al., 2007	Nationally representative sample of 13,356 youth	Drop out	Moderate
Suh et al., 2007	Nationally representative sample of 4,327 youth	Drop out	Small

**Internal locus of control.** Internal locus of control refers to the extent to which individuals believe they exercise control over their own destiny and attribute success or failure to their own actions.<sup>25</sup> Having an external locus of control (believing events are outside of one’s control) tends to reduce students’ effort at school and depress their overall school performance.<sup>26</sup> We found three studies containing evidence that students with an internal locus of control are more likely to stay in school than students with a greater external locus of control.

Table 5. Internal Locus of Control

Citation	Sample Description	Outcome	Size of Effect on Outcome
Fall & Roberts, 2012	Nationally representative sample of 14,781 youth	Drop out	Moderate
Finn & Rock, 1997	1,803 African-American and Hispanic students sampled from NELS:88 participants	Drop out	Small to Moderate
Rumberger, 1995	Nationally representative sample of 17,424 youth	Drop out	Moderate

## Family Assets

Parents provide critical resources, opportunities, and guidance to their children.<sup>27</sup> Thus, strong connections between adolescents and their parents, as well as the extent to which parents are involved in the academic lives of their adolescent children, predict whether or not students will stay in and ultimately graduate from high school.

**Parent academic involvement.** Parents can be involved in the academic lives of their children in many ways, including helping with homework, being involved in school committees, attending parent-teacher conferences, or communicating regularly with a child’s school.<sup>28</sup> This support can facilitate a student’s connection to extra assistance for accomplishing academic goals and ultimately boost academic performance and attainment.<sup>29</sup> We found five studies containing evidence that parent academic involvement increases adolescents’ chances of staying in and graduating from high school.

Table 6. Parent Academic Involvement

Citation	Sample Description	Outcome	Size of Effect on Outcome
Carpenter & Ramirez, 2007	Nationally representative sample of 17,613 youth	Drop out	Small
Jimerson, et. al., 2000	63% White, 14% African-American, 14% Mixed-race sample of 177 youth	Drop out	Small
Ou & Reynolds, 2008	49% Male, 94% Black, 83% Eligible for free lunch sample of 1,286 youth	Graduation	No Effects
Rumberger, 1995	Nationally representative sample of 17,424 youth	Drop out	Small
Stearns, et. al., 2007	Nationally representative sample of 12,343 to 13,356 youth	Drop out	Small
Stone, 2006	Nationally representative sample of 2,174 youth	Drop out	Small

**Parent-adolescent connection.** The connection between parents and their adolescent children refers both to the emotional support that parents provide to their children, as well as to open communication between the two parties.<sup>30</sup> These kinds of positive relationships promote academic success by encouraging positive affect, self-confidence and cooperative behavior in young people, all of which are important for thriving in school.<sup>31</sup> We found seven studies containing evidence that adolescents who have a strong connection with their parents are more likely to continue to be enrolled in school, and to graduate from high school, than peers with weaker connections to their parents.

Table 7. Parent-Adolescent Connection

Citation	Sample Description	Outcome	Size of Effect on Outcome
Englund, et. al., 2008	179 children of low socio-economic status mothers. 67% White, 11% African American, 16% Mixed Race, 2% Other	Graduation and Drop out	Small
Fall & Roberts, 2012	Nationally representative sample of 14,781 youth	Drop out	Small
Hess & Copeland, 2001	54% Hispanic, 41% White, 39% female sample of 92 youth	Graduation and Drop out	Not Listed
Stearns, et. al., 2007	Nationally representative sample of 12,343 to 13,356 youth	Drop out	Small
Teachman, et. al., 1997	Nationally representative sample of 10,899 youth	Drop out	Small
Tenenbaum et al., 2007	44 youth (25 girls, 19 boys): 76% White, 25% qualified for free lunch	Graduation	Small
Stone, 2006	Nationally representative sample of 2,174 youth	Drop out	Small

## Peer Academic Norms

Young people's relationships with their peers become more important in adolescence, as peers serve as key sources of social and emotional support and create social norms for behaviors and attitudes.<sup>32</sup> Although we did not find enough evidence to support the claim that peer social support predicts high school graduation, we did find that the norms to which individuals were exposed as a result of peer relationships predicted whether or not they persisted in and graduated from high school.

**Peer norms.** Peer norms of academic attainment refer to the expectations and beliefs that members of a young person's peer network hold about doing well in school and continuing or not continuing their education.<sup>33</sup> Individuals tend to become more like their peers over time; thus, peers inform self-expectations and ultimately influence students' likelihood of graduation.<sup>34</sup> We found four studies containing evidence that young people who are connected to peers that do well in school and expect to finish high school, are themselves more likely to continue in school and to graduate high school than students connected to lower achieving and lower aspiring peers.

Table 8. Peer Academic Norms

Citation	Sample Description	Outcome	Size of Effect on Outcome
Barile et al., 2012	Nationally representative sample of 7,779 youth	Drop out	Small
Palardy, 2013	Nationally representative sample of 10,936 youth	Graduation	Small
Ryabov, 2011	Nationally representative sample of 19,117 youth	Graduation	Large
Suh, Suh, & Houston, 2007	Nationally representative sample of 4,327 youth	Drop out	Small



## School Assets

Schools exert profound influence on students' academic performance. When students feel accepted at their schools and have opportunities to be engaged in the school environment, they are more likely to persist in obtaining a high school diploma. We found two school-based assets that predicted students' likelihood of staying in or graduating from high school: positive student-teacher relationships (STRs) and participation in school-based extra-curricular activities (ECAs).

