

**NC**

Teaching & Learning Hubs

# Evidence of Scale for a Statewide Teaching and Learning Model

DECEMBER 2023

**NC STATE UNIVERSITY**

College of Education  
Belk Center for Community College  
Leadership and Research



**DVP-PRAXIS**

# INTRODUCTION



After two years of operation, North Carolina's Teaching and Learning Hubs have grown substantially, broadening participation by faculty in particular, and demonstrating improvements in course success rates.

Supported by initiative partners at the Belk Center for Community College Leadership and Research, Achieving the Dream, and the North Carolina Student Success Center, the Hubs aim to

*“ help educators learn about, adopt, test, and scale evidence-based strategies that have increased equitable student success outcomes across the nation and ensure that local area needs are met.”<sup>1</sup>*

Originating with the East and West Hubs in Fall 2021, the program expanded in academic year (AY) 2022-23 with the addition of the Central and Piedmont Hubs to cover all 58 of North Carolina's community colleges. Each of the four Hubs are managed by faculty Co-Directors who are located

at the Hubs' host colleges and supported by senior leadership at those colleges. Each Hub has a group of affiliated colleges that are regionally adjacent. The Hubs design professional learning (PL) opportunities that are relevant for their affiliate colleges and support full- and part-time educators in making changes in their classrooms that support student success. Hub Co-Directors collaborate with contacts at the affiliate colleges to understand what campuses need and to build capacity for individual colleges' professional learning efforts.

By implementing the Hubs as a statewide model for delivering PL to faculty and building regional capacity, it is expected that faculty will apply what they've learned to their course content and delivery methods, resulting in improved academic outcomes for students. To understand this theory of change, evaluation and learning partners at DVP-PRAXIS LTD are conducting a multi-year mixed methods study of the Hubs.

This second-year report of the Teaching and Learning Hubs documents the growth of the Hubs, in terms of geographic reach, participation by faculty and staff, and the diversity of sessions and participants. In addition, this report shares the emergent evidence on the relationship between faculty participation in PL and course success rates, as a preliminary investigation into the effect of Teaching and Learning Hubs on equitable student outcomes in North Carolina (NC).



# EVIDENCE OF SCALE FOR TEACHING AND LEARNING HUBS

North Carolina's Teaching and Learning Hubs are on a positive trajectory to achieve the goals of accessible statewide support for professional learning (PL). Hubs are achieving scale by quickly increasing their reach to colleges and participants, as well as the number and diversity of the PL sessions offered. Statewide

coverage enabled participation from all of colleges in the state, more than doubled the number of PL opportunities (44 sessions in year one to 85 sessions in year two) and resulted in a 42% increase in average PL session attendance (from 26 participants in year one to 37 participants in year two).

