NORTH CAROLINA
State Board of Education
Department of Public Instruction

Report to the North Carolina General Assembly

Schools that Lead Pilot Program (Impact of Program)

Section 7.25.(c)

Date Due: 10/01/2022
DPI Chronological Schedule, 2021-2022

Submitted by the [North Carolina Department of Public Instruction and/or State Board of Education], in conjunction with Schools that Lead, Inc.

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INTRODUCTION

Session Law 2018-50, Section 7.25 (c), requires the Department of Public Instruction to submit to the Joint Legislative Education Oversight Committee and the Fiscal Research Division an annual report on the impacts of the Schools That Lead program, beginning October 1, 2019, and continuing each year thereafter until October 1, 2022. The 2022 report is intended to be a summary outlining the program's impact along with a copy of the final report provided by the independent research organization pursuant to subsection (b) of the legislation. The Program focuses on high schools working to increase on-time graduation rates, middle schools working to prepare students to succeed in high school by reducing the likelihood of retention in the ninth grade, and elementary schools working to reduce the number of students with early warning indicators of course failures, absences, and discipline. This report analyzes program outcomes from two sources: internal data from the North Carolina Department of Public Instruction and an external evaluation conducted by the Education Policy Initiative at Carolina (EPIC).

The North Carolina Department of Public Instruction collected and analyzed internal data most relevant to requirements in Session Law 2018-50, Section 7.25 (c): an accounting of expenditures, school performance data, principal performance data, teacher performance data, and student outcome data. These metrics include:

- School Performance Grades
- Teacher Value-Added Data
- Grade level Proficiency

The Department of Public Instruction contracted with the Education Policy Initiative at Carolina (EPIC) to conduct an external evaluation that measures the impacts of the Program on student outcomes. EPIC's evaluation had two primary foci:

- to assess programming by establishing an objective rating of professional development quality
- to learn whether/how participation in the program has resulted in observable, measurable changes in instruction, school leadership, and student success

BACKGROUND

Through Session Law 2018-50, Section 7.25, the North Carolina General Assembly appropriated funds to the Department of Public Instruction for the Schools That Lead Pilot Program. With these funds, Schools That Lead, Inc., would provide professional development to teachers and principals in up to 60 North Carolina public schools, beginning with the 2018-2019 academic year and ending in the 2020-2021 school year. The Program committed to offering services to three cohorts of schools: high schools working to increase on-time graduation, middle schools working to prepare students to succeed in high school by reducing the likelihood of retention in the ninth grade for multiple school years, and elementary schools working to reduce the number of students with early warning indicators of course failures, absences, and discipline.

Guided by a Networked Improvement Model, the Schools that Lead Program trains educators on the implementation science framework with the expectation that teachers will implement the implementation science framework in their classrooms, principals will support teachers as they set aggressive learning goals for their students, and improvement facilitators will support the relationship between teachers and principals in the program. The Six Principles of the Improvement Science Model are:

- make the work problem-specific and user-centered
- focus on variation in performance
- see the system that produces outcomes
- improve at scale what you can measure
- use disciplined inquiry to drive improvement
- accelerate learning through networked communities

PROGRAM EXPENDITURES

Four-year Expenditures

The North Carolina Department of Public Instruction distributes $350,000 quarterly to Schools that Lead. Funds are withheld to cover the evaluation process that is outlined in Session Law 2018-50, Section 7.25. A net amount of $316,666.67 is distributed on a quarterly basis. Figure 1 shows an accounting of expenditures beginning with the 2018-2019 school year and ending in the 2021-2022 school year.

FIGURE 1. FOUR-YEAR EXPENDITURES

	Salary and Benefits	Insurance	Travel, Meals, Convening	Accounting	Office supplies	Contracted services	Totals
Year One	170,635	1,883	28,526	7,500			208,544
Year Two	269,888	2,100	48,994	7,500	3,578		332,060
Year Three	281,852	2,001	5,510	7,500	4,693	8,580	310,136
Year Four	86,593	1,688	7,959	2,250			98,490
Totals	808,968	7,672	90,989	24,750	8,271	8,580	949,230

PROGRAM PARTICIPATION

At the end of 2020-21, there were 21 Cohort 1 schools and 31 Cohort 2 schools enrolled in STL Networked Improvement Communities. Cohort 1's three years of partnership concluded in June 2021. Over the summer, Buncombe Early College (Buncombe), Enfield Middle School (Halifax), Scotland Neck Elementary (Halifax), Inborden Elementary (Halifax), Southeast Collegiate Prep (Halifax), Morehead High (Rockingham), Douglass Elementary (Rockingham), Holmes Middle School (Rockingham), Albemarle High School (Stanly) and Central Elementary (Stanly) withdrew from the Network, many citing the significant pressures related to managing the impacts of COVID in their schools and communities. Seven Cohort 2 schools extended their partnership through the Early Literacy Improvement Network of eastern NC elementary schools, leaving 21 of 31 Cohort 2 schools. One Cohort 1 school, East Garner Elementary, elected to continue partnership beyond the years of the initial agreement. Figure 2 shows program participants by their school, district, and cohort.

FIGURE 2. PROGRAM PARTICIPANTS

Participating Schools	
Cohort 1	**Cohort 2**
Elementary School Networked Improvement Community (n=12) Aulander Elementary, Bertie County Schools Colerain Elementary, Bertie County Schools East Garner Elementary School, Wake County Public School System Grays Chapel Elementary School, Randolph County Schools Kenansville Elementary, Duplin County Schools Liberty Elementary, Randolph County Schools Rose Hill Magnolia Elementary, Duplin County Schools Royal Elementary School, Franklin County Schools Spindale Elementary School, Rutherford County Schools Warsaw Elementary, Duplin County Schools West Bertie Elementary, Bertie County Schools Windsor Elementary, Bertie County Schools **Middle School Networked Improvement Community (n=6)** Bertie Middle School, Bertie County Schools Butner-Stem Middle School, Granville County Schools Centennial Campus Magnet Middle School, Wake County Public School System East McDowell Middle School, McDowell County Schools Northeastern Randolph Middle School, Randolph County Schools Pattillo Middle School, Edgecombe County Schools	**Elementary School Networked Improvement Community (n=14)** Central Elementary, Elizabeth City Pasquotank County Schools Central Elementary, Stanly County Schools Douglass Elementary, Rockingham County Schools Eastfield Global Magnet, McDowell County Schools Glenwood Elementary, McDowell County Schools Inborden Elementary S.T.E.A.M Academy, Halifax County Schools J.Y. Joyner Magnet Elementary, Wake County Schools J.C. Sawyer Elementary, Elizabeth City Pasquotank County Schools Nebo Elementary, McDowell County Schools Northside Elementary, Elizabeth City Pasquotank County Schools P.W. Moore Elementary, Elizabeth City Pasquotank County Schools Scotland Neck Elementary Leadership Academy, Halifax County Schools Sheep-Harney Elementary, Elizabeth City Pasquotank County Schools Weeksville Elementary, Elizabeth City Pasquotank County Schools **Middle School Networked Improvement Community (n=8)** Charlotte Secondary School, Charter School Elizabeth City Middle School, Elizabeth City Pasquotank County Schools

High School Networked Improvement Community (n=3) Bertie High School, Bertie County Schools James Kenan High School, Duplin County Schools Providence Grove High School, Randolph County Schools	Enfield Middle S.T.E.A.M Academy, Halifax County Schools J.E. Holmes Middle School, Rockingham County Schools Neuse River Middle School, Wake County Schools River Road Middle School, Elizabeth City Pasquotank County Schools Southwestern Randolph Middle School, Randolph County Schools West McDowell Middle School, McDowell County Schools **High School Networked Improvement Community (n=9)** Albemarle High School, Stanly County Schools Buncombe County Early College, Buncombe County Schools Elizabeth City Pasquotank Early College, Elizabeth City Pasquotank County Schools J.F. Webb High School, Granville County Schools Morehead High School, Rockingham County Schools Northeastern High School, Elizabeth City Pasquotank County Schools Pasquotank County High School, Elizabeth City Pasquotank County Schools Randolph Early College High School, Randolph County Schools Southeast Collegiate Prep Academy, Halifax County Schools

PROGRAM OUTPUTS

The Program focuses on high schools working to increase on-time graduation, middle schools working to prepare students to succeed in high school by reducing the likelihood of retention in the ninth grade for multiple school years, and elementary schools working to reduce the number of students with early warning indicators of course failures, absences, and discipline. This report analyzes program outcomes from two sources: the North Carolina Department of Public Instruction and an external evaluation conducted by the Education Policy Initiative at Carolina (EPIC) (Appendix A.).

The North Carolina Department of Public Instruction collected and analyzed internal data most relevant to Program metrics, using data from the implementation (2018-19) to the fourth year of program implementation (2021-2022). Data from year three is not used due to a lack of data resulting from the global COVID-19 pandemic. These metrics include:

- School Performance Grades
- Teacher Value-Added Data
- Grade level Proficiency

Accountability Data Sets and Reports

The 2021–22 school year was the third school year with impacts from the pandemic. Schools resumed face-to-face instruction, and virtual programs continued to be available for students. Students and the education community continued to be affected by COVID, particularly when COVID exposures required students to be absent from school or revert to remote learning. This report must be reviewed within that context, meaning, though instructional delivery was not as varied as in the 2020–21 school year, it continued to be an anomaly in comparison to the 2018– 19 school year, which was prior to the onset of the pandemic.

School Performance Grades

School Performance Grades are assigned using a weighted model of 80% achievement and 20% growth. Schools with a grade span that does not go beyond eighth grade (grades three through eight, referred to as elementary/middle) use a defined set of indicators for the letter grades. Schools with a grade span starting at ninth grade (grades nine through thirteen, referred to as high school) use another set of indicators.

Elementary/Middle Indicators

Reading/Mathematics Assessmen English Learner Progress Science Assessments	**80%**
EVAAS School Growth (Reading, Mathematics and Science)	**20%**

High School Indicators

Reading/Mathematics Assessmen English Learner Progress Four-year Cohort Graduation Rat Biology Assessments ACT/WorkKeys Assessments Passing NC Math 3 Course	**80%**
EVAAS School Growth (Reading and Mathematics)	**20%**

As with the 2020–21 school year, the 2021–22 school year and the 2018–19 school year differed significantly with respect to the consistency of day-to-day learning. Students continued to learn remotely and to have instruction interrupted due to illness and quarantines. For these reasons, the 2018–19 test data is provided as a reference; it is intended for context, not for evaluation. Figure 3 shows that most schools (59%) in the network during the 2018-2019 were C schools. Data released for the 2021-2022 school year shows that most schools (62%) are D

schools. Figure 4 shows each school in the network school performance grades from 2018-2019 to 2021-2022. Twenty-seven schools saw a change in their letter grade with only one school improving their school performance grade from a B to an A. While it is not possible to attribute causality to participation in the Schools that Lead program, the data is shared to meet the requirements outlined in Session Law 2018-50, Section 7.25. It should be acknowledged that schools are in a multi-year recovery process from the 2020 global pandemic.

FIGURE 3. SCHOOL PERFORMANCE GRADES DISTRIBUTION

Overall Grade	Number of Schools 2018-2019	Percent of Schools 2018-2019	Number of Schools 2021-2022	Percent of Schools 2021-2022
A	1	2%	2	4%
B	3	6%	1	2%
C	30	59%	10	19%
D	15	29%	32	62%
F	2	4%	7	13%
Total	51	100%	52	100%

