



LUMINA ISSUE PAPER

SCALING HIGH-IMPACT PRACTICES TO IMPROVE COMMUNITY COLLEGE STUDENT OUTCOMES: Evidence from the Tennessee Board of Regents

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Introduction

Public two-year colleges serve as an important access point for two out of every five students enrolled in postsecondary education. However, only 40 percent of community college students earn a postsecondary credential of any kind within six years, limiting their opportunities for advancement.¹ Hoping to increase student retention and success, many colleges are developing and scaling up evidence-based practices that engage students more effectively.

Significant evidence suggests that high-impact educational practices (HIPs)—including learning communities, service learning, and other practices that deeply engage students—can enhance learning and boost academic attainment, particularly among students who are traditionally underserved in higher education.² However, most of this evidence relies on student self-reports of participation in HIPs, making it difficult to connect student outcomes with verifiable educational practices at the institution or system level. Unfortunately, this situation is common among institutions of higher education, most of which lack any sort of systemic process to define, measure, track, and officially document HIP participation.

This report highlights efforts of the Tennessee Board of Regents (TBR) to advance quality and equity in higher education by increasing the number of students who experience high-quality, high-impact practices, and measuring the results of these efforts. TBR's use of administrative records to track HIP participation—based on statewide taxonomies used by faculty to establish a minimum quality threshold for categorizing different courses and experiences as HIPs—enables more reliable analysis of the relationship between HIP participation and key student success outcomes such as retention. A recent study by DVP-PRAXIS LTD as part of a Lumina-funded initiative on high-quality educational practices employed at five TBR community colleges suggests that HIPs can lead to meaningful improvements across several student outcomes—especially among Black and Hispanic students and adult learners.

Table of Contents

Introduction	2
The Lumina-NASH HIPs Initiative	3
Examining Benefits of HIP Participation	5
Sample and Methodology	5
Results – All Students	7
Results – Black and Hispanic Students	7
Results – Adult Learners	10
Spotlight on Chattanooga State	12
Conclusion: System Leadership for Scaling HIPs	14
Appendix	15
Endnotes	16

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The Lumina-NASH HIPs Initiative: Building on a Systemwide Process for Tracking HIP Participation in Tennessee

In 2018, with support from Lumina Foundation, the National Association of System Heads (NASH) launched an effort with four public college and university systems to demonstrate how a coordinated approach could expand high-impact practices in an equitable manner. In addition to expanding HIP participation among traditionally underserved students, a key goal of this effort was to better understand and measure the quality of HIPs, the student learning gains that can result from participation in HIPs, and the extent to which this learning occurs equitably.

The Tennessee Board of Regents (TBR) was considered a promising system to advance HIP participation, in part because of its 2014 commitment to implement and expand HIPs across the system.³ Over the past several years, TBR developed statewide taxonomies for nine high-impact practices to be used by faculty. These taxonomies establish minimum thresholds that a practice must meet to be labeled a HIP. They also include key elements or strategies that should exist on a campus for the institutionalization and support of each practice.

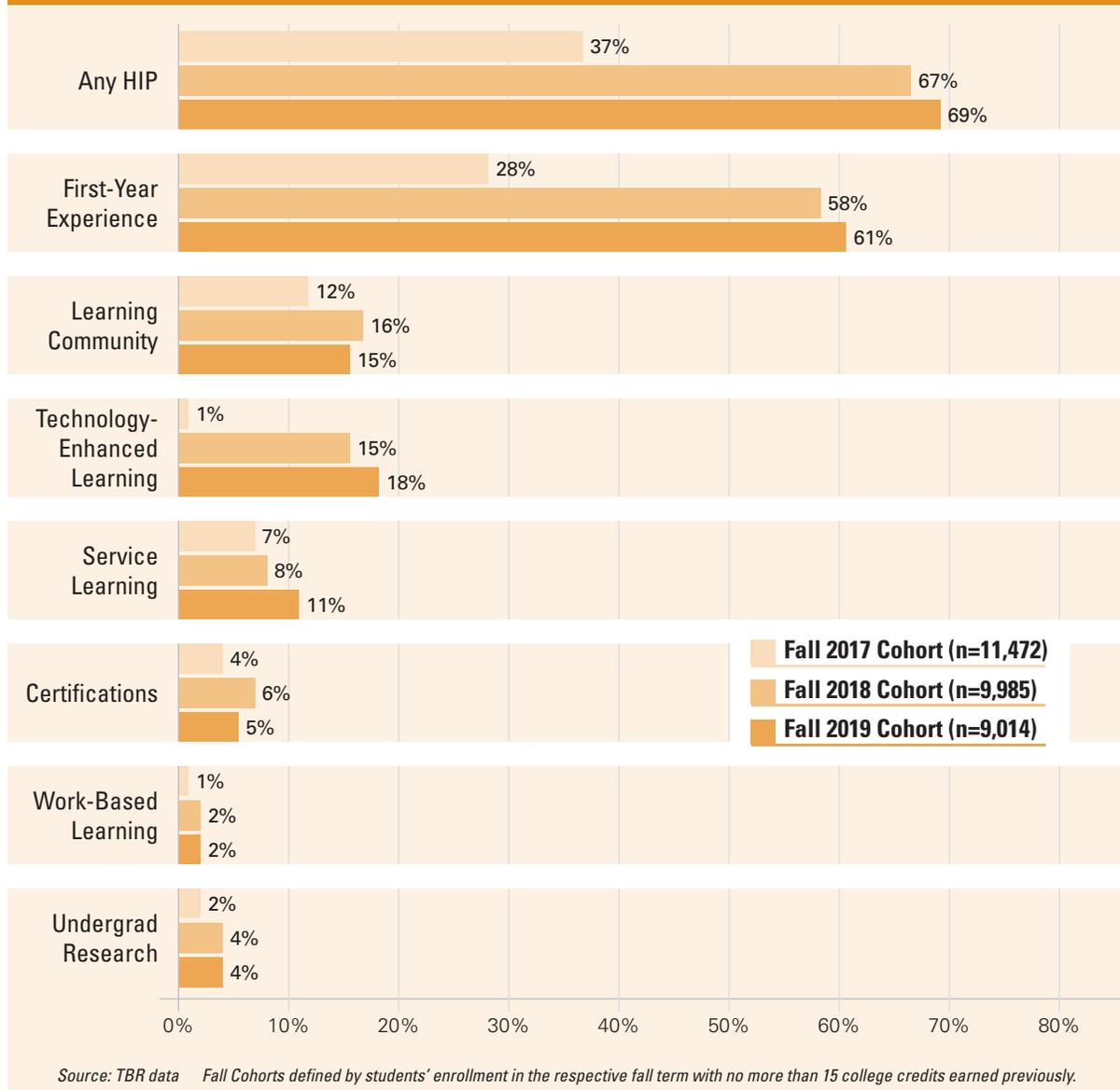
The HIP taxonomies developed are: Study Abroad, Service Learning, Work-Based Learning, Learning Communities, Undergraduate Research, Certifications, Technology-Enhanced Learning (e-portfolios), First-Year Seminars, and Honors Education (see Appendix).⁴ Related to these taxonomies is a standardized coding process in BANNER for campuses to report HIP participation on their campuses. The process allows for systemwide tracking and analysis of the relationship between HIP participation and key student success measures. These two achievements represent “best-practices” of system efforts to establish quality standards in educational experiences.