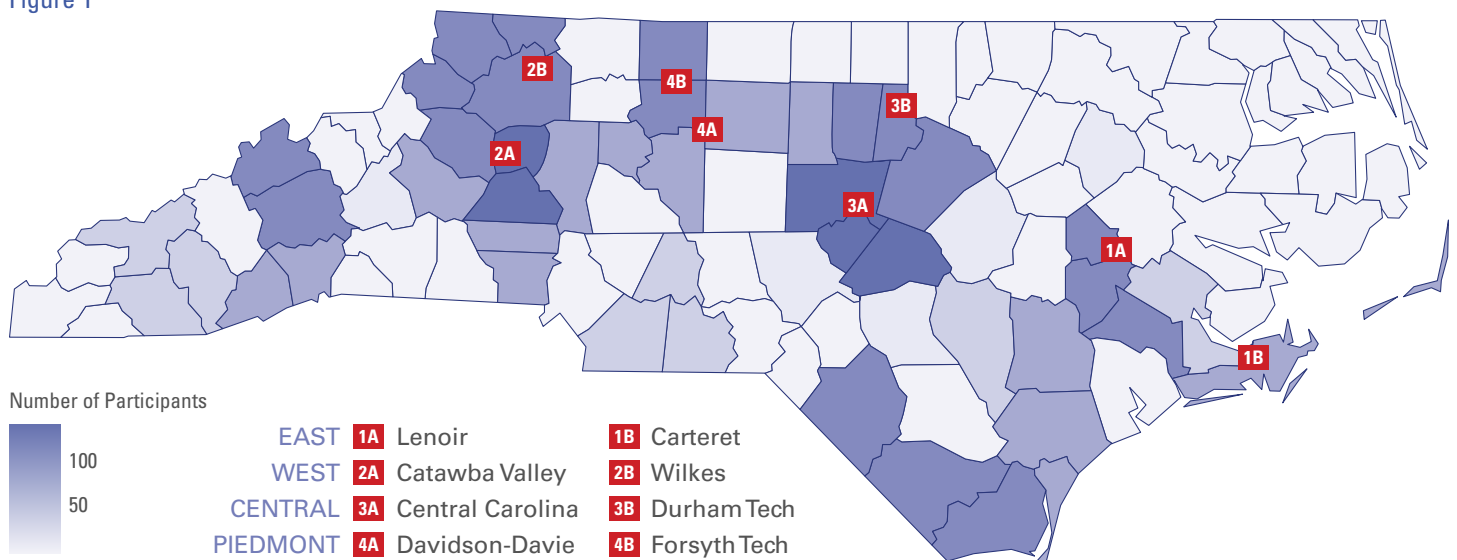
## ACHIEVING SCALE BY REACHING FACULTY AND STAFF

In the second year of operation, unique faculty and staff in Teaching and Learning Hubs nearly tripled from 513 in AY 2021-22 to 1,406 in AY 2022-23.<sup>4</sup> Additionally, 166 of participants in year two are return attendees from 2021-22, and the remainder (n = 1,240) are newly engaged faculty and staff from NC community colleges. To date, and including

those who participated in both years, 1,753 unique individuals from NC community colleges have attended at least one PL opportunity offered by a Hub since all 2021. These 1,753 unique registrants come from all corners of the state, including representation from each of the 58 NC community colleges (Figure 1).

### TOTAL REGISTRATION FOR TEACHING AND LEARNING HUBS BY COLLEGE (N=1,753)

Figure 1



# THE DIVERSITY OF PARTICIPANTS IN HUB-OFFERED PROFESSIONAL LEARNING IS INCREASING.

Overall, the diversity of Teaching and Learning Hubs registrants is similar to the makeup of the North Carolina Community College System (NCCCS).<sup>5</sup>

Though notably, the representation of Native American/Alaskan Native registrants and registrants identifying as multiple races or ethnicities is significantly higher in PL sessions (2%) than the

representation of the same groups in NCCCS (1%). Although most registrants in Hubs programming across years are white (67%), that majority decreased between AY 2021-22 (74%) and AY 2022-23 (66%), and is significantly lower than the percentage reported by NCCCS, while Black (12% -> 16%) and Hispanic (2% ->3%) representation increased (Table 1).

## RACE/ETHNICITY DISTRIBUTION BY YEAR

Table 1

RACE/ ETHNICITY	AY 2021 - 2022		AY 2022 - 2023		Across Years		NCCCS		p
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
White	380	(74%)	926	(66%)	1179	(67%)	21,962	(73%)	0.001
Asian	*	*	*	*	22	(1%)	353	(1%)	0.283
Native American/ Alaskan Native	22	(4%)	20	(1%)	35	(2%)	335	(1%)	0.001
Black	64	(12%)	<b>224</b>	<b>(16%)</b>	275	(16%)	5,139	(17%)	0.143
Hispanic	10	(2%)	<b>36</b>	<b>(3%)</b>	43	(2%)	960	(3%)	0.179
Multiple	*	*	*	*	26	(2%)	155	(1%)	0.042
Prefer not to Answer	30	(6%)	159	(11%)	173	(10%)	—		
<b>TOTAL</b>	513		1,406		1,753		—		

Note: Bolded numbers show increase in percent representation from AY 2021-22 to AY 2022-23; \* are data redacted due to low n-size, dashes are data that are unavailable. Significance is determined by a proportion comparison test determining whether the proportional representation of race and ethnicity present among registrants to T&L events across years significantly differed from the proportional representation of employees in NC institutions according to the NCCCS data dashboard.

Most of the 1,753 unique registrants for PL sessions were female (71%, n=1,244) within and across academic years of participation (Table 2).<sup>6</sup> Female attendees were significantly overrepresented in Hub-

offered PL compared with the population in NCCCS. Notably, non-binary and transgender participation also increased, though these numbers are small and therefore redacted to protect confidentiality.

## GENDER DISTRIBUTION BY YEAR

Table 2

GENDER	AY 2021 - 2022		AY 2022 - 2023		Across Years		NCCCS		p
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
Female	387	(74%)	988	(69%)	1,244	(71%)	17,595	(59%)	< 0.001
Male	109	(23%)	257	(18%)	338	(19%)	12,359	(41%)	< 0.001
Unknown / Redacted	17	(3%)	<b>161</b>	<b>(12%)</b>	171	(10%)	—		
<b>TOTAL</b>	513		1,406		1,753		—		

Note: Bolded numbers show increase in percent representation from AY 2021-22 to AY 2022-23. Significance is determined by a proportion comparison test determining whether the proportional representation of gender present among registrants to T&L events across years significantly differed from the proportional representation of employees in NC institutions according to the NCCCS data dashboard.

