



## January 2010 Research Brief Middle School: The Fork in the Road to College

Students apply to college in their senior year, but it is at least five years earlier, in the middle grades, when students really make the decision to go to college, and more importantly, when they must start taking steps to make that decision a reality. Middle school is a time of huge change – academically, developmentally and socially – and it is during these years when students, particularly underserved students, either shift their lives towards going to college or away from it. Research from Johns Hopkins University found that “during the middle grades, students in high-poverty environments are either launched on the path to high school graduation or knocked off-track.”<sup>1</sup> These researchers looked at when exactly students were falling off the path to high school graduation and found that many students who got off track did so as early as 6<sup>th</sup> grade. According to this research, “sixth graders who failed math or English/reading, or attended school less than 80% of the time, or received an unsatisfactory behavior grade in a core course had only a 10% to 20% chance of graduating on time.” Researchers also found that 6<sup>th</sup> graders who had “off track” indicators had worse outcomes than students who did not have any off track indicators until 7<sup>th</sup> grade, suggesting that early intervention is critical to preventing students from falling off the path to high school graduation and college matriculation. We know then that the middle grades are a critical time for students, but how should students be supported during this time so that they get on, and stay on, the path to college? This research brief discusses three key areas in which middle school students should be supported—academic preparation; intellectual and emotional development; and social context.

### Connecting Research to Practice – Best Practices for Student Admission

- Behavior grades or “citizenship” grades are a key indicator of high school success. Breakthrough staff should carefully consider citizenship grades in addition to academics to determine motivation during the student admission process.

### Why are the middle grades such a critical time in terms of academic preparation?

While there is no universal high school college-prep curriculum, there is widespread agreement about the rigorous high school courses students should take in order to prepare for college (e.g., 4 years of English; 4 years of math, culminating in pre-calculus or calculus; 3-4 years of lab science; 3-4 years of social studies; 3-4 years of the same foreign language and college-level courses—AP, IB, dual enrollment—wherever possible).<sup>2</sup> If students come into ninth grade without the skills and knowledge they need to succeed in

<sup>1</sup> Balfanz, R. (2009) *Putting Middle Grades Students on the Graduation Path*. Baltimore, MD: Johns Hopkins University

<sup>2</sup> For more information, see California’s A-G requirements; Indiana’s “Core 40” Curriculum; the State Scholars Initiative; ACT’s *Rigor at Risk*; and Southern Regional Education Board’s *High Schools That Work*.

these rigorous college-prep classes, their chances of excelling in high school and being adequately prepared for college are severely jeopardized. Therefore middle school students need to be academically prepared to take a college-prep high school curriculum. Recent research from ACT found that the level of academic achievement students attain *by eighth grade* has a significant impact on college and career-readiness and that “improving high school course rigor may not succeed unless we first increase the number of entering high school students who are prepared to benefit from such rigorous courses.”<sup>3</sup>

One clear example of the academic preparation middle school students need is mastery of Algebra I by 8<sup>th</sup> grade, at the latest. We know from research by the U.S. Department of Education that students who take Calculus by 12<sup>th</sup> grade are much more likely to attend and graduate college, and that this is especially true for low-income students.<sup>4</sup> We also know that math curricula are fairly sequential. Therefore in order for students to be positioned to take Calculus by 12<sup>th</sup> grade, they must master Algebra I by 7<sup>th</sup> or 8<sup>th</sup> grade so that they have the time and knowledge to take the college-prep math classes that precede Calculus (e.g., Geometry, Algebra II, Trigonometry, Pre-Calculus). In addition to taking Algebra in the middle grades, research from the “Making Middle Grades Work” initiative found that students who take and are successful in rigorous 9<sup>th</sup> grade classes shared two other key characteristics: 1) they read a lot of books in middle school (researchers at the “Making Middle Grades Work” initiative recommend that middle school students read at least 25 books per year) and 2) they expect to go to college.<sup>5</sup>