In addition to statewide HIP taxonomies, TBR developed a quality assurance assessment tool for colleges to use as they implemented HIPs on their campuses.⁵ This tool encourages institutions to disaggregate course outcomes by race and ethnicity, gender, first-generation status, Pell receipt, and age. It also urges them to specify course outcomes for HIPs with a focus on “HIP Keys” that align with student learning outcomes promoted through the VALUE Rubrics established by the Association of American Colleges & Universities. For example, the quality assurance assessment tool asks faculty to document high-quality pedagogical practices used in the course and to provide class artifacts that help students demonstrate the skills and learning outcomes gained throughout the course.

As part of the Lumina-NASH effort, TBR worked with five partner institutions to embed HIPs within associate degree and transfer pathways. The system provided guidance on the degree pathways selected so that the work focused on pathways that enrolled high numbers of minoritized and underserved students. In addition, TBR specifically engaged three institutions with the highest overall enrollment of minoritized students: Chattanooga State Community College, Nashville State Community College, and Southwest Tennessee Community College. The additional two institutions, Walters State Community College and Cleveland State Community College, were selected through a faculty application process to ensure faculty commitment and support at the institutional level.

Recent data from these five institutions reflect TBR's efforts to equitably expand HIP participation and its systematic measurement by showing notable increases in the proportion of students participating in HIPs. Figure 1 displays HIP participation rates during the first academic year for three cohorts of students enrolling at these institutions in Fall 2017, Fall 2018, and Fall 2019, and who had earned no more than 15 college credits as of the start of the term.

Figure 1: HIP Participation Rates within the First Academic Year (Fall and Spring)



As shown in the figure, HIP participation rates in the first year spiked notably between the Fall 2017 and Fall 2018 cohorts, driven largely by increases in First-Year Experience and in Technology-Enhanced Learning.⁶ Specifically, whereas 37 percent of Fall 2017 students participated in a HIP in their first academic year, this participation jumped to 67 percent among Fall 2018 cohort students and to 69 percent among Fall 2019 cohort students. Although participation rates increased across time for almost all HIPs, First-Year Experience participation rates more than doubled between the Fall 2017 and Fall 2018 cohorts, and Technology-Enhanced Learning also saw a dramatic jump between these two academic years. These increases reflect intentional efforts to embed HIPs earlier into the student experience across these institutions. They also result from system-driven strategies requiring campuses to report HIP participation based on statewide taxonomies using TBR's administrative data system (i.e., BANNER).

Examining Benefits of HIP Participation on Student Academic Outcomes

Sample and Methodology

TBR's use of administrative records to track HIP participation allows for a more reliable and robust analysis of the relationship between HIP participation and key student success outcomes than can be obtained via student self-reports. This section presents findings on the benefits of HIP participation using student data from the five colleges participating in the Lumina-NASH initiative.

Given the large increases in HIP participation between the 2017-18 and 2018-19 academic years—increases due in part to gradual improvements in institutions' coding and reporting of various HIPs—this analysis of student outcomes focuses on the latter two fall student cohorts as TBR considers these data most reliable. Thus, the analytic sample includes approximately 19,000 students enrolling across the five institutions in Fall 2018 or Fall 2019 who had earned no more than 15 college credits as of start of term. Among these fall cohorts, approximately two-thirds of students engaged in a HIP in their first fall term. Our analysis focuses on impacts of HIP participation in the first term on a range of short-term academic outcomes connected with longer-term postsecondary success.

Table 1 displays various characteristics for the analytic sample, both for students participating in a HIP in their first term and for students not participating in a HIP. As shown, there are notable differences between these two groups. Students participating in HIPs in their first term are slightly more

Table 1: Sample Characteristics, by HIP Participation in First Term

Demographic Characteristics	No HIP (n=6,766)	HIP (n=12,233)	
Female	58%	59%	*
Age (average)	23	21	*
Race/Ethnicity			
White	58%	54%	*
Black	28%	31%	*
Hispanic	7.5%	9.2%	*
Native American	0.2%	0.2%	
Other	6.3%	5.6%	
Socioeconomic Status			
Pell recipient	53%	63%	*
Enrollment characteristics (first fall term)			
Enrolled in Learning Support	27%	68%	*
Enrolled in Gatekeeper English	53%	70%	*
Enrolled in Gatekeeper Math	48%	41%	*
Enrolled full time	70%	88%	*

**Differences between HIP participants and non-participants significant at p<.05.*

Analytic sample comprises students enrolling in Fall 2018 or Fall 2019 with no more than 15 college credits earned previously.