## FACULTY ENGAGEMENT IS GROWING IN HUB-OFFERED PROFESSIONAL LEARNING.

Of the 1,753 unique registrants who attended across years, 60% self-identified as full-time faculty, 12% as adjunct/part-time faculty, 24% as staff, and 4% as other. When broken down by year, full-time faculty increased from 60% of registrants in AY 2021-22 to 62% of registrants in AY 2022-23. Adjunct and part-time faculty also increased from 9% to 12%, while the share of self-identified staff (26% ->22%) and other (6% ->4%) decreased (Table 3). In other words, full- and part-time faculty (n=1,262) make up a growing majority (72%) of Hub registrants across years.

## PROFESSIONAL LEARNING REGISTRATION BY ROLE AND ACADEMIC YEAR

Table 3

ROLE	AY 2021 - 2022		AY 2022 - 2023		Across Years	
	Number	Percent	Number	Percent	Number	Percent
Full-Time Faculty	308	60%	876	<b>62%</b>	1,060	60%
Part-Time Faculty	45	9%	163	<b>12%</b>	202	12%
Staff	131	26%	316	22%	416	24%
Other	29	6%	51	4%	75	4%
<b>TOTAL</b>	513		1,406		1,753	

Note: The role "other" may include session presenters and project partners. Bolded numbers show increase in percent representation from AY 2021-22 to AY 2022-23.

Among the 1,262 faculty registrants, 48% have 11 or more years of teaching experience and only 28% have five or fewer years of teaching experience. Specifically, only 9% taught one year or less and 19% taught between two and five years. By contrast, 22% taught between six and 10 years, 33% taught between 11-20 years, and 15% taught more than 20

years.<sup>7</sup> Additionally, of faculty registrants, 1,093 (86%) reported they were teaching curriculum courses, 14% (n=174) reported they were involved in teaching continuing education courses, and 6% (n=77) indicated they were involved in both. Put simply, faculty who register for PL sessions are more experienced and primarily teach curriculum courses.

# ACHIEVING SCALE THROUGH GROWTH IN PROFESSIONAL LEARNING SESSIONS

## THE NUMBER & DIVERSITY OF PROFESSIONAL LEARNING SESSIONS IS INCREASING ALONG WITH INCREASED AVERAGE ATTENDANCE PER SESSION.

Across the two years of Teaching and Learning Hubs, a slight majority of the 1,753 individuals registered for only one PL session (54%), 18% registered for two sessions, and 28% registered for three or more sessions (Table 4).

From year one to year two, the number and diversity of PL sessions increased, which represents expanded opportunities for attendees to learn evidence-based teaching practices and apply these practices within their classroom.

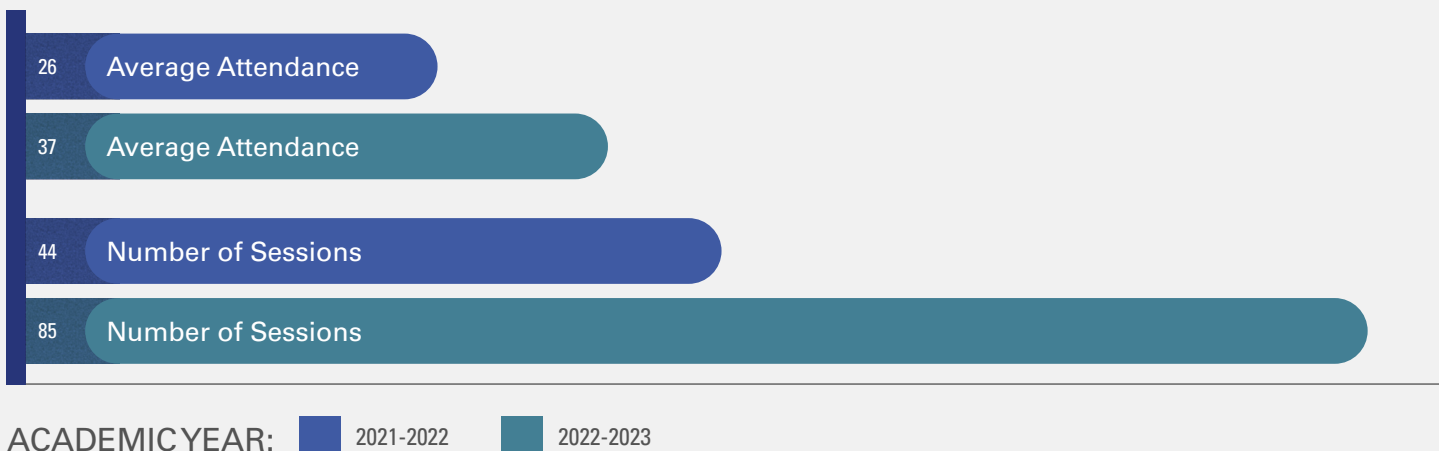
As noted previously, the number of PL sessions almost doubled from 44 sessions in year one to 85 sessions in year two (Figure 2). To date the most common sessions offered by the Hubs were those focused on Diversity, Equity, and Inclusion (44%), those that were explicitly action-oriented (61%), and those that were structured as a series (36%). During year two of the Hubs, Co-Directors broadened the topics available by also offering sessions focused on student engagement (25 sessions), instructional strategies (17 sessions), and mental health (16 sessions). Almost one-third of

