

Leveraging Psychological Factors: A Necessary Component to Improving Student Outcomes

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Executive Summary

Higher education researchers and policy experts have recently become interested in how psychological factors—such as student mindsets and motives—are associated with improving college completion. A new and growing body of research demonstrates the effect that a college’s practices and policies have on students’ psychological factors. While postsecondary institutions vary considerably in their missions, resources, and student bodies, the findings suggest that programs and initiatives aimed at raising college completion can be enhanced when they consider the unique psychological elements of the students at their specific schools.

In this report, Mesmin Destin conducts a careful review of the literature and finds that approaches that incorporate psychological factors—such as encouraging growth mindsets, linking classroom work to real-world aspirations, and using online modules that help activate students’ motivation and sense of belonging—can improve student success in higher

education. Of course, results from individual experimental studies do not mean policymakers should jump to implement a specific interactive module at all schools, but they should recognize that college administrators' policy choices matter for the success of their students.

The research does not suggest implementing one-size-fits-all programs or activities, since there is still much we do not know about the corollaries between psychological factors and student success. For policymakers, this means they should avoid high-stakes measurements of psychological factors and resist the urge to tie public subsidies to the results of those psychological measurements. At the same time, the research offers promising opportunities for improving completion if policymakers can gently encourage university administrators to focus on student experience and align psychological factors in their favor to improve completion rates.

— *Frederick M. Hess and Lanae Erickson Hatalsky*

For decades, researchers and policymakers have sought ways to increase access to higher education, particularly for racial-ethnic groups that are underrepresented in college and people who come from lower socioeconomic status (SES) backgrounds. The federal government is particularly invested in increasing opportunities for these students, given its critical role in supporting civil rights and large annual investment in Pell Grants. In addition to these efforts, more recent attention has been devoted to the significant numbers of students who enroll in college but fail to complete their degrees.

While some of the challenges students face may be attributed to their own level of preparation or individual circumstances, growing evidence demonstrates that colleges and universities themselves have a strong capacity to support and encourage students' successful college completion. As Mark Schneider and Kim Clark describe, comprehensive institutional practices such as using evidence-based teaching methods and providing holistic student support can significantly increase

course success and college completion rates.¹ However, institutional efforts to increase college completion can be even more effective by systematically taking *psychological factors* into account.

Research in psychological and behavioral science has demonstrated the incredibly powerful role that psychological factors can play in helping encourage college student learning, success, and completion. In simple terms, psychological factors refer to considerations of how people subjectively experience any given task (e.g., assignment), situation (e.g., classroom), or institution (e.g., college). The core psychological question is whether these college contexts and practices convey to students that they are supported and likely to reach their goals or that they are unsupported and unlikely to reach their goals. Thoughtful consideration of how institutions convey these messages to students through their policies and practices has enormous consequences for student success.

In one study, for example, students who were randomly assigned to see class assignments as connected to reaching their goals earned grades that were half a grade point higher than students randomly assigned to control groups.² Similarly, new college students who were randomly assigned to encounter messages that they were likely to learn, grow, and succeed in college were 4–10 percent more likely to remain enrolled by the end of their first year.³

Such demonstration studies do not mean that these student interventions should be mandated or uniformly implemented for all students. Instead, these studies and insights point to principles that can inform institutions' general efforts. Policies that are designed to elevate college completion should be attentive to the psychological experience of college students by following two broad guidelines:

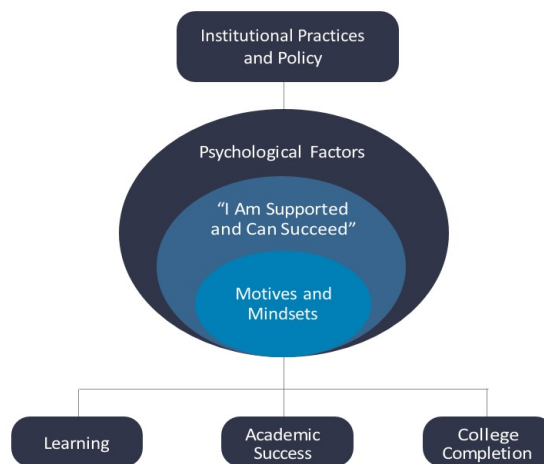
- 1. Enhance institutions' capacity to align their practices with insights from the study of psychological factors in order to improve student outcomes and respond to demographic changes.** For example, when faculty and staff have diverse backgrounds and perspectives, they are likely to understand the breadth of student experiences in college and support positive student learning outcomes.⁴ Further, faculty and staff development that is informed by psychological and behavioral science should be Examples include resources from the Center for the Integration of Research, Teaching and Learning Network and the National Association of Student Personnel Administrators–Student Affairs Administrators in Higher Education.⁵ If students regularly encounter faculty and staff who are well versed in understanding students' subjective experiences, students are more apt to perceive that they are supported and likely to reach their goals at the institution.
- 2. Evaluate initiatives aiming to elevate college completion by paying attention to the student experience, and incorporate mechanisms for iteration based on systematic feedback.** For example, if a college allocates new financial aid resources to provide more support for students, it should institute mechanisms to evaluate whether resources are disbursed clearly and efficiently. When resources are unclear or difficult to access (even if they are technically available), it signals to students that they are not supported at the institution and unlikely to succeed.⁶