**Positive student-teacher relationships.** Positive STRs are characterized by students' belief in teacher competence, teacher expression of care for students, and respectful interactions between the two parties.<sup>35</sup> The ability of students to talk to teachers about personal or academic challenges may also be an important component of these relationships.<sup>36</sup> Additionally, some students benefit from teachers serving as mentors and demonstrating a long-term investment in their lives. Positive student-teacher relationships create connections for students in school, a supportive culture for learning, and a climate that encourages students to remain engaged in school by partly fulfilling a basic need for connectedness to other people.<sup>37</sup> We found 12 studies that contained evidence that students who have positive relationships with their teachers or are mentored by a teacher are more likely to remain in and eventually graduate from high school than students who have negative relationships with teachers or lack a teacher-mentor.

Table 9. Positive Student-Teacher Relationships

Citation	Sample Description	Outcome	Size of Effect on Outcome
Ahrens, et. al., 2010	1,714 youth receiving special education services	Graduation	Small
Barile, et. al., 2012	Nationally representative sample of 7,779 youth	Drop out	Moderate
Brooks, 2010	Nationally representative sample of 11,360 youth	Graduation	Small
Croninger & Lee, 2001	Nationally representative sample of 10,979 youth	Drop out	Moderate
Erickson & Phillips, 2012	Nationally representative sample of 8,379 youth	Graduation	Small
Fall & Roberts, 2012	Nationally representative sample of 14,781 youth	Drop out	Small
Hayes, 1998	90.5% White, 15% low-income sample of 118 youth in one suburban high school	Graduation	Moderate
Lee & Burkham, 2003	Nationally representative sample of 3,840 youth	Drop out	Small
O'Connor, 1995	257 high risk youth in one urban high school	Drop out	Small
Pellerin, 2005	4,743 urban youth; 50.6% Black or Hispanic youth	Drop out	Moderate
Rumberger, 1995	Nationally representative sample of 8,379 youth	Graduation	Small
Stearns et. al., 2007	Nationally representative sample of 12,343 youth	Drop out	Moderate

**School-based extra-curricular activities.** ECAs are school-sponsored activities that are optional for students, ungraded, and usually take place outside the normal school day; they include athletics, student government and performing arts.<sup>38</sup> ECA participation may promote graduation because it exposes students to peer groups with positive academic norms and fosters students' connection with school.<sup>39</sup> Eight studies contain evidence that students who participate in school-based ECAs are more likely to stay enrolled in school and more likely to graduate from high school than those who do not.

Table 10. School-Based Extra-Curricular Activities

Citation	Sample Description	Outcome	Size of Effect on Outcome
Brooks, 2010	Nationally representative sample of 11,360 youth	Graduation	Small
Furstenberg & Neumark, 2007	528 high-risk high school students: 75.4% Minority, in Philadelphia	Drop out	Small
Mahoney & Cairns, 1997	329 youth; 25% Black in Southern U.S.	Drop out and Graduation	Moderate
Mahoney, 2000	695 youth; 25% Black in Southern U.S.	Drop out	Large
Mahoney, Cairns & Farmer, 2003	695 youth; 25% Black in Southern U.S.	Drop out	Large to Moderate
McNeal, 1995	Nationally representative sample of 17,424 youth	Graduation	Small to Moderate
Randolph et. al., 2004	692 urban, low-income youth, 90% Black	Drop out	Small
Rumberger, 1995	Nationally representative sample of 14,249 youth	Drop out	Small

## Community Assets

Though much research has pointed to communities as a source of risk for adolescent academic outcomes, communities are also sources of supportive relationships, social norms, and institutional resources.<sup>40</sup> Few studies have examined assets present in communities promoting high school graduation; however, a growing body of evaluation literature suggests community-based out-of-school time (OST) programs can promote high school graduation. While these programs are similar to school-based ECAs, these community-based programs are accessed in different locations and social contexts in young people's lives. Moreover, evidence suggests that community-based programs promote educational outcomes via different means than school-based ECAs.

*Community-based out-of-school time programs.* These programs typically consist of structured adult-led activities such as community service, academic enrichment, or social-emotional learning outside of the normal school day. They are based in non-school institutions such as universities or community-based organizations.<sup>41</sup> Upward Bound, The Quantum Opportunities Project, After-School Matters, Citizen Schools and SummerBridge are all examples of OST programs that have been evaluated and found to have at least modest effects on students' likelihood of finishing high school.

Whereas the effectiveness of school-based ECAs lies in socially integrating students into schools, community-based OST programs are thought to be effective because they foster relationships between caring adult mentors and teens while providing academic assistance and enrichment to young people for whom such support would not otherwise be available.<sup>42</sup> All evaluations show that young people from high-risk populations (e.g., live in poverty, have been involved in the juvenile justice system, or have low educational aspirations) who participate in these programs are more likely to graduate from high school than similarly high-risk peers who do not participate.