FIGURE 4. SCHOOL PERFORMANCE GRADES

		2018-19		2018-19		2021-22		2021-22	
		2018–19 SPG Scale A = 85-100 B = 70-84 C = 55-69 D = 40-54 F = 0-39 I = Insufficient Data ALT = Alternative School		EVAAS Growth is based on an index value and the index is converted to both the school growth score and status. The statuses are defined as follows: Exceeds Growth >= 2.00 Meets Growth 1.99 to -2.00 Does Not Meet Growth < -2.00		2021–22 SPG Scale A = 85-100 B = 70-84 C = 55-69 D = 40-54 F = 0-39 I = Insufficient Data ALT = Alternative School		EVAAS Growth is based on an index value and the index is converted to both the school growth score and status. The statuses are defined as follows: Exceeds Growth >= 2.00 Meets Growth 1.99 to -2.00 Does Not Meet Growth < -2.00	
School	District	School Performance Grade (SPG)	School Performance Score (SPS)	School Growth Status	School Growth Index	School Performance Grade (SPG)	School Performance Score (SPS)	School Growth Status	School Growth Index
Aulander Elementary	Bertie County Schools	C	59	Met	1.35	C	61	Exceeded	2.59
Colerain Elementary	Bertie County Schools	C	60	Exceeded	2.53	D	45	Met	1.41
East Garner Elementary School	Wake County Public School System	D	51	Met	-1.74	D	47	Met	0.1
Grays Chapel Elementary School	Randolph County Schools	C	66	Not Met	-3.41	C	57	Not Met	-3.25
Kenansville Elementary	Duplin County Schools	C	57	Met	-1.52	D	54	Exceeded	3.89
Liberty Elementary	Randolph County Schools	D	49	Met	-1.53	D	51	Met	0.3
Rose Hill Magnolia Elementary	Duplin County Schools	D	52	Exceeded	3.39	F	35	Met	-1.73
Royal Elementary School	Franklin County Schools	C	58	Met	0.36	D	52	Exceeded	3.45
Spindale Elementary School,	Rutherford County Schools	C	62	Met	1.08	D	51	Exceeded	3.33
Warsaw Elementary	Duplin County Schools	D	48	Met	1.51	F	37	Met	-0.14
West Bertie Elementary	Bertie County Schools	D	54	Met	0.35	D	47	Met	-0.22
Windsor Elementary	Bertie County Schools	C	59	Exceeded	2.47	D	53	Exceeded	5.66
Bertie Middle School	Bertie County Schools	D	50	Not Met	-6.08	D	42	Met	-0.77
Butner-Stem Middle School	Granville County Schools	D	48	Not Met	-3.94	D	47	Met	0.68
Centennial Campus Magnet Middle School	Wake County Public School System	D	50	Not Met	-7.11	D	51	Met	0.4
East McDowell Middle School	McDowell County Schools	C	61	Exceeded	8.2	C	57	Exceeded	5.79
Northeastern Randolph Middle School	Randolph County Schools	C	61	Not Met	-2.7	D	48	Not Met	-5.82
Pattillo Middle School	Edgecombe County Schools	D	50	Exceeded	6.66	F	24	Not Met	-6.54
Bertie High School	Bertie County Schools	D	50	Not Met	-4.31	D	50	Not Met	-6.75
James Kenan High School	Duplin County Schools	C	61	Met	1.14	D	48	Not Met	-7.62
Providence Grove High School	Randolph County Schools	C	66	Not Met	-3.31	C	61	Not Met	-2.89
Central Elementary	Elizabeth City Pasquotank County Schools	C	68	Met	1.03	D	44	Met	-1.66
Central Elementary	Stanly County Schools	D	48	Met	-1.7	D	45	Exceeded	2.14
Douglass Elementary	Rockingham County Schools	C	67	Exceeded	3.89	D	44	Met	-0.82
Eastfield Global Magnet	McDowell County Schools	C	58	Met	1.2	C	60	Met	0.84
Glenwood Elementary	McDowell County Schools	B	71	Met	-0.1	C	58	Exceeded	3.65
Inborden Elementary S.T.E.A.M Academy	Halifax County Schools	C	57	Exceeded	7.11	D	44	Exceeded	4.1
J.Y. Joyner Magnet Elementary	Wake County Public School System	C	64	Exceeded	4.77	C	63	Not Met	-3.03
J.C. Sawyer Elementary	Elizabeth City Pasquotank County Schools	C	59	Met	-0.64	F	35	Not Met	-3.26
Nebo Elementary	McDowell County Schools	C	64	Met	-0.25	C	62	Exceeded	6.94
Northside Elementary	Elizabeth City Pasquotank County Schools	C	67	Met	-0.76	D	48	Met	-1.03
P.W. Moore Elementary	Elizabeth City Pasquotank County Schools	F	39	Not Met	-2.54	F	38	Met	1.29
Scotland Neck Elementary Leadership Academy	Halifax County Schools	F	39	Not Met	-2.12	F	33	Exceeded	2.8
Sheep-Harney Elementary	Elizabeth City Pasquotank County Schools	C	62	Met	-0.82	D	50	Exceeded	2.32
Weeksville Elementary	Elizabeth City Pasquotank County Schools	C	68	Met	-1.17	C	62	Met	-0.87
Charlotte Secondary School	Charter School	C	58	Met	-1.76	D	53	Met	0.76
Elizabeth City Middle School	Elizabeth City Pasquotank County Schools	D	49	Not Met	-3.48	D	46	Exceeded	4.5
Enfield Middle S.T.E.A.M Academy	Halifax County Schools	D	46	Met	0.16	F	31	Met	1.48
J.E. Holmes Middle School	Rockingham County Schools	C	60	Met	-0.2	D	53	Met	-0.7
Neuse River Middle School	Wake County Public School System					D	43	Met	0.74
River Road Middle School	Elizabeth City Pasquotank County Schools	C	59	Exceeded	7.51	D	43	Met	-0.9
Southwestern Randolph Middle School	Randolph County Schools	C	55	Not Met	-3.26	D	48	Not Met	-4.28
West McDowell Middle School	McDowell County Schools	C	68	Exceeded	7.39	C	55	Met	1.3
Albemarle High School	Stanly County Schools	C	60	Not Met	-2.61	D	45	Not Met	-6.04
Buncombe County Early College	Buncombe County Schools	B	83	Met	0.31	A	86	Exceeded	8.69
Elizabeth City Pasquotank Early College	Elizabeth City Pasquotank County Schools	B	76	Met	1.27	B	73	Met	-1
J.F. Webb High School	Granville County Schools	C	55	Met	-1.19	D	50	Not Met	-2.76
Morehead High School	Rockingham County Schools	C	57	Not Met	-11.08	D	52	Not Met	-8.64
Northeastern High School	Elizabeth City Pasquotank County Schools	C	59	Not Met	-4.31	D	53	Not Met	-2.34
Pasquotank County High School	Elizabeth City Pasquotank County Schools	D	53	Not Met	-6.39	D	46	Not Met	-5.46
Randolph Early College High School	Randolph County Schools	A	97	Exceeded	6.4	A	91	Exceeded	5.24
Southeast Collegiate Prep Academy	Halifax County Schools	D	50	Met	-0.97	D	45	Not Met	-2.41

TEACHER VALUE-ADDED REPORT

The Teacher Value-Added data examines a teacher's overall effectiveness in each tested grade and subject, or course. The data provides reliable measures of the academic growth a teacher's students made, on average, in the selected grade and subject or course. Colors are assigned to the growth indexes to help interpret the data. The colors represent how strong the evidence is that a teacher's students met, exceeded, or fell short of expected growth. Figure 5 shows the percentage of teachers' effectiveness (met, exceeded, did not meet) in the Schools that Lead program for the 2018-2019 and 2021-2022 school years.

Expected Growth represents the point at which the teachers' students' scores, on average, align with expectations. Expected Growth signifies the minimum amount of academic growth that educators should expect a group of students to make in a subject and grade or course. In general, this signifies appropriate, expected academic growth. Simply put, the expectation is that regardless of their entering achievement level, students served by each district, school, or teacher should at least make enough progress to maintain their achievement level relative to their peers. This is a reasonable target for educators who serve all types of students. With this in mind, the percentage of teachers who met expected growth during the 2018-2019 year were compared to those in 2021-2022 for trends. Seventy-nine percent (79%) of schools showed an increase in the number of teachers' students met growth. Eleven percent (11%) of schools showed a decrease in the number of teachers' students who met growth. While it is not possible to attribute causality to participation in the Schools that Lead, program, the data is shared to meet the requirements outlined in Session Law 2018-50, Section 7.25. It should be acknowledged that schools are in a multi-year recovery process from the 2020 global pandemic.

FIGURE 5. TEACHER VALUE ADDED REPORT

		2018-2019 DNM: Does Not Meet Growth Meets: Meets Expected Growth Exceeds: Exceeds Expected Growth			2021-2022 DNM: Does Not Meet Growth Meets: Meets Expected Growth Exceeds: Exceeds Expected Growth			
		Teacher Value-Added Report Percentages			Teacher Value-Added Report Percentages			
School	District	per_DNM	per_Meets	per_Exceeds	per_DNM	per_Meets	per_Exceeds	△_Meets
Bertie High School	Bertie County Schools	66.67%	29.63%	3.70%	55.56%	44.44%		
Bertie Middle School	Bertie County Schools	47.06%	52.94%		66.67%	33.33%		
Aulander Elementary	Bertie County Schools		87.50%	12.50%	42.86%	57.14%		
West Bertie Elementary	Bertie County Schools	16.67%	83.33%		10.00%	90.00%		
Colerain Elementary	Bertie County Schools	7.69%	76.92%	15.38%	25.00%	75.00%		
Windsor Elementary	Bertie County Schools		83.33%	16.67%	23.53%	76.47%		
Buncombe County Early College	Buncombe County Schools	22.22%	55.56%	22.22%		33.33%	66.67%	
Warsaw Elementary	Duplin County Schools	10.53%	68.42%	21.05%	18.18%	81.82%		
James Kenan High School	Duplin County Schools	25.00%	66.67%	8.33%	78.57%	21.43%		
Kenansville Elementary	Duplin County Schools	21.43%	57.14%	21.43%	19.05%	76.19%	4.76%	
Rose Hill Magnolia Elementary	Duplin County Schools	11.76%	56.86%	31.37%	41.18%	55.88%	2.94%	
Pattillo Middle School	Edgecombe County Schools	14.29%	64.29%	21.43%		100.00%		
Royal Elementary School	Franklin County Schools	20.83%	58.33%	20.83%	11.76%	82.35%	5.88%	
Butner-Stem Middle School	Granville County Schools	33.33%	62.50%	4.17%	4.55%	90.91%	4.55%	
J.F. Webb High School	Granville County Schools	26.09%	60.87%	13.04%	35.71%	64.29%		
Scotland Neck Elementary Leadership Acad	Halifax County Schools	27.27%	72.73%		100.00%			
Enfield Middle S.T.E.A.M Academy	Halifax County Schools	37.50%	56.25%	6.25%	33.33%	66.67%		
Inborden Elementary S.T.E.A.M Academy	Halifax County Schools	15.38%	61.54%	23.08%	42.86%	57.14%		
Southeast Collegiate Prep Academy	Halifax County Schools	31.25%	50.00%	18.75%	14.29%	85.71%		
Eastfield Global Magnet	McDowell County Schools	12.50%	68.75%	18.75%	7.14%	71.43%	21.43%	
East McDowell Middle School	McDowell County Schools	10.00%	53.33%	36.67%	10.00%	80.00%	10.00%	
Nebo Elementary	McDowell County Schools	4.76%	66.67%	28.57%		70.00%	30.00%	
West McDowell Middle School	McDowell County Schools	15.63%	53.13%	31.25%	21.43%	71.43%	7.14%	
Charlotte Secondary School	Charter School	14.29%	85.71%		28.57%	71.43%		
Glenwood Elementary	McDowell County Schools	14.29%	71.43%	14.29%		93.33%	6.67%	
Central Elementary	Elizabeth City Pasquotank County Schools	5.00%	70.00%	25.00%	41.18%	58.82%		
Elizabeth City Middle School	Elizabeth City Pasquotank County Schools	45.83%	37.50%	16.67%	41.18%	52.94%	5.88%	
Northside Elementary	Elizabeth City Pasquotank County Schools	4.00%	80.00%	16.00%	17.39%	82.61%		
J.C. Sawyer Elementary	Elizabeth City Pasquotank County Schools	9.09%	63.64%	27.27%	17.65%	82.35%		
Northeastern High School	Elizabeth City Pasquotank County Schools	20.69%	58.62%	20.69%	11.76%	88.24%		
Pasquotank County High School	Elizabeth City Pasquotank County Schools	51.61%	45.16%	3.23%	21.43%	78.57%		
P.W. Moore Elementary	Elizabeth City Pasquotank County Schools	15.79%	57.89%	26.32%	5.26%	73.68%	21.05%	
River Road Middle School	Elizabeth City Pasquotank County Schools	4.76%	42.86%	52.38%	18.75%	75.00%	6.25%	
Sheep-Harney Elementary	Elizabeth City Pasquotank County Schools	13.33%	80.00%	6.67%	12.50%	87.50%		
Elizabeth City Pasquotank Early College	Elizabeth City Pasquotank County Schools	25.00%	25.00%	50.00%		100.00%		
Weeksville Elementary	Elizabeth City Pasquotank County Schools	6.25%	43.75%	50.00%	13.33%	86.67%		
Grays Chapel Elementary School	Randolph County Schools	20.83%	79.17%			94.74%	5.26%	
Liberty Elementary	Randolph County Schools	15.00%	65.00%	20.00%		88.24%	11.76%	
Northeastern Randolph Middle School	Randolph County Schools	32.00%	52.00%	16.00%	18.75%	81.25%		
Providence Grove High School	Randolph County Schools	28.13%	50.00%	21.88%	20.00%	80.00%		
Randolph Early College High School	Randolph County Schools		8.33%	91.67%		20.00%	80.00%	
Southwestern Randolph Middle School	Randolph County Schools	53.85%	38.46%	7.69%	46.67%	53.33%		
Douglass Elementary	Rockingham County Schools	16.67%	61.11%	22.22%		71.43%	28.57%	
J.E. Holmes Middle School	Rockingham County Schools	25.93%	62.96%	11.11%	9.09%	90.91%		
Morehead High School	Rockingham County Schools	56.67%	30.00%	13.33%	61.54%	30.77%	7.69%	
Spindale Elementary School,	Rutherford County Schools	23.81%	61.90%	14.29%	7.14%	92.86%		
Albemarle High School	Stanly County Schools	25.00%	70.83%	4.17%	27.27%	72.73%		
Central Elementary	Stanly County Schools	21.43%	67.86%	10.71%		88.89%	11.11%	
Centennial Campus Magnet Middle School	Wake County Public School System	30.00%	60.00%	10.00%	13.33%	80.00%	6.67%	
East Garner Elementary School	Wake County Public School System	18.18%	72.73%	9.09%	11.11%	83.33%	5.56%	
Neuse River Middle School	Wake County Public School System	26.92%	61.54%	11.54%	7.41%	88.89%	3.70%	
J.Y. Joyner Magnet Elementary	Wake County Public School System	26.67%	73.33%		4.55%	95.45%		

STUDENT PERFORMANCE ON STATE ASSESSMENTS

North Carolina students in grades three through eight and in certain high school grades take assessments each year that measure achievement in reading, mathematics, and science. Student performance on these end-of-grade and end-of-course assessments is reported as four academic achievement levels:

Achievement Level 5	Comprehensive Understanding (Career and College Readiness)
Achievement Level 4	Thorough Understanding (Career and College Readiness)
Achievement Level 3	Sufficient Understanding (Grade-Level Proficiency)
Not Proficient	Inconsistent Understanding

Achievement Level 3 identifies students who have a sufficient understanding of grade-level knowledge and skills in the tested content areas to move on to the next grade but who may need additional support to be on track for career-and-college readiness. Achievement Levels 4 and 5 indicate students are on track to be career-and-college ready by the time they graduate from high school. The percentage of students meeting Level 3 was analyzed for this report. Ten percent (10%) of schools participating in Schools that Lead program showed an increase in Grade Level Proficiency from the 2018-2019 school year to the 2021-2022 school year. Ninety percent (90%) of schools participating in Schools that Lead Inc. program showed a decrease in Grade Level Proficiency from the 2018-2019 school year to the 2021-2022 school year. While it is not possible to attribute causality to participation in the Schools that Lead program, the data is shared to meet the requirements outlined in Session Law 2018-50, Section 7.25. It should be acknowledged that schools are in a multi-year recovery process from the 2020 global pandemic.