These suggestions describe how institutional practices related to campus resources and personnel can shape consequential aspects of students' psychological experience during college. As shown in Figure 1, psychological factors that consistently convey that students can succeed and are supported can amplify institutional efforts to improve college student learning, success, and completion. Even the most straightforward attempts to improve student outcomes can

fall flat without systematic attention to students' psychological experience.

The movement toward psychologically informed policies and practices can dramatically enhance the effectiveness and efficiency of other approaches to increasing college completion. When guided by sound psychological principles, seemingly small and subtle institutional changes significantly improve student outcomes. At the same time, such considerations can help large and structural changes achieve their desired effects.

Figure 1. The Connection Among Institutions, Psychological Factors, and College Student Outcomes



Source: Author.

Despite the evidence and potential in leveraging psychological factors to enhance policy effectiveness and improve college completion, two barriers and misconceptions have limited their widespread uptake. First, psychological studies can seem small in scale and irrelevant for institutional practice and policy. However, a critical mass of evidence and principles from psychological and behavioral science can now be harnessed to encourage significant positive effects across a wide range of institutions. This report will provide descriptions and evidence of two well-studied psychological factors that support student completion—motives and mindsets.

A second barrier is the misconception that psychologically informed policies and practices insulate students from real-world challenges and focus predominantly on making

transitions easier. On the contrary, an approach focused on psychological factors attempts not to coddle students but rather to encourage them to take on meaningful challenges and opportunities for growth. This report will describe evidence on how psychological factors encourage students to persist in the face of challenges. It will also provide cautionary guidance on how such factors should not be used as tool kits to implement blindly but rather as guidelines to systematically consider when developing and implementing comprehensive and holistic institutional practices.

Two Main Psychological Factors

Evidence for the effectiveness of psychologically oriented approaches to improving college completion is robust and growing. A recent report published by the National Academies of Sciences, Engineering, and Medicine affirmed the role of psychological factors in supporting student success and called for even greater attention to continued research from the scientific community.⁷

Motives and mindsets are two psychological factors that everyday practices of colleges and universities can shape and activate both positively and negatively. Research in psychological and behavioral science can guide institutions to intentionally shape motives and mindsets in ways that have strong and consistent positive effects on student outcomes.

Factor 1: Motives

Motives include students' thoughts about what matters to them and who they may become in life. These thoughts, which are often referred to as goals, expectations, values, or identities, serve as guides that support students' motivation during college. For example, imagine a student who has a goal of becoming a civil engineer. When this student thinks about the future, the student visualizes being an integral part of a team building bridges and tunnels that enhance communities and ultimately improve people's lives.

Research consistently demonstrates that when students can articulate what they are ultimately working toward and why it matters for them and others, it increases their motivation and ability to focus, persist, and succeed in school.⁸ Most important, various aspects of the college environment can help develop and encourage these types of supportive and motivating thoughts—or they can inadvertently distance students from their valued goals and identities, with serious positive or negative consequences for their likelihood of success.

In one experiment, researchers studied over 1,000 college students in large biology courses.⁹ Half the students were randomly assigned to complete individual writing assignments throughout the semester that the researchers designed to emphasize the connection between the course content and students' own lives and goals. The study found that students who were randomly assigned to this group performed significantly better in the course than students who were not. The assignments were especially beneficial for first-generation college students and those from underrepresented racial-ethnic minority groups. In fact, the experiment led to a 61 percent reduction in the gap in course grades between these students and students from socioeconomic and racial-ethnic groups that are not underrepresented in college.