all registrants chose a session focused on these three topics, suggesting the diversification of topics was well received.

In addition to the increased diversity of sessions offered, the average number of registrants per session also increased. PL sessions in AY 2021-22 averaged 26 individuals per event, increasing to an average of 37 registrants per session in AY 2022-23 (Figure 2). The overall increase in average registration for a PL event is, in and of itself, an indicator of progress towards statewide scale. In addition, larger sessions may allow registrants to connect with each other and build relationships across their region, and could result in more diverse perspectives around teaching and learning being shared within these sessions.

## AVERAGE SESSION REGISTRATION AND SESSIONS OFFERED

Figure 2



Notably, full-time faculty represent larger proportions of those who registered for more than one PL session.

As Table 4 shows, 68% of registrants who attended three or more PL sessions self-identify as full-time faculty.

That percentage is much lower for registrants who attended only one session, of which only 56% identified as full-time faculty. In other words, full-time faculty represent the majority of registrants, both in terms of percentage of attendees overall and frequency of attendance.

## PROFESSIONAL LEARNING REGISTRATION BY ROLE

Table 4

ROLE	1 Professional Learning		2 Professional Learning		3+ Professional Learning	
	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>
Full-Time Faculty	523	(56%)	204	(63%)	333	(68%)
Part-Time Faculty	123	(13%)	41	(13%)	38	(8%)
Staff	251	(27%)	62	(19%)	103	(21%)
Other	45	(5%)	16	(5%)	14	(3%)
<b>TOTAL</b>	<b>942</b>	<b>(54%)</b>	<b>323</b>	<b>(18%)</b>	<b>488</b>	<b>(28%)</b>

# ACHIEVING SCALE BY REACHING FACULTY AND STAFF

A third way the Teaching and Learning Hubs are achieving scale is by expanding the courses taught by Hub-trained instructors, and thereby reaching more students. We examined data from a sub-sample of registrants who had a record of teaching a course within NCCCS between fall 2021 and spring 2023. The result is 1,033 individuals who registered for a PL session and taught a course concurrent with or following their first PL session. Some of the individuals who taught

a course self-identified their role as “staff.” To be inclusive of all roles that are teaching, individuals in this sub-sample will be referred to as “instructors.” This sample of instructors has a significantly higher proportion of male instructors (22% vs. 19% of all registrants,  $p < 0.001$ ) and white instructors (70% vs. 67% of all registrants,  $p < 0.001$ ). This sample also has a significantly lower proportion of Black instructors (12% vs. 16% of all registrants,  $p < 0.001$ ).<sup>8</sup>



## EACH HUB-TRAINED INSTRUCTOR REACHED AN AVERAGE OF 151 STUDENTS PER ACADEMIC YEAR.

To understand the cumulative reach of Hub-offered PL, we examined both the number and types of courses taught by Hub-trained instructors in addition to the number of students who enrolled in their courses.