A student’s expectation that they will attend and graduate from college is indeed correlated with success in high school and college, but just because students have the expectation that they will go to college does not always mean that they will take the classes they need to pursue that path.<sup>6</sup> In California, for example,

only 34% of 2008 graduating seniors completed all the courses required for entrance into a University of California or California State University campus.<sup>7</sup> Why is the percentage so low? A large part of the problem may be an information gap. While almost all (92%) middle school students reported in a recent poll that they intend to go to college, only 32% said they had a “great deal” or “quite a bit” of information about selecting high school classes that

#### Connecting Research to Practice – Best Practices for Middle School

- If students’ academic achievement by 8<sup>th</sup> grade significantly impacts college-readiness, then Breakthrough staff need to ensure that their students are excelling in middle school classes.
- Breakthrough staff should know the strength and depth of the Algebra classes their students are taking. If there are multiple Algebra options, Breakthrough staff should make sure their students are in the most rigorous Algebra classes available.
- Breakthrough staff should encourage their students to read 25 books or more per year.

#### Connecting Research to Practice – Best Practices for High School

- Generally, very few students (only 32%) are knowledgeable about selecting college-prep high school classes; therefore Breakthrough staff need to provide explicit & comprehensive counseling to students & families about what a college-prep curriculum entails. Currently across the collaborative, only 49% of 8<sup>th</sup> grade students receive any high school options counseling.

<sup>3</sup> ACT (2008) *The Forgotten Middle*, Iowa City, IA.

<sup>4</sup> Adelman, C. (2006). *The Toolbox Revisited*. Washington DC: U.S. Department of Education.

<sup>5</sup> Cooney, S. & Bottoms, G. (2003) *Middle Grades to High School: Mending a Weak Link*. Atlanta, GA.

<sup>6</sup> Bedsworth, W. Colby, S. & Doctor, J. (2006). *Reclaiming the American Dream*. The Bridgespan Group

<sup>7</sup> California Dept of Education Dataquest - <http://data1.cde.ca.gov/dataquest/>

would prepare them for college.<sup>8</sup> In other words, many middle school students may simply not know enough about translating their dream of going to college into a reality.

#### Implications for Breakthrough

Breakthrough programs should nurture and support students' expectations that they will attend and graduate from college. At the same time, Breakthrough programs should make sure students are enrolled and are successful in the middle-school classes that are pre-requisites for college-prep high school classes (e.g., Algebra by 8<sup>th</sup> grade, high-level English classes where there is an abundance of reading and writing). Breakthrough programs should also make sure students and their families know which specific classes they should take in high school and that students have the necessary knowledge and skills to succeed in those classes.

#### Why are the middle grades such a critical time developmentally?

Rigorous academic preparation is undoubtedly the most important factor determining students' academic success, but there are other factors, especially for young adolescents, that influence academic success. Research shows that middle school, particularly the transition to middle school, is a precarious time for students. This time period in a student's life is associated with declines in academic performance, students' sense of self-efficacy and academic competence, and self-esteem.<sup>9</sup> Researchers suggest that these declines in performance and self-perception could be exacerbated, or even caused by, school environments that do not meet the developmental needs of young adolescents (e.g., middle schools that are large and impersonal; middle schools that focus on students' relative ability and use competition as a motivator; middle schools that don't allow much student autonomy, etc.).<sup>10</sup> Learning environments that *do* meet the developmental needs of young adolescents might then be able to mitigate some of the observed declines in student performance and self-perception in the middle grades.

#### Implications for Breakthrough

Breakthrough programs should intentionally structure curricula, instruction and program culture around their students' developmental needs and assets. For example, young adolescence is a time when youth are developing their meta-cognitive abilities and their ability for abstract thought, so this is an especially good time to teach students about the learning process itself. "By explaining that it is normal to experience difficulty and even confusion when learning new material, students are less likely to believe that it is their lack of ability keeping them from immediately demonstrating proficiency."<sup>11</sup> Teaching students about the learning process both develops students' meta-cognitive abilities and encourages them to view their own intellectual capabilities as evolving, not fixed. Developmentally, young adolescents are also increasing their capacity to think independently and are highly curious about the world around them. Therefore curricula and instruction should be

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<sup>8</sup>NASSP (2007). *A Voice from the Middle: Highlights of the 2007 NASSP/PDK Middle School Student Poll*.

