aMIND
at Work

Maximizing the Relationship
Between Mindset and
Student Success

2019 NATIONAL REPORT

CONTENTS

Acknowledgments

Community colleges are redesigning the student experience—beginning with the end in mind—by focusing on guided pathways. As the college experience is changing, so are the perspectives of administrators, faculty, and staff. As a sector, we are long past the time of having as our primary ethos an open-door admissions policy. We are now emphatically focused on trying to ensure that those who walk through our doors are successful, defined as transferring or having the skills needed to thrive in a job that pays a living wage.

With this new focus comes a need for more tools that will help students reach their goals. One emerging tool is educating students about mindset. The person best known for mindset work is Carol Dweck, a Professor of Psychology at Stanford University. Dweck coined the terms *fixed mindset* and *growth mindset,* and while her research primarily focuses on K–12 students, it is increasingly being applied to higher education. In 2015, the Tennessee Board of Regents (TBR) launched an academic mindset initiative that builds on Dweck's work. The initiative aims to better understand the noncognitive factors that affect student success and then develop classroom strategies that address those factors. At the third AACC Pathways Project Institute in 2016, Tristan Denley, then the Vice Chancellor for Academic Affairs for TBR, discussed the impact of noncognitive factors on student success. This discussion spurred the Center for Community College Student Engagement's (the Center's) interest in collecting national data on academic mindset.

Many of the students who walk through the doors of community colleges have already been told they are not college material. Or they have had experiences that led them to believe they cannot do math or are not good at taking tests. Through intentional and deliberate actions, colleges can begin to move students from what the Center is calling *nonproductive mindsets* to *productive mindsets* and change the way they feel about past failures. This shift can lead to more engaged students—and ultimately, more successful students.

This work would not have been possible without the efforts of the researchers who have already been invested in this topic. The work would certainly not have been possible without the colleges that participated in the 2018 Community College Survey of Student Engagement *(CCSSE)*, the faculty in whose classes the surveys were administered, and the students who responded. We would also like to thank the colleges that participated in the mindset focus groups and the colleges featured in this report that shared the mindset work happening on their campuses.

Evelyn N. Waiwaiole
Executive Director
Center for Community College Student Engagement

The Role of Mindset in Improvement

Tristan Denley
Executive Vice Chancellor for Academic Affairs and Chief Academic Officer
University System of Georgia

The last decade has brought student success and completion to the forefront of higher education. Where once a tangential issue, today's colleges and universities are increasingly focused on undergraduate success. The decade's work has brought significant insights into strategies that improve student success at scale.

This shift has entailed, among other things, a willingness on the part of higher education to change a deep-seated paradigm. Whilst in the past, as a community, we have held that the best way to improve student outcomes was to have better students, we now know that a healthy dose of the issue lies with us. Student success strategies have shown that much can be done to change the way in which learning happens and improve learning for all. Indeed, as prototypes have grown to scaled initiatives, we have discovered ways to harness these phenomena to improve student learning and often level historical equity gaps.

Mindset Is Connected to Many Areas of College Improvement

Pathways design. The current focus of success efforts began with recognizing the importance of having clear curricular pathways. We now know that academic mindset plays an important role in several elements of pathway reforms. Researchers have identified pathway design principles that enhance success. Chief among these design principles has been redesigning developmental education, a critical roadblock for many students, and co-requisite remediation has emerged as a key redesign strategy.

As we studied the reasons why the co-requisite approach to remediation is so successful, we found evidence that it was because "just-in-time" remediation is more effective than prior preparation. Now we see that in no small part the effectiveness is enhanced because co-requisite students no longer experience the "othering" that is ubiquitous in the traditional approach.

Advising. We saw evidence that beginning college "undecided" led students to unnecessarily lengthen their programs of study and lessen their success rates. As a result, many colleges revamped their advising models. But we now also know that appreciating the purpose of what one is studying not only improves success rates, but leads to deepened mastery of material. Colleges that understand this mindset phenomenon can be even more helpful to their students.

Engagement and community. How students interact with the learning environment around them is a critical component of mindset. A growing body of research demonstrates the importance of helping students see themselves as members of a learning community.

The Value of Understanding Mindset

These are just a few of the insights provided by an academic mindset approach, which are richly explored in this report. The structure of higher education plays a large part in shaping students' academic mindset. Once again, it is not a problem with the students that has been found but an opportunity that by shaping policy, pedagogy, and practice can improve student learning and college success.

Part of the challenge of academic mindset research in the collegiate setting has been to gather sufficiently large data sets that paint an informative picture. Every institution has a wealth of historical academic data, but measures of academic mindset are harder to obtain. That is why this report is important.

There is a wealth of research about academic mindset at a classroom scale. Some papers involve whole institutions, and efforts in Tennessee and Georgia have allowed the study of academic mindset at a state-system scale. However, with this report, the Center provides the first data set that allows us to clearly see the landscape of academic mindset on a national scale. These data confirm that the findings from those two states and the research findings from specific institutions are phenomena that are not limited to those locales but have a general and profound significance. These data confirm that identifying the strategies at scale that might improve student learning through mindset-based interventions is the key to unlocking the next great wave of improvements to national higher education attainment.

Why Mindset Matters

New findings from the Center for Community College Student Engagement indicate that mindset may play an important role in student engagement. Students who have more productive mindsets are more engaged and have higher GPAs. Thus, understanding mindset—and helping students improve their academic mindsets—may open new avenues for improving student success.

While there is a great deal of research about mindset and its impact on the way people learn, little work has been done on mindset in community colleges. Yet mindset is beginning to get traction in the field, primarily at colleges that are implementing guided pathways.

This report provides results from the first large set of data on mindset in community colleges. These data suggest that understanding the relationship between mindset and success can give colleges new tools to help students meet their academic goals. The Center presents these findings in the hope that they provide insights at this emergent time of mindset work.

What Is Academic Mindset?

Academic mindset encompasses individuals' beliefs about the ways learning and intelligence work. These beliefs frame students' thinking, influence how they interpret events, and ultimately affect their success.

Students with *productive academic mindsets* believe, for example, that they can change their intelligence, and they have confidence in their ability to learn challenging material and accomplish difficult tasks. "When students believe they can get smarter, they understand that effort makes them stronger. Therefore they put in extra time and effort, and that leads to higher achievement."[1]

By contrast, students with *nonproductive academic mindsets* are more likely to "stop trying when confronted with a challenge because they've convinced themselves that they're not good at math or writing or whatever the subject is."[2]

Based on research developed around these concepts, a growing number of colleges are incorporating mindset—in particular, exploring ways to help students move toward a more productive academic mindset—into their efforts to improve student success.

Components of Academic Mindset

The Center identified four components of academic mindset and surveyed students about each of them. Based on their responses, students were placed along a scale from a nonproductive to a productive mindset. For example, *agreeing* or *strongly agreeing* with statements such as *"I can become more intelligent by working hard on my studies"* indicates a productive mindset.

The four components of academic mindset explored in this report are:

1. **Growth vs. fixed mindset:** students' perceptions of the potential for change in their intelligence.

2. **Self-efficacy:** students' confidence in their ability to be successful in their coursework.

3. **Relevance of academic experience:** students' views of whether their college work is preparing them for future success.

4. **Sense of belonging:** students' perceptions of whether they are accepted members of their college community.

These four components are interconnected, so colleges' efforts to influence one component may have an impact on another. Even with the overlapping nature of these components, however, there is value in exploring each one individually.