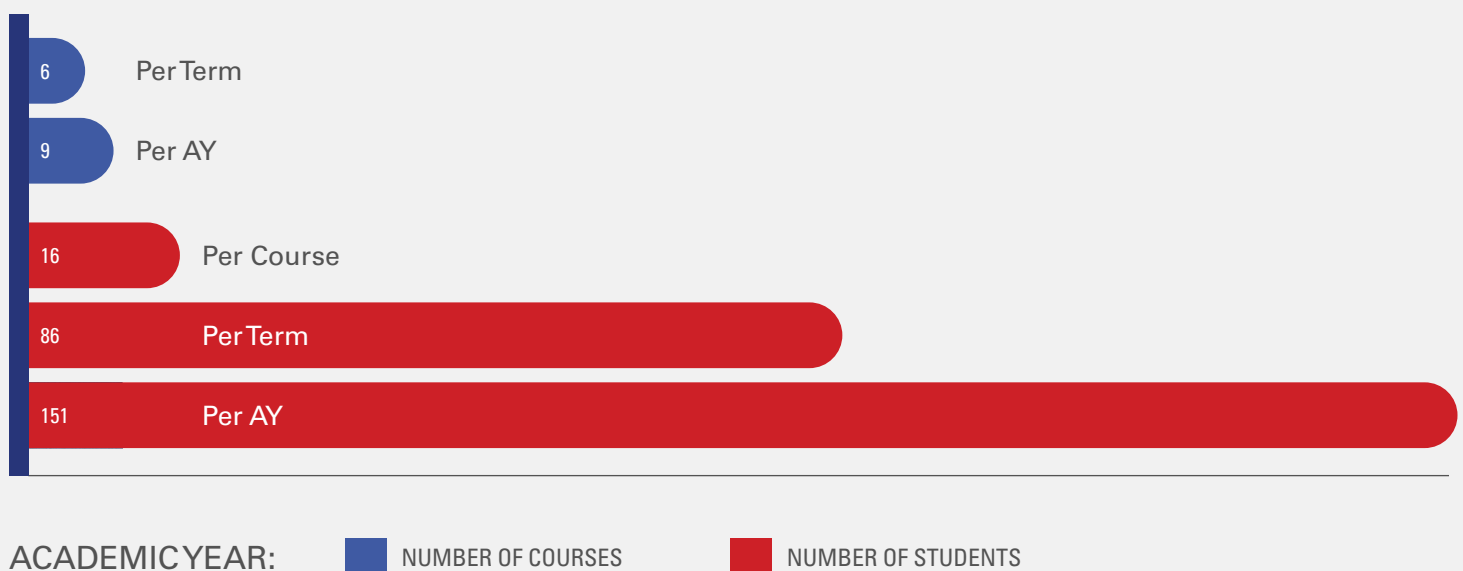
Concurrent with or following instructor participation in Hub-offered PL, half of the courses taught by these 1,033 instructors were offered online (4,292) and half in-person (4,218). Instructors cumulatively taught 3,335 Career and Technical Education (CTE) courses, 4,741 General Education (Gen Ed) courses, and 434 Developmental Education (Dev Ed) courses between fall 2021 and spring 2023.

These 1,033 instructors taught an average of six courses per term and nine per academic year (Figure 3).

Additionally, the average number of students in a course taught by an instructor who had registered for at least one PL session was 16 students (Figure 3). The average number of students each instructor taught was 86 per term and 151 per academic year, although average students reached varied by the types of courses taught (e.g., CTE - 121; Dev Ed - 128; Gen Ed - 173). In other words, for every instructor who participates in Teaching and Learning Hubs, 151 students on average are reached annually, indicating the growth in Teaching and Learning Hubs is reaching students more broadly.

### THE REACH OF HUB-TRAINED INSTRUCTORS TO COURSES AND STUDENTS

Figure 3



## **HUB-TRAINED INSTRUCTORS ARE REACHING SIGNIFICANT NUMBERS OF LOW-INCOME AND FIRST-TIME STUDENTS, ADULT LEARNERS, AND STUDENTS OF COLOR.**

Of the 74,210 students reached by Hub-trained instructors to date, 34% (25,505) received a Pell Grant sometime during college. Additionally, 27% (20,361) were first-time students when they took a course from

these PL instructors, 26% (18,988) were adult learners (25 or older), 41% (30,267) identified as students of color (self-identified as other than white), and 11% identified as adult students of color (8,685).

Notably, 20,293 students were enrolled in 1,709 courses taught by instructors of color (n=258 of the 1,033 instructors).

Students in courses taught by instructors of color were significantly more likely to be students of color (52% v. 40%;  $p < 0.001$ ) and adult learners (31% v. 27%;  $p < 0.001$ ).

While the diversity of students reached by Hub-trained instructors is considerable, continuing to increase engagement with instructors of color can improve the reach of PL to a greater number of students of color and adult learners by providing support to the instructors most likely to teach them. This area for further growth is in line with the Hubs' mission to support equitable student success.

## **PRELIMINARY EVIDENCE ON THE RELATIONSHIP BETWEEN PROFESSIONAL LEARNING AND COURSE SUCCESS RATES**

The growth and reach of PL sessions indicates that the Teaching and Learning Hubs are successfully building capacity for PL opportunities and reaching instructors across the state.

The reach and expansion of these PL opportunities is intended to improve learning outcomes, persistence rates, and credential attainment.