FIGURE 6. ACHIEVEMENT LEVEL 3 (GRADE LEVEL PROFICIENCY)

School	District	2019 Grade Level Proficiency glp_19	2022 Grade Level Proficiency glp_22	Change in Grade Level Proficiency Δ_glp
Bertie High	Bertie County Schools	19.9	19.2	
Bertie Middle	Bertie County Schools	48.4	32.7	
Aulander Elementary	Bertie County Schools	57.5	53	
West Bertie Elementary	Bertie County Schools	45.4	39.7	
Colerain Elementary	Bertie County Schools	54	37	
Windsor Elementary	Bertie County Schools	51.8	42.4	
Early College	Buncombe County Schools	76.4	82.1	
Warsaw Elementary	Duplin County Schools	37.6	27.2	
James Kenan High	Duplin County Schools	28.4	25.1	
Kenansville Elementary	Duplin County Schools	52.5	45.6	
Rose Hill-Magnolia Elementary	Duplin County Schools	42.1	27.3	
W A Pattillo Middle	Edgecombe County Public School	38.6	16.5	
Royal Elementary	Franklin County Schools	51.8	42.7	
Butner-Stem Elementary	Granville County Schools	42.9	48.3	
J. F. Webb High	Granville County Schools	28	23.5	
Scotland Neck Elementary Leadership Acad	Halifax County Schools	31.5	20.8	
Enfield Middle S.T.E.A.M. Academy	Halifax County Schools	37.8	18.1	
Inborden Elementary S.T.E.A.M. Academy	Halifax County Schools	47.2	30.4	
Southeast Halifax Collegiate Prep Academ	Halifax County Schools	11.4	7.9	
Eastfield Global Magnet School	McDowell County Schools	51.2	55.3	
East McDowell Middle School	McDowell County Schools	51.7	48.8	
Nebo Elementary School	McDowell County Schools	60.5	53.6	
West McDowell Middle School	McDowell County Schools	60.4	49.1	
Charlotte Secondary	Charter Schools	41.6	29.2	
Glenwood Elementary	Chapel Hill-Carrboro Schools	80.8	74.7	
Central Elementary	Pasquotank County Schools	63.6	36.5	
Elizabeth City Middle	Pasquotank County Schools	45	34.6	
Northside Elementary	Pasquotank County Schools	63.9	39.8	
J C Sawyer Elementary	Pasquotank County Schools	54.3	27.6	
Northeastern High	Pasquotank County Schools	33.1	29.6	
Pasquotank County High	Pasquotank County Schools	28.6	21.4	
P W Moore Elementary	Pasquotank County Schools	31.9	25.7	
River Road Middle	Pasquotank County Schools	49.3	34.7	
Sheep-Harney Elementary	Pasquotank County Schools	57.6	42.7	
Elizabeth City Pasquotank Early College	Pasquotank County Schools	72	65.9	
Weeksville Elementary	Pasquotank County Schools	65.9	58.9	
Grays Chapel Elementary School	Randolph County Schools	66.5	55.4	
Liberty Elementary School	Randolph County Schools	43	43.2	
Northeastern Randolph Middle School	Randolph County Schools	58.9	45.3	
Providence Grove High School	Randolph County Schools	42.7	40	
Randolph Early College High School	Randolph County Schools	94.9	88.6	
Southeastern Randolph Middle School	Randolph County Schools	42.6	29.9	
Douglass Elementary	Rockingham County Schools	60	35.8	
J E Holmes Middle	Rockingham County Schools	53.8	47.4	
John M Morehead High	Rockingham County Schools	28.8	35.3	
Spindale Elementary School	Rutherford County Schools	54.8	41.3	
Albemarle High	Stanly County Schools	31.5	18	
Central Elementary	Stanly County Schools	42	34.1	
Centennial Campus Middle	Wake County Schools	48.7	43.1	
East Garner Elementary	Wake County Schools	47.3	39.9	
Neuse River Middle	Wake County Schools	39.2	35.4	
Joyner Elementary	Wake County Schools	72.5	61.7	

PROGRAM OUTCOMES

INDEPENDENT RESEARCHER SUMMARY

FINDINGS: The three-year summative evaluation of the Schools That Lead NC NIC provides compelling evidence that the use of improvement science within a networked community of schools can provide meaningful and measurable change toward improving early warning indicators of chronic absenteeism and course performance. This evidence is present throughout findings around implementation, effectiveness, and impact.

1. Implementation Findings
   - Finding 1a. Approaching data with curiosity about a problem has revealed underlying causes that are catalysts for change.
   - Finding 1b. Giving teachers ownership and agency in solving problems can be transformative throughout a school.
   - Finding 1c. Principals and teachers value opportunities for collaboration within and between schools.

2. Effectiveness Findings
   - Finding 2a - Knowledge: Data across all three years demonstrated a consistent increase in knowledge of improvement science concepts, holding true for all school levels and all NIC team roles.
   - Finding 2b - Skills: Educators participating in the NC NIC professional development reported growth in three categories of skills: 1) Instructional Design; 2) Use of data; and 3) Leadership Practices.
   - Finding 2c - Behavior: In year 3, almost all NC NIC participants report engaging in stepwise improvement science activities to address barriers to student success.

3. Impact Findings
   - Finding 3a. A total of 57 improvement ideas were tested across 52 schools - 65% designed to impact course performance, 23% designed to impact attendance, and 12% designed to impact Social and Emotional Learning (SEL).
   - Finding 3b. Although ideas from the Improvement Menu are still being tested, there were a number of improvement approaches that successfully impacted their target early warning indicator. Examples include: daily texts to high school seniors to prevent dropout; reducing the number of assignments given in elementary in order to increase assignment completion, and providing students with tracking tools for work completion.

4. Administrative Data Findings
   - Finding 4a. High School Graduation Rates. The proportion of NC NIC schools with graduation rates above the state average increased nine percentage points for Cohort 1 (from 25% to 34%) and ten percentage points for Cohort 2 schools (30% to 40%).
   - Finding 4b. Chronic Absenteeism. Over half of NC NIC schools had greater decreases in chronic absenteeism than the state average.

APPENDIX

SCHOOLS THAT LEAD SUMMATIVE EVALUATION 2018-2022

SCHOOLS THAT LEAD

Summative Evaluation

2018-2022

Prepared by the Education Policy Initiative at Carolina (EPIC)

Submitted June 2022

EPIC EDUCATION POLICY INITIATIVE *at* CAROLINA

UNC COLLEGE OF ARTS & SCIENCES
PUBLIC POLICY

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Schools That Lead Summative Evaluation

EXECUTIVE SUMMARY

BACKGROUND

In July 2018, the North Carolina General Assembly passed legislation requiring the Department of Public Instruction to contract with Schools That Lead (STL) to provide professional development to teachers and principals in up to 60 schools, beginning with the 2018-19 school year and ending in the 2020-21 school year.

Guided by a mission of equitable outcomes for students, STL was mandated to provide professional development trainings to at least three cohorts of schools, including those with the following criteria:

- High schools working to increase on-time graduation.
- Middle schools working to prepare students to succeed in high school by reducing the likelihood of retention in the ninth grade for multiple school years.
- Elementary schools working to reduce the number of students with early warning indicators of course failures, absences, and discipline.

PURPOSE OF THE REPORT: The STL legislative mandate also included a requirement that the North Carolina Department of Public Instruction engage an independent external evaluator and awarded a contract to the Education Policy Initiative at Carolina (EPIC) in spring of 2019. This Year Three report will provide summative findings around Implementation, Effectiveness, and Impact.

PROGRAM DESCRIPTION: The STL approach is grounded in a Networked Improvement Communities (NIC) framework, a blend of improvement science and networked science, developed by the Carnegie Foundation. The hallmark of STL's continuous improvement initiative is a focus on incremental changes to address identified student learning issues.

Schools That Lead defines the shared aim of the NIC as collaborating to reduce the percentage of students in each school with research-backed Early Warning Indicators in attendance, behavior, and course performance. There is robust evidence correlating Early Warning Indicators with a number of student outcomes (see Appendix A for literature). One of the most striking being that as early as Kindergarten there are markers for who will be off-track or on-time for graduation. The ultimate goal of the STL NIC is to increase on-time graduation rates by decreasing the number of kids with early warning indicators in early or mid-grades.

Drawing from this evidence base, the STL professional development model is built upon the use of a "Watch List" of early warning indicators for elementary, middle, and high school. These indicators map empirical thresholds around attendance, behavior, and course performance to

school-level goals around a) number of early warning indicators in elementary schools; b) 9th grade promotion in middle schools; and c) graduation rates for high schools. The STL professional development helps guide schools through a systematic and evidence-based examination of: a) what can we improve?; b) where can we improve it?; and ultimately c) how can it be done? This final step encompasses specific improvement ideas that will be implemented and tested on a small scale. If there is evidence of effectiveness, the improvement approach will then be tested across different settings, subject areas, and grade levels.

SAMPLE: As of the 2020 - 2021 School Year, the STL North Carolina Networked Improvement Communities (NC NIC) is comprised of 52 North Carolina K-12 schools in 15 districts and charter schools that serve nearly 30,000 students, 70% of whom live in poverty.

DATA SOURCES:

Program Artifacts: training materials including session evaluations, school testimonials, conference presentations, and press articles to the EPIC evaluation team.

Internal Session Evaluations: anonymous survey administered after each session that included a pre-post assessment of knowledge change, current level of understanding, quality of the professional development, and items on self-efficacy and readiness. In years 1 and 2, the session evaluations also included two open ended questions around what participants found most valuable, suggestions for improvement, and overall reflections.

Internal Annual Evaluations: annual self-assessment for Teachers Leaders in Years 1 and 2, capturing perceived changes in knowledge and skills around effective peer observations and reflections.

Independent Impact Assessment Survey: independent web-based survey administered by EPIC to determine the impact of NC NIC on instruction, leadership, and student success; along with the extent that principals and teachers believed their work with STL will ultimately impact the legislated outcomes at each level.

EPIC Teacher and Principal Semi-Structured Interviews: telephone interviews conducted in year two of the project, eleven NC NIC teachers and principals, focused around observable and measurable changes that have occurred as a result of the skills and tools acquired from participation in NC NIC.

NCDPI Administrative Data: School-level sociodemographic variables and school performance data were calculated from North Carolina Department of Public Instruction.

FINDINGS: The three-year summative evaluation of the Schools That Lead NC NIC provides compelling evidence that the use of improvement science within a networked community of schools can provide meaningful and measurable change toward improving early warning indicators of chronic absenteeism and course performance. This evidence is present throughout findings around implementation, effectiveness, and impact.

1. Implementation Findings

- Finding 1a. Approaching data with *curiosity* about a problem has revealed underlying causes that are catalysts for change.
- Finding 1b. Giving teachers ownership and agency in solving problems can be transformative throughout a school.
- Finding 1c. Principals and teachers value opportunities for collaboration within and between schools.

2. Effectiveness Findings

- Finding 2a - Knowledge: Data across all three years demonstrated a consistent increase in knowledge of improvement science concepts, holding true for all school levels and all NIC team roles.
- Finding 2b - Skills: Educators participating in the NC NIC professional development reported growth in three categories of skills: 1) Instructional Design; 2) Use of data; and 3) Leadership Practices.
- Finding 2c - Behavior: In year 3, almost all NC NIC participants report engaging in stepwise improvement science activities to address barriers to student success.

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- Finding 3a. A total of 57 improvement ideas were tested across 52 schools - 65% designed to impact course performance, 23% designed to impact attendance, and 12% designed to impact Social and Emotional Learning (SEL).
- Finding 3b. Although ideas from the Improvement Menu are still being tested, there were a number of improvement approaches that successfully impacted their target early warning indicator. Examples include: daily texts to high school seniors to prevent dropout; reducing the number of assignments given in elementary in order to increase assignment completion, and providing students with tracking tools for work completion.

4. Administrative data findings

- Finding 4a. High School Graduation Rates. The proportion of NC NIC schools with graduation rates above the state average increased nine percentage points for Cohort 1 (from 25% to 34%) and ten percentage points for Cohort 2 schools (30% to 40%).
- Finding 4b. Chronic Absenteeism. Over half of NC NIC schools had greater decreases in chronic absenteeism than the state average.

BACKGROUND

In July 2018, the North Carolina General Assembly passed legislation requiring the Department of Public Instruction to contract with Schools That Lead (STL) to provide professional development to teachers and principals in up to 60 schools, beginning with the 2018-19 school year and ending in the 2020-21 school year.

Guided by a mission of equitable outcomes for students, STL was mandated to provide professional development trainings to at least three cohorts of schools, including those with the following criteria:

- High schools working to increase on-time graduation.
- Middle schools working to prepare students to succeed in high school by reducing the likelihood of retention in the ninth grade for multiple school years.
- Elementary schools working to reduce the number of students with early warning indicators of course failures, absences, and discipline.

As part of that mandate, the North Carolina Department of Public Instruction was required to engage an independent external evaluator and awarded a contract to the Education Policy Initiative at Carolina (EPIC) in spring of 2019.

CONTEXT

In March 2020, the Covid-19 pandemic caused an unprecedented disruption in teaching and learning in North Carolina. This included a brief mandatory statewide school closure, followed by LEA-directed decisions between multiple instructional models that were adopted at different times and different places across the state.

Consequences of this included: 1) a federal waiver for End of Grade and End of Course testing; 2) attendance standards that may not include any synchronous learning with a teacher; 3) disparities in internet access and home support; 4) a lack of socioemotional connections without an in-person school community; and 5) inevitably many other impacts that are yet to be seen.

All of this required a real-time pivot for STL to continue program implementation, necessitating a corresponding re-orientation of the evaluation approach. While the impetus for this adjustment has been devastating, the shift itself provided an opportunity to go deeper into the lived experiences of principals and teachers engaged with the North Carolina Network Improvement Communities (NC NIC).

This summative report will follow the three-year arc of the evaluation, and findings will be organized as follows: 1) Implementation Findings; 2) Effectiveness Findings; 3) Impact Findings; 4) Administrative Data Findings; and 5) Sustainability and Scale.