Most community colleges have not implemented direct efforts to influence the first two components, growth vs. fixed mindset and self-efficacy, so the steepest learning

> "Over and over, we see the students say, 'Oh, I didn't think I was good at math. In third grade, my teacher told me I couldn't do math. My mom can't do math. My dad can't do math. I can't do math.'"
> —FACULTY MEMBER

curve may be in these areas. However, existing efforts at many colleges already address the third and fourth components.

Making sure students' academic experiences are relevant is central to guided pathways, and maximizing students' sense of belonging is a key part of engagement efforts. In fact, more than 15 years of Center data show that building relationships is central to student success, in part because relationships foster students' sense of belonging at college. But even with a strong head start in these areas, looking at these components through a mindset lens may help colleges better serve their students.

Contradictory Beliefs Point to Opportunities for Improvement

Center findings indicate that few students have fully productive or fully nonproductive mindsets. Most students have at least partially productive or mixed mindsets; their responses fall toward the productive end of the scale for at least some components of mindset.

It is noteworthy that student responses that indicate a nonproductive mindset tend to cluster in two areas: testing and math. Students report that in general they believe they can learn new things, but their responses consistently indicate a less productive mindset when responding to survey items specifically about test-taking and math. These data mirror statements such as *"I don't test well"* and *"I'm not a math person"* that are often heard in student focus groups.

These findings indicate that colleges have an opportunity to reframe students' perspectives on learning and that the greatest dividends may come from focusing on mindsets related to testing and performance in math.
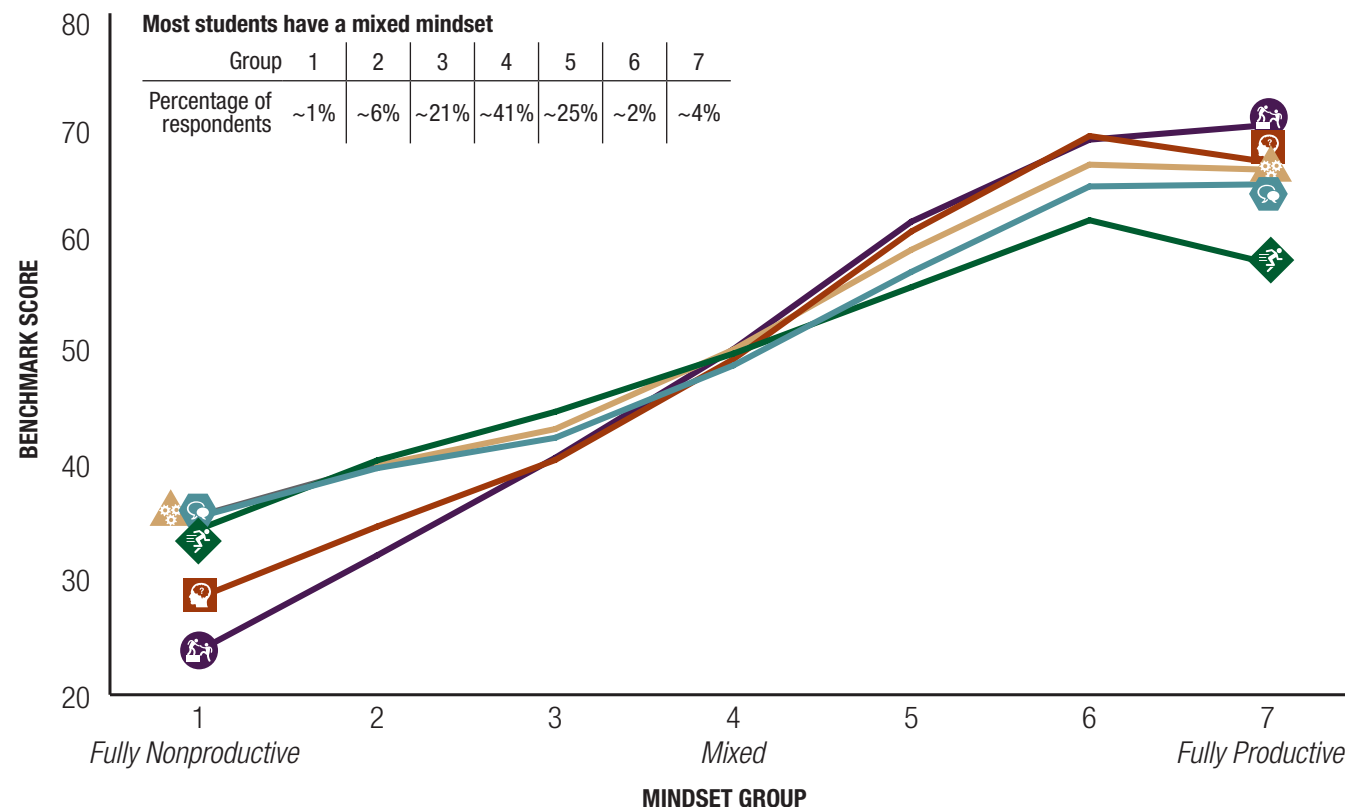
A Productive Mindset Correlates With Higher Engagement

Having a productive mindset correlates with higher levels of engagement, and this finding holds true across all *CCSSE* benchmarks. The closer students are to a productive mindset, the more likely they are to be highly engaged and, thus, more successful.[3]

As shown in the chart below, the Center divided students into seven groups based on their responses to 15 mindset survey items. (For details, see Methodology on page 7.) Students in Group 1 have the strongest nonproductive mindset, and students in Group 7 have the strongest productive mindset.

Most students have a mixed mindset. In fact, roughly four in 10 students fall in Group 4, while very few students are in Groups 1 and 7.

These data highlight an important opportunity for colleges. If they can help students move closer to the productive mindset end of this continuum, the students likely will be more engaged. In addition, given that very few students are in Group 7 (the strongest productive mindset), colleges have the potential to help most students on their campuses.

Students Closer to a Fully Productive Mindset Have Higher *CCSSE* Benchmark Scores

BENCHMARKS
Active and Collaborative Learning
Student Effort
Academic Challenge
Student-Faculty Interaction
Support for Learners

Most students have a mixed mindset

Group	1	2	3	4	5	6	7
Percentage of respondents	~1%	~6%	~21%	~41%	~25%	~2%	~4%

BENCHMARK SCORE

MINDSET GROUP

Fully Nonproductive — Mixed — Fully Productive

Mindset and the Student Experience

Understanding the four components of academic mindset gives colleges new ways to support their students.

Center data show that many students have at least a partially productive mindset, but there is room for improvement in all areas. It's also worth noting that students who provide *neutral* responses (up to 30% of students for some of the mindset special survey items) can benefit from mindset support. These neutral students can be influenced to move toward a more productive mindset, which is accompanied by higher engagement.

> " Some types of math are just plain difficult to understand. . . . I guess it's just the way my brain works. . . . I know quite a few friends and my sister even is really good at math. I think it's just the way people's brains are wired differently. . . . I just think where I'm at with math is as far as I'm going to get. "
>
> —STUDENT

What kinds of actions are colleges taking? In many cases, it's not about doing something new; it's about doing the same things differently. For example, some colleges are introducing the concept of mindset in discussions about test-taking to help students reframe their own thinking about tests. This introduction is happening in student success courses, tutoring sessions, and other classes across campus.
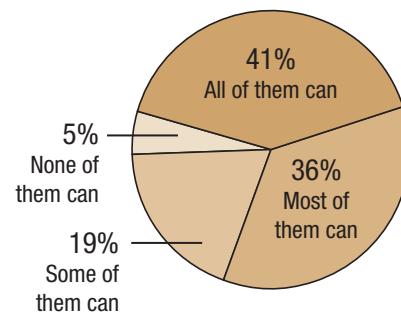
The Role of Faculty

As colleges consider introducing the concept of a productive academic mindset to their students, it's important to note that faculty will be key to implementing this approach. And recognizing the power faculty have to influence student views is important. Recent research suggests that organizational theories of intelligence carry more weight than personal theories of intelligence. In other words, what faculty members tell students about their ability to succeed may matter more than what students personally believe.[4]

Forty-one percent of faculty members have confidence that all of their students can change their basic intelligence. But nearly a quarter of faculty members (24%) believe that only *some* or *none* of their students can change their basic intelligence. Colleges may want to explore this area further.