This section provides a preliminary analysis on whether instructors who participated in PL sessions improved their course pass rates (i.e., the number of students who receive an A, B, C, or P (pass)) during and after participating in PL sessions. To do so, we compare the pass rates in courses taught by instructors prior, during, and after participating in PL sessions.

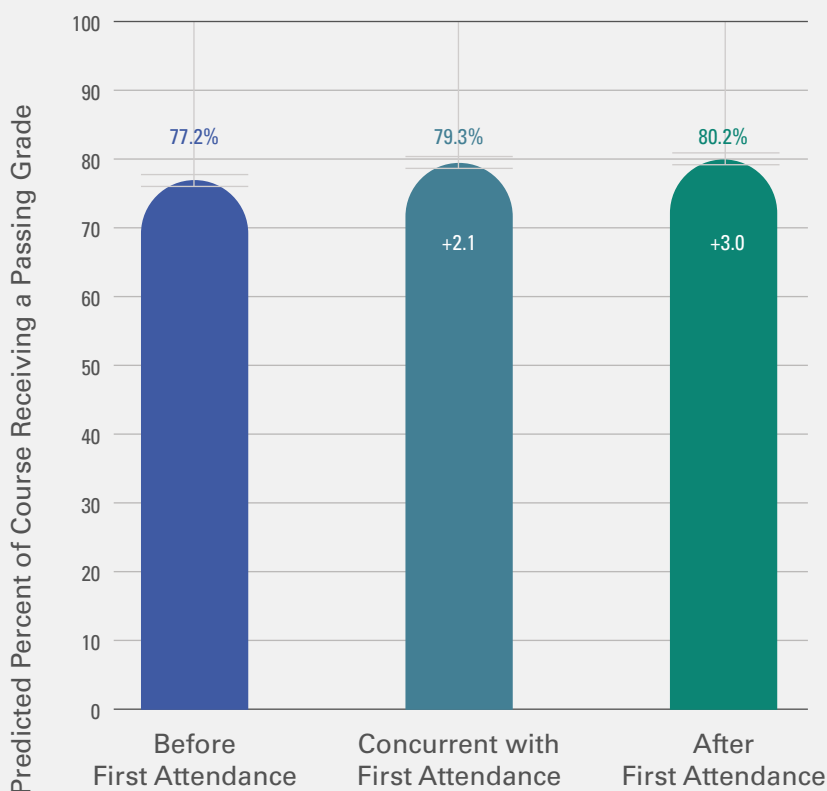
We examined our sub-sample of instructors with a teaching record in NCCCS (n = 1,033) to see if they had taught courses both before and after their first PL engagement. This process resulted in 732 instructors who collectively taught 3,404 courses concurrently with the instructor's first PL attendance; 2,188 courses after the instructor's first PL attendance; and 7,277 courses prior to the instructor's first PL attendance.<sup>9</sup> Of note, this subsample is significantly more likely to be white (78% vs. 70%,  $p < 0.001$ ) and female (76% vs. 67%), compared to the Hub-trained instructors (n=1,033) who matched the NCCCS database. Using this subsample of 732 instructors and 12,869 courses, a mixed-effects regression model was used to explore the relationship between instructor's registration for PL sessions and their course pass rates.<sup>10</sup>

## **INSTRUCTOR'S ENGAGEMENT IN HUB-OFFERED PROFESSIONAL LEARNING CORRESPONDED WITH A TWO PERCENTAGE POINT AVERAGE INCREASE IN SUCCESSFUL COURSE PASS RATES.**

Regression results indicate that, from a baseline of 77.2% “before PL engagement,” there was an average increase in course pass rates of 2.1 percentage points to 79.3% for instructors that registered for their first PL event “during” the same semester as the course being offered ( $p < 0.001$ , Figure 4).<sup>11</sup> The average course pass rate increased to 80.2% in semesters “after PL engagement,” an increase of three percentage points compared to the baseline ( $p < 0.001$ , Figure 4). This model included interactions for self-identified race or ethnicity and gender. Neither race and ethnicity nor gender significantly interacted with treatment status, indicating that the predicted relationship between attending PL sessions and improved course pass rates was comparable for all groups of instructors, irrespective of race, ethnicity, and gender. Additional sensitivity testing was conducted to determine if the number of PL sessions attended or years or teaching experience interacted with the patterns documented for course success rates.<sup>12</sup>

### **AVERAGE COURSE PASS RATES FOR INSTRUCTORS BEFORE, DURING, AND AFTER PROFESSIONAL LEARNING REGISTRATION (N=12,869 COURSES)**

Figure 4



Results indicate that instructors with different levels of teaching experience do show significant differences in their course pass rates before they attended PL sessions. However, their improved course success rates concurrently with and following PL sessions follow the same positive trajectory, indicating the pattern of improved course success rates for Hub-trained instructors are consistent regardless of instructor experience or starting course pass rates.