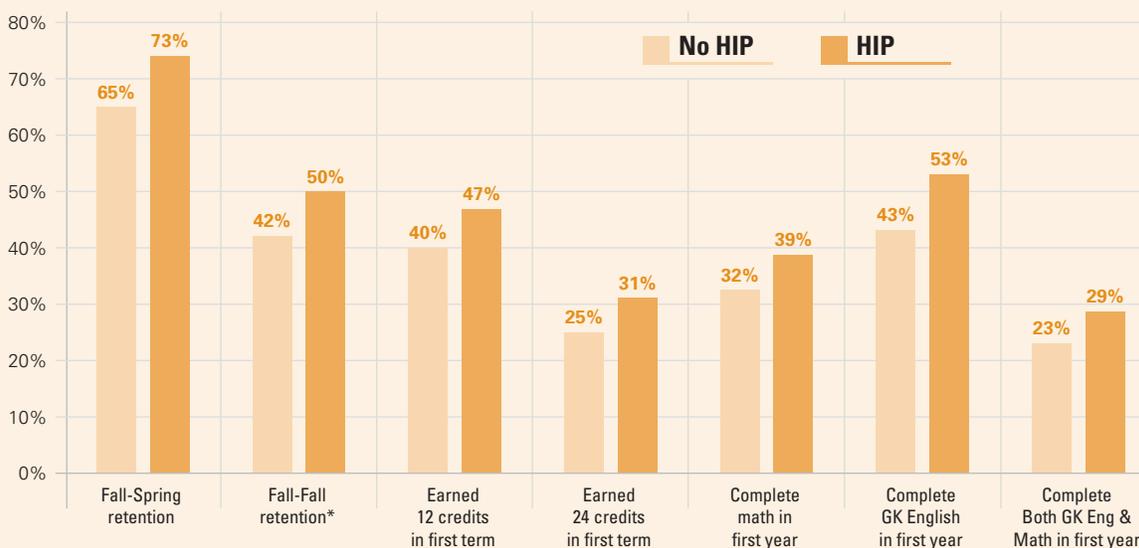
Source: TBR data

likely to be female and are younger, on average, than students not participating. Whereas more than one-quarter of students not participating in a HIP are adult students (25 years or older), just 14 percent of HIP participants are in this age group. Students participating in HIPs in their first term are more likely to be Black and Hispanic; those not participating are more likely to be white; there are no differences between HIP participants and non-participants who are Native American, though these students represent a very small proportion (0.2 percent) of their respective groups. Finally, a higher proportion of HIP participants demonstrate financial need, with 63 percent receiving Pell in their first fall term compared to 53 percent among non-participants.

HIP participants also differ from non-participants in terms of their enrollment characteristics. Students participating in a HIP in their first term are more likely to be enrolled full time (88 percent) compared to non-participants (70 percent), and they are much more likely to be enrolled in a learning support course (especially one in reading). Finally, although HIP participants are more likely than non-HIP students to be enrolled in an English gatekeeper course, students participating in a HIP are less likely to be enrolled in a math gatekeeper course in their first term.

To account for these student-level differences, our analysis estimates the association between HIP participation and a variety of academic outcomes using regression models that control for various student characteristics as well as a students' institution and term of enrollment. Controlling for student-level differences between HIP participants and non-participants reduces bias in estimates in an attempt to more effectively isolate the relationship between HIP participation and the academic outcome of interest.

Figure 2: Academic Outcomes for HIP Participants and Non-Participants



Source: TBR data. n=18,850. All differences between HIP participants and non-participants are significant at $p < .05$.
 *Fall-Fall retention data is only available for Fall 2018 students and is restricted to this cohort.
 Percentages represent average marginal effects from regressions that control for gender, age, race/ethnicity, Pell receipt, English and math gatekeeper course enrollment, learning support course enrollment, enrollment intensity, prior credits earned, institution, and start term.

Because students in the sample can be followed for two academic years at most, the outcomes of focus include a variety of “momentum metrics” related to retention (Fall-Spring and Fall-Fall), credit accumulation (12 credits earned at end of first term and 24 credits earned at end of first year), and gatekeeper course completion in both English and math. These shorter-term momentum metrics have been shown in other research to correlate strongly with eventual completion of programs and credentials.⁷

Results – All Students

Figure 2 displays academic outcomes for students participating in a HIP in their first term and for students not participating. Across all academic outcomes, HIP participation is associated with large, statistically significant improvements; this bodes well for HIP participants’ eventual credential completion.

Students participating in a HIP are 8 percentage points more likely to be retained both one semester and one year later and are 6 to 7 percentage points more likely to earn key credit milestones by the end of their first and second terms. In addition, HIP participants are significantly more likely to complete gatekeeper courses in English and math (and to complete both courses) during their first year of enrollment.⁸

Supplementary regression models exploring associations between participation in each individual HIP and academic outcomes (not shown) suggest that First-Year Experience and Undergraduate Research are most consistently associated with substantively large benefits across most outcomes of focus. As already noted, participation in First-Year Experience drives overall HIP participation so the notable benefits associated with this HIP are expected. In contrast, although the benefits of Undergraduate Research are also large for those who participate in this HIP, rates of participation in undergraduate research are very low across the sample. Analyses further suggest smaller but positive benefits across most outcomes from participation in Learning Communities, Technology-Enhanced Learning, and Service Learning.

