July 2009 Research Brief:
Factors that support academic success

The single most important factor determining a student's academic success is the academic preparation a student receives and the rigor of coursework to which he is exposed (see Breakthrough's Research Brief on Academic Rigor at http://btresearch.wordpress.com/2009/01/16/academic-rigor-what-does-it-really-mean). While rigorous academic preparation is the most important factor in academic success, there are a number of other factors that support academic success and readiness for college-prep high schools and college, such as students' motivation, engagement and sense of self-efficacy. Research shows that these "non-academic" or "social/emotional" factors do matter when it comes to academic achievement, and those directly related to academic activities matter the most.[1] A review of the research literature reveals that the following factors are most directly related to, and supportive of, academic success:

Motivation, engagement & academic discipline
Students' academic talents can carry them far, but in order to become scholars who can manage their own learning, students need to be self-motivated, engaged and disciplined. According to a recent ACT report, the strongest predictor of academic success, aside from prior academic achievement, is academic discipline, which the authors define as the "skill component of motivation" and is exhibited in the amount and quality of effort students devote to schoolwork and the degree to which students engage in learning new things.[2] Other researchers have documented the positive correlations between engagement and student achievement, specifically when engagement is characterized by students doing more work than what's required; students initiating conversations with their teachers about academic work; students monitoring their own comprehension; and students using strategies to deepen their understanding of new material and connect new material to existing knowledge.[3]

Implications for Breakthrough
Motivation and engagement are not intrinsic characteristics that students either have or don't have. These characteristics can be significantly influenced by students' learning environments. Research shows that students are more motivated and engaged when they are in environments that are intellectually challenging and socially supportive. Students tend to be more engaged and "resilient" (i.e., academically successful despite facing obstacles in life outside of school) when they feel a connection to school and a sense of belonging and when they have caring

---

[1] ACT. (2007). *The Role of nonacademic factors in college readiness and success*. Iowa City, IA.
[2] ACT (2008). *The forgotten middle: Ensuring that all students are on target for college and career readiness before high school*. Iowa City, IA.
[3] Fredricks, J. A., Blumenfeld, P. C., & Paris, A. (2004). School engagement: potential of the concept: state of the evidence. *Review of Educational Research, 74*, 59-119.

teachers and adults in their lives.[4] According to research by Jennifer Fredricks, Robert Balfanz and others, in order to foster motivation and engagement, students should be given challenging and interesting work that relates to their lives; encouraged to demonstrate understanding; given some choice and autonomy in their own learning; given opportunities to discuss ideas and debate points of view; given opportunities to demonstrate their strengths; recognized for positive behavior; and given clear and consistent expectations.[5] Breakthrough programs should, therefore, be intentional in how they choose curricula, set up classrooms and train teachers so that instruction and student-teacher interactions are geared toward stimulating motivation and engagement.

Self-efficacy & academic self-concept

Self-efficacy, or perceived competence to perform a specific task, and academic self-concept, a more general sense of how well one does in school, and related traits such as confidence, assertiveness and positive risk-taking, correlate with, if not directly influence, academic performance.[6] Researchers believe that individuals' actions are better predicted by *their beliefs about* their abilities and competence, than their actual abilities.[7] For example, a student who believes her mathematical skills are strong enough to take advanced math classes probably will enroll in advanced math, whereas another student who does not have confidence in her mathematical skills may shy away from advanced math, even if these two students have comparable math skills. A student's sense of self-efficacy not only influences academic choices, but also influences a student's level of effort and persistence, particularly when a student perceives their academic success as within their control.[8]

Implications for Breakthrough

Traits such as a strong academic self-concept and a sense of self-efficacy can be developed in a number of ways, the most important being "mastery experiences." When students master a topic or skill, this can enhance their sense of self-efficacy. This does not mean, however, that curricula should be "dumbed down" in order to ensure mastery (research shows that students must have access to rigorous curricula if they are to be academically successful), but it does have implications for the ways in which challenging material is taught. For example, instructional activities may need to include breaking down complex problems into manageable steps; setting specific goals; and providing regular feedback.[9] Another method for influencing self-efficacy

[4] Waxman, H., Gray, J. & Padron, Y. (2003). *Review of Research on Educational Resilience.* UC Santa Cruz: Center for Research on Education, Diversity & Excellence.