Do you think the students in your selected course section can change their basic intelligence? *(N=6,595)*

- 41% All of them can
- 36% Most of them can
- 19% Some of them can
- 5% None of them can

Percentages do not total 100% due to rounding.
Source: 2018 CCFSSE data

> " [My] classes . . . [are] very focused on the process of learning. . . . What are [students] learning during the process of the assignment? How are they working together? How are they overcoming the obstacles? "
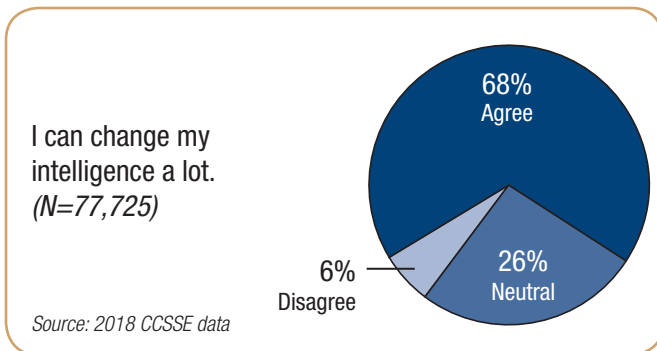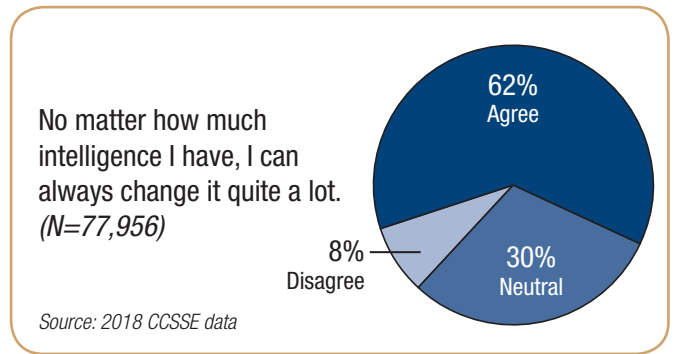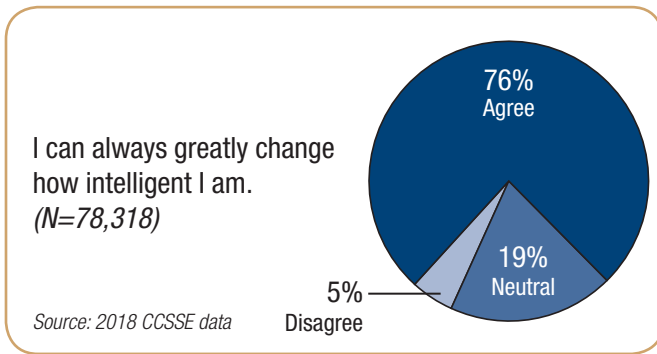>
> —FACULTY MEMBER

Growth vs. Fixed Mindset

Growth vs. fixed mindset refers to students' perceptions of the potential for change in their intelligence.

The first research on mindset focused on growth vs. fixed mindset. Individuals with a fixed mindset believe qualities such as intelligence are carved in stone. Those with a growth mindset, however, believe that "your basic qualities are things you can cultivate through your efforts, your strategies, and help from others."[5]

More students have fixed mindsets for math than for either English or overall intelligence. This finding, while not surprising, indicates an opportunity for colleges to help students change their mindsets regarding math. Also worth noting is that many colleges, particularly those implementing guided pathways, are aligning students' math courses to their programs of study. This approach makes math more accessible and may help students develop more of a growth mindset regarding math. It also affects other academic mindset components including self-efficacy and relevance of academic experience.

I can always greatly change how intelligent I am. *(N=78,318)*

Source: 2018 CCSSE data

- 76% Agree
- 19% Neutral
- 5% Disagree

No matter how much intelligence I have, I can always change it quite a lot. *(N=77,956)*

Source: 2018 CCSSE data

- 62% Agree
- 30% Neutral
- 8% Disagree

I can change my intelligence a lot. *(N=77,725)*

Source: 2018 CCSSE data

- 68% Agree
- 26% Neutral
- 6% Disagree

In English (reading and writing), I can change my intelligence a lot. *(N=77,917)*

Source: 2018 CCSSE data

- 68% Agree
- 25% Neutral
- 7% Disagree

In math, I can change my intelligence a lot. *(N=77,655)*

Percentages do not total 100% due to rounding.
Source: 2018 CCSSE data

- 55% Agree
- 31% Neutral
- 13% Disagree

"If you're their cheerleader to begin with, you are telling them that, 'I'm not even looking at you with a fixed mindset. You have an A when you walk in this door. . . . Let's build on that.'"

—FACULTY MEMBER

How Colleges Can Inspire a Growth Mindset

To help students develop a growth mindset, colleges can:

✔ Teach students the research behind growth mindset in student success courses and tutoring sessions.

✔ Help students connect all coursework, particularly math coursework, to their interests and long-term goals.

✔ When a student experiences a setback, such as a poor test grade, frame the conversation around strategies for improvement rather than the student's abilities or attributes.

✔ Provide professional development to faculty and staff so they can incorporate discussions of mindset in their courses, advising sessions, and other interactions with students.

✔ Encourage faculty to provide students with detailed feedback on projects and give them opportunities to revise their work.

✔ Encourage faculty to structure their assessments and grading system to focus on mastery of content by the end of the course.

I think that it's not necessarily the content of the class always, but sometimes how you approach it.

—STUDENT

Methodology

The Center added a special 20-item set on academic mindset to the 2018 Community College Survey of Student Engagement *(CCSSE)* administration. A total of 82,821 students across 159 colleges responded to these items. Fifteen of these special survey items were written in a positive manner such that agreement indicated a productive mindset. The wording of the remaining five items used the reverse logic and were written in a negative manner so that agreement indicated a nonproductive mindset. A close analysis of responses to the 20 items revealed that the five negatively worded items were likely misunderstood by respondents; therefore, the analyses of these items are not included in this report.

Using the 15 positively worded items, Center researchers created an index of an overall academic mindset continuum. (This index is shown on page 4.) The items were constructed with a five-point response scale of *strongly agree* to *strongly disagree* with *I neither agree nor disagree* as the middle response option. To create a single index to represent the continuum from a fully nonproductive mindset to a fully productive mindset, the items were coded numerically from -2 (nonproductive) to +2 (productive). The 15 item scores were then averaged to create a single index score ranging from -2 to +2. Seven academic mindset categories were defined based on the standard deviation of the index scores.

The number of respondents for the individual items varies due to missing data. Analyses of student data presented throughout this report are weighted by enrollment status.

The Center also added a special five-item set on academic mindset to the 2018 Community College Faculty Survey of Student Engagement *(CCFSSE)* administration. A total of 6,761 faculty across 84 colleges responded to these items.

All analyses used in this report are based on responses to the 15 *CCSSE* items and the five *CCFSSE* items.

For more information about the methodology used in this report, visit www.cccse.org/NR2019.