Additionally, the improvement of course success rates did not significantly differ depending on the level of PL engagement, or the individual's race, ethnicity, or gender. This analysis suggests that the improved course pass rates before and after PL attendance is a robust outcome across attendees of different races and ethnicities, different levels of teaching experience, and across different levels of PL engagement.

# CONCLUSION

North Carolina's statewide Teaching and Learning Hubs have grown substantially during the first two years of the initiative.

The number of individuals engaging in Hub-offered PL has nearly tripled, resulting in Hub-trained instructors teaching more than 8,500 courses and reaching more than 74,000 students – many of whom are low income, first-time, adult learners, and students of color. Additionally, the average number of registrants per PL session, as well as the number of registrants who

return for multiple sessions, is increasing, suggesting the increased number and variety of offerings is appealing. Preliminary evidence points to the positive and statistically significant relationship between engagement in Hub-offered PL and increased course pass rates, on average. During a time when states and colleges are looking for practices to improve student outcomes, this emerging evidence from North Carolina suggests that scaling teaching and learning opportunities for instructors can positively impact student success.

# ACKNOWLEDGEMENTS

We thank the faculty, staff, and instructors across the North Carolina Community College System for participating in Teaching and Learning Hubs and making classroom changes to support equitable student success. We recognize the continuous improvement efforts and innovation of Hub leadership including Hub Co-Directors and host-college leaders. We appreciate the partners that support the colleges and this evaluation including DVP Praxis, the Research and Performance Management team at the North Carolina Community College System Office, the Belk Center for Community College Leadership and Research, Achieving the Dream, and the North Carolina Student Success Center.

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# ENDNOTES



- 1 North Carolina Teaching and Learning Hubs Website. <https://belk-center.ced.ncsu.edu/leadership-and-learning/teaching-and-learning-hubs/>
- 2 The inaugural report produced in January 2023 noted that there were 522 participants, rather than the currently stated 513. This is due to post-hoc analysis that rectified incorrectly provided faculty id numbers, thus allowing faculty members who engaged in multiple events to be linked together (i.e., not be double counted).
- 3 Several numbers presented here differ from the inaugural report. The number of instructors increased from the 279 matched in the inaugural report to the current number of 295. This is in part due to improved matching of registrants to the NCCCS database and because the Summer 2022 term is included, which was not available at the time the inaugural report was written. Additional data allowed those who only teach in summer to be counted as active instructors. The number of courses taught (inaugural report:2,411; this report: 1,955) and students reached (inaugural report: 20,922; this report: 18,772) decreased in this report compared to the inaugural report. These numbers are modified due to a change in the process. Previously, the number of courses taught by treated faculty was calculated based on Academic Year and is now counted based on Academic Term to ensure the engagement happened concurrently with or prior to the course that was taught. This change also affected the number of students as it reduced the number of courses included in our analysis.
- 4 This report uses two distinct datasets: registration data from Professional Learning sessions and administrative data on faculty, courses, and students provided by NCCCS. Contact the research team for additional details on how these numbers are defined and calculated.
- 5 Numbers obtained from October 2022 count retrieved from the NCCCS employee headcount analytics dashboard (<https://www.nccommunitycolleges.edu/analytics/dashboards/employee-headcount>)
- 6 The gender distribution across groups who had attended different numbers of PL sessions was stable. In other words, there was no interaction between gender of participants and number of sessions attended.
- 7 Representation of faculty by different levels of experience is relatively stable across AY 2021-22 & AY 2022-23, indicating that there is growth in participation overall rather than change in the type of participants based on years of experience in teaching. For additional exploration on years of teaching experience see Deal, S.A., Valentine, J.L., Price, D.V. (2023). The Reach of the North Carolina Teaching and Learning Hubs: An Inaugural Year Report. DVP-PRAXIS LTD. Indianapolis, IN. Retrieved from: <https://belk-center.ced.ncsu.edu/wp-content/uploads/sites/128/2023/02/The-Reach-of-the-North-Carolina-Teaching-and-Learning-Hubs.pdf>
- 8 For more information on how this sample compares to faculty within NCCCS see Table A1 in the Technical Appendix or contact the research team.
- 9 Courses that had a 0% pass rate were eliminated, as this value would indicate the course did not occur.
- 10 The model construction included factors for gender and race/ethnicity. For that reason, 132 instructors who had missing demographic information were dropped during model construction and are not reported in the numbers provided here. We also ran the model without gender and race/ethnicity (i.e., keeping these 132 instructors and their classes in the analysis), which did not change the pattern of results presented in this report. For full regression model outputs see Table A2 in the Technical Appendix.
- 11 Regression for Pass rates: Percent of course receiving an A, B, C, or P regressed on Treatment status of instructor (i.e. was the course before, concurrent, or after their first PL attendance) with an interaction between treatment status and gender, and treatment status and race or ethnicity. The model also included random slopes for treatment status on individual faculty, with additional random intercepts for individual faculty and course.
- 12 Please contact the research team for more information about these models.