[5] Fredricks, J. A., Blumenfeld, P. C., & Paris, A. (2004). School engagement: potential of the concept: state of the evidence. *Review of Educational Research, 74*, 59-119; Anderman, L. & Midgely, C. (1998). *Motivation and Middle School Students*. Eric Digest; Balfanz, R. (2009) *Putting Middle Grade Students on the Graduation Path: A Policy and Practice Brief*. National Middle School Association.

[6] Multon, K. D., Brown, S. D., & Lent, R. W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analytic investigation. Journal of Counseling Psychology, 38, 30-38.

[7] Bandura, A. (1997) *Self-efficacy: The Exercise of Control.* New York: Freeman; Stajkovic, A. D., & Luthans, F. (1998). Self-efficacy and work-related performances: A meta-analysis. *Psychological Bulletin, 124*, 240-261.

[8] Collins, J. L. (1982). Self-efficacy and ability in achievement behavior. Paper presented at the Annual Meeting of the American Educational Research Association, New York; Anderman, L. & Midgely, C. (1998). *Motivation and Middle School Students*. Eric Digest.

[9] Waxman, H., Gray, J. & Padron, Y. (2003) *Review of research on educational resilience*. Washington, DC: Center for Research on Education, Diversity & Excellence

beliefs is modeling, or showing by example what success or excellence looks like. Modeling is particularly effective when the person being observed and the observer share similar attributes (e.g., both teacher and student are Latino or both teacher and student grew up in similar neighborhoods). When teachers or mentors model excellence for students, and particularly when teachers seem similar to students, students see their own potential reflected back to them.[10]

Positive reinforcement is another critical component of developing self-efficacy beliefs. Positive reinforcement should communicate high expectations, a belief in students' capabilities and a belief in individuals' ability to learn and grow.[11] Having high expectations, believing in a student's ability and clearly communicating those beliefs can change a student's academic future. In fact, a study done by the College Board showed that if a student's counselor believed that a student should go to a four year college, the likelihood of that student attending a four year college increased substantially.[12]

Educational aspirations & belief that college is necessary

Most students, including low-income students, expect to go to college. Clear aspirations, however, do not translate into a concrete plan for how to get to college. Even when students are clear about their desire to go to college, they may not know how to navigate the college testing, application and financial aid processes, or they may not take the requisite college prep courses. An analysis of the National Education Longitudinal Study done by the Bridgespan Group showed that while most students expect to go to college, only about half of those students expect to take a college prep curriculum and research from the Gates Foundation shows that less than a third of low-income students ultimately enroll in a college prep curriculum.[13]

This disconnect between aspirations and actions may be attributed to students' limited knowledge about what it takes to prepare for college, as well as schools' and communities' failure to make the explicit connection between students' current education path, college and future career goals. When students believe college is necessary for their long term goals, they are more likely to take challenging classes in middle school and high school, work harder in those classes and be more successful in both high school and college. Data show that when students believe that a bachelor's degree is necessary for their career goals, they are 46% more likely to obtain a bachelor's degree.[14]

Implications for Breakthrough

Reinforcing students' college aspirations and students' beliefs about their ability to succeed in college is a key first step. Students who are surrounded by adults and peers who value academic success and believe in the importance of college significantly enhance students' own likelihood

[10] Pajares, F. (2002). *Overview of social cognitive theory and of self-efficacy*. Retrieved May 29, 2009 from http://www.emory.edu/EDUCATION/mfp/eff.html

[11] Ibid.

[12] King, J. (1996) *Improving the odds: Factors that increase the likelihood of four-year college attendance among high school seniors*. New York, NY: College Board.

[13] Bedsworth, W., Colby, S. & Doctor, J. (2006) *Reclaiming the American Dream.* The Bridgespan Group; Gates Education Policy Paper. *Closing the graduation gap: Toward high schools that prepare all students for college, work and citizenship*. Seattle, WA: Bill & Melinda Gates Foundation, 2003.