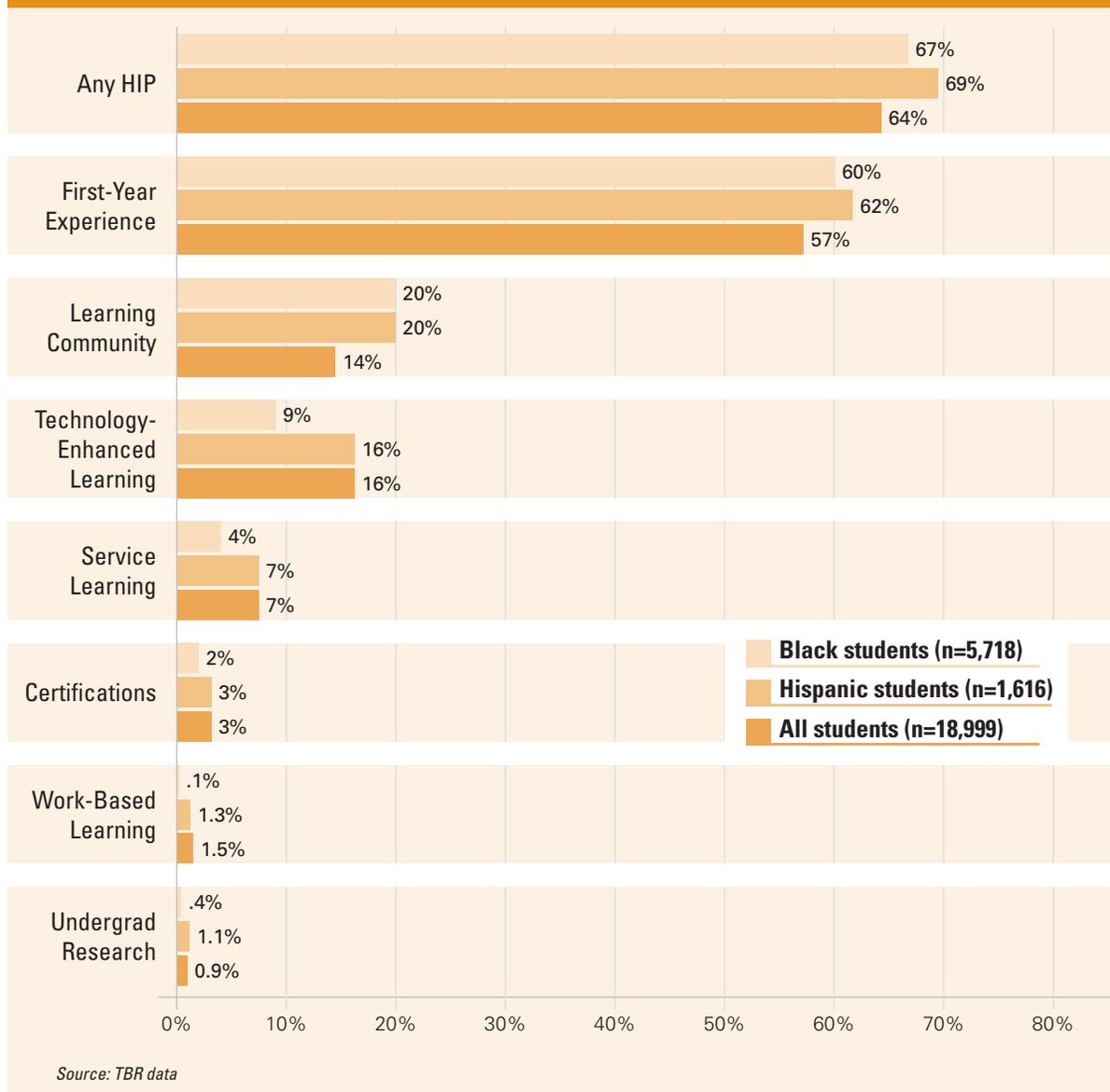
Results – Black and Hispanic Students

TBR has consistently focused on providing higher education opportunities to underrepresented groups, which is reflected by the inclusion of priorities to “engage those who have been historically underrepresented and underserved in their pursuit of post-secondary credentials at all levels” in its strategic planning.⁹ These commitments are integrated into the strategic goals of each TBR college. As noted above, TBR used disaggregated student data to guide the selection of pilot pathway programs in which to embed HIPs for the Lumina-NASH initiative, and three of five institutions selected to participate in the initiative have the largest enrollments of minoritized students.

In addition to assessing relationships between HIP participation and academic outcomes for all students, disaggregated analyses were conducted to assess potential variation in these relationships for Black and Hispanic students, who represent more than 35 percent of the analytic sample as shown in Table 1.¹⁰ Before examining outcomes, it is important to understand HIP participation patterns for these students. Figure 3 displays first-term HIP participation rates for Black and Hispanic students, as well as for the full sample.

Notably, Black and Hispanic students participate in HIPs during their first term at slightly higher rates than all students, which is driven by higher participation in First-Year Experience and in Learning Communities. Among Black students, 67 percent participated in a HIP in their first term, with 60 percent participating in First-Year Experience and 20 percent participating in Learning Community. Similarly, among Hispanic students, 69 percent participated in any HIP in their first term, 62 percent

Figure 3: HIP Participation Rates in First Term for Black and Hispanic Students



participated in First-Year Experience, and 20 percent participated in Learning Community. High levels of participation by Black and Hispanic students in these HIPs result in part from institutions' focus on embedding HIPs within pathways with higher enrollments of minoritized and underserved students. This indicates that equitable participation in HIPs can be achieved through intentional and strategic efforts made by campuses with support from the system office.

As shown in Table 2, both Black and Hispanic students reap significant academic benefits from participation in HIPs, and these benefits are especially large for Black students.

For Black students, participating in a HIP in the first academic term yields an 8 percentage point increase

in both fall-to-spring retention and in fall-to-fall retention; this is comparable to the percentage point increases in retention for all students in the sample. Notably, among Black students, these improvements represent very large *percentage* increases over baseline retention rates. For the fall-to-spring retention metric, the outcome for HIP participants represents a 14 percent increase over the baseline retention rate for students not participating in a HIP.¹¹ For the fall-to-fall retention metric, the difference in outcomes represents a 23 percent increase over non-participant retention rates.