Productive Persistence Improves Course Completion

Carnegie Math Pathways

There's more to math than the numbers. Research shows that one of the biggest predictors of a student's success in mathematics is his or her degree of Productive Persistence, a combination of learning mindsets and skills. Many students enter the mathematics classroom with negative beliefs about their ability to learn, others' acceptance of them, and the value of mathematics in their lives. These beliefs can cause students to feel anxious, withdraw their efforts, and ultimately not succeed.

Therefore, when the Carnegie Foundation set out in 2010 to transform students' learning experience in mathematics, the team designed strategies, resources, and training to help instructors address these factors. Today, Productive Persistence interventions are used by more than 350 faculty at 90 institutions teaching the Carnegie Math Pathways' Statway and Quantway courses. The evidence shows that these interventions not only improve students' confidence as learners, increase their sense of belonging, and reduce their anxiety, but also that doing so translates into significantly higher course completion rates.[6, 7, 8, 9]

One Productive Persistence intervention is the Growth Mindset Writing Activity. Most Math Pathways students enter their courses with a fixed mindset about their ability to learn mathematics. To improve students' mindsets, the Carnegie Math Pathways team adapted an intervention from a study with middle schoolers[10] that featured an article about the neuroscience of learning and how students can grow their brains. Together with its network of researchers and faculty members, the Carnegie Math Pathways team iteratively refined the language in the article and instructions for how faculty and students should use it. The result was a 30-minute intervention embedded into the Carnegie Math Pathways curriculum.

> " I definitely do believe I can do well because even if the material was kind of difficult, I also know that having the right mindset going into [the test] just makes me feel better. "
>
> —STUDENT

In the intervention, students:

1. Independently read the article in class.
2. Write a summary of the article in their own words.
3. Write about a personal learning experience outside of mathematics.
4. Write a letter to a future student sharing the growth message of the article.
5. Independently engage in a rich challenging math problem.

In a randomized control study, 20% of the students in the control group withdrew from the course, compared to only 9% of the students who read the growth mindset article. (Students in the control group read an article that featured facts about the brain that did not include the growth mindset message.)

After this introductory intervention, Math Pathways students' growth mindsets are supported through engaging pedagogy and rigorous curriculum. For example, in Carnegie Math Pathways courses, students work together in class to understand problems drawn from real contexts, which helps them connect mathematics with their interests and long-term goals. To prepare students to engage in this collaborative problem solving, the program creates a classroom culture that reduces students' doubts about whether they belong.

For example, educators in the network developed a contract activity, which differs from other course contracts in the way that it focuses on personal and social commitments. After students get to know one another, the instructor gives them a starter list of course commitments. Each student reviews the list silently and is asked what he or she is prepared to commit to and what commitments he or she might need help meeting.

Next, the students talk in groups about commitments they might have trouble fulfilling and brainstorm strategies that can help them succeed. Following these group conversations, the instructor leads a full-class discussion about the contract. Through this discussion, the class acts as a team and develops a shared understanding of the course commitments and strategies they can use to meet those commitments. Only then

do the students sign the contracts. The class also reviews and modifies the contracts halfway through the course.

These two activities, along with a comprehensive package of other interventions, help Carnegie Math Pathways students start their coursework from a position of strength. This approach introduces students to the idea that they can successfully learn math, creates an inclusive environment in which each student can identify as a mathematical learner, provides opportunities for students to connect math to their interests and goals, and teaches them effective learning strategies.

The Carnegie Math Pathways, a national network of educators, is now a program at WestEd, a nonprofit education research and services organization.

Seattle Central College

Based on the Carnegie Foundation's Math Pathways work, **Seattle Central College (WA)** began offering workshops on Productive Persistence to faculty and staff in fall 2013 and has continued to offer them annually. Productive Persistence focuses on noncognitive aspects of learning such as changing students' beliefs about learning, belonging, and relevance of subject matter. A major tenet of the approach is that students need a growth mindset so they believe their hard work and learning strategies will lead to success. To date, approximately one-third of faculty and staff at the college have been trained on how to integrate these practices into their courses and/or student support areas.

Faculty began implementing Productive Persistence activities into pre-college math courses in fall 2013. Since then, the work has expanded and the practices are now included in science, technology, engineering, and math (STEM); English; college-level math; and Basic and Transitional Studies classes. Seattle Central also incorporated Productive Persistence into its new student orientation and TRiO Student Success Program. Many of the activities are self-reflective and provide students with an understanding that their ability can grow with effort and good strategies. Activities also focus on creating strong social ties that have been shown to promote retention.

For example, instructors use Process vs. Person praise and feedback. They focus all conversations with students on the process of learning, such as improving the strategies students use, as opposed to discussing students' abilities or attributes. Instructors also use writing exercises to boost students' mindsets at difficult points in the coursework. In these exercises, students write to future students and give them advice for overcoming specific challenges, such as loss of confidence, studying with others, or a mid-course slump.

As the college was introducing Productive Persistence in fall 2013, it began offering accelerated math pathways through pre-college math. And in 2013, the number of students completing the pre-math sequence within one year increased 18 percentage points over the previous year. Additionally, Seattle Central was recognized by the Washington State Board for Community and Technical Colleges during the 2014–15 academic year for having some of the largest math completion gains statewide.

> I started out really stressed because college is much more difficult than high school, and it requires a lot more out of you. Once . . . we talked about different ways to change your mindset, I feel like I really do have a better outlook on the amount that's required of me here.
>
> —STUDENT

Self-efficacy is students' confidence in their ability to be successful in their coursework. Most students encounter at least one academic setback in college. Some students dig in and work through the challenge; others are completely defeated and even drop out. The difference is likely related to whether they attribute the problem to something they cannot change (*"I'm just not good at this"*) or something they can change (*"I can learn this if I get extra help"*).[11] Having a productive mindset can inspire students to put in more effort and move past the setback rather than allowing it to define their college experience.

I can learn all of the material being presented in my courses this academic term. *(N=78,511)*

83% Agree
5% Disagree
12% Neutral
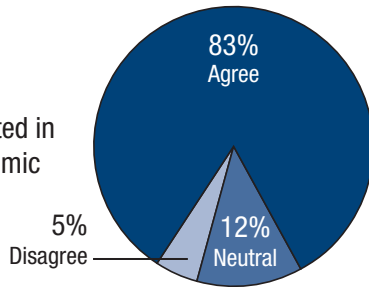
Source: 2018 CCSSE data

I can become more intelligent by working hard on my studies. *(N=78,481)*

91% Agree
2% Disagree
7% Neutral
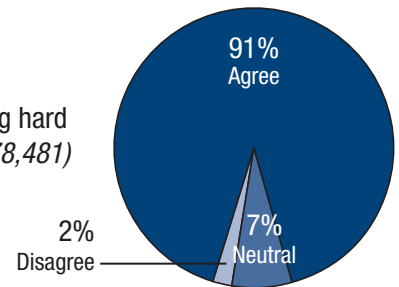
Source: 2018 CCSSE data

I can do well on tests, even when they are difficult. *(N=78,047)*

58% Agree
16% Disagree
26% Neutral
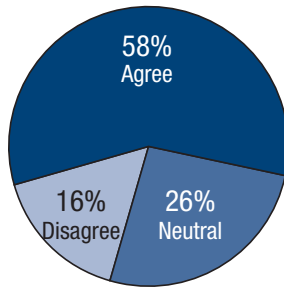
Source: 2018 CCSSE data

When facing difficult tasks, I am certain that I will accomplish them. *(N=78,010)*