This experimental demonstration and similar results from several related experiments do not suggest that all students should complete specific activities or writing assignments from particular studies. Rather, they show the potential benefits of finding ways to consistently activate a positive psychological process for students in a college context. Student success and completion are supported when college and college tasks are made to feel relevant to students, particularly in how they think about what matters to them and who they hope to become.¹⁰

Several practices, which institutional policies can encourage, can systematically improve student success by strengthening

the connection between students' academic experiences and their motives. First, at the administrative level, many colleges and universities offer generous financial aid and student loans to increase access for students with otherwise limited financial resources. However, the extent to which students know about such resources and the way in which such resources are disbursed can determine whether they support or undermine student motivation and achievement. A study of over 300 college students showed that if students receive financial aid but perceive they are among a small minority of students who rely on such assistance, they feel a weaker connection to the institution and have difficulty imagining and pursuing success.¹¹

Similarly, receiving student loans to attend college but having little guidance on how the loans work or how they support students' academic success can actually increase students' stress about future financial stability. On the other hand, when loans are disbursed in a way that reinforces their potential as an investment toward future goals—through adequate financial counseling, for instance—they help improve student performance.¹²

Second, positive interactions with faculty are integral to activating student motives, which affects student success. A meaningful connection with a faculty member helps students maintain a strong identification with the university, which reduces the likelihood of disengagement.¹³ It is a long-standing empirical finding that students who have discussions and informal contact with faculty outside of class time are less likely to drop out of college.¹⁴ In general, a robust and cohesive advising network and strategy can ensure that students develop clear goals and find the appropriate path toward those goals.

In one experiment with 13,000 college students, some students were randomly assigned to have access for two years to consistent college coaching resources to help them form clear goals and related strategies.¹⁵ Those who received the coaching were 14 percent more likely to remain enrolled in

college a year after the coaching ended than students in a control group. These and other studies show that regular and substantive interactions with faculty and counselors improve college student outcomes.

Third, at the student level, peer mentoring also supports students' journeys toward their goals.¹⁶ Exposure to peers from a diverse range of backgrounds helps students envision their own success and increases the achievement of students from underrepresented groups.¹⁷ In one experimental demonstration study with over 150 college students, a one-hour program at the beginning of the students' first year of college was designed to expose them to the diversity of experiences and stories of more advanced college students. This program reduced the gap in achievement between first-generation and continuing-generation students by 63 percent during their first year of college and continued to positively influence achievement and how students responded to academic challenges in subsequent years.¹⁸ Through judicious implementation, approaches that carefully foster motivating peer interactions promote student success during college and help reduce or eliminate preventable achievement gaps among students.

Factor 2: Mindsets

The second key psychological factor associated with college completion is mindset, or what is sometimes referred to as students' lay theories. Some environments lead students toward more of a fixed mindset, in which they believe that personal qualities like intelligence are relatively stable and unchanging. Other environments lead students toward more of a growth mindset, in which they believe that a person's intelligence level can change and develop. In dozens of studies, encouraging more of a growth mindset consistently improves student outcomes.¹⁹

Think of a student who performs poorly on a difficult quiz or midterm during their first college class. A fixed mindset environment indicates to the student that their ability to perform well in college is low and that it is not going to

change. As a result, the student becomes less likely to seek help or employ strategies that could improve performance. This fixed pathway can lead to discouragement, declining performance, and falling behind in multiple courses. A growth mindset environment, on the other hand, indicates to students that they will have to do something differently to succeed, such as change their study strategies or find resources on campus to enhance their learning. This growth pathway would be more likely to support motivation and improvement across a student's courses.

Relatedly, college environments also shape students' lay theories about belonging. Contexts that lead students to interpret challenges as a sign that they do not belong in college (compared with those that tell students that experiencing challenges is a normal part of belonging) discourage students and reduce their academic performance, especially among students from groups that are underrepresented in college.²⁰ For example, when an exam is presented as a way to "weed out" the weakest students, students from underrepresented groups perform worse than when the same exam is presented as a way to support learning.²¹

Perhaps the most important insight to understand about mindset and lay theories, particularly in relation to institutional or public policy, is that environments shape whether students develop certain lay theories and exhibit more of a fixed or growth mindset. For example, in experimental studies with over 9,000 college students, an interactive module during students' online college orientation that explicitly conveyed to them that intellectual ability can change and develop (i.e., a growth mindset) significantly improved academic motivation and performance.²² This type of experiment has led to a 40 percent reduction in inequality among different sociodemographic groups in the likelihood that students remain enrolled in college after one year.

The effects of individual experimental studies do not suggest that specific interactive modules should be distributed at scale. Every college context is different and can find unique ways to support lay theories and mindsets that are consistent and appropriate to their environment. The relevant insight, rather, is that institutional practice and policy can influence a classroom or university in ways that shape whether struggling students feel a sense of belonging and whether they have more of a fixed or growth mindset response, with significant consequences for college success and completion.

Practices that encourage growth mindsets include student evaluation systems that reward effort and learning rather than basic performance.²³ Further, classes that allow and encourage opportunities for students to take risks (e.g., low-stakes testing) and embrace challenges (e.g., project-based learning) also support the development of resilient growth mindsets.²⁴ In the same vein, the institutional environments that encourage positive lay theories and growth mindsets are those in which key administrators are recruited and trained to understand and foster the value that students' abilities are malleable and can develop.²⁵ Overall, everyday experiences that signal to students that difficulty is normal rather than a sign that they do not belong increase their likelihood of persisting and succeeding.