Black students who participated in a HIP in their first academic term also saw a 10 percentage point gain in the likelihood of earning at least 12 credits in their first term (a 40 percent increase over non-participant rates) and a 5 percentage point gain in earning 24 credits in the first year (a 42 percent increase over non-participant rates). Similarly, among Black students, participating in a HIP in the first academic term resulted in a 32 percent increase in completion of Gatekeeper Math, a 28 percent increase in completion of Gatekeeper English, and a 28 percent increase in completion of *both* courses in the first academic year, relative to completion rates for students not participating in HIPs. Supplementary analyses exploring the relationship between individual HIP participation and the academic outcomes of focus (not shown) suggest that First-Year Experience and Technology-Enhanced Learning are driving these positive benefits of overall HIP participation among Black students.

Participating in a HIP in the first academic term is also important for Hispanic students who saw an 8 percentage point gain in earning 12 credits in the first term (a 17 percent increase) and a 4 percentage point gain in earning 24 credits in the first year (a 13 percent increase). Moreover, Hispanic students experienced an 8 percent increase in both fall-to-spring retention and fall-to-fall retention, relative to retention rates for Hispanic students not participating in a HIP. HIP participation also resulted in a 15 percent increase in completion of Gatekeeper Math, a 25 percent increase in completion of Gatekeeper

Table 2: Academic Outcomes for HIP Participants and Non-Participants, for Black and Hispanic Students

	Black students (n=5,718)		Hispanic students (n=1,616)		All students (n=18,850)				
	No HIP	HIP	No HIP	HIP	No HIP	HIP			
Fall-Spring retention	+8%	59%	67%	+6%	73%	79%	+7%	66%	73%
Fall-Fall retention*	+8%	35%	43%	+4%	50%	54%	+7%	42%	49%
Earned 12 credits in first term	+10%	25%	35%	+8%	46%	54%	+7%	40%	47%
Earned 24 credits in first year	+5%	12%	17%	+4%	31%	35%	+6%	25%	31%
Complete GK math in first year	+7%	22%	29%	+6%	39%	45%	+7%	32%	39%
Complete GK Eng. in first year	+11%	40%	51%	+13%	51%	64%	+10%	43%	53%
Complete Both GK Eng. & Math	+5%	18%	23%	+7%	30%	37%	+6%	23%	29%

Source: TBR data

With the exception of coefficients in italics among Hispanic students, all differences between HIP participants and non-participants are significant at $p < .05$.

*Fall-Fall retention data is only available for Fall 2018 students and is restricted to this cohort.

Percentages represent average marginal effects from regressions that control for gender, age, race/ethnicity, Pell receipt, English and math gatekeeper course enrollment, learning support course enrollment, enrollment intensity, prior credits earned, institution, and start term.

English, and a 23 percent increase in the completion of *both* Gatekeeper Math and Gatekeeper English in the first year. Supplementary analyses exploring the relationship between individual HIP participation and the academic outcomes of focus (not shown) suggest that First-Year Experience and Technology-Enhanced Learning are consistent drivers of these positive benefits of overall HIP participation among Hispanic students. In addition, Hispanic students appear to derive large and consistent benefits across outcomes from their participation in Service Learning.

These substantive and significant gains in early momentum milestones for Black and Hispanic students bode well for longer-term completion outcomes and point to the promise of high-impact practices as an effective strategy to address racial equity gaps in Tennessee.

Results – Adult Learners

Although adult students were not an explicit focus of the Lumina-NASH HIPs project, a renewed focus on adult participation in HIPs is important given Tennessee’s increased attention to these learners as part of the state’s Drive to 55 policy agenda. In 2018, Tennessee launched the Tennessee Reconnect Grant Program that offers tuition-free community and technical college for adult learners. According to the Tennessee Higher Education Commission, more than 18,000 adult students received financial support in the 2018-19 academic year, with nearly 70 percent of recipients coming from low-income backgrounds, 28 percent being students of color, and 58 percent having children or other dependents.¹² In this section, we examine the relationship between HIP participation and academic outcomes for students 25 years and older.

Figure 4 displays first-term HIP participation rates for adult students as well as for the full analytic sample. Students 25 and older are less likely to participate in a HIP in their first term—48 percent of such students participated in a HIP, a rate considerably lower than the 64 percent first-term participation rate among all students in the fall cohort. Among older students, First-Year Experiences are the most

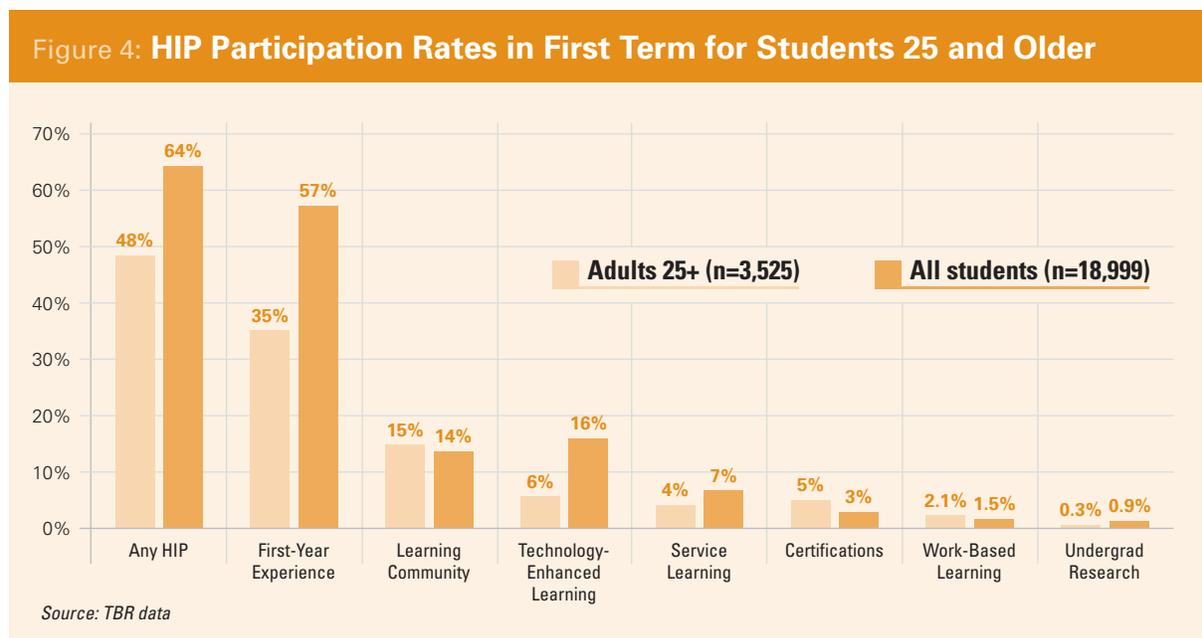


Table 3: Academic Outcomes for HIP Participants and Non-Participants, for Students 25+