77% Agree
4% Disagree
19% Neutral
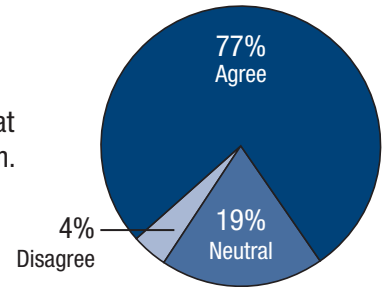
Source: 2018 CCSSE data

I am confident that I will be able to keep up with my coursework at this college. *(N=77,695)*

82% Agree
4% Disagree
14% Neutral
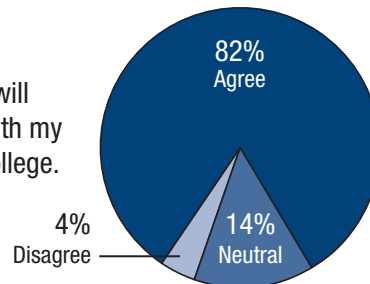
Source: 2018 CCSSE data

❝ Well, we're going to fail. We're human beings. . . . You shouldn't think of yourself as being inherently bad because you did. You should just see what you can do differently next time. ❞

—STUDENT

How Colleges Can Influence Students' Self-Efficacy

To help students develop self-efficacy, colleges can:

✔ Set clear expectations. At the outset of each course, faculty members can specify expectations for coursework, noting that some of the work is challenging but they are confident that the students can learn it. Current research about mindset can provide a framework for that discussion.

✔ Help students process setbacks. When students hit an obstacle, such as a bad grade on a test, teach them to understand that stumbling is part of learning. In addition, encourage students to attribute setbacks to temporary causes, such as a transition to a new learning environment or a need for more academic support, rather than a permanent inability to learn.[12]

✔ Encourage faculty, staff members, and other students to share examples of their own learning process, including facing challenges, making mistakes, and learning from them. At the University of Michigan, students in introductory physics learn from the students who preceded them. They receive testimonials from past students that highlight how new approaches to study habits can lead to better performance.[13]

✔ Introduce and regularly review the concept of a productive mindset. This conversation can happen wherever students are learning new or challenging content (classes, tutoring sessions, and so on), during advising, and during discussions of test-taking skills.

✔ Include low-stakes assessments, such as weekly quizzes or writing assignments, throughout the term rather than basing course grades on only midterms and finals.

Chippewa Valley: Starting Strong With Mindset

Chippewa Valley Technical College (WI) developed its learning module, Start Strong, to introduce and reinforce student success principles in the early weeks of the term. Ten instructors piloted Start Strong in fall 2017, and the program launched college-wide in spring 2018, reaching approximately 1,000 students. Today, the Start Strong module, which is offered in both online and face-to-face versions, is embedded in all of the college's more than 90 degree programs. Each program makes it part of a core course that all students take in their first term.

The learning module, which is built within the college's Learning Management System, includes six success strategies or units, one of which is growth mindset. Each unit includes simple and short activities such as an introductory video, a short PowerPoint presentation to review and discuss, or an interactive quiz. One of the activities in the growth mindset unit is a Think-Pair-Share activity in which students briefly share with a partner a situation in which they faced difficulty, worked hard, and succeeded.

Approximately 300 students were part of the Start Strong pilot in fall 2017. More than 55% reported positive changes in an end-of-course evaluation that asked students if they were doing anything differently as a result of the module. One student reported "trying to have a better mindset when it comes to things that I feel I cannot accomplish . . . yet." Another said, "The growth mindset portion helped me understand how to steer thoughts into an optimistic direction."

The college's Start Strong task force will continue to meet every term to review program outcomes and guide ongoing improvements.

Cleveland State: Faculty Drive Mindset Efforts

The mindset work at **Cleveland State Community College (TN)** grew out of a series of voluntary faculty learning communities with a common read: Carol Dweck's *Mindsets*. Each faculty member identified opportunities to adapt his or her teaching practice to move students from fixed to growth mindsets. They then shared their strategies with one another. The statewide initiative on mindset that was launched in 2015 further energized the work that was already underway. To date, approximately half of the college's full-time faculty, along with some staff members who are also part-time faculty, have participated in a Mindset Learning Community.

Describing the book club learning communities, one faculty member said, "I think mindsets became such a big topic on this campus because we built it from the bottom up. People heard about it, talked about it [and wanted to know] 'How can I do that in my class? How can I grow a growth mindset?'"

Some faculty in gateway courses with high DFW rates (grade of D, failure, or withdrawal), such as General Biology and Accounting I, have taken this work to heart. They now teach with a goal of promoting a growth mindset. Changes to their teaching include altering their vocabulary when they speak to their students about success and failure. Faculty also help students learn to understand failure differently so they can see that a poor test grade, for example, can be a pathway to improvement.

As one student recalled, "We discussed how to avoid [failure], but we also discussed how it can teach you, how it's almost something that's required to be able to push yourself and move further."

Additionally, beginning in fall 2017, the college implemented a growth mindset module into its First Year Seminar, a course required for all degree-seeking students. PERTS, a research center at Stanford University, surveyed First Year Seminar students and found that 35% identified with a growth mindset before completing the module. That percentage increased to 55% after students completed the module.

In celebration of Cleveland State's 50th anniversary three years ago, it created a convocation event with new students that formally begins the academic year. The high point of the ceremony is the Chief Academic Officer's interactive address to students that challenges them to approach their learning with a growth mindset.

The college plans to continue its work to move the needle on students' perceptions of their own ability to learn and grow.

> I believe that I'm really confident in thinking that I can learn all the material in my courses because my professors are very open, and if I'm not understanding a concept . . . they're more than happy to . . . show me how it applies in my day-to-day life.
> —STUDENT

Relevance of Academic Experience

Relevance of academic experience encompasses students' views of whether their college work is preparing them for future success. When students clearly see a connection between their college work and their future employment or other life goals, they are more engaged in their college experience.

Often this connection between where students are and where they are going is made for them through academic advising. Colleges are beginning to implement guided pathways, which makes this type of advising—along with student supports, applied learning, and many other proven strategies—part of every student's college experience. Structured programs such as guided pathways can also incorporate mindset strategies that focus on the relevance of academic experience.

This college is preparing me for what I plan to do in life. *(N=78,592)*
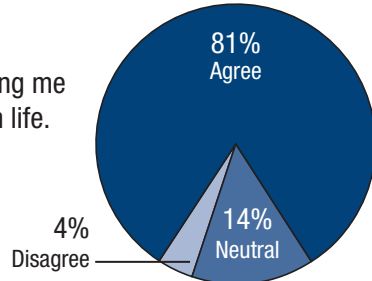
Percentages do not total 100% due to rounding.
Source: 2018 CCSSE data

- 81% Agree
- 14% Neutral
- 4% Disagree

What I learn in my classes is necessary for my success in the future. *(N=78,396)*

Source: 2018 CCSSE data

- 79% Agree
- 15% Neutral
- 6% Disagree
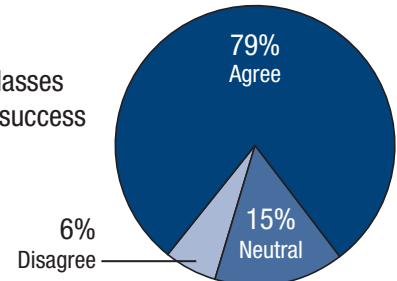
I understand how my academic work is preparing me for the career field in which I am interested. *(N=78,002)*

Source: 2018 CCSSE data

- 79% Agree
- 15% Neutral
- 6% Disagree
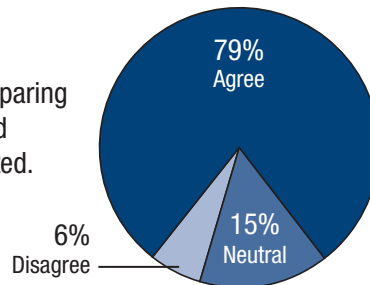
How Colleges Can Promote Relevance of Academic Experience

To help ensure that students understand the relevance of their academic experience, colleges can:

- ✔ Require advising, including making an academic plan, for all students.