Supporting Student Persistence

College experiences that activate students' motives, encourage resilient mindsets, and generally convey to students that they are supported and can succeed do not attempt to shield students from academic challenges. On the contrary, they aim to infuse academic difficulty with a sense of meaning that helps students persist, grow, and learn. Almost all students encounter some form of academic or personal difficulty during college.

Imagine two students with roughly the same academic ability and background. For one of them, facing a challenging or ambiguous course project or losing a family member might

weaken the resolve to succeed in classes. Under the same circumstances, the other student might become more focused and find ways to successfully overcome the challenges. Any number of personal differences between the two students might explain their divergent responses to personal and academic difficulty. However, increasing evidence shows that when colleges' qualities and practices are meaningfully linked to students' goals and values or infer a sense of belonging and potential for growth, they increase the likelihood that students build and demonstrate persistence.

Several effective classroom-level practices can tap into students' motives and mindsets in ways that support student persistence. For example, classrooms that create a sense of community, engage active learning strategies, and invoke real-world problems all increase the likelihood that students will persist amid difficult coursework. Clearly communicating faculty expectations and using evaluations that emphasize opportunities to learn rather than unnecessary competition also align with psychological factors to encourage persistence, especially for students from underrepresented groups.²⁶ In general, these psychologically informed practices signal to students that difficulty is a sign that a task is meaningful and important rather than meaningless and impossible, which is an incredibly strong predictor of student success.²⁷

Further, the availability of a wide range of resources to enhance student learning, such as tutoring, helps increase student persistence and success. These resources are most effective, however, when colleges and universities provide them with attention to psychological factors. Strongly encouraging the wide use of academic support resources and providing opportunities for students to strategize how they will use resources normalizes challenges and difficulties and psychologically links available resources to students' own goals.²⁸

Table 1. Examples of Psychologically Informed Practices at Multiple Institutional Levels

Level	Policy or Practice	Psychological Message
Institutional	Financial aid counseling that normalizes receipt of financial aid and connects current costs and future goals	The institution is supportive of the motives of students from diverse socioeconomic backgrounds
Faculty/Classroom	Faculty development that encourages innovative teaching and project-based learning	Students are encouraged to embrace challenges as a part of learning
Peer	Peer mentoring programs that connect new students with advanced students from similar and diverse backgrounds	Students from many different backgrounds belong here and succeed

Source: Author.

A Note of Caution

As institutions and policymakers move toward greater consideration of psychological factors in elevating college completion, there are several important considerations. First, although tempting, they should avoid the path of high-stakes measurement of psychological factors. The measurement of student motives and mindsets continues to evolve and changes depending on the context. Therefore, it is unwise to consider any measure a universal standard.

Further, as students, educators, and institutions become increasingly aware of psychological factors, attaching resources to their measurement may influence researchers and respondents to bias their responses.²⁹ For example, an attempt to measure faculty mindsets and reward those who indicate more of a growth mindset would ignore the importance of faculty practices, rather than survey responses, in conveying messages to students in a classroom.

Another important consideration is balancing targeted and universal approaches. Without careful implementation, targeted approaches that single out particular types of students can be stigmatizing and hurt student outcomes. For example, a depersonalized attempt to provide academic support to students from low SES families may signal to individual students that the institution has low expectations for their success, thereby causing them to feel concerned, self-conscious, and less able to focus on their studies. However, thoughtful implementation that organically reaches students and offices that are designated to form meaningful connections with students can help reach those who may benefit the most.

In addition, there are some areas where additional knowledge is necessary to more fully understand the role of psychological factors in student outcomes. Perhaps most notably, a better record of the practices, initiatives, and efforts of individual institutions would be most useful. Many colleges and universities are generally aware of the crucial role that students' subjective experiences play in their likelihood of college completion and have taken steps to acknowledge and address such factors. A systematic review of the extent to which such efforts are carried out and evaluated would benefit researchers and policymakers alike.

Finally, despite the critical mass of evidence on the significance of psychological factors for students and the ability of institutions to influence them, additional funding and research remain necessary to continue the pattern of advancement. In particular, more large-scale experimental studies that collect longitudinal data will provide even greater guidance for institutions seeking to improve student outcomes. Perhaps most important, continuing work in this area will show that attention to psychological factors is necessary in any attempt to influence student outcomes and that they should be considered as part of holistic approaches to comprehensively improve the experience and outcomes of students in higher education.

About the Author

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