	Students 25+ (n=3,498)		All students (n=18,850)			
	No HIP	HIP	No HIP	HIP		
Fall-Spring retention	+10%	62%	72%	+7%	66%	73%
Fall-Fall retention*	+9%	41%	50%	+7%	42%	49%
Earned 12 credits in first term	+6%	25%	31%	+7%	40%	47%
Earned 24 credits in first year	+8%	11%	19%	+6%	25%	31%
Complete GK math in first year	+9%	24%	33%	+7%	32%	39%
Complete GK Eng. in first year	+12%	36%	48%	+10%	43%	53%
Complete Both GK Eng. & Math	+7%	17%	24%	+6%	23%	29%

Source: TBR data

All differences between HIP participants and non-participants are significant at $p < .05$.

*Fall-Fall retention data is only available for Fall 2018 students and is restricted to this cohort.

Percentages represent average marginal effects from regressions that control for gender, age, race/ethnicity, Pell receipt, English and math gatekeeper course enrollment, learning support course enrollment, enrollment intensity, prior credits earned, institution, and start term.

common HIP in the first term (35 percent), followed by Learning Communities (15 percent). Although absolute participation rates are relatively low, students 25 and older are more likely to participate in Certifications (5 percent) and Work-Based Learning (2 percent) relative to all students in the sample.

Table 3 displays the percentage point difference in outcomes between adult students participating in a HIP in their first term and students not participating. As shown, students 25 and older reap large and significant academic benefits from participation in HIPs. Participating in a HIP in the first academic term yields a 16 percentage point increase in fall-to-spring retention for students 25 and older, and a 22 percentage point increase in fall-to-fall retention, compared to similarly aged students not participating in HIPs. These improvements represent a 10 percentage point difference in fall-to-spring retention and a 9 percentage point difference in fall-to-fall retention, which is larger than the 7-percentage point increase in retention for all students in the sample.

Students 25 and older who participated in a HIP in their first academic term also saw a 6 percentage point gain in the likelihood of earning 12 credits in the first term (a 24 percent increase) and an 8 percentage point gain in earning 24 credits in the first year (a 73 percent increase). Similarly, participating in a HIP in the first academic term resulted in a 38 percent increase in completion of Gatekeeper Math, a 33 percent increase in completion of Gatekeeper English, and a 41 percent increase in the completion of *both* Gatekeeper Math and Gatekeeper English in the first year.

Supplementary analyses exploring the relationship between individual HIP participation and the academic outcomes of focus (not shown) suggest that First-Year Experience and Learning Community are drivers of these positive benefits of overall HIP participation among adult students.

Spotlight on Chattanooga State

Chattanooga State Community College (Chatt-State) is a leader of HIPs-related efforts in Tennessee. It has institutionalized efforts to expand HIPs, including a systemic process for direct measurement of student learning (i.e., Assessment in the Majors, or AIM).¹³ These efforts preceded the Lumina-NASH project and were aided in three notable ways: by a Title III grant awarded to the college during a re-accreditation and general education review, by Chatt-State's involvement with AAC&U's VALUE Institute, and by its membership in Achieving the Dream. According to the National Center for Education Statistics College Navigator, more than 8,000 students enrolled at Chatt-State in Fall 2019, almost one-fourth of whom were Asian (2 percent), Black or African American (13 percent), and Hispanic or Latino (7 percent).

During the Lumina-NASH project, Chatt-State saw considerable gains in HIP participation in students' first academic year, growing from 19 percent for Fall 2017 cohort students, to 77 percent among Fall 2018 students and 85 percent for Fall 2019 students. This growth was driven by increased participation in First-Year Experience and Technology-Enhanced Learning, two high-impact practices that are now required for all first-time college students at Chatt-State. Also notable is the high rate of student participation in research with faculty during the first year at the college, which increased from 11 percent for Fall 2017 cohort students to 13 percent for Fall 2018 students and almost 19 percent for Fall 2019 students. These participation rates in faculty-aided research are considerably higher than those at the other colleges in this project.

As documented in its 2015-2025 strategic plan, Chatt-State is committed to increasing enrollment in high-impact practices. It has operationalized this goal by encouraging faculty to implement multiple HIPs across the institution, by integrating these practices in high-enrollment courses, and by requiring all first-time students to take the First-Year Experience (i.e., College Success Course). In practice, the Lumina-NASH project was a faculty-driven effort that leveraged the college's formal curriculum review procedure, allowing faculty to develop and codify the process by which HIPs are reviewed and approved. Chatt-State's organizational structure governing HIPs and its rigorous formal process of HIP approval appear to be important reasons for this documented growth in HIPs. At Chatt-State, a course goes through two levels of review before being identified as a HIP. A screening committee comprising the HIP specialist and HIP master faculty conduct an initial review, which is followed by a review by the faculty senate for final approval. Once approved, the course is identified in BANNER as a HIP course and given the appropriate code.