- ✔ Introduce first-year experiences that help students explore career fields and make informed choices about their majors.

- ✔ Require applied learning experiences as part of every major.

- ✔ Align requirements, such as math requirements, to students' programs of study.

- ✔ Encourage faculty to help students understand why their course is relevant to the students' program of study. The reason for taking a class should not be "because it is a core requirement."
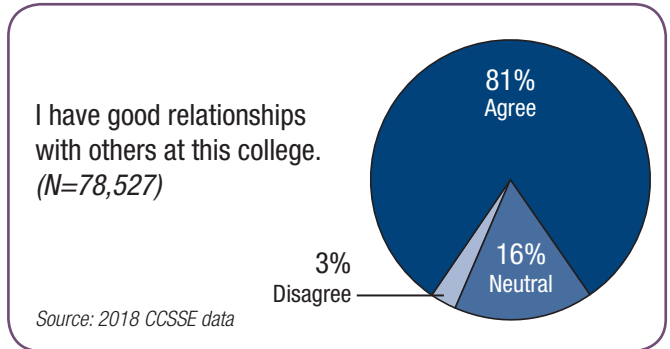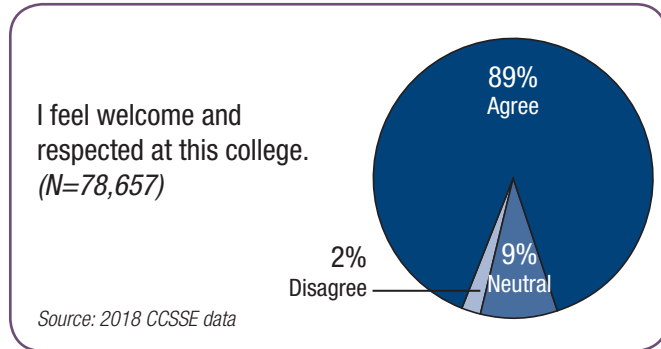
Sense of Belonging

Sense of belonging includes students' perceptions of whether they are accepted members of their college community.

More than 15 years of Center focus group findings show that relationships and having a sense of belonging can make the difference between staying in college and leaving. When students participating in focus groups are asked if they ever have considered dropping out of college, many students say they have. And when they are asked what helped them stay in college, students' answers, almost without exception, are about relationships.

Being part of an academic community gives students an identity as a learner. Then, if they face setbacks, which most students do, they interpret the setbacks as part of the learning process rather than as a signal that they do not belong.

I feel welcome and respected at this college.
(N=78,657)

89% Agree
9% Neutral
2% Disagree

Source: 2018 CCSSE data

I have good relationships with others at this college.
(N=78,527)

81% Agree
16% Neutral
3% Disagree

Source: 2018 CCSSE data

> If we hadn't had each other's backs, pushing each other, telling each other, 'Hey, we've got this. We can do this,' I don't think any of us would have done it.
>
> —STUDENT

> In my experience, the biggest contributor to students staying in school and succeeding is feeling a sense of belonging on campus, feeling like they have a place here, that our school wants them here, that they can find their people on this campus.
>
> —FACULTY MEMBER

How Colleges Can Foster Students' Sense of Belonging

To help students develop a sense of belonging, colleges can:

✔ Require orientation and use it to welcome students to the college community.

✔ Place students in cohorts whenever possible, e.g., through learning communities or block scheduling.

✔ Require faculty members to learn all of their students' names. And during the first meeting of every course, have students introduce themselves and encourage students to learn one another's names.

✔ Require group projects in all classes.

✔ Create gathering areas with comfortable seating.

✔ Require faculty members to meet with each of their students at least once a semester.

Maturity and Mindset

For two of the four components of academic mindset, the Center found notable differences between nontraditional-age students (students who are at least 25 years old) and students who are 18–24 years old. More than a decade of Center data show that nontraditional-age students are more engaged than their traditional-age peers, so this finding reinforces the relationships among mindset, engagement, and academic success.

Self-Efficacy

I can do well on tests, even when they are difficult.

Nontraditional-age students *(n=24,142)*
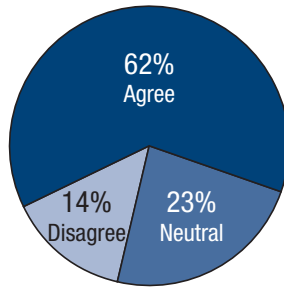
62% Agree
23% Neutral
14% Disagree

Percentages do not total 100% due to rounding.

Source: 2018 CCSSE data

Traditional-age students *(n=53,128)*

55% Agree
27% Neutral
17% Disagree
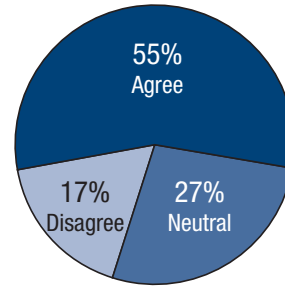
Percentages do not total 100% due to rounding.

When facing difficult tasks, I am certain that I will accomplish them.

Nontraditional-age students *(n=24,128)*
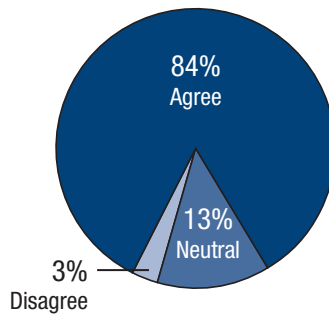
84% Agree
13% Neutral
3% Disagree

Source: 2018 CCSSE data

Traditional-age students *(n=53,105)*

74% Agree
22% Neutral
4% Disagree
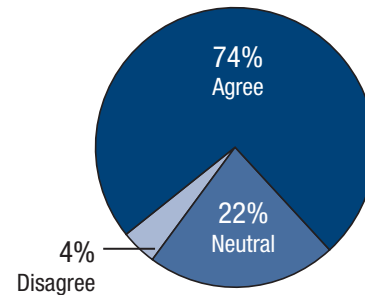
I am confident that I will be able to keep up with my coursework at this college.

Nontraditional-age students *(n=23,984)*
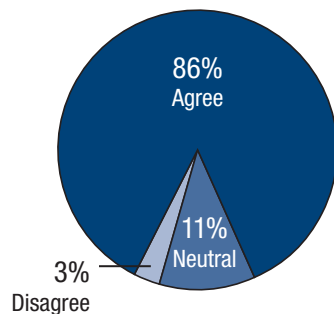
86% Agree
11% Neutral
3% Disagree

Source: 2018 CCSSE data

Traditional-age students *(n=52,944)*
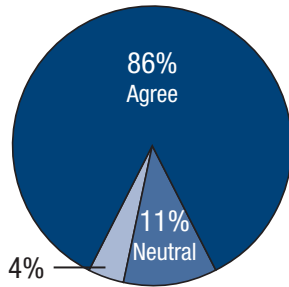
80% Agree
15% Neutral
4% Disagree
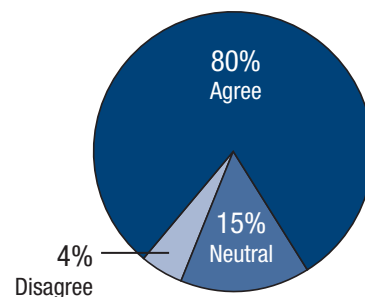
Percentages do not total 100% due to rounding.