Table 11. Community-Based OST Programs

Citation	Program	Sample Description	Outcome	Size of Effect on Outcome
Arcaira, et. al., 2010	Citizen Schools	896 Students: 75% Black, 21% Hispanic, 84% low-income, in Boston, MA	Graduation	Small
George, et. al., 2007	After-School Matters	20,370 Chicago Public Schools students	Drop out and Graduation	Small
Harlow & Baenen, 2001	SummerBridge	166 students: 51.2% Black, 5.8% Hispanic, 32.6% White. 34% Low- income, in Wake County, NC	Drop out and Graduation	Moderate
Hahn, et. al., 1994	The Quantum Opportunities Project	400 high-risk, low-income youth at five sites in Northeast, Midwest and Southern U.S.	Drop out and Graduation	Small to Moderate
Schirm et. al., 2006		1,100 high-risk students: 26% Hispanic, 68% African-American in five sites in Midwest, South, Northeast, and Pacific Northwest	Drop out and Graduation	No Effects
Rodriguez-Planas, 2012			Graduation	Small
Myers & Schirm, 1999	Upward Bound	2,800 students of non-college educated parents: 28% White, 19% Hispanic, 43% Black, 10% other; 85% low-income at 67 sites across U.S.	Drop out and Graduation	Small to Large
Myers et. al., 2004			Graduation	No Effects
Nathan, 2013			Graduation	Small

## Considerations Based on Findings

### Implications for Policy and Practice

The influential assets revealed through our literature review provide policymakers and practitioners with insights into where effective investments and programs can be directed in order to optimize students' chances of finishing high school. Four specific recommendations for policy and practice emerged from this review:

*Foster students' beliefs in themselves and engagement with school.* There is strong evidence suggesting that students' behaviors, attitudes, and beliefs about themselves play a role in determining their likelihood of graduating from high school. Programs that boost school engagement, set high academic expectations for all young people, and instill an internal sense of control will likely help increase the probability that young people will stay in school and graduate.

*Promote connections with parents, peers, and teachers.* Similarly, the quality and quantity of relational resources available to young people may also be related to their educational attainment. Relationships with parents and teachers are particularly important for promoting a young person's ability to stay on track to graduation. Therefore, programs that promote parental involvement in their children's education, promote consistent communication and supportive relationships between parents and children during adolescence, foster strong relationships between teachers and students, and encourage teachers to invest time and energy in mentoring vulnerable students could have tremendous benefits. In addition, fostering a student peer culture in which high educational expectations are valued may also help to increase students' chances of graduating from high school.

*Schools and community-based institutions can foster positive attitudes and connect young people with social resources.* Schools and communities provide programming outside of the school day that can improve adolescents' connection to positive social assets and aid in the development of strong internal ones. Specifically, participation in extra-curricular activities in schools and community-based organizations have been found to be associated with increases in students' likelihood of staying in and graduating from high school. Previous reviews suggest these kinds of programs influence youths' academic outcomes because they foster the development of internal strengths, such as high academic aspirations, while also providing positive academic norms from caring adults and peer groups.<sup>43</sup> We, therefore, suggest that policymakers and practitioners think of community- and school-based extra-curricular activities as a means for connecting young people with opportunities to forge relationships and develop important individual capacities that can promote educational attainment.

*A holistic approach is needed.* All of the assets we have identified have been shown to affect young peoples' chances of staying in and finishing high school, but these effects, by and large, are modest. Our research suggests that no single asset holds the potential to act as a "silver bullet" for preventing drop out and encouraging graduation. It is likely students, especially those at high risk of dropping out, require access to an array of assets to ensure that they have a bright educational future.

In order for our nation to achieve a 90 percent graduation rate by 2020 and help ensure all young people are on a path for lifelong success, it is important to think beyond discrete programs that target those students at the greatest risk for drop out. Whole school reform strategies (e.g., a community schools approach) or broader community strategies (e.g., development of a comprehensive community initiative) may be necessary to provide support to all students who need it and will help ensure that we, as a nation, continue to make progress on raising the graduation rate.<sup>44</sup>

## What More Do We Need to Know?

This literature review uncovered some additional questions that would benefit from further research:

*How much do demographics and risk matter?* The bioecological framework suggests different kinds of individuals may respond differently to similar environmental conditions. Therefore, it is important to understand how different contextual assets might have varying impacts for young people depending on their demographic characteristics and life experiences. The *prevention science* approach also suggests that having more risk factors can make it more difficult for assets to promote positive outcomes in young people.<sup>45</sup> Even though many studies were conducted with diverse samples in terms of race, ethnicity, gender, socioeconomic status and age, the majority of analyses (with some notable exceptions) did not examine variation in the effects of assets by these demographic characteristics.<sup>46</sup> Furthermore, we only found four studies that considered how effects of assets differed by the amount of risk to which young people were exposed.<sup>47</sup> We suggest that future research assess how assets might work differently for young people from different demographic backgrounds, as well as how different levels of risks related to high school drop out, such as mental health, physical safety, school quality, and neighborhood disorder might attenuate the ability of assets to promote graduation.