PROGRAM DESCRIPTION

Improvement Science Framework

The STL approach is grounded in a Networked Improvement Communities (NIC) framework, a blend of improvement science and networked science, developed by the Carnegie Foundation. The hallmark of STL's continuous improvement initiative is a focus on incremental changes to address identified student learning issues.

A systematic review conducted in January 2020 revealed that the use of NIC models in education has increased substantially over the last five years.[1] Areas of focus include improving novice teacher retention, academic achievement for high school and middle school students, developmental math success, and quality of instruction in mathematics. One practitioner-focused NIC project, the National Board for Professional Teaching Standards "Networks to Transform Teaching (NT3)", demonstrated that the nine networked states outpaced the growth of board-certified teachers compared with all other states[2].

The six principles of improvement science underlying the NIC model are as follows[3]:

1) make the work problem-specific and user-centered
2) focus on variation in performance
3) see the system that produces outcomes
4) improve at scale what you can measure
5) use disciplined inquiry to drive improvement
6) accelerate learning through networked communities.

Networked Improvement Model

Schools That Lead uses a Networked Improvement model, where education practitioners are brought together to solve problems of practice. This collective action approach enables more rapid dissemination and adoption of data-driven solutions for school improvement. Put into practice, the schools served by STL form a Networked Improvement Community (NIC). STL provides ongoing professional development for Improvement Teams within each Network school. The Improvement Team is composed of the principal and three teacher-leaders, one of which serves in the role of Improvement Facilitator.

Early Warning Indicators

Schools That Lead defines the shared aim of the NIC as collaborating to reduce the percentage

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[1] Evidence for Networked Improvement Communities; American Institutes for Research

[2] https://www.nbpts.org/wp-content/uploads/NT3-Overview.pdf

[3] LeMahiu et al; Networked Improvement Communities: The Discipline of Improvement Science Meets the Power of Networks; *Quality Assurance in Education: An International Perspective*, v25 n1 p5-25 2017

of students in each school with research-backed Early Warning Indicators[4] in attendance, behavior, and course performance. There is robust evidence correlating Early Warning Indicators with a number of student outcomes (see Appendix A for literature); one of the most striking being that as early as Kindergarten there are markers for who will be off-track for on-time for graduation. The ultimate goal of the STL NIC is to increase on-time graduation rates by decreasing the number of early warning indicators for kids in early or mid-grades.

Table 1. Correlation between Early Warning Indicators and School Dropouts[5]

Grade	Early Warning Indicator	Correlation with Dropping Out of School
1st grade, 3rd Marking Period	Absent 9 or more times	2x more likely to drop out
	Suspended	5x more likely to drop out
	Below grade-level in Math/ELA	2x more likely to drop out
	GPA below 1.2	2x more likely to drop out
3rd Grade, 1st Marking Period	Absent 3 or more times	2x more likely to drop out
	Suspended	9x more likely to drop out
	Below grade-level in Math/ELA	2x more likely to drop out
	GPA below 3.0	2x more likely to drop out

Drawing from this evidence base, a key tool provided to NC NIC schools is a "Watch List" of early warning indicators for elementary, middle, and high school [See Appendix L]. These indicators map empirical thresholds around attendance, behavior, and course performance to school-level goals around a) number of early warning indicators in elementary schools; b) 9th grade promotion in middle schools; and c) graduation rates for high schools.

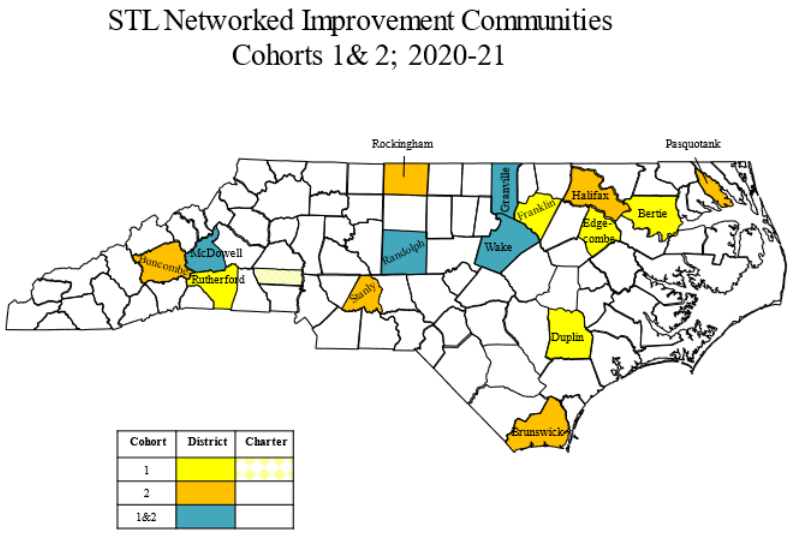
Guided by indicators from the Watch Lists, each school is then tasked with creating a Driver Diagram that begins with a specific challenge they will address – e.g., decreasing the number of students with early warning indicators by 50% by June 2021 (see Appendix E for driver diagram structure). The driver diagram guides the NIC teams through the stepwise questions of: a) what can we improve?; b) where can we improve it?; and ultimately c) how can it be done? This final step encompasses specific improvement ideas that will be implemented and tested on a small scale. If there is evidence of effectiveness, the improvement approach will then be tested in different settings, across subject areas and grade levels.

[4] Balfanz, R., & Byrnes, V. (2010). Dropout Prevention through Early Warning Indicators: A Current Distribution in West Virginia Schools.

STUDY SAMPLE

As of the 2020 - 2021 school year, the STL North Carolina Networked Improvement Communities (NC NIC) is comprised of 52 North Carolina K-12 schools in 15 districts and charter schools that serve nearly 30,000 students, 70% of whom live in poverty (See Appendix B and C for list of member schools and school demographics).

Figure 1. 2020-21 Networked Improvement Communities (Cohort 1&2)



Schools That Lead conducted a total of 56 NC NIC professional learning sessions between September 2020 and June 2021 (see Appendix D for full calendar of service).

Table 2a. NC NIC Participants by School Level and Role – Cohort 1; 2020-21

School Level	NC NIC Schools	Principals	Improvement Facilitators	Teacher Leaders
Elementary	12	12	10	19
Middle	6	6	6	4
High	3	3	2	9
Total	**21**	**21**	**18**	**32**

Table 2b. NC NIC Participants by School Level and Role – Cohort 2; 2020-21

School Level	NC NIC Schools	Principals	Improvement Facilitators	Teacher Leaders
Elementary	14	14	13	26
Middle	8	8	7	11
High	9	9	6	15
Total	**31**	**31**	**26**	**52**

DATA SOURCES

EPIC employed a concurrent mixed-methods evaluation design for the NC NIC evaluation, with the following data sources:

Program Artifacts: The STL team provided full access to all of their training materials across the three-year evaluation, including session evaluations, school testimonials, conference presentations, and press articles to the EPIC evaluation team.

Internal Session Evaluations: At the conclusion of each training, STL staff administered anonymous surveys to participants that included a pre-post assessment of knowledge change, current level of understanding, quality of the professional development, and items on self-efficacy and readiness to implement current and future actions as part of the improvement science and networked improvement communities model. When sessions were in person in years one and two, the session evaluations also included two open ended questions around what participants found most valuable, suggestions for improvement, and overall reflections

Internal Annual Evaluations: STL also administered an annual self-assessment for Teachers Leaders in Years 1 and 2, capturing perceived changes in knowledge and skills around effective peer observations and reflections.

Independent Impact Assessment Survey: EPIC administered an independent web-based survey to determine the impact of NC NIC on instruction, leadership, and student success; along with the extent that principals and teachers believed their work with STL will ultimately impact the legislated outcomes at each level. The five-question survey was administered via a Qualtrics link at the conclusion of the Year 1 and Year 2 training sessions. The items were a combination of Likert style and open-ended questions and branched to reflect the corresponding school-level outcomes for each respondent. Across both years, a total of 275 surveys were used in this evaluation.

EPIC Teacher and Principal Semi-Structured Interviews: At the end of the 2019-20 school year, EPIC conducted telephone interviews with eleven NC NIC teachers and principals, focused around observable and measurable changes that have occurred as a result of the skills and tools acquired from participation in NC NIC.

NCDPI Administrative Data: School-level sociodemographic variables and school performance data were calculated from North Carolina Department of Public Instruction.

FINDINGS

1. Implementation Findings

All qualitative data sources (self-assessment items, survey items, interviews, and case reports) were open-coded to identify recurrent themes associated with positive perceptions of implementation. These were then triangulated with any corresponding survey items to ensure consistency of responses. From these, three themes coalesced: 1) Approaching data with curiosity; 2) Empowering teachers; and 3) Opportunities for collaboration

1a. Approaching data with *curiosity* about a problem has revealed underlying causes that are catalysts for change

> "When I started looking at my data, *one of the things that I actually thought was a problem…it was not attendance…it was not behavior. It was our Math scores*….it makes you look at all of the pieces…are their reading scores so low that it also crosses over into their Math? It made us look at how all of those pieces fit together, and then how many of those kids fall in every single category, so it was huge…it was an eye opener" - (NIC Principal)

> "So when we do…reviews with the stakeholders, students and their parents, to demonstrate why kids aren't coming to school, we found that a lot of our problem was actually in our locus of control. While *we assumed it was things like transportation or secondary responsibilities, it actually was things like kids not feeling represented in what we were learning, and low historical gains in feeling student success, or the way in which we did discipline or how certain teachers talk to kids,* or the fact that they had Math first block of the day. So, when we got really curious, we found that we could actually change all those things and so, we've embarked on an entire different master schedule". - (NIC Principal)

> "*...we thought behavior, behavior, behavior, but then I started looking at the data and I was like, no - our issue is attendance and our behavior is bad because our attendance is poor* and it goes hand in hand. So we really tried to push attendance. … now, we're using the same improvement science to try to fix the tardies. So much so that I'm trying to convince the district to change the (school start time) policy. -(NIC Teacher)

1b. Giving teachers ownership and agency in solving problems can be transformative across a school

> "…*Without question, the greatest benefit has been the impact that Schools That Lead has had on teacher leadership.* I've watched teachers take the reins with specific projects and truly demonstrate effective leadership throughout the school. They have also changed our perspective as to how we view school improvement and how we should approach problem areas within our school." -(NIC Principal)

> "The improvement science approach allows for teachers to have input into the planning and movement of the school. *A lot of times new initiatives are pushed onto teachers at once, and they are expected to implement them whether they work or not. This gives teachers a chance to personalize change for their classroom and subject areas*. - (NIC Principal)

1c. Principals and teachers value opportunities for collaboration within and between schools

> Time with the NIC teams feels like a safe space. I appreciate being able to hear the views of other and share my views without being worried if I will be judged. Normally *I never share my thoughts in a room of people I don't know, but every time I do I feel like someone says, "that's exactly what I'm trying figure out" or "here are some ideas to try"*. That's definitely a first for me. -(NIC Teacher)

> We are always going to share students with other teachers...I feel like when I go up and say Hey, this is something I am doing and I'm just focused on Jack and Johnny… those teachers get curious and then I can share with them what I've learned. That feels good as I am one of the younger teachers so I'm used to always being the one saying " Why did you do that? How do you that?" Now I have people starting to ask that of me. -(NIC Teacher)

2. Effectiveness Findings

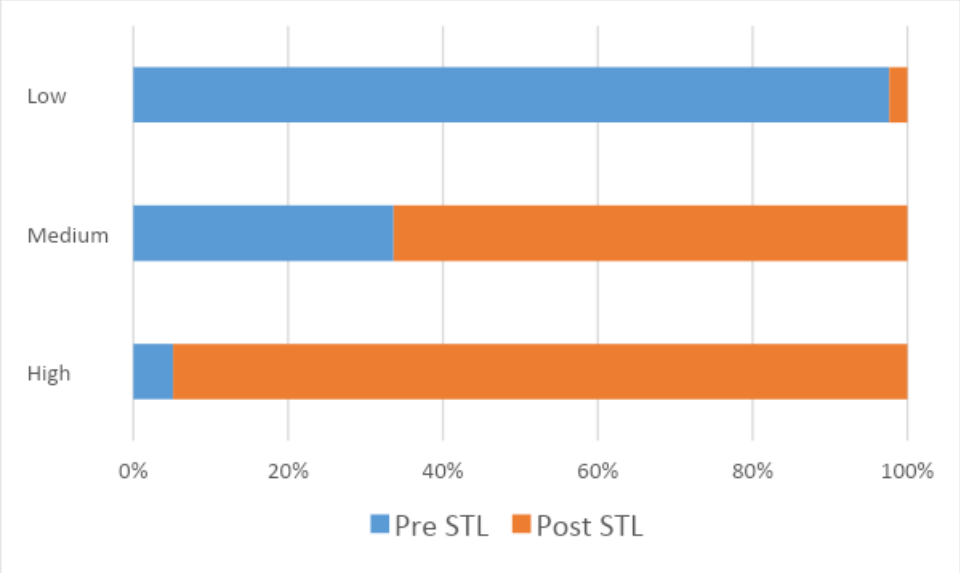
The NC NIC professional development model is dependent on educators adopting the necessary knowledge, skills, and behaviors required to leverage implementation science for school improvement. As such, the effectiveness of the STL NC NIC professional development was assessed via changes in knowledge, skills, and behaviors of PD participants. This data was captured in participant self-assessments, surveys, interviews, and case studies.

Finding 2a – Knowledge: *Data across all three years demonstrated a consistent increase in knowledge of improvement science concepts, holding true for all school levels and all NIC team roles.*

A total of 3961 self-assessment items (1771 items for Cohort 1 & 2190 items for Cohort 2) were used to calculate changes in knowledge after each NC NIC professional learning session. Participants rated themselves on a five-point assessment scale to indicate their change in knowledge before and after completing each NC NIC session.

On average, there was a seven-fold increase in the number of participants who felt they have a high-level knowledge around the NC NIC professional learning topics, at the conclusion of each NC NIC session.