What I learn in my classes is necessary for my success in the future.

Nontraditional-age students *(n=24,301)*

86%
Agree

11%
Neutral

4%
Disagree

Traditional-age students *(n=53,290)*
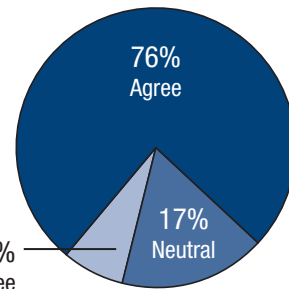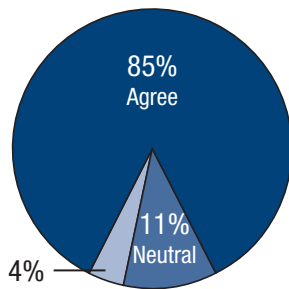
76%
Agree

17%
Neutral

7%
Disagree
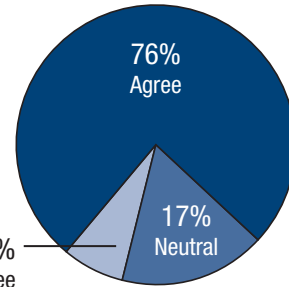
Percentages do not total 100% due to rounding.

Source: 2018 CCSSE data

I understand how my academic work is preparing me for the career field in which I am interested.

Nontraditional-age students *(n=24,128)*

85%
Agree

11%
Neutral

4%
Disagree

Traditional-age students *(n=53,096)*

76%
Agree

17%
Neutral

7%
Disagree

Source: 2018 CCSSE data

A Productive Mindset Correlates With Higher GPA

In addition to positively correlating with higher levels of engagement, having a productive mindset correlates with higher self-reported college GPAs. This finding holds true for all mindset survey items. Results from eight of the items are displayed on the next two pages.
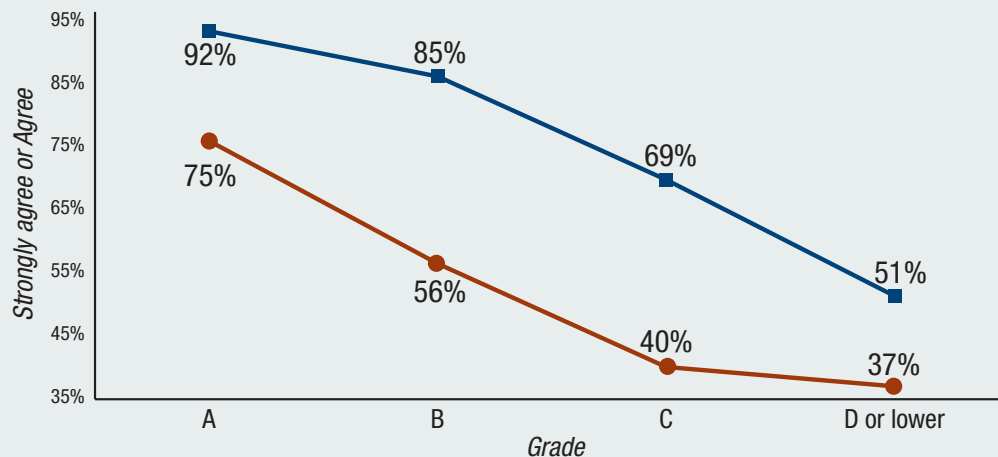
Growth vs. Fixed Mindset

Strongly agree or Agree vs. *Grade*

- 71%, 68%, 63%, 58% (A, B, C, D or lower)
- 61%, 56%, 48%, 45% (A, B, C, D or lower)
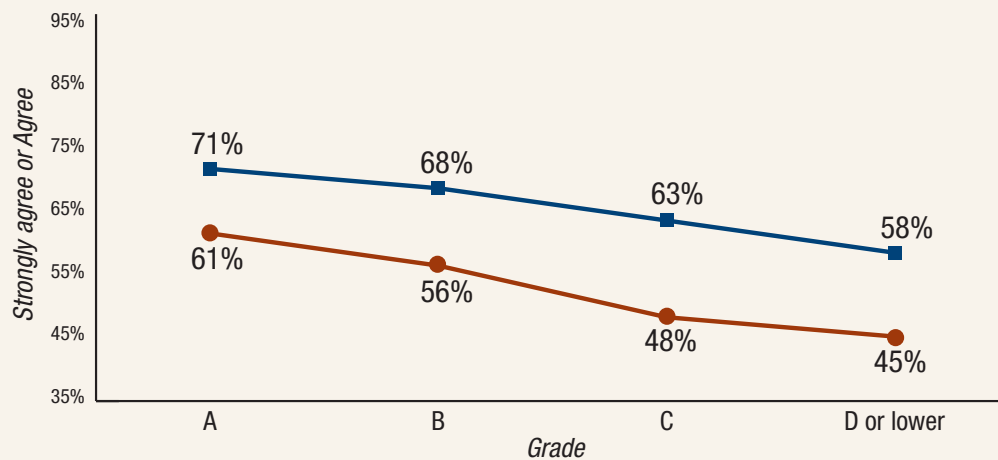
■ In English (reading and writing), I can change my intelligence a lot. *(N=76,401)*
● In math, I can change my intelligence a lot. *(N=76,160)*

Source: 2018 CCSSE data

Self-Efficacy

Strongly agree or Agree vs. *Grade*

- 92%, 85%, 69%, 51% (A, B, C, D or lower)
- 75%, 56%, 40%, 37% (A, B, C, D or lower)

■ I am confident that I will be able to keep up with my coursework at this college. *(N=76,190)*
● I can do well on tests, even when they are difficult. *(N=76,516)*