*Are there other potential levers for intervention?* Compared to the body of research on educational risk factors, relatively little research has explored which assets can promote graduation and protect against drop out; therefore, future research may identify additional assets, beyond those noted in this report, that influence educational attainment. In particular, we found no studies that investigated non-institutional community-level assets such as neighborhood collective efficacy (i.e., the extent to which neighborhood residents can act collectively upon shared norms and values), and very few studies on school policies and practices in relation to high school graduation or drop out.<sup>48</sup> Furthermore, the bodies of evidence for peer effects and individual assets were also quite small. Lastly, we found several potential assets that

did not meet our criteria for inclusion due to a small number of studies or too few data sources. These include teacher expectations for students, parental monitoring of adolescents, and constrained school curriculum.<sup>49</sup> Future research is necessary to identify additional assets at the individual, family, peer, school, and community levels that may impact young people's chances of finishing high school.

---

## Conclusion

Recent progress in boosting graduation rates suggests the GradNation goal of a 90 percent on-time national high school graduation rate can be reached. However, for too many students in too many school districts, graduation is not the norm. The existing body of research suggests there are many potential avenues of policy and practice intervention that can help to ensure the recent gains in graduation rates are not lost and momentum toward the 90 percent goal continues. We believe expanding the conversation around high school graduation beyond the identification of risks to include a careful consideration of how assets can promote educational attainment has the potential to open a new front in the effort to achieve the 90 percent on-time graduation goal. We urge the practitioners and policymakers who read this report to consider new directions for intervention that leverage multiple individual and contextual assets to ensure every young person in America attains a high school diploma.

## ENDNOTES

- 1 DePaoli, Hornig Fox, Ingram, Maushard, Bridgeland, & Balfanz 2015
- 2 DePaoli, Hornig Fox, Ingram, Maushard, Bridgeland, & Balfanz 2015
- 3 DePaoli, Hornig Fox, Ingram, Maushard, Bridgeland, & Balfanz 2015; Indiana Department of Education, 2015; KNOP, 2014; New Mexico Public Education Department, 2014; Virginia Department of Education, 2014. It is important to note that four-year cohort graduation rates were not available for all states at the time of this study's publication. Rates quoted here represent the range of available state-wide graduation rates.
- 4 DePaoli, Hornig Fox, Ingram, Maushard, Bridgeland, & Balfanz 2015; Swanson et al., 2009
- 5 Sum, Khatiwada & McLaughlin, 2009
- 6 Sum, et al., 2009
- 7 Nover, Godsay, Kirby & Kawashima-Ginsberg, 2010
- 8 See Balfanz, 2008 for a discussion of EWIS; See National Center for Education Statistics, 2014 for national graduation trends
- 9 See Hammond, Linton, Smink & Drew, 2007; Rumberger & Lim, 2009; Tyler & Lofstrom, 2009 for reviews
- 10 Bronfenbrenner & Morris, 2006
- 11 Covington, 2000 and Eccles & Wigfield, 2002
- 12 Hawkins, 2006
- 13 Hawkins et al., 2012
- 14 Hawkins, Catalano & Arthur, 2002; Feinberg, Greenberg, Osgoode, Sartorius & Bontempo, 2007
- 15 See Table 1 for Summary.
- 16 Mahoney & Cairns, 1997; Mahoney, Cairns, & Farmer, 2003.
- 17 Effect sizes estimate how large (and potentially how meaningful) is a relationship between variables. For example, when effect sizes are significant but small, it indicates that the relationship is not likely to occur due to chance alone, but the magnitude of the relationship is weak. Previous research has established guidelines for categorizing effect sizes into small, medium, and large (Cohen, 1988). We use those categories to discuss the magnitude of effect sizes in this report. .
- 18 Pintrich, 2003; Wang & Fredericks, 2014.
- 19 Ryan & Deci, 2000.
- 20 Covington, 2000.
- 21 Wang & Holcombe, 2010
- 22 Wang & Fredericks, 2014
- 23 Olson, Roese, & Zanna, 1996

- 24 Eccles & Wigfield, 2002
- 25 Wentzel & Wigfield, 1998
- 26 Wentzel & Wigfield, 1998
- 27 Grusec & Davidov, 2007
- 28 Hill & Tyson, 2009
- 29 e.g., Hill & Tyson, 2009
- 30 Teachman, Paasch, & Carver 1997; Tenenbaum, Porche, Snow, Tabors, & Ross, 2007
- 31 e.g., Rueger, Malecki, & Demaray, 2010
- 32 Brown & Dietz, 2009; Wentzel, Barry, & Caldwell, 2011
- 33 Veenstra, Dijkstra, Steglich, & van Zalk, 2013
- 34 Ryan & Deci, 2000
- 35 Barile, et al, 2013; Croninger & Lee, 2001; Fall & Roberts, 2012; Lee & Burkham, 2003
- 36 Croninger & Lee, 2001
- 37 Wang & Fredericks, 2014
- 38 Mahoney & Cairns, 1997
- 39 Mahoney & Cairns, 1997; Mahoney, 2000
- 40 Ensminger, Lamkin, & Jacobson, 1996; Johnson, 2013; Leventhal, Dupéré, & Brooks-Gunn, 2009
- 41 e.g., Hahn, Leavitt, & Aaron, 1994; Nathan, 2013; Payton et. al., 2008
- 42 George et al., 2007; Hahn, et. al., 1994; Nathan, 2013; Schirm, Stuart, & McKie, 2006; Rodriguez-Planas, 2012
- 43 See Durlak, Weissberg, & Pachan, 2010; Lauer, et al., 2006; Payton, et al., 2008
- 44 Zaff & Smerdon, 2009
- 45 Hawkins, 2006
- 46 For exceptions see Connell et al, 1999; Rumberger, 1995
- 47 See Croninger & Lee, 2001; Mahoney, 2000; Nathan, 2013; Rodriguez-Planas, 2012
- 48 See Sampson, Raudenbush, & Earls, 1997 for a discussion of collective efficacy. See Daun-Barnett & St John, 2012 or Lee & Burkham, 2003 for exceptions, i.e. studies of school policies.
- 49 Lee & Burkham, 2003; Muller, 1998; Stone, 2006