# TECHNICAL APPENDIX



Table A1

## COMPARISONS OF SUBSET OF REGISTRANTS WHO MATCHED WITH NCCCS COMPARED TO ALL PL REGISTRANTS

### GENDER COMPARISON

	<i>Instructors who matched with NCCCS</i>	<i>All PL Participants</i>	<i>Difference</i>	<i>p-value</i>
Female	687 (67%)	1244 (71%)	-4%	<b>0.002</b>
Male	226 (22%)	338 (19%)	3%	<b>0.018</b>
Unknown/Redacted	120 (12%)	171 (10%)	2%	0.083
<b>TOTAL</b>	1033	1753		

### RACE/ETHNICITY COMPARISON

	<i>Instructors who matched with NCCCS</i>	<i>All PL Participants</i>	<i>Difference</i>	<i>p-value</i>
White	727 (70%)	1179 (67%)	3%	<b>0.021</b>
Asian	14 (1%)	22 (1%)	0%	0.251
Native American / Alaskan Native	17 (2%)	35 (2%)	0%	0.416
Black	121 (12%)	275 (16%)	-4%	<b>&lt; 0.001</b>
Hispanic	24 (2%)	43 (2%)	0%	0.458
Multiple	11 (1%)	26 (1%)	0%	0.834
Prefer not to answer	119 (12%)	173 (10%)	2%	<b>&lt; 0.001</b>
<b>TOTAL</b>	1033	1753		

Table A2

**REGRESSION MODEL FOR COURSE PASS RATES**

CoursePassRate ~ TreatmentStatus\*Gender + TreatmentStatus\*Race/Ethnicity; random slope for treatment on faculty, random intercept for faculty & course name (combination of course ID and college)

Avg Pass Rate

Predictors	Estimates	CI	p
(Intercept)	77.21	76.06 – 78.37	< 0.001
Concurrent with first attendance	2.04	1.16 – 2.93	< 0.001
After first attendance	3.03	1.93 – 4.13	< 0.001
Race/Eth: Asian	-2.95	-9.71 – 3.82	0.393
Race/Eth: Native American/Alaskan Native	-5.21	-11.66 – 1.24	0.114
Race/Eth: Black	-3.60	-6.14 – -1.05	0.006
Race/Eth: Hispanic	0.65	-4.52 – 5.82	0.805
Race/Eth: Multiple	7.99	0.13 – 15.84	0.046
Gender: Male	1.14	-0.90 – 3.18	0.273
[Concurrent] * [Asian]	1.00	-4.46 – 6.46	0.719
[After] * [Asian]	1.85	-10.05 – 13.74	0.761
[Concurrent] * [Native American/ Alaskan Native]	0.21	-5.17 – 5.58	0.940
[After] * [Native American/ Alaskan Native]	1.04	-3.89 – 5.98	0.678
[Concurrent] * [Black]	1.36	-0.69 – 3.42	0.193
[After] * [Black]	-0.77	-3.24 – 1.69	0.539
[Concurrent] * [Hispanic]	0.75	-3.01 – 4.51	0.696
[After] * [Hispanic]	-3.11	-7.25 – 1.02	0.140
[Concurrent] * [Multiple]	-4.77	-10.88 – 1.35	0.127
[After] * [Multiple]	0.54	-6.36 – 7.44	0.878
[Concurrent] * [Male]	-0.41	-1.99 – 1.17	0.610
[After] * [Male]	-0.26	-2.20 – 1.67	0.789

**Random Effects**

$\sigma^2$	192.98
$\tau_{00}$ Course	68.67
$\tau_{00}$ Instructor	100.24
$\tau_{11}$ Instructor.Concurrent with first attendance	15.45
$\tau_{11}$ Instructor.After first attendance	9.51
$\rho_{01}$ Instructor.Concurrent with first attendance	-0.33
$\rho_{01}$ Instructor.after first attendance	-0.25
ICC	0.46
N Instructor	732
N Course	3294
Observations	12869
Marginal R <sup>2</sup> / Conditional R <sup>2</sup>	0.012/0.467

Note: Course refers to the same section number, course number, and college identifier. Essentially it is the same course offering across terms within the same college.

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