Figure 1. Teacher Leader Self-efficacy in Improvement Science Knowledge and Practice



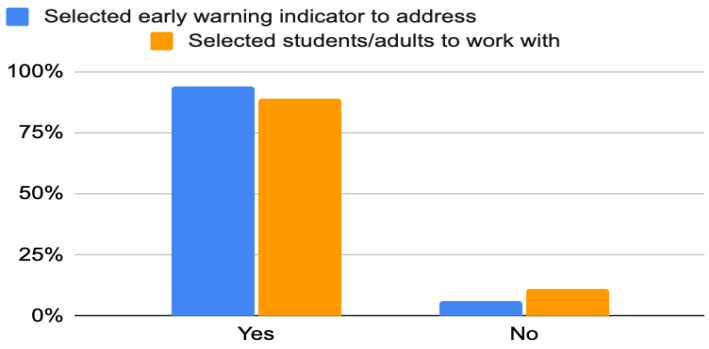
Finding 2b - Skills: *Educators participating in the NC NIC professional development reported growth in three categories of skills: 1) Instructional Design; 2) Use of data; and 3) Leadership Practices.*

Analysis of 174 open-ended assessments showed that 74% of NC NIC participants reported changes in processes and practices as their greatest benefit to their work with NC NIC. The processes and practices they cited could be organized under three broad skill categories: instructional design, use of data, and leadership practices.

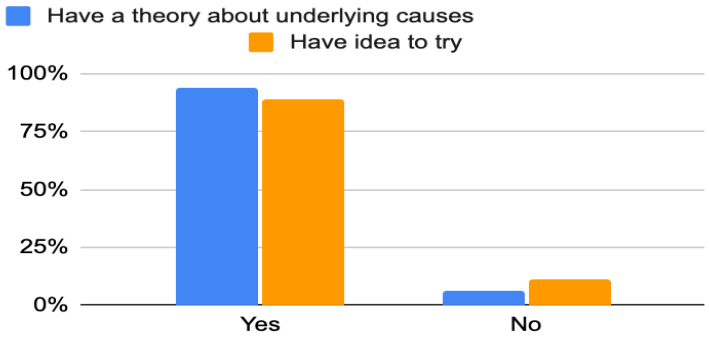
Finding 2c - Behavior: *In year 3, almost all NC NIC participants report engaging in stepwise improvement science activities to address barriers to student success.*

As of Fall 2020...

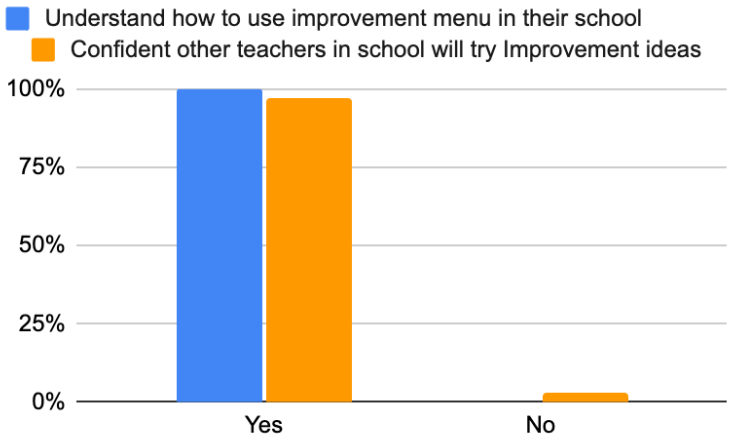
→ 94% of NC NIC educators had selected an early warning indicator to address,
→ 89% had identified the students/adults they would be working with.



→ 92% of NC NIC educators had a theory about underlying causes for the early warning indicator they were targeting,
→ 89% had an improvement idea that they would be trying.



As Spring 2021, 100% of NC NIC participants reported that they understood how to use the improvement menu in their school, and 97% were confident that other teachers in their school would be testing improvement ideas within the next 30 days.



3. Impact Findings

The hallmark of the third year of the NC NIC was operationalizing the improvement science process through the creation of a "Menu of Improvement Ideas" – a 100+ page document that reflected promising practices tested within NC NIC schools to address early warning indicators. A total fifty-seven ideas were implemented within NC NIC schools, with the most prevalent focus being course performance.

Table 3. Improvement ideas across early warning indicators

Drivers/ Early warning indicators	Number of Improvement Ideas Tested	Percentage of Total ideas
Course performance	37	65%
Attendance	13	23%
Social Emotional Learning	7	12%

The charge of NC NIC schools was then to begin to test these ideas in their own context and document the impact. It is worth calling attention to the fact that teachers and principals committed time to testing these improvement ideas amid a global pandemic that left educators facing unprecedented challenges around teaching and learning.

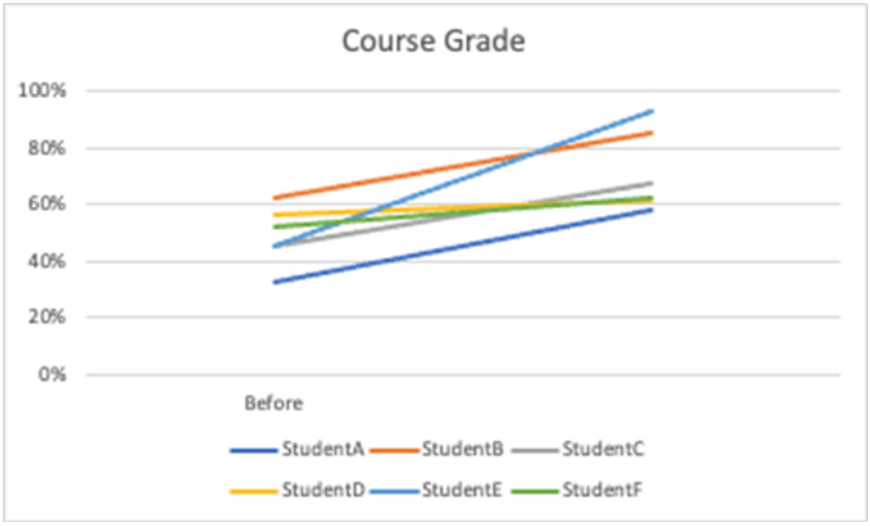
While findings have not yet been reported by all schools, there were a number of improvement ideas that produced measurable impact:

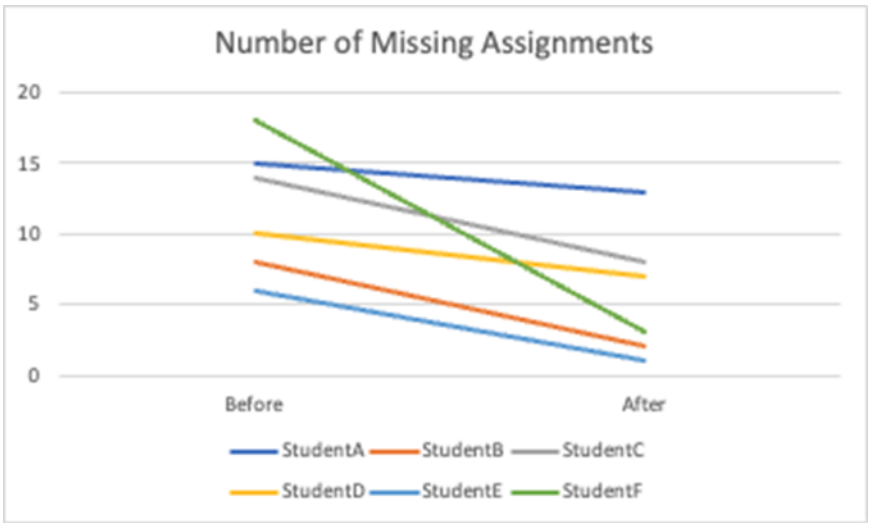
Case Study 1- Middle School

- **Driver:** Course Performance; assignment completion
- **Idea(s):** Providing students with tool to track work completion (n=7)
- **Finding:** ***100% of students using assignment tracking tool improved overall grade, 70% previously failing improved to passing grades***

Table 4. Breakdown of Course Performance and Assignment Completion in Middle School

Number of Missing Assignments Before	Number of Missing Assignments After	Grade Average Before	Grade Average After
15	13	32%	58%
8	2	62%	85%
14	8	45%	67%
10	7	56%	61%
6	1	45%	93%
18	3	%52	62%





While the focus of STL's efforts is decreasing the number of evidence-based early warning indicators, the underlying driver is to increase the number of students who will successfully complete and graduate from high school. Seeing this type of change on a large scale will take time, even in the absence of a pandemic. In the interim, we conducted an anonymous independent survey of participants asking the extent to which their work with the NC NIC will ultimately impact large scale outcomes such as high school graduation and course passage rates. The data revealed a remarkably large proportion of teachers and principals who believed their work testing improvement ideas with just a few students would ultimately result in macro-level policy changes such as graduation and course-passing rates. This held true for 100% of high school teachers and principals, and around 90% of teachers and principals at the elementary and middle school level.

Table 5. Likelihood the NC NIC model will Impact Legislated Student Outcomes

	Elementary	*Middle*	*High*
Unlikely/Very unlikely	9%	12%	0%
Likely/Very likely	91%	88%	100%

Note: Distinction between Unlikely/Very Unlikely and Likely/Very Unlikely ratings were not meaningful.

LEGISLATIVE OUTCOMES

HIGH SCHOOL GRADUATION RATES

The proportion of NC NIC schools with graduate rates above the state average increased nine percentage points for Cohort 1 (from 25% to 34%) and ten percentage points for and Cohort 2 schools (30% to 40%)

By design, improvement science is grounded in the concept of starting small and seeing what works, rather than sweeping changes in programs or policies without any evidence of effectiveness. It follows that these policy level changes will take time to manifest, particularly as it relates to 4-year graduation rates.

While it is not possible to attribute causality to participation in the NC NIC, it is encouraging to see that while the state level graduation rates stayed relatively stable, there was an increase in the proportion of NC NIC schools with graduation rates higher than the state average. At a minimum, this correlates with the qualitative findings around the enduring commitment to improvement seen among the NC NIC schools despite unprecedented challenges in teaching and learning.

Table 6a. NC NIC High School Graduation Rates; Cohort 1

	2017-18	**2018-19**	**2019-20**	**2021-22**
High Schools	**4-year Graduation Rate (%)**	**4-year Graduation Rate (%)**	**4-year Graduation Rate (%)**	**4-year Graduation Rate (%)**
Bertie High	79.4	73.3	79.0	78.9
James Kenan High	70.1	79.5	77.7	78.7
Providence Grove High	86.2	97.4	91.2	85.5
Lincoln Charter School	95.0	91.1	95.0	95.1
NC Average Graduate Rate	**86.3**	**86.5**	**87.6**	**87.0**

Table 6b. NC NIC High School Graduation Rates; Cohort 2

	2018-19	2019-20	2021-22
High Schools	4-year Graduation Rate (%)	4-year Graduation Rate (%)	4-year Graduation Rate (%)
Albemarle High School	86.5	85.6	89.5
Buncombe County Early College	90.6	94.0	94.3
Charlotte Secondary School	80.6	81.0	68.1
J.F. Webb High School	71.4	76.8	82.7
Morehead High School	84.1	89.5	85.2
Northeastern High School	80.8	80.2	76.6
Pasquotank County High School	80.7	75.2	75.0
Randolph Early College High School	97.7	95.0	95.1
Southeast Collegiate Prep Academy	74.7	87.5	84.9
NC Average Graduate Rate	**86.5**	**87.6**	**87.0**

SCHOOL PERFORMANCE

On March 23, 2020, the U.S. Department of Education approved North Carolina's request to waive spring statewide assessments, accountability ratings, and certain reporting requirements in the Elementary and Secondary Education Act (ESEA) due to widespread school closures related to the novel Coronavirus disease (COVID-19). As a result, no proficiency data is available for the 2019-20 school year. Proficiency data from the first- and second-year report can be found in Appendix F.

CHRONIC ABSENTEEISM

Over half of NC NIC schools had greater decreases in chronic absenteeism than the state average.

When North Carolina moved to remote and hybrid learning, the North Carolina Department of Public Instruction provided guidance to schools around tracking and reporting attendance. Specifically - if a student completes their daily assignments, either online or offline; **and/or** a student has a daily check-in, a two-way communication, with the appropriate teacher – the student is considered present. In practice, this means a full-time virtual student could complete their work offline, with little to no interaction with a teacher and still be counted present.

Given this, the data for chronic absenteeism will understandably be skewed downward. While the absolute value of the absenteeism data may not be representative, we can still look at change from the previous year within NC NIC schools, relative to the change seen in the statewide data.

Statewide, chronic absenteeism in elementary school decreased seven percentage points. Across NC NIC Cohort 1 elementary schools, eight out of twelve schools (66%) reported a greater decrease in chronic absenteeism, ranging from an eight to eleven percentage point decrease. Across Cohort 2 schools, 43% reported a greater decrease in chronic absenteeism than the state average, ranging from an eleven to fifteen percentage point decrease. Taken together, 53% of NC NIC schools had a greater decrease in chronic absenteeism than the state average.

SHORT-TERM SUSPENSIONS

There were no notable patterns in short-term suspensions over time, or in relation to the state average. While we are unable to empirically isolate mechanisms that may influence discipline measures, it is reasonable to take into account that, unlike fluctuations in attendance and student performance, a transition to online learning may in fact eliminate the use of short-term suspensions.