## REFERENCES

- Abar, B., Abar, C. C., Lippold, M., Powers, C. J., & Manning, A. E. (2012). Associations between reasons to attend and late high school drop out. *Learning and Individual Differences, 22*, 856-861.
- Ahrens, K., DuBois, D.L., Lozano, P. & Richardson, L.P. (2010). Naturally acquired mentoring relationships and young adult outcomes among adolescents with learning disabilities. *Learning Disabilities Research and Practice, 25* (4), 201-216.
- Arcaira, E., Vile, J.D., & Reisner, E.R. (2010). *Achieving high school graduation: Citizen Schools' youth outcomes in Boston*. Policy Study Associates: Washington, DC.
- Balfanz, R. (2008). *Early warning and intervention systems: Promise and challenges for policy and practice*. Baltimore, Maryland: The Everyone Graduates Center.
- Balfanz, R., Bridgeland, J.M., Fox, J.H., DePaoli, J.L., Ingram, E.S., & Maushard, M. (2014). *Building a GradNation: Progress and challenge in ending the high school drop out epidemic*. America's Promise Alliance: Washington, DC.
- Balfanz, R. & Letgers, N. (2004). *Locating the drop out crisis: Which high Schools produce the nation's drop outs? Where are they located? Who attends them?* (Report #70) Baltimore, Maryland: CRESPAR.
- Barile, J. P., Donohue, D. K., Anthony, E. R., Baker, A. M., Weaver, S. R., & Henrich, C. C. (2012). Teacher–student relationship climate and school outcomes: Implications for educational policy initiatives. *Journal of Youth and Adolescence, 41*, 256-267.
- Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In Damon, W.D. & Lerner, R.M. (Eds). *Handbook of child psychology* (pp. 894-941). Malden, MA. John Wiley and Sons Inc.

- Brooks, J.E. (2010). School characteristics associated with educational resilience of low income youth (Doctoral Dissertation). Retrieved from Proquest Dissertations and Theses. (UMI# 3445983).
- Brown, B.B. & Dietz, E.L. (2009). Informal peer groups in middle childhood and adolescence. In KH Rubin, WM Bukowski, & B Laursen (Eds) *Handbook of Peer Interactions Relationships and Groups*, pp. 361-376. New York, NY: Guilford.
- Carpenter, D. M., & Ramirez, A. (2007). More than one gap: Drop out rate gaps between and among Black, Hispanic, and White students. *Journal of Advanced Academics*, 19 (1), 32-64.
- Cohen, J. (1988). *Statistical Power Analysis for the Social Sciences*. Hillsdale, NJ: Erlbaum.
- Connell, J.P., Halpem-Felsher, B.L., Clifford, E., Crichlow, W., Usinger, P. (1995). Hanging in there: Behavioral, psychological, and contextual factors affecting whether African-American adolescents stay in high school. *Journal of Adolescent Research*, 10 (1), 41-63.
- Covington, M. V. (2000). Goal theory, motivation, and school achievement: An integrative review. *Annual Review of Psychology*, 51, 171-200.
- Croninger, R.G. & Lee, V.E. (2001). Social capital and dropping out of high school: Benefits to at-risk students of teachers' support and guidance. *Teachers College Record*, 103 (4), 548-581.
- Daun-Barnett, N. & St. John, E.P. (2012). Constrained curriculum in high schools: The changing math standards and student achievement, high school graduation and college continuation. *Education Policy Analysis Archives*, 20(5), 1-25.
- DePaoli, J.L., Hornig Fox, J., Ingram, E.S., Maushard, M., Bridgeland, J.M., Balfanz, R. (2015). *Building a Grad Nation: Progress and Challenge in Ending the High School Dropout Epidemic Annual Update 2015*. Washington, D.C.: America's Promise Alliance.
- Driscoll, A.K. (1999). Risk of high school drop out among immigrant and native Hispanic youth. *International Migration Review*, 33 (4), 857-875.
- Durlak, J. A., Weissberg, R. P., & Pachan, M. (2010). A meta-analysis of after-school programs that seek to promote personal and social skills in children and adolescents. *American Journal of Community Psychology*, 45 (3-4), 294-309.
- Eccles, J.S. & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology*, 23, 109-133.
- Englund, M. M., Egeland, B., & Collins, W. A. (2008). Exceptions to High School Drop out Predictions in a Low-Income Sample: Do Adults Make a Difference? *Journal of Social Issues*, 64 (1), 77-94
- Ensminger, M. E., Lamkin, R. P., & Jacobson, N. (1996). School leaving: A longitudinal perspective including neighborhood effects. *Child Development*, 67 (5), 2400-2416.
- Erickson, L.D. & Phillips, J.W. (2012). The effects of religious-based mentoring on educational attainment: More than just a spiritual high? *Journal for the Scientific Study of Religion*, 51 (3), 568-587.
- Fall, A.M. & Roberts, G. (2012). High school drop outs: Interactions between social context, self-perceptions, school engagement, and student drop out. *Journal of Adolescence*, 35, 787-798.
- Feinberg, M.E., Greenberg, M.T., Osgoode, Sartorius, J., & Bontempo, D. (2007). Effects of the Communities That Care model in Pennsylvania on youth risk and problem behaviors. *Prevention Science*, 8, 261-270.
- Finn, J. D. & Rock, D. A. (1997). Academic success among students at risk for school failure. *Journal of Applied Psychology*, 82 (2), 221-234.
- Furstenberg Jr, F. F., & Neumark, D. (2007). Encouraging education in an urban school district: Evidence from the Philadelphia Educational Longitudinal Study. *Education Economics*, 15 (2), 135-157.
- George, R., Cusick, G.R., Wasserman, M., Gladden, R.M. (2007). *After-school programs and academic impact: A study of Chicago's After School Matters* (Report # 112). Chapin Hall Center for Children: Chicago, IL.
- Grusec, J. E., & Davidov, M. (2007). Socialization in the family: The role of parents. In J. E. Grusec & P. D. Hastings (Eds.), *Handbook of Socialization: Theory and Research*. New York: The Guilford Press.
- Hahn, A., Leavitt, T. & Aaron, P. (1994). *Evaluation of the Quantum Opportunities Program? Did the program work? A report on the post-secondary outcomes and cost effectiveness of the QOP Program*. Waltham, MA: Brandeis University Center for Human Resources.
- Hammond, C., Linton, D., Smink, J., & Drew, S. (2007). *Drop out risk factors and exemplary programs: A technical report*. Clemson, SC: National Drop out Prevention Center.