Staff from DVP-PRAXIS LTD visited Chatt-State in September 2019 to learn about the college's efforts to expand HIP participation in First-Year Experience and Research with Faculty. During the site visit, the evaluation team interviewed 17 administrators and faculty to examine implementation factors known to affect progress: executive-level commitment, distributed leadership, faculty ownership, resource prioritization, and use of data.¹⁴

Qualitative data from the site visit indicate strong institutional commitment to expanding HIPs. This commitment is demonstrated by 1) including the expansion of HIPs in the college's 2015-2025 strategic plan, 2) executive-level support with distributed responsibility for implementation led by faculty through the teaching and learning center, 3) intentional engagement of faculty to assure quality of high-impact practices, and 4) a strong culture of using data to assess student learning outcomes. These institutional attributes help explain the high rates of student HIP participation at Chatt-State—rates that have grown notably in the last three years.

Project leadership for expanding HIPs at Chatt-State is embedded in the Center for Academic Research and Excellence (CARE), the college's faculty teaching and learning center. CARE has responsibility for HIPs and is staffed with a HIPs Specialist (essentially a coordinator of the HIPs work); there are HIPs master faculty members who work across departments and divisions to help small groups of faculty develop HIPs; and there is a formal application and approval process for HIPs that goes through the Faculty Senate (i.e., curriculum review). These efforts were strengthened through the Lumina-NASH initiative and reinforced by TBR's HIP taxonomies.

Additionally, the systematic assessment of student learning (the AIM process) is also well-established. It features a formal cycle of assessment and review for seven ISLOs (Institution Student Learning Outcomes) that is led by faculty teams using VALUE-informed rubrics to document institutional learning outcomes. These data are analyzed by the Institutional Research and Planning Division, and results are shared with faculty and academic administrators.

HIPs expansion and systematic assessment of learning are successful because they are faculty driven.

Faculty and staff universally indicated the president was supportive of HIPs, which align with other institutional priorities. Expanding HIPs is in the strategic plan, and CARE is an established resource for faculty on campus. The college's involvement with Achieving the Dream has helped HIPs and their assessment become core components of the teaching and learning aspects of their Focus on Completion efforts.

The most common message conveyed to the evaluation team was that HIPs expansion and systematic assessment of learning are successful because they are faculty driven. Faculty lead the process for HIP development through master faculty and small groups (professional development). They approve HIPs through normative curricula processes overseen by the Faculty Senate. They serve as reviewers for the AIM process using VALUE rubrics to assess student learning for seven ISLOs. They have CARE—a formal teaching and learning center with staffing and space to provide leadership and professional development. And they manage an annual HIPs summer institute with support from AAC&U. Faculty ownership of HIPs is promoted and communicated to the campus through multi-media, and students who complete 12 hours of HIPs are awarded a special tassel at graduation.

The resources to support HIPs and systematic assessment of learning appears largely grant-driven at Chatt-State, though the Title III grant (Strengthening Institutions) that initially launched these efforts is meant to build capacity at colleges. Faculty leaders see TBR's increased attention to HIPs as a reason for ongoing presidential support for these efforts. The message that faculty would continue to prioritize HIPs was communicated consistently during the site visit.

Joining Achieving the Dream helped to solidify a culture of data use at the college, though there is still room for improvement. The Institutional Research and Planning division manages a sophisticated assessment process (AIM) to measure student learning systematically, and the Student Success Scorecard reports disaggregated data on retention and also examines the relationship between a HIP and retention. Data disaggregation and analysis is more frequent and regular on campus, and processes to institutionalize the use of such data for program review and institutional outcomes (retention and completion) are improving.

Conclusion:

Best Practices in System Leadership for Scaling High-Impact Practices

In their efforts to expand HIP participation equitably through the Lumina-NASH HIP project, the Tennessee Board of Regents built on a proven model of faculty engagement, leveraging previously trained and engaged faculty as campus leaders in the project to reduce initiative fatigue, reinforcing the connectedness of system initiatives around equity, and inviting continued collaboration across the system.¹⁵ The five colleges in the project benefited from TBR's efforts to achieve consensus around the meaning of quality for HIPs, to be intentional about expanding HIPs equitably, and to build on their commitment to measure HIP participation systematically through administrative data systems.

Analyses of TBR administrative data presented in this report reveal that participation in HIPs has grown steadily, reaching more than two-thirds of all students in the Fall 2019 cohort. This growth was driven by increased participation in First-Year Experience (a requirement at several colleges), Technology-Enabled Learning (often embedded in the FYE course), and Service Learning. Notably, 64 percent of all Fall 2018 and Fall 2019 students participated in a HIP during the first academic term, and higher percentages of Black (66 percent) and Hispanic (69 percent) students participated in a HIP, a notable equity-related achievement. Analyses further show that HIPs are an important system strategy for increasing college completion, because doing so is strongly connected to improved outcomes for a host of shorter-term academic metrics including retention, credit accumulation, and gatekeeper course completion. The positive benefits of HIP participation accrue to all students and are especially pronounced for Black and Hispanic students and for students 25 years and older.

TBR and the five participating community colleges highlighted in this report achieved these outcomes because of their intentionality in planning and execution, and because they explicitly aligned TBR strategic objectives and campus priorities around HIP participation and systematic reporting. The overarching system goal for all students to experience three HIPs before they complete a community college degree is clear to all campuses, and campuses were encouraged in the project to focus on HIPs with existing momentum and support from faculty and to embed HIPs in programs or pathways with significant enrollment of Black and Hispanic students. Earlier efforts to develop HIP taxonomies had the support and buy-in of campus leaders because faculty were engaged in the process of developing these taxonomies; they were not perceived as "heavy-handed" system mandates.

Two critical system-driven "best practices" facilitated campus progress in scaling HIPs equitably, and both could be adapted by other state systems. First, TBR effectively leveraged its "power of convening" through system-level and campus-level events, including regional professional development opportunities focused on HIPs. Second, and perhaps most important, TBR engaged faculty through online learning communities and through discipline-specific working groups. These efforts showcased faculty HIPs champions, provided peer-learning opportunities across the system's campuses, and helped expand the effective use of HIPs. TBR also benefited from its development of a quality assurance assessment tool and use of HIPs taxonomies and coding rules for reporting HIP participation that provided a system-wide process for monitoring and supporting equitable student success.¹⁶

Appendix: TBR High-Impact Practices — Minimum Definition of Practice

TBR determines a “minimum definition of practice” for each HIP of focus. The following is adapted from TBR’s website for the HIPs of focus for this report (see <https://www.tbr.edu/student-success/tbr-high-impact-practices>).