[14] Ibid

of academic success. Research shows that having peers who are planning to attend college is even more important than parental encouragement and support, particularly for young adolescents who strongly associate with their peer groups. One study showed that students are four times more likely to enroll in college if their friends intend to enroll in college as well.[15] Breakthrough's programs should, therefore, facilitate relationships among students and between students and their high-school and college-age teachers where college-going is the norm, discussions about college are common and information is shared about the specific steps to get to college. Breakthrough teachers and staff should also help students make explicit connections between their career goals, college and the courses they will need to take now and in the future.

Conclusion

Just as intelligence is not fixed, neither is students' beliefs about their own capabilities. It is, and should be, a goal of Breakthrough programs to develop students' academic self-concept, educational aspirations, motivation and academic discipline, as these are all factors that support students' academic success. As discussed in this brief, practices that support the development of these factors include:

- Surrounding students with supportive adults, teacher and peers who all share a common goal of academic excellence and college success
- Setting high expectations and clearly communicating those expectations and the belief in students' ability to meet them
- Providing students with the necessary resources and support to reach the high expectations set for them, including setting clear goals, giving regular feedback and breaking down difficult or complex problems
- Providing opportunities for students to demonstrate their strengths and talents and publicly recognizing their success
- Explicitly making connections between the academic courses students take now and in the future with college and career goals
- Making college-going the norm and demystifying the path to college with informal and formal discussions of the necessary steps to applying to college and securing financial aid
- Modeling commitment, hard work and excellence

All the factors discussed in this brief (e.g., motivation, engagement, self-efficacy, educational aspirations, etc.) influence academic achievement and it may be these factors that help explain why prior academic achievement, by itself, is not always the best predictor of future academic achievement. As one educational psychologist wrote, "the beliefs that individuals hold about their abilities and about the outcome of their efforts powerfully influence the ways in which they will behave."[16] The power of attitudes and beliefs may help to explain why some academically gifted students fail to live up to their potential and also underscores the importance of paying attention to all of the factors that contribute to academic success.

---

[15] Choy, S. (2002) "Access and Persistence: Findings from 10 Years of Longitudinal Research on Students," American Council on Education, 2002

[16] Pajares, F. (1996). Self-efficacy Beliefs in Academic Settings. *Review of Educational Research*, Winter 1996, Vol. 66, No. 4, pp. 543-578

Sources:

ACT. (2007). *The Role of nonacademic factors in college readiness and success*. Iowa City, IA.

ACT (2008). *The forgotten middle: Ensuring that all students are on target for college and career readiness before high school*. Iowa City, IA.

Anderman, L. & Midgely, C. (1998). *Motivation and Middle School Students*. Eric Digest.

Balfanz, R. (2009) *Putting Middle Grade Students on the Graduation Path: A Policy and Practice Brief*. National Middle School Association.

Bandura, A. (1997) *Self-efficacy: The Exercise of Control.* New York: Freeman; Stajkovic, A. D., & Luthans, F**.** (1998). Self-efficacy and work-related performances: A meta-analysis. *Psychological Bulletin, 124*, 240-261.

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

Choy, S. (2002). "Access and Persistence: Findings from 10 Years of Longitudinal Research on Students," American Council on Education.

Collins, J. L. (1982). Self-efficacy and ability in achievement behavior. Paper presented at the Annual Meeting of the American Educational Research Association, New York

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. (2004). School engagement: potential of the concept: state of the evidence. *Review of Educational Research, 74*, 59-119.

Gates Education Policy Paper. *Closing the graduation gap: Toward high schools that prepare all students for college, work and citizenship*. Seattle, WA: Bill & Melinda Gates Foundation, 2003.

King, J. (1996) *Improving the odds: Factors that increase the likelihood of four-year college attendance among high school seniors*. New York, NY: College Board.

Multon, K. D., Brown, S. D., & Lent, R. W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analytic investigation. Journal of Counseling Psychology, 38, 30-38.

Pajares, F. (2002). *Overview of social cognitive theory and of self-efficacy*. Retrieved May 29, 2009 from http://www.emory.edu/EDUCATION/mfp/eff.html

Pajares, F. (1996). Self-efficacy Beliefs in Academic Settings. *Review of Educational Research*, Winter 1996, Vol. 66, No. 4, pp. 543-578

Waxman, H., Gray, J. & Padron, Y. (2003). *Review of Research on Educational Resilience.* UC Santa Cruz: Center for Research on Education, Diversity & Excellence.