- Harlow, K. & Baenen, N. (2001). *The effectiveness of the Wake Summerbridge summer enrichment program* (E & R Report No. 01.47). Raleigh, NC: Wake County Public School System.
- Hawkins, J.D., Catalano, R.F., Kuklinski, M.R. (2012). Communities that Care: Bridging science and community practice to prevent adolescent health and behavior problems including violence. In D.M Patel & R.M. Taylor (Eds) *Social and Economic Costs of Violence*. Washington, DC: National Academies Press.
- Hawkins, J.D. (2006). Science, social work, prevention: Finding the intersections. *Social Work Research*, 30 (3), 137-152.
- Hayes, G.L. (1998). An evaluation of a staff mentor program for at risk students in an Oregon high school: CAKE (Caring for Kids Effectively)(Doctoral Dissertation). Retrieved from Proquest Dissertations and Theses. (UMI # 9834861).
- Hess, R. S., & Copeland, E. P. (2001). Students' Stress, Coping Strategies, and School Completion: A Longitudinal Perspective. *School Psychology Quarterly*, 16 (4), 389-405.
- Hill, N. E., & Tyson, D. F. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology*, 45 (3), 740-763.
- Indiana Department of Education. (2015). Graduation Cohort Rate. Retrieved from <http://www.doe.in.gov/accountability/graduation-cohort-rate>.
- Jimerson, S., Egeland, B., Sroufe, L. A., & Carlson, B. (2000). A prospective longitudinal study of high school drop outs examining multiple predictors across development. *Journal of School Psychology*, 38 (6), 525-549.
- Johnson Jr, O. (2013). Is concentrated advantage the cause? The relative contributions of neighborhood advantage and disadvantage to educational inequality. *The Urban Review*, 45, 1-25.
- KNOP. (2014). Nebraska High School Graduation Rate Hits Record High. Retrieved from <http://www.knopnews2.com/home/headlines/Nebraska-High-School-Graduation-Rate-Hits-Record-High-283497701.html>.
- Lauer, P. A., Akiba, M., Wilkerson, S. B., Apthorp, H. S., Snow, D., & Martin-Glenn, M. L. (2006). Out-of-school-time programs: A meta-analysis of effects for at-risk students. *Review of Educational Research*, 76 (2), 275-313.
- Lee, V. E., & Burkam, D. T. (2003). Dropping out of high school: The role of school organization and structure. *American Educational Research Journal*, 40 (2), 353-393.
- Leventhal, T., Dupéré, V., & Brooks-Gunn, J. (2009). Neighborhood influences on adolescent development. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology 3rd ed* (pp. 411-443). New York, NY: John Wiley and Sons.
- Mahoney, J. L., & Cairns, R. B. (1997). Do extracurricular activities protect against early school drop out? *Developmental Psychology*, 33 (2), 241-253.
- Mahoney, J. L. (2000). School extracurricular activity participation as a moderator in the development of antisocial patterns. *Child Development*, 71 (2), 502-516.
- Mahoney, J., Cairns, B.D., & Farmer, T.W. (2003) Promoting interpersonal competence and educational success through extracurricular activity participation. *Journal of Educational Psychology*, 95 (2), 409-418.
- McNeal, R.B. (1995). Extracurricular activities and high school drop outs. *Sociology of Education*, 68 (1), 62-80.
- Muller, C. (1998). The minimum competency exam requirement, teachers' and students' expectations and academic performance. *The Social Psychology of Education*, 2, 199-216.
- Myers, D. & Schirm, A. (1999). *The impacts of Upward Bound: Phase I of the national evaluation* (MPR Ref # 8046-515). Washington, DC: Mathematica Policy Research.
- Myers, D., Olsen, R., Seftor, N., Young, J. & Tuttle, C. (2004). *The impacts of regular Upward Bound: Results from the third follow-up data collection* (MPR Ref # 8464-600). Washington, DC: Mathematica Policy Research.
- Nathan, A. (2013). *Does Upward Bound have an effect on student educational outcomes? A reanalysis of the Horizons Randomized Controlled Trial Study*. (Doctoral Dissertation). Retrieved from ProQuest Dissertations and Theses. (UMI #3560135).
- National Center for Education Statistics . (2015). *Public High School Graduation Rates*. U.S. Department of Education. Washington, DC: Retrieved from [https://nces.ed.gov/programs/coe/indicator\\_coi.asp](https://nces.ed.gov/programs/coe/indicator_coi.asp).