Table 7. NC NIC Elementary School Chronic Absenteeism & Short-term Suspensions (Cohort 1)

	% Chronic Absenteeism 2017-18	% Chronic Absenteeism 2018-19	% Chronic Absenteeism 2019-20	Short-term Suspension Rates* 2017-18	Short-term Suspension Rates* 2018-19	Short-term Suspension Rates* 2019-20
Aulander	0.21	0.17	**0.06**	0.21	0.05	**0.12**
Bugg	0.12	0.12	-	0.08	0.06	-
Colerain	0.13	0.14	**0.05**	0.21	0.01	**0.08**
East Garner	0.12	0.11	**0.09**	0.05	0.02	**0.05**
Grays Chapel	0.03	0.12	**0.05**	0.00	0.03	**0.02**
Kenansville	0.13	0.15	**0.07**	0.16	0.19	**0.10**
Liberty	0.13	0.11	**0.05**	0.05	0.04	**0.02**
Lincoln Charter	0.04	0.07	-	0.03	0.02	-
Millbrook	0.12	0.14	-	0.02	0.01	-
Rose Hill	0.11	0.14	**0.07**	0.15	0.10	**0.11**
Royal	0.12	0.20	**0.09**	0.13	0.05	**0.03**
Spindale	0.14	0.15	**0.07**	0.13	0.20	**0.07**
Warsaw	0.15	0.17	**0.08**	0.18	0.15	**0.20**
West Bertie	0.20	0.19	**0.14**	0.21	0.21	**0.31**
Windsor	0.16	0.16	**0.06**	0.21	0.06	**0.02**
State Average	**0.15**	**0.16**	**0.09**	**0.14**	**0.13**	**0.09**

Bugg, Lincoln Charter, and Millbrook Magnet left the cohort between 2018-19 and 2019-20
**Short-term suspension rates are per 1000 students*

Table 8. NC NIC Elementary School Chronic Absenteeism and Short-term Suspensions (Cohort 2)

School Name	% Chronic Absenteeism 2018-19	% Chronic Absenteeism 2019-20	Short Term Suspension Rates* 2018-19	Short Term Suspension Rates* 2019-20
Central Elementary (ECP)	0.14	**0.08**	0.08	**0.06**
Central Elementary (Stanly)	0.17	**0.10**	0.16	**0.11**
Douglass Elementary	0.13	**0.11**	0.11	**0.11**
Eastfield Global Magnet	0.12	**0.05**	0.00	**0.00**
Glenwood Elementary	0.16	**0.05**	0.00	**0.00**
Inborden STEAM Academy	0.27	**0.12**	0.39	**0.34**
J.C. Sawyer	0.14	**0.08**	0.15	**0.22**
James Y Joyner Magnet	0.16	**0.05**	0.01	**0.01**
Nebo	0.18	**0.06**	0.00	**0.01**
Northside	0.05	**0.08**	0.05	**0.06**
P.W. Moore	0.14	**0.08**	0.25	**0.24**
Scotland Neck Leadership	0.19	**0.06**	0.06	**0.09**
Sheep-Harney	0.23	**0.08**	0.05	**0.04**
Supply	0.26	-	0.09	-
Weeksville	0.14	**0.08**	0.03	**0.00**
State Average	**0.15**	**0.09**	**0.13**	**0.09**

Supply Elementary left the cohort in 2019-20.

**Short-term suspension rates are per 1000 students.*

CONCLUSION

The three-year summative evaluation of the Schools That Lead NC Network Improvement Communities (NC NIC) provides compelling evidence that the use of improvement science within a networked community of schools can provide meaningful and measurable change toward improving early warning indicators of chronic absenteeism and course performance. This evidence is present throughout findings around implementation, effectiveness, and impact.

1. Implementation Findings

- Finding 1a. Approaching data with *curiosity* about a problem has revealed underlying causes that are catalysts for change
- Finding 1b. Giving teachers ownership and agency in solving problems can be transformative throughout a school
- Finding 1c. Principals and teachers value opportunities for collaboration within and between schools

2. Effectiveness Findings

- Finding 2a - Knowledge: Data across all three years demonstrated a consistent increase in knowledge of improvement science concepts, holding true for all school levels and all NIC team roles.
- Finding 2b - Skills: Educators participating in the NC NIC professional development reported growth in three categories of skills: 1) Instructional Design; 2) Use of data; and 3) Leadership Practices.
- Finding 2c - Behavior: In year 3, almost all NC NIC participants report engaging in stepwise improvement science activities to address barriers to student success.

3. Impact Findings

- Finding 3a. A total of 57 improvement ideas were tested across 52 schools - 65% designed to impact course performance, 23% designed to impact attendance, and 12% designed to impact Social and Emotional Learning (SEL)
- Finding 3b. Although ideas from the Improvement Menu are still being tested, there were a number of improvement approaches that successfully impacted their target early warning indicator. Examples include daily texts to high school seniors to prevent dropout; reducing the number of assignments given in elementary in order to increase assignment completion, and providing students with tracking tools for work completion.

4. Administrative data findings

- Finding 4a. High School Graduation Rates - The proportion of NC NIC schools with graduation rates above the state average increased nine percentage points for Cohort 1 (from 25% to 34%) and ten percentage points for and Cohort 2 schools (30% to 40%).
- Finding 4b. Chronic Absenteeism. Over half of NC NIC schools had greater decreases in chronic absenteeism than the state average.

APPENDIX A. EARLY WARNING INDICATOR LITERATURE

Allensworth, E., & Easton, J. (2005). The on-track indicator as a predictor of high school graduation. Chicago, IL: Chicago Consortium on School Research.

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Mac Iver, M.A. (2011). Destination graduation: Sixth grade early warning indicators for Baltimore City schools—Their prevalence and impact. Baltimore, MD: Baltimore Education Research Consortium.

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Neild, R. C., & Balfanz, R. (2006). Unfulfilled promise: The dimensions and characteristics of Philadelphia's dropout crisis, 2000–2005. Philadelphia, PA: Philadelphia Youth Transitions Collaborative.

APPENDIX B: NC NETWORKED IMPROVEMENT COMMUNITIES' MEMBER LIST

COHORT 1

Elementary School Networked Improvement Community (n=12)

- Aulander Elementary, Bertie County Schools
- Colerain Elementary, Bertie County Schools
- East Garner Elementary School, Wake County Public School System
- Grays Chapel Elementary School, Randolph County Schools
- Kenansville Elementary, Duplin County Schools
- Liberty Elementary, Randolph County Schools
- Rose Hill Magnolia Elementary, Duplin County Schools
- Royal Elementary School, Franklin County Schools
- Spindale Elementary School, Rutherford County Schools
- Warsaw Elementary, Duplin County Schools
- West Bertie Elementary, Bertie County Schools
- Windsor Elementary, Bertie County Schools

Middle School Networked Improvement Community (n=6)

- Bertie Middle School, Bertie County Schools
- Butner-Stem Middle School, Granville County Schools
- Centennial Campus Magnet Middle School, Wake County Public School System
- East McDowell Middle School, McDowell County Schools
- Northeastern Randolph Middle School, Randolph County Schools
- Pattillo Middle School, Edgecombe County Schools

High School Networked Improvement Community (n=3)

- Bertie High School, Bertie County Schools
- James Kenan High School, Duplin County Schools
- Providence Grove High School, Randolph County Schools

COHORT 2

Elementary School Networked Improvement Community (n=14)

- Central Elementary, Elizabeth City Pasquotank County Schools
- Central Elementary, Stanly County Schools
- Douglass Elementary, Rockingham County Schools
- Eastfield Global Magnet, McDowell County Schools
- Glenwood Elementary, McDowell County Schools
- Inborden Elementary S.T.E.A.M Academy, Halifax County Schools
- J.Y. Joyner Magnet Elementary, Wake County Schools
- J.C. Sawyer Elementary, Elizabeth City Pasquotank County Schools
- Nebo Elementary, McDowell County Schools
- Northside Elementary, Elizabeth City Pasquotank County Schools
- P.W. Moore Elementary, Edgecombe County Public Schools
- Scotland Neck Elementary Leadership Academy, Halifax County Schools
- Sheep-Harney Elementary, Elizabeth City Pasquotank County Schools
- Weeksville Elementary, Edgecombe County Schools

Middle School Networked Improvement Community (n=8)

- Charlotte Secondary School, Charter School
- Elizabeth City Middle School, Edgecombe County Schools
- Enfield Middle S.T.E.A.M Academy, Halifax County Schools
- J.E. Holmes Middle School, Rockingham County Schools
- Neuse River Middle School, Wake County Schools
- River Road Middle School, Elizabeth City Pasquotank County Schools
- Southwestern Randolph Middle School, Randolph County Schools
- West McDowell Middle School, McDowell County Schools

High School Networked Improvement Community (n=9)

- Albemarle High School, Stanly County Schools
- Buncombe County Early College, Buncombe County Schools
- Elizabeth City Pasquotank Early College, Elizabeth City Pasquotank County Schools
- J.F. Webb High School, Granville County Schools
- Morehead High School, Rockingham County Schools
- Northeastern High School, Elizabeth City Pasquotank County Schools
- Pasquotank County High School, Elizabeth City Pasquotank County Schools
- Randolph Early College High School, Randolph County Schools
- Southeast Collegiate Prep Academy, Halifax County Schools

APPENDIX C: NC NIC SCHOOL DEMOGRAPHICS

Table 1A. 2020-21 NC NIC School Demographics (Cohort 1)

School Name	School Size	% Caucasian	% African American	% Latino	Rural/Urban	% Low Income	Teacher Turnover (%)
*Albemarle Middle	387	31	44	11	Rural, Distant	100	16.67
Aulander Elementary	124	9	82	4	Rural, Remote	100	12.50
Bertie High	435	9	87	2	Rural, Remote	100	33.33
Bertie Middle	475	12	83	2	Rural, Remote	100	17.24
*Bugg Elementary	292	4	69	22	City, Large	81.55	23.68
Butner-Stem Middle	504	33	27	34	Rural, Distant	85.68	18.18
Centennial Campus Middle	492	22	38	33	City, Large	55.18	18.92
Colerain Elementary	161	15	79	2	Rural, Remote	100	20.00
East Garner Elementary	557	8	52	34	City, Large	79.86	28.57
East McDowell Middle	606	70	4	19	Rural, Fringe	69.02	25.53
Grays Chapel Elementary	461	80	1	13	Rural, Fringe	52.46	13.33
James Kenan High	647	15	33	49	Rural, Distant	100	28.95
Kenansville Elementary	557	39	30	27	Rural, Distant	100	9.52
Liberty Elementary	404	58	7	27	Rural, Fringe	66.67	13.33
*Lincoln Charter	2138	81	3	10	Rural, Fringe	43.65	--
*Millbrook Elementary	494	10	40	42	City, Large	76.22	19.51
Northeastern Randolph MS	523	73	4	17	Rural, Fringe	50.80	17.24
Providence Grove High	695	75	5	14	Rural, Fringe	42.13	4.65
Rose Hill-Magnolia Elementary	1162	15	28	54	Rural, Distant	100	8.33
Royal Elementary	393	39	33	21	Rural, Distant	72.93	20.69

Table 1A. 2020-21 NC NIC School Demographics (Cohort 1)

School Name	School Size	% Caucasian	% African American	% Latino	Rural/Urban	% Low Income	Teacher Turnover (%)
*Southern Middle	446	49	28	13	Town, Distant	54.61	16.13
Spindale Elementary	375	49	33	6	Rural, Fringe	68.33	26.67
W A Pattillo Middle	294	11	75	11	Rural, Fringe	97.67	27.27
Warsaw Elementary	787	11	46	39	Rural, Distant	100	21.31
West Bertie Elementary	229	5	87	4	Rural, Remote	100	0.00
Windsor Elementary	370	15	77	2	Rural, Remote	100	16.67
NORTH CAROLINA	**1,439,481**	**46**	**24**	**19**			**7.53**

Table 2A. 2020-21 NC NIC School Demographics (Cohort 2)

School Name	School Size	% Caucasian	% African American	% Latino	Rural/Urban	% Low Income	Teacher Turnover (%)
Albemarle High	322	32	43	12	Rural, Distant	67.38	23.53
Central Elementary (ECP)	363	49	37	10	Rural, Distant	80.85	12.5
Central Elementary (Stanly)	534	35	36	14	Rural, Distant	100	17.95
Charlotte Secondary	274	17	45	26	City, Large	29.75	--
Douglass Elementary	351	58	19	13	Town, Distant	65.71	20.00
Early College	261	61	4	28	Suburb, Midsize	39.63	12.50
Eastfield Global Magnet	289	50	4	39	Rural, Fringe	80.34	8.33
Elizabeth City Middle	615	39	41	10	Rural, Distant	100	10.81
Elizabeth City Pasquotank EC	114	53	26	12	Rural, Distant	53.54	25.00
Enfield Middle S.T.E.A.M. Acad.	210	1	90	6	Rural, Distant	100	23.53
Glenwood Elementary	399	91	0	3	Rural, Fringe	52.39	10.00
Inborden Elementary	230	1	95	2	Rural, Distant	100	30.00
J C Sawyer Elementary	381	33	54	6	Rural, Distant	88.18	16.67
J E Holmes Middle	707	55	22	16	Town, Distant	78.01	13.95
J. F. Webb High	424	19	61	13	Rural, Distant	70.90	8.57
John M Morehead High	737	54	21	16	Town, Distant	61.70	20.41
Joyner Elementary	659	64	18	14	City, Large	24.89	12.24
Nebo Elementary	351	79	3	9	Rural, Fringe	67.08	11.54
Neuse River MS (For. East Wake)	735	12	38	46	City, Large	73.13	18.18
Northeastern High	608	34	51	9	Rural, Distant	87.77	18.37
Northside Elementary	484	58	25	9	Rural, Distant	86.43	11.76
P W Moore Elementary	385	21	64	8	Rural, Distant	100	23.33

Table 2A. 2020-21 NC NIC School Demographics (Cohort 2)

School Name	School Size	% Caucasian	% African American	% Latino	Rural/Urban	% Low Income	Teacher Turnover (%)
Pasquotank County High	678	44	42	8	Rural, Distant	100	19.15
Randolph Early College High	366	53	3	37	Rural, Fringe	37.22	23.08
River Road Middle	584	31	53	10	Rural, Distant	100	22.86
Scotland Neck Elementary	168	2	90	8	Rural, Distant	100	28.57
Sheep-Harney Elementary	370	28	47	18	Rural, Distant	85.09	7.14
Southeast Halifax Collegiate	217	1	93	4	Rural, Distant	100	15.79
Southwestern Randolph Middle	563	65	2	30	Rural, Fringe	60.56	16.13
*Supply Elementary	585	49	19	23	Rural, Distant	84.87	21.43
Weeksville Elementary	264	56	31	6	Rural, Distant	91.67	28.57
West McDowell Middle	684	79	3	12	Rural, Fringe	55.27	16.00
NORTH CAROLINA	**1,439,481**	**46**	**24**	**19**			**7.53**