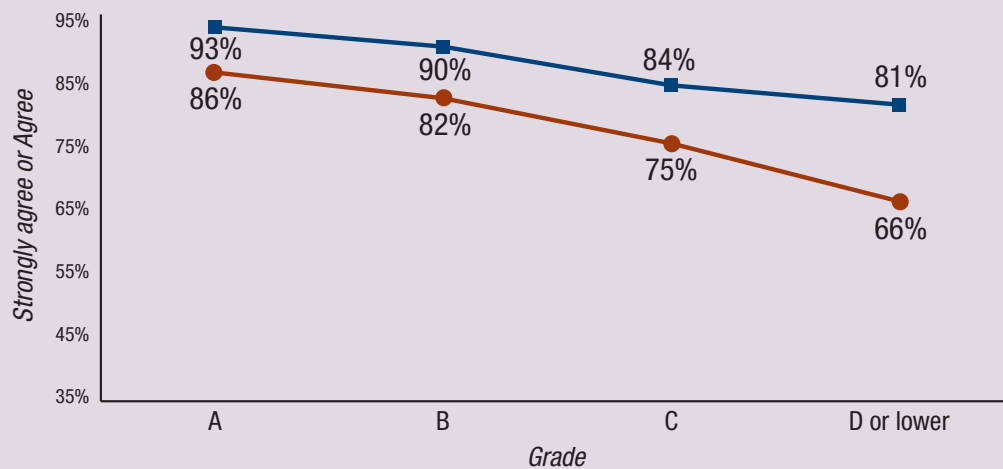*Source: 2018 CCSSE data*

Relevance of Academic Experience
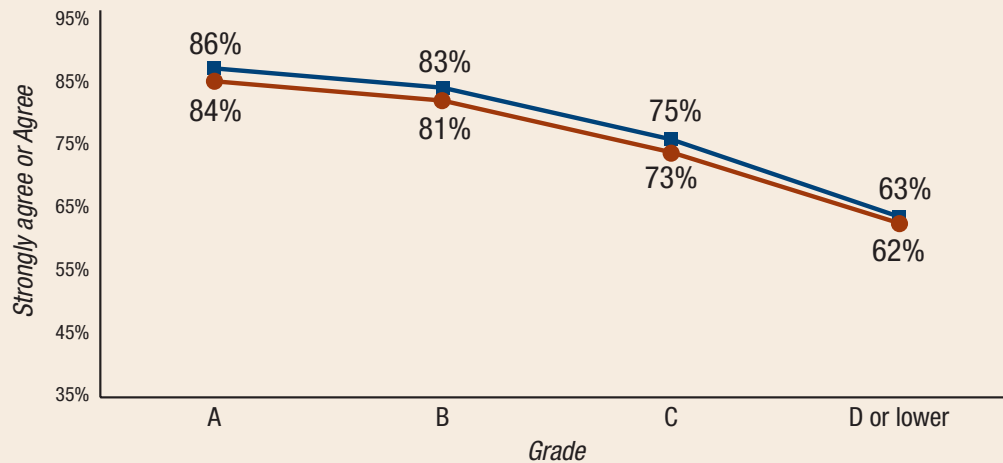
This college is preparing me for what I plan to do in life. *(N=77,006)*

● **I understand how my academic work is preparing me for the career field in which I am interested.** *(N=76,476)*

Source: 2018 CCSSE data

Sense of Belonging

■ **I feel welcome and respected at this college.** *(N=77,070)*

● **I have good relationships with others at this college.** *(N=76,950)*

Source: 2018 CCSSE data

> I work almost 30 hours a week, and a lot of my classes don't have anything to do with my major, so . . . I don't try to understand everything for those. I'm just trying to get the grade to get the piece of paper at the end.
>
> —STUDENT

Is Your College Maximizing the Relationship Between Academic Mindset and Student Success?

Questions to Consider

Colleges can influence academic mindset in ways that can increase student success. Doing so requires rethinking everyday interactions and using more of them to help students strengthen their academic mindsets and improve their learning.

Consider using the following questions to start conversations about how your students, faculty, and staff can be more intentional about mindset and its role in the student experience. It is best to reinforce all four components of a productive mindset through different experiences—and to do so for everyone on your campus.

Questions Related to Growth vs. Fixed Mindset

» How do you talk to students about success and failure? How do you teach students to process failure and move toward success?

» Where could you incorporate mindset work at your college? Orientation? Student success courses? Gateway courses? Classes that have high failure and withdrawal rates?

» Having a productive academic mindset is correlated with use of academic advising. Where else can you introduce supports that might also lead to more productive mindsets? For example, how can you bring such supports into the classroom?

» What kind of professional development can you provide for advisors so they can help students develop more productive mindsets?

» Do the people staffing your skills labs talk to students about how to have a growth mindset, particularly with regard to test-taking and math?

Questions Related to Self-Efficacy

» Do faculty members encourage students to put in their best effort rather than do the minimum work needed?

» Do faculty members set clear expectations for their coursework? Do they tell students that the work may be challenging but they are confident that the students can learn it?

» What kind of professional development can you provide for faculty members so they can help students around their fears of failure with new and intimidating content?

Questions Related to Relevance of Academic Experience

» What percentage of your students are required to meet with an advisor to set academic goals and develop an academic plan? What process does your college use to help students track progress toward their academic goals?

» What percentage of your students are taking math courses that are aligned to their programs of study?

» What percentage of your incoming students are required to complete career exploration that includes interacting with people who work in their field of interest?

» What percentage of your students are required to complete internships or other applied learning experiences?

» How can the college ensure that faculty and staff other than advisors are talking with students about their futures and careers?

Questions Related to Sense of Belonging

» What percentage of your students are required to participate in orientation and first-year experience programs?

» How do faculty and staff members build relationships with students so that students feel a sense of belonging? Are they required to meet with each of their students at least once a semester?

» Does the college culture engender a sense of welcoming and respect? How does the college encourage students to build relationships among one another?

» What percentage of your incoming students are part of a learning community or other cohort?

» What percentage of your college's classes include a requirement for group projects?

Center Data and Academic Mindset

In addition to the special survey items about academic mindset, the Center's core surveys provide a range of data that colleges can connect to mindset work and to the questions presented here.

The chart below shows *CCSSE* items that colleges can use to support campus conversations about academic mindset. To see relevant Survey of Entering Student Engagement *(SENSE)* and *CCFSSE* items, visit www.cccse.org/NR2019.

FOR CONVERSATIONS ABOUT	SEE *CCSSE* ITEMS						
Growth vs. fixed mindset	12d	12e	17				
Self-efficacy	4o	7	9a				
Relevance of academic experience	8a	11a	11h	11i	12a	12b	20
Sense of belonging	9c	9e	11f	12i	14	15	16	21

Center National Advisory Board

Center Member Colleges and Center Staff

For lists of Center member colleges and Center staff, visit www.cccse.org.

ENDNOTES

1   Decades of Scientific Research that Started a Growth Mindset Revolution. (n.d.). Retrieved from https://www.mindsetworks.com/science/

2   Barshay, J. (2015, November 23). Growth mindset guru Carol Dweck says teachers and parents often use her research incorrectly. *The Hechinger Report*. Retrieved from https://hechingerreport.org/growth-mindset-guru-carol-dweck-says-teachers-and-parents-often-use-her-research-incorrectly/

3   McClenney, K., Marti, C. N., & Adkins, C. (2007). *Student engagement and student outcomes: Key findings from CCSSE validation research*. Retrieved from http://www.ccsse.org/aboutsurvey/docs/CCSSE%20Validation%20Summary.pdf

4   UCLA Equity, Diversity and Inclusion. (n.d.). *Inclusive pedagogy: Communicating theories of intelligence*. Retrieved from https://equity.ucla.edu/know/guidance/

5   Dweck, C. S. (2016). *Mindset: The new psychology of success*. Random House Digital, Inc.

6   Silva, E., & White, T. (2013). *Pathways to improvement: Using psychological strategies to help college students master developmental math*. Carnegie Foundation for the Advancement of Teaching.

7   Edwards, A. R., & Beattie, R. L. (2016). Promoting student learning and productive persistence in developmental mathematics: Research frameworks informing the Carnegie Pathways. *NADE Digest*, 9(1), 30–39.

8   Krumm, A. E., Beattie, R., Takahashi, S., D'Angelo, C., Feng, M., & Cheng, B. (2016). Practical measurement and productive persistence: Strategies for using digital learning system data to drive improvement. *Journal of Learning Analytics*, 3(2), 116–138.

9   Huang, M. (2018). *2016–2017 impact report: Six years of results from the Carnegie Math Pathways*. San Francisco, CA: WestEd.

10   Blackwell, L., Trzesniewski, K., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development*, 78, 246–263.

11   Yeager, D. S., & Walton, G. M. (2011). Social-psychological interventions in education: They're not magic. *Review of Educational Research*, 81(2), 267–301. doi: 10.3102/0034654311405999

12   Ibid.

13   Huberth, M., Chen, P., Tritz, J., & McKay, T. A. (2015). Computer-tailored student support in introductory physics. *PloS ONE*, 10(9). doi: 10.1371/journal.pone.0137001

A Mind at Work

Maximizing the Relationship Between Mindset and Student Success

Center for Community College Student Engagement

Program in Higher Education Leadership

Department of Educational Leadership and Policy
College of Education
The University of Texas at Austin
3316 Grandview Street
Austin, TX 78705

T: 512.471.6807
F: 512.471.4209

info@cccse.org
www.cccse.org