- New Mexico Public Education Department. (2014). [Table containing links to cohort graduation rate data]. Graduation. Retrieved from [http://ped.state.nm.us/ped/Graduation\\_data.html](http://ped.state.nm.us/ped/Graduation_data.html).
- Nover, A., Godsay, S., Kirby, E.H., & Kawashima-Ginsberg, K. (2010). *Electoral engagement and college experience*. Medford, MA: Center for Information and Research on Civic Learning and Engagement.
- O'Connor, S.M. (1995). *Evaluation of a mentoring program for youth at-risk*. (Doctoral Dissertation). Retrieved from Proquest Dissertations and Theses. (Order # 9517983).
- Ou, S.-R., & Reynolds, A. J. (2008). Predictors of educational attainment in the Chicago Longitudinal Study. *School Psychology Quarterly*, 23, 199-229.
- Palardy, G.J. (2013). High school socioeconomic segregation and student attainment. *American Educational Research Journal*, 50 (4), 714-754.
- Payton, J., Weissberg, R. P., Durlak, J. A., Dymnicki, A. B., Taylor, R. D., Schellinger, K. B., & Pachan, M. (2008). *The positive impact of social and emotional learning for kindergarten to eighth-grade students*. Chicago, IL: Collaborative for Academic, Social, and Emotional Learning.
- Pellerin, L. A. (2005). Applying Baumrind's parenting typology to high schools: Toward a middle-range theory of authoritative socialization. *Social Science Research*, 34 (2), 283-303.
- Pintrich, P. R. (2003). A motivational science perspective on the role of student motivation in learning and teaching contexts. *Journal of Educational Psychology*, 95 (4), 667-686.
- Randolph, K. A., Fraser, M. W., & Orthner, D. K. (2004). Educational resilience among youth at risk. *Substance Use and Misuse*, 39 (5), 747-767.
- Rodriguez-Planas, N. (2012). Longer-term impacts of mentoring, educational services, and incentives to learn: Evidence from a randomized controlled trial in the United States. *American Economic Journal of Applied Economics*, 4 (4), 121-139.
- Rueger, S. Y., Malecki, C. K., & Demaray, M. K. (2010). Relationship between multiple sources of perceived social support and psychological and academic adjustment in early adolescence: Comparisons across gender. *Journal of Youth and Adolescence*, 39 (1), 47-61.
- Rumberger, R. W., & Lim, S. A. (2008). *Why students drop out of school: A review of 25 years of research*. Santa Barbara, CA: California Drop out Research Project.
- Rumberger, R. W. (1995). Dropping out of middle school: A multilevel analysis of students and schools. *American Educational Research Journal*, 32 (3), 583-625.
- Ryabov, I. (2011). Adolescent outcomes in school context: Network effects reexamined. *Journal of Adolescence*, 34, 915-927.
- Sampson, R.J., Raudenbush, S.J., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of Collective Efficacy. *Science*, 277, 918-924.
- Schirm, A., Stuart, E., & McKie, A. (2006). *The Quantum Opportunities Program Demonstration: Final Impacts* (MPR Reference Number 8279-932). Washington, DC: Mathematica Policy Research.
- Stearns, E., Moller, S., Blau, J., & Potochnick, S. (2007). Staying back and dropping out: The relationship between grade retention and school drop out. *Sociology of Education*, 80 (3), 210-240.
- Stone, S. (2006). Correlates of change in student reported parent involvement in schooling: A new look at the National Education Longitudinal Study of 1988. *American Journal of Orthopsychiatry*, 76 (4), 518-530.
- Suh, S., Suh, j., & Houston, I. (2007). Predictors of categorical at-risk high school drop outs. *Journal of Counseling and Development*, 85, 196-203.
- Sum, A., Khatiwada, I., & McLaughlin, J. (2009). *The consequences of dropping out of high school: Joblessness and jailing for high school drop outs and the high cost for taxpayers* (Paper # 23). Boston, MA: Center for Labor Market Studies Publications.
- Swanson, C.B. (2009). *Cities in crisis: Closing the graduation gap. Educational and economic conditions in America's largest cities*. Bethesda, MD: Editorial Projects in Education Research Center.
- Teachman, J. D., Paasch, K., & Carver, K. (1997). Social capital and the generation of human capital. *Social Forces*, 75 (4), 1343-1359.