APPENDIX D. CALENDAR OF SERVICES

SCHOOLS THAT LEAD
Advancing Powerful Student Learning

Fall Meeting Schedule

ECPPS	ECPPS	Bertie	Duplin/Brunswick	Halifax
Zoom Meetings 2:30-4:00 Mon, Sept 21 Mon, Oct 19 Mon, Nov 16	**Zoom Meetings 2:30-4:00** Tues, Sept 22 Tues, Oct 20 Tues, Nov 17	**Zoom Meetings 2:30-4:00** Wed, Sept 23 Wed, Oct 21 Wed, Nov 18	**Zoom Meetings 2:30-4:00** Thurs, Sept 24 Thurs, Oct 22 Thurs, Nov 19	**Zoom Meetings 2:30-4:00** Mon, Sept 28 Mon, Oct 26 Mon, Nov 30
Elizabeth City MS PW Moore Sheep-Harney ES Northside ES Central ES PCHS	ECP Early College River Road MS Northeastern HS JC Sawyer WeeksvilleES	Aulander ES Bertie HS Bertie MS Colerain ES West Bertie ES Windsor ES	James Kenan HS Kenansville Rose Hill-Magnolia Warsaw Supply ES	Enfield MS Scotland Neck ES Inborden ES Southeast Collegiate W.A. Pattillo

SCHOOLS THAT LEAD
Advancing Powerful Student Learning

Fall Meeting Schedule

Buncombe/ Rutherford/ McDowell	Randolph	Stanly/Charlotte	Wake	Granville/ Rockingham/ Franklin
Zoom Meetings 2:30-4:00 Tues, Sept 29 Tues, Oct 27 Tues, Dec 1	**Zoom Meetings 2:30-4:00** Wed, Sept 30 Wed, Oct 28 Wed, Dec 2	**Zoom Meetings 2:30-4:00** Thurs, Oct 1 Thurs, Oct 29 Thurs, Dec 3	**Zoom Meetings 2:30-4:00** Mon, Oct 5 Mon, Nov 9 Mon, Dec 7	**Zoom Meetings 2:30-4:00** Tues, Oct 6 Tues, Nov 10 Tues, Dec 8
East McDowell MS Glenwood ES West McDowell MS Eastfield Global Nebo ES Spindale ES Buncombe ECHS	Southwestern Randolph MS Randolph ECHS Grays Chapel Liberty ES NERMS Providence Grove HS	Central ES Albemarle MS Albemarle HS Charlotte Secondary	Centennial Campus MS East Garner ES Neuse River MS Joyner ES Bugg ES	JF Webb HS Butner-Stem MS Douglass ES Holmes MS Morehead HS Royal ES

SCHOOLS THAT LEAD
Advancing Powerful Student Learning

Spring Zoom Meeting Schedule

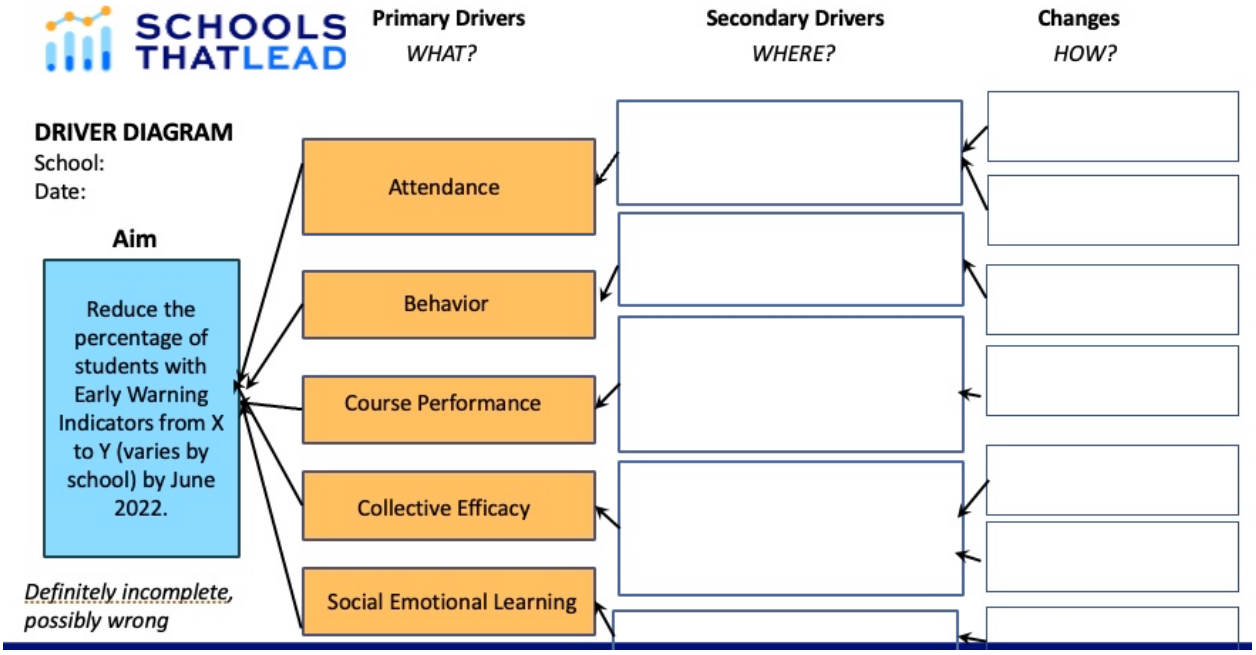
ECPPS Elementaries 2	ECPPS Secondaries 4	Bertie/ Edgecombe 3	Duplin/Halifax 5	Eastern NC Makeup Dates
Zoom Meetings 10:00-11:30 Wed, Feb 10 Wed, Mar 10 Wed, Apr 14	**Zoom Meetings 3:30-5:00** Th, Feb 11 Th, Mar 11 Th, Apr 15	**Zoom Meetings 2:30-4:00** Wed, Feb 10 Wed, Mar 10 Wed, Apr 14	**Zoom Meetings 10:30- 12:00** Fri, Feb 12 Fri, Mar 12 Fri, Apr 16	**Zoom Meetings 2:30-4:00**
Northside ES PW Moore ES Sheep-Harney ES Central ES WeeksvilleES JC Sawyer ES	Elizabeth City MS ECP Early College River Road MS Northeastern HS PCHS	Aulander ES Bertie HS Bertie MS Colerain ES West Bertie ES Windsor ES W.A. Pattillo MS	James Kenan HS Kenansville Rose Hill-Magnolia Warsaw Enfield MS Scotland Neck ES Inborden ES Southeast Collegiate	

SCHOOLS THAT LEAD
Advancing Powerful Student Learning

Spring Zoom Meeting Schedule

Buncombe/ Rutherford/ McDowell 6	Randolph 7	Stanly/Charlotte/ Wake 8	Granville/ Rockingham/ Franklin 1	Western NC Make Up Dates
Zoom Meetings 2:30-4:00 Tues, Feb 16 Tues, Mar 16 Tues, Apr 20	**Zoom Meetings 3:00-4:30** Wed, Feb 17 Wed, Mar 17 Wed, Apr 21	**Zoom Meetings 2:30-4:00** Thurs, Feb 18 Thurs, Mar 18 Thurs, Apr 22	**Zoom Meetings 2:30-4:00** Tues, Feb 9 Tues, Mar 9 Tues, Apr 13	**Zoom Meetings 2:30-4:00**
East McDowell MS Glenwood ES West McDowell MS Eastfield Global Nebo ES Spindale ES Buncombe ECHS	Southwestern Randolph MS Randolph ECHS Grays Chapel Liberty ES NERMS Providence Grove HS	Central ES Albemarle HS Charlotte Secondary Centennial MS East Garner ES JY Joyner ES Neuse River MS	JF Webb HS Butner-Stem MS Douglass ES Holmes MS Morehead HS Royal ES	

APPENDIX E. DRIVER DIAGRAM



APPENDIX F. NC NIC SCHOOL PERFORMANCE DATA

Table 2a Elementary School Performance Data (Cohort 1)

	% Proficient Math 2017-18	% Proficient Math 2018-19	% Proficient Math 2019-20*	% Proficient Math 2020-21	% Proficient ELA 2017-18	% Proficient ELA 2018-19	% Proficient ELA 2019-20*	% Proficient ELA 2020-21
Aulander	56.8	54.4	-	17.1	50.6	52.9	-	25.7
Bugg	27.3	23.2	-	17.7	24.2	19.6	-	17.6
Colerain	57.3	56.4	-	15.8	36.4	44.6	-	26.3
East Garner	45.9	46.7	-	22.1	38.7	44.6	-	24.4
Grays Chapel	70.6	68.3	-	56.3	58.0	64.3	-	46.3
Kenansville	52.0	49.1	-	25.5	52.0	49.2	-	32.6
Liberty	46.1	39.1	-	40.4	43.2	39.1	-	34.9
Lincoln Charter	77.3	77.9	-	62.5	82.2	78.3	-	68.5
Millbrook Magnet	38.7	36.8	-	30.6	33.9	35.3	-	32.2
Rose Hill	41.9	44.6	-	16.9	32.1	32.0	-	21.0
Royal	57.1	53.9	-	22.2	48.6	43.4	-	27.9
Spindale	53.8	57.6	-	24.7	45.7	45.4	-	34.2
Warsaw	31.1	33.6	-	13.0	37.5	35.4	-	25.0
West Bertie	61.5	40.8	-	11.9	47.5	41.6	-	25.9
Windsor	61.0	51.2	-	11.0	49.5	45.6	-	26.2
State Average	**56.1**	**58.6**	-	**40.0**	**57.3**	**57.2**	-	**45.5**

**Note on missing Data: On March 23, 2020, the U.S. Department of Education approved North Carolina's request to waive spring statewide assessments, accountability ratings, and certain reporting requirements in the Elementary and Secondary Education Act (ESEA) for the 2019-2020 school year due to widespread school closures related to the novel Coronavirus disease (COVID-19).*

Table 2a Elementary School Performance Data (Cohort 1) Continued

	% Proficient Science 2017-18	% Proficient Science 2018-19	% Proficient Science 2019-20*	% Proficient Science 2020-21
Aulander	70.0	79.2	-	29.2
Bugg	36.5	30.6	-	24.1
Colerain	83.3	74.3	-	21.7
East Garner	59.4	56.3	-	42.7
Grays Chapel	73.5	83.3	-	63.2
Kenansville	59.1	72.1	-	40.2
Liberty	59.2	64.9	-	78.3
Lincoln Charter	83.5	93.3	-	85.5
Millbrook Magnet	50.5	31.0	-	31.1
Rose Hill	46.6	62.9	-	29.1
Royal	72.7	70.8	-	59.0
Spindale	78.3	77.0	-	35.6
Warsaw	55.0	54.8	-	37.2
West Bertie	82.9	70.7	-	32.0
Windsor	74.0	72.1	-	30.2
State Average	**72.1**	**75.5**	**-**	**62.3**

**Note on missing Data: On March 23, 2020, the U.S. Department of Education approved North Carolina's request to waive spring statewide assessments, accountability ratings, and certain reporting requirements in the Elementary and Secondary Education Act (ESEA) for the 2019-2020 school year due to widespread school closures related to the novel Coronavirus disease (COVID-19).*

Table 2b Elementary School Performance Data (Cohort 2)

School Name	% Proficient Math 2018-19	% Proficient Math 2019-20*	% Proficient Math 2020-21	% Proficient ELA 2018-19	% Proficient ELA 2019-20*	% Proficient ELA 2020-21
Central Elementary (ECP)	64.9	-	41.8	54.1	-	50.0
Central Elementary (Stanly)	40.0	-	25.1	38.3	-	25.9
Douglass Elementary	63.1	-	36.6	53.6	-	34.4
Eastfield Global Magnet	46.3	-	35.2	47.5	-	39.1
Glenwood Elementary	68.0	-	73.9	60.85	-	76.1
Inborden STEAM Academy	42.4	-	10.0	39.6	-	16.7
JC Sawyer	53.1	-	12.6	47.9	-	28.8
James Y Joyner Magnet	49.3	-	26.1	49.3	-	31.4
Nebo	52.7	-	26.9	62.0	-	42.2
Northside	62.2	-	27.6	59.4	-	34.6
PW Moore	29.7	-	7.7	31.1	-	18.5
Scotland Neck Leadership	26.4	-	4.9	33.0	-	19.2
Sheep-Harney	52.7	-	18.4	56.9	-	32.4
Supply	45.6	-	46.8	41.7	-	40.0
Weeksville	72.2	-	34.6	54.3	-	46.2
State Average	**58.6**	**-**	**40.0**	**57.2**	**-**	**45.5**

**Note on missing Data: On March 23, 2020, the U.S. Department of Education approved North Carolina's request to waive spring statewide assessments, accountability ratings, and certain reporting requirements in the Elementary and Secondary Education Act (ESEA) for the 2019-2020 school year due to widespread school closures related to the novel Coronavirus disease (COVID-19).*

Table 2b Elementary School Performance Data (Cohort 2) Continued

School Name	% Proficient Science 2018-19	% Proficient Science 2019-20*	% Proficient Science 2020-21
Central Elementary (ECP)	85.5	-	65.4
Central Elementary (Stanly)	58.1	-	33.0
Douglass Elementary	69.2	-	50.9
Eastfield Global Magnet	72.9	-	38.8
Glenwood Elementary	89.4	-	67.7
Inborden STEAM Academy	81.1	-	14.3
JC Sawyer	73.7	-	27.3
James Y Joyner Magnet	76.4	-	48.6
Nebo	80.0	-	42.1
Northside	81.4	-	40.4
PW Moore	40.8	-	31.7
Scotland Neck Leadership	41.7	-	4.9
Sheep-Harney	75.9	-	35.8
Supply	71.2	-	55.3
Weeksville	81.5	-	74.2
State Average	**75.5**	**-**	**62.3**