<sup>9</sup> Mullins, E. & Irvin, J. (2000). "Transition into middle school." *Middle School Journal*.

<sup>10</sup> Mullins & Irvin

<sup>11</sup> Maday, T. (2008). *Stuck in the Middle: Strategies to Engage Middle-Level Learners*. Washington DC: Learning Points Associates

focused on real-world concepts and closely related to students' lives, and students should be active participants in their learning.<sup>12</sup>

Young adolescence is also a time of identity formation, when youth are seeking independence and individuality, but still feel intense vulnerability and self-consciousness. Programs should therefore promote a culture of trust and inclusion, where collaboration is favored over competition. Programs should provide “experiences that promote freedom and independence within a safe space.”<sup>13</sup> Programs should make sure their students are known well and have relationships with caring, trusted adults who can support their development. Another feature of young adolescent development is that students' own experiences plays a central role in their learning and development. “Young adolescents, as learners, build upon their individual experiences and prior knowledge to make sense of the world around them.”<sup>14</sup> Therefore, young students who don't have the experience of family members going to college will need to be explicitly taught all the steps that are part of the college-going process, because they won't have the personal experience and prior knowledge to build on, and college-going may not even be part of their world view. These students will need to be supported to create a vision of their future that includes going to college.

Connecting Research to Practice –  
Best Practices for Instruction & Program Culture

- Instruction in Breakthrough programs should relate to students' lives and actively involve students in learning.
- Students should learn about the learning process itself and should be taught to expect challenge and difficulty when learning new things.
- Breakthrough programs should promote collaboration, inclusion and relationship-building among peers and between students and caring adults.

Why are the middle grades such a critical time socially?

Research shows that young adolescents have a strong desire to belong to a peer group and it is during young adolescence when “peer approval becomes more important as adult approval decreases in importance.”<sup>15</sup> It's not surprising then that research shows that peers have a great deal of influence over their friends' college-going behavior and decisions. Researchers who examined the social supports that impact students' college completion rates found that “the factor most likely to bump up a student's odds of completing college was having a significant portion of friends who were also planning to attend college.”<sup>16</sup> This research highlights the importance of creating peer groups where students have shared aspirations to work hard in school and go to college.

Implications for Breakthrough

Breakthrough is intentionally structured to bring together highly motivated peer groups and to create an environment where students are expected to go to college. The Breakthrough model

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<sup>12</sup> Caskey, M. M., & Anfar, V. A., Jr. (2007). *Research summary: Young adolescents' developmental characteristics*. National Middle School Association

<sup>13</sup> Caskey & Anfar

<sup>14</sup> Caskey & Anfar

<sup>15</sup> Caskey & Anfar

<sup>16</sup> Bedsworth, W. Colby, S. & Doctor, J. (2006). *Reclaiming the American Dream*. The Bridgespan Group

reinforces a shared ethos of high achievement by having highly motivated, academically successful college and high school students teaching younger students. Breakthrough students are surrounded by peers and close-in-age teachers who embody high achievement and who demonstrate that “it’s cool to be smart.” These shared peer groups are strongest during Breakthrough’s intensive summer programs, but Breakthrough programs should also hire the best and brightest high school and college students to tutor and teach during their school year program to promote and strengthen college-going peer groups during the school year, when Breakthrough students are back at their home schools and are surrounded by peers who may not share their college aspirations.

In many ways the middle grades represent a fork in the road on the path to college. It is the time when students are choosing who they want to be in the world and are solidifying their academic path. Breakthrough programs, because they support students at such a critical time in their lives, have a unique opportunity to shape students’ futures, as long as they are intentional and comprehensive in meeting the academic, developmental and social needs of their students.

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