Tenenbaum, H. R., Porche, M. V., Snow, C. E., Tabors, P., & Ross, S. (2007). Maternal and child predictors of low-income children’s educational attainment. *Journal of Applied Developmental Psychology, 28* (3), 227-238.

Tyler, J.H. & Lofstrom, M. (2009). Finishing high school: Alternative pathways and drop out recovery. *The Future of Children, 19* (1), 77-103.

Veenstra, R., Dijkstra, J., Steglich, C., & van Zalk, M. W. (2013). Network-behavior dynamics. *Journal of Research on Adolescence, 23*, 399–412.

Virginia Department of Education. (2014). [Links to reports on 4-year cohort graduation rates]. Virginia Cohort Reports. Retrieved from [http://www.doe.virginia.gov/statistics\\_reports/graduation\\_completion/cohort\\_reports/](http://www.doe.virginia.gov/statistics_reports/graduation_completion/cohort_reports/).

Wang, M-T. & Fredericks, J. (2014). The reciprocal links between school engagement, youth problem behaviors, and school drop out during adolescence. *Child Development, 85* (2), 722-737.

Wang, M. T. & Holcombe, R. (2010). Adolescents’ perceptions of school environment, engagement, and academic achievement in middle school. *American Educational Research Journal, 47* (3), 638–662.

Wentzel, K.R., Barry, C.M., & Caldwell, K.A. (2011). Friendships in middle school: Influences on motivation and school adjustment. *Journal of Educational Psychology, 96* (2), 195-203.

Wentzel, K. R., & Wigfield, A. (1998). Academic and social motivational influences on students’ academic performance. *Educational Psychology Review, 10* (2), 155-175.

Zaff, J.F. & Smerdon, B. (2009). Putting children front and center: Building coordinated social policy for America’s children. *Applied Developmental Psychology, 13*, 105-118.

Zimmerman, M.A. & Schmeelk-Cone, K. H. (2003). A longitudinal analysis of adolescent substance use and school motivation among African American youth. *Journal of Research on Adolescence, 13* (2), 185-210.

## APPENDIX A: SEARCH TERMS

Level	Search Terms	Outcome Terms
Individual	Engagement, “school engagement”, motivation, “intrinsic motivation”, “extrinsic motivation”, optimism, “locus of control”, expectation*, aspiration*, persistence, “self perception*”	graduation, drop out, enrollment, “education* attainment”
Parents	Family, Parent*, monitor*, communication, involvement, support, expectation*, connect*, “academic support”, “social support” “parent-school involvement”	
Peers	Peer*, achievement, norms, aspirations, expectations, support, connection,	
School	School, Teacher*, climate, expectation*, curriculum, “student-teacher relation*”, “teacher-student relation*”, mentor*, “vocational education”, “Career and Technical Education”, belonging, bonding, “extra-curricular”, athletic*, sport*, art*, club*, size, improvement, police*	
Community	community, neighborhood, “collective efficacy”, “social cohesion”, “out-of-school time”, OST, mobility, “housing voucher”, “school voucher”, “social capital”	

## APPENDIX B: DATA SOURCES

We included articles that analyzed data from several localized and community-based longitudinal surveys, eight program evaluations, and six nationally representative longitudinal surveys. Nationally representative datasets were The National Longitudinal Survey of Adolescent Health (AddHealth), the National Educational Longitudinal Survey of 1988 (NELS:88), The NELS:88 High School Effectiveness Study (HSES), High School and Beyond (HSB), The National Longitudinal Survey of Youth of 1997 (NLSY:97), and The Educational Longitudinal Survey of 2002 (ELS:2002).



America's Promise Alliance  
1110 Vermont Avenue, N.W.  
Suite 900  
Washington, DC 20005

202.657.0600

[cfp@americaspromise.org](mailto:cfp@americaspromise.org)

[www.americaspromise.org](http://www.americaspromise.org)

---

## About the Center for Promise

The Center for Promise is the research institute for America's Promise Alliance, housed at Boston University's School of Education, dedicated to understanding what young people need to thrive and how to create the conditions of success for all young people. The Center's work will add to the academic exploration of these issues and help give communities and individuals the tools and knowledge to effectively work together to support young people.

---

## The Five Promises

### Caring Adults

Young people need to be surrounded by caring adults providing love, challenge, active support, a vision for a brighter future and opportunities for them to take responsibility for their own lives.

### Safe Places

Young people need physical and psychological safety at home, in school, online and in the community.

### Healthy Start

Young people need the conditions that make it possible to grow physically, socially and intellectually starting at the earliest ages.

### Effective Education

Young people need not only a high school diploma, but a high-quality learning experience that prepares them for college and career.

### Opportunity to Serve

Young people need service opportunities to help them develop belonging in their communities, empowerment to be positive contributors and a sense of personal responsibility.