Certifications

Certifications are identifiers that a student has completed a qualification for an industry or a particular skill area. Certifications identified in this taxonomy refer to credit-bearing courses that enable a student to take an assessment leading to industry-recognized certification.

First-Year Seminar/Experience

A course intended to enhance the academic and social integration of first-year students by introducing them to essential skills for college success and a supportive campus community comprising faculty, staff, and peers. FYs often place a strong emphasis on critical inquiry, frequent writing, information literacy, collaborative learning, and other crucial competencies.

Learning Communities

The same groups of students taking two or more classes concurrently for academic credit and engaged in a substantial amount of time in common intellectual activities, within and outside the classroom, with intentional curricular connections.

Study Abroad

Study abroad is a credit-bearing experience incorporated into general education or college core requirements for a certificate/degree program. Curriculum includes field-based “experiential learning” in locations outside the United States with an emphasis on intercultural understanding and communication. Students apply what they learn in a real-world setting and reflect on experiences as part of course requirements.

Technology-Enhanced Learning

Instructional practices that leverage digital technologies to enhance teaching and learning. (Digital technology is any electronic tool, system,

device, or resource that facilitates learning and improves student performance. Examples include, but are not limited to, social media, online games, multimedia, productivity applications, cloud computing, interoperable systems, and mobile devices.)

Undergraduate Research

Undergraduate research is an inquiry or investigation conducted by an undergraduate student that makes an original intellectual, scholarly activity, or creative contribution to the discipline and for which the student receives academic credit either through a course or independent study.

Work-Based Learning

Work-based Learning represents credit-bearing experience that integrates knowledge and theory learned in the classroom with practical application and skills development in a professional setting. Internships, practicums, clinicals, co-ops and similar experiences, integrated with a class or related to a major field of study, give students the opportunity to gain valuable applied learning and make connections in professional fields students are considering for career paths, while giving employers the opportunity to guide and evaluate talent (NACE, 2011).

Service Learning

Service learning is a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities. Curriculum includes structured field-based “experiential learning” alongside community partners, which reinforces course learning outcomes. In the TBR System, credit-bearing service-learning designated courses are incorporated into general education or college core requirements for a degree program.

Endnotes

¹ Cinder, S.A., Kelly-Reid, J.E., & Mann, F.B. (2018). Postsecondary institutions and cost of attendance in 2017–18; Degrees and other awards conferred, 2016–17; and 12-month enrollment, 2016–17: First Look (Provisional Data) (NCES 2018-060rev). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

Shapiro, D., Dundar, A., Huie, F., Wakhungu, P., Bhimdiwala, A., & Wilson, S. (2019). Completing college: A state-level view of student completion rates (Signature Report No. 16a). Herndon, VA: National Student Clearinghouse Research Center.

² Kuh, George D. (2008). High-Impact Educational Practices: What They Are, Who Has Access to Them, and Why They Matter. Washington, DC: Association of American Colleges and Universities.

Finley, A. & McNair, T. (2013). Assessing Underserved Students' Engagement in High-Impact Practices. Washington, DC: Association of American Colleges and Universities.

³ TBR Proposal for NASH-Lumina HIPS initiative, October 31, 2017.

⁴ Participation in Honors Education is not included in this analysis given the expansive definition for this HIP, as well as notable coding inconsistency across institutions for Honors Education in these data.

⁵ For more information on the quality assurance assessment tool, see <https://www.tbr.edu/student-success/other-high-impact-resources>. Accessed December 15, 2020.

⁶ Participation rates for Study Abroad not shown in figure due to extremely low participation rates in this HIP.

⁷ Belfield, C, Jenkins, D, and Fink, J. (2019). Early Momentum Metrics: Leading Indicators for Community College Improvement. Columbia University: Community College Research Center.

⁸ As noted in Table 1, HIP participants are significantly more likely to enroll in English gatekeeper courses and significantly less likely to enroll in Math gatekeeper courses. Importantly, all regression models (including those for gatekeeper course completion) control for enrollment in gatekeeper English and gatekeeper math in first term. Results from models therefore demonstrate that, controlling for differences in enrollment in gatekeeper courses, students participating in HIPs are more likely to complete these courses compared to students who do not participate in HIPs.

⁹ <https://www.tbr.edu/academics/strategic-planning-academic-affairs> Accessed December 3, 2020.

¹⁰ Sample size for American Indian students in the data does not support separate regression analyses for this group.

¹¹ Based on regression model estimates, Black students participating in a HIP in first term were 8 percentage points more likely to be retained fall-to-spring (67% retention rate for HIP participants versus 59% retention rate for non-participants). This represents a 14% increase in fall-to-spring retention rate over baseline $[(67\% - 59\%) / 59\%]$.

¹² Tennessee Reconnect Annual Report. (2020). <https://www.tn.gov/thec/research/tnr-annual-report.html>

¹³ See https://chattanooga.state.digitization.com/assessment_and_planning/AIM_Process. Accessed December 15, 2020.

¹⁴ Price, D.V., McMaken, J., and Kioukis, G. (June 2015). Case-Informed Lessons for Scaling Innovation at Community and Technical Colleges. DVP-PRAXIS LTD <https://www.dvp-praxis.org/wp-content/uploads/2015/05/Catalyst-Fund-Evaluation-Report-FINAL-060815.pdf>

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Kezar, A. (February 2011). What is the best way to achieve broader reach of improved practices in higher education? *Innovation in Higher Education* 36: 235-247. DOI 10.1007/s10755-011-9174-z

¹⁵ TBR Proposal for NASH-Lumina HIPS initiative, October 31, 2017

¹⁶ These system-level best practices were also reported by TBR in their final report to NASH, December 30, 2019.