**Note on missing Data: On March 23, 2020, the U.S. Department of Education approved North Carolina's request to waive spring statewide assessments, accountability ratings, and certain reporting requirements in the Elementary and Secondary Education Act (ESEA) for the 2019-2020 school year due to widespread school closures related to the novel Coronavirus disease (COVID-19).*

APPENDIX G. IMPLEMENTATION QUALITY - PROFESSIONAL LEARNING RUBRIC

		NC NIC Professional Learning Evidence Sources				
		Session Eval Quant Data	Session Eval Qual Data	Telephone Survey	Web Survey	Program Artifacts
Standard 1	Learning Communities					
Committed to…						
Criteria 1-1	Continuous improvement	x	x	x	x	x
Criteria 1-2	Collective responsibility	x				x
Criteria 1-3	Goal alignment	x	x	x		x
Standard 2	Leadership					
Leaders who…						
Criteria 2-1	Develop capacity	x	x	x	x	x
Criteria 2-2	Advocate	x		x		x
Criteria 2-3	Create support systems	x	x	x	x	x
Standard 3	Resources					
Requires…						
Criteria 3-1	Prioritizing resources					x
Criteria 3-2	Monitoring resources	---	---	---	---	---
Criteria 3-3	Coordinating resources			x	x	
Standard 4	Data					
Uses variety of…						
Criteria 4-1	Student data	x	x	x	x	x

		NC NIC Professional Learning Evidence Sources				
		Session Eval Quant Data	Session Eval Qual Data	Telephone Survey	Web Survey	Program Artifacts
Criteria 4-2	Educator data	x	x	x	x	x
Criteria 4-3	System data	x	x	x	x	x
Standard 5	Learning Communities					
Committed to…						
Criteria 5-1	Theories	x	x	x	x	x
Criteria 5-2	Research	x	x			x
Criteria 5-3	Models of Human learning	x		x		x
Standard 6	Implementation					
Applies…						
Criteria 6-1	Continuous improvement	x	x	x	x	x
Criteria 6-2	Collective responsibility	x				x
Standard 7	Outcomes					
Aligns with...						
Criteria 7-1	Research on change	x	x	x	x	x
Criteria 7-2	Sustained support		x	x		x

APPENDIX H. FORMATIVE EVALUATION FEEDBACK ANALYSIS

Table 3a. Session Feedback Analysis on Skills, Practices, and Processes – Year 1

Role	Training day	S No	Session Questions	Include	Question No.	Dimension
1	1	1	Drafting, adapting or adopting a definition of leadership that you aspire to	0	111	
1	1	2	Having a clear definition of what powerful leadership looks like to you	0	112	
1	1	3	Having a clear definition of what powerful student learning means to you	0	113	
1	1	4	Knowing a key tenet of improvement science: Understand the problem	0	114	
1	1	5	Gaining a more nuanced understanding of your current school outcomes	1	115	Practice
1	2	1	Identifying strengths and challenges as an Improver	0	121	
1	2	2	Understanding lessons learned from schools using Improvement Science	0	122	
1	2	3	Recognizing learning from user interviews about attendance	0	123	
1	2	4	Drafting a three-year school aim for improvement	1	124	Practice
1	2	5	Drafting a Plan DO- Study-Act cycle about attendance	1	125	Skill
1	2	6	Understanding core processes and tools used in TLI	1	126	Practice

Role	Training day	S No	Session Questions	Include	Question No.	Dimension
1	2	7	Understanding some of the challenges of teacher leadership	1	127	Practice
1	3	1	Creating a clear and measurable three-year aim statement for your school.	1	131	Practice
1	3	2	Building or revising a Driver Diagram	1	132	Skill
1	3	3	Using a fishbone diagram to understand two of the drivers more deeply	1	133	Skill
1	3	4	Planning a meeting of all four members of your improvement team (Principal, Improvement facilitator and teacher leaders) to clarify roles and responsibilities and to share learning	1	134	Process
1	3	5	Crafting a problem statement that communicates urgency and builds will	1	135	Buy in
1	3	6	Reflecting on an element of leadership for leading improvement	0	136	
1	3	7	Determining ways to support TLI participants (principals) OR Drafting a new plan do study about one of the Drivers (IFs)	1	137	Skill
1	4	1	Identifying and consolidating learning from NIC team meeting	1	141	Process
1	4	2	Drawing a through line from Drivers to current initiatives	1	142	Practice
1	4	3	Updating Driver Diagrams	1	143	Skill

Role	Training day	S No	Session Questions	Include	Question No.	Dimension
1	4	4	Making a plan to collect data for the family of measures	1	144	Skill
1	4	5	Understanding the purpose and uses of the Networked Improvement learning and supports platform	1	145	Process
1	4	6	Tracking progress to date on this improvement project and	1	146	Skill
1	4	7	Understanding the work of teacher leaders and improvement facilitators as it relates to the work of the NIC team	1	147	Process
1	5	1	Understanding the underlying psychology of change and be able to leverage its power for improvement efforts	0	151	
1	5	2	Being able to use three tools to better understand others' perspectives on next year's improvement work	0	152	Process
1	5	3	Drafting a communication for staff about this improvement project	1	153	Buy in
1	5	4	Understanding general challenges of the work from the perspective of teacher leaders	0	154	Practice
1	5	5	Strengthening skills of listening and asking questions to deepen thinking	0	155	
1	5	6	Drafting process measures	1	156	Skill
1	5	7	Preparing for NIC Teamwork at Summer Convening	1	157	Process

Role	Training day	S No	Session Questions	Include	Question No.	Dimension
2	1	1	Having a clear definition of what powerful student learning means to you	0	211	
2	1	2	Knowing a key tenet of improvement science: Understand the problem	0	212	
2	1	3	Gaining a more nuanced understanding of the current school outcomes	0	213	
2	1	4	Learning to use a toll of improvement by drafting a Plan-Do-Study-Act (PDSA) cycle	1	214	Skill
2	2	1	Identifying strengths and challenges as an Improver	0	221	
2	2	2	Understanding lessons learned from schools using Improvement Science	0	222	
2	2	3	Identifying key learning from the first PDSA cycle	1	223	Skill
2	2	4	Gaining confidence crafting a new PDSA about attendance	1	224	Skill
2	2	5	Understanding core processes and tools used in TLI	1	225	Skill
2	2	6	Understanding some of the challenges of teacher leadership	0	226	Practice
2	2	7	Understanding the purpose and elements of a Driver Diagram	1	227	Skill
2	3	1	Creating a clear and measurable three-year aim statement for your school	1	231	Practice
2	3	2	Building or revising a Driver Diagram	1	232	Skill

Role	Training day	S No	Session Questions	Include	Question No.	Dimension
2	3	3	Using a fishbone diagram to understand two of the drivers more deeply	1	233	Skill
2	3	4	Planning a meeting of all four members of your Improvement Team (principal, Improvement Facilitator and teacher leaders) to clarify roles and responsibilities and to share learning	1	234	Process
2	3	5	Crafting a problem statement that communicates urgency and builds will	1	235	Buy in
2	3	6	Reflecting on an element of leadership for leading improvement	0	236	
2	3	7	Determining ways to support TLI participants (principals) OR Drafting a new Plan-Do-Study-Act cycle about one of the Drivers (IF)	1	237	Skill
2	4	1	Identifying and consolidating learning from NIC Team meeting	1	241	Process
2	4	2	Identifying key learning from the last two PDSA cycles	1	242	Practice
2	4	3	Drawing a through-line from Drivers to change ideas	1	243	Skill
2	4	4	Constructing a PDSA connected to one or more Drivers and specific students on the watch list	1	244	Skill
2	4	5	Determining a data collection plan for PDSA	1	245	Skill
2	4	6	Strengthening skills of listening and asking questions to deepen thinking	0	246	

Role	Training day	S No	Session Questions	Include	Question No.	Dimension
2	4	7	Drafting a set of questions to ask colleagues when they start working on change ideas	1	247	Practice
2	4	8	Building a shared understanding of the work of PLI and TLI as it connects to the theory of practice improvement	1	248	Practice
2	4	9	Understanding the purpose and uses of the Network Improvement Learning and Supports (NILS) platform	0	249	Process
2	5	1	Identifying and consolidating learning from NIC Team meeting	1	251	Process
2	5	2	Identifying key learning from the last PDSA connected to one or more Drivers specific students on the watch list	1	252	Practice
2	5	3	Constructing the next PDSA with data collection plan	1	253	Skill
2	5	4	Drafting a set of questions to ask colleagues when they start testing change ideas connected to one or more Drivers	1	254	Practice
2	5	5	Being able to use three tools to better understand others' perspectives on next year's improvement work	0	255	Skill
2	5	6	Preparing for NIC Team work at Summer Convening	1	256	Process
3	1	1	Understand the construct and workings of STL Networked Improvement Communities (NIC)	1	311	Process

Role	Training day	S No	Session Questions	Include	Question No.	Dimension
			including an introduction to the Improvement science methodology			
3	1	2	Understanding different ways teacher leadership is conceptualized	0	312	
3	1	3	Gaining a more nuanced understanding of what powerful student learning means to you	0	313	
3	1	4	Collecting quality evidence of student learning	1	314	Skill
3	1	5	Understanding key tenets of adult learning	0	315	
3	1	6	Selecting a key problem of practice in your classroom for focused study	1	316	Skill
3	2	1	Engaging in shared examination and analysis of student learning using video case studies	0	321	Skill
3	2	2	Cultivating and deepening the practices of quality data collection and reflection	1	322	Practice
3	2	3	Distinguishing typical feedback practices in schools from data collection and reflection	0	323	Skill
3	2	4	Practicing a protocol for reflective dialogue with colleagues based on observation of student learning	1	324	Practice
3	2	5	Considering the meaning of a culture of learning for adults	0	325	
3	2	6	Strengthening skills of listening and asking questions that deepen thinking	0	326	

Role	Training day	S No	Session Questions	Include	Question No.	Dimension
3	3	1	Consolidating learning from the school based NIC Team meeting	1	331	Process
3	3	2	Reflecting on Student Learning Reflection Cycles and identify an area for growth	1	332	Skill
3	3	3	Building confidence and refining the practice of the Student Learning Reflection Cycle	1	333	Skill
3	3	4	Identifying one target for growth based on feedback from the student surveys and identifying the next steps	1	334	Practice
3	3	5	Understanding and practicing using a protocol for looking at student work with colleagues with a stance of inquiry	1	335	Practice
3	3	6	Drafting a classroom improvement intended to advance powerful student learning	1	336	Skill
3	3	7	Considering potential partners to scale the Student Learning Reflection Cycle	1	337	Buy in
3	3	8	Understanding the micro-credential process and products	0	338	
3	4	1	Identifying key learning from the latest rounds of Student Learning Reflection Cycles	1	341	Skill
3	4	2	Sharing a classroom improvement intended to advance powerful student learning	1	342	Practice
3	4	3	Drafting a Plan-Do-Study-Act cycle for one or more students in need of help	1	343	Skill

Role	Training day	S No	Session Questions	Include	Question No.	Dimension
3	4	4	Assessing confidence in skills used in the Student Learning Reflection Cycle	1	344	Practice
3	4	5	Reflecting on and sharing the most important pieces of learning from this year	0	345	
3	4	6	Using three frames to better understand others' perspectives on next year's scaling efforts	0	346	
3	4	7	Identifying knowledge and skills necessary to lead the snowflake next year	1	347	Buy in
3	4	8	Drafting an agenda for a Learning Team meeting	1	348	Process

APPENDIX I. FORMATIVE EVALUATION CODEBOOK

Table 4a. Qualitative analysis codebook – Year 1

Name	Description	Files	References
Barrier	A node dedicated to the barriers articulated by participants.	0	0
Competing initiatives	Teachers have other things on their plate, and they fear they will have to let something else go in order to follow STL	1	8
Creating Buy In	Unwillingness to change. Or a school culture that resists change.	1	30
Lack of quick results	Participants point that the intervention is slow occurring, and that may be a barrier.	1	4
Lack of time	Participant expressed a lack of time to plan, to execute on the tools, strategies learnt in the intervention.	1	10
Personnel Turnover	Participant expressed concern over retention of teachers as a potential barrier to the success of STL intervention.	1	20
STL process related	STL related barriers identified by participants.	1	9
Benefits	Benefits articulated by the participants	0	0
Coherence with other initiatives	Participant mentioned how STL complements other initiatives currently ongoing in schools.	1	1
Credentialing	Participants mentioned the link with national boards.	1	1

Name	Description	Files	References
Improvement Science Approach	Participants have mentioned how they were able to focus on one thing that they are currently working on changing in their class.	1	20
Interaction with other teachers	Participant mentioned helping other teachers to grow in their professional practice. Other mentioned that through STL intervention they have built better interaction routines with other teachers.	1	15
Changed Perspective	The participant mentioned a change in approach to teaching, leading the school etc. due to STL training sessions.	1	10
Design of STL intervention	Participant expressed opinions about the novelty, characteristics, design, approach of STL intervention.	1	13
Appreciation of the instructors	Participants expressed gratefulness for the training received through the facilitators or remarked about the assistance they received from the facilitators through the training sessions, and/ or through the year.	1	8
Concerns about the program experience	Participant expressed doubts over the length of time it is taking to affect change	1	3
Focus on Student	Participant expressed that there was a lack of evaluation and Judgement which freed them to participate and implement STL intervention approach.	2	9
Meaningful engagement with professional community	Participants expressed appreciation for the opportunity to interact and gain knowledge, discuss	1	5

Name	Description	Files	References
	issues, and glean insights from others in the same profession.		
More useful for teacher than other participants	Expressed an opinion that STL intervention is more geared towards improving teaching than other roles.	1	1
Enhanced Self Value	Participant referred to feeling more valued	2	6
Evidence of Change	Participants reporting that they are observing changes or intended outcomes.	2	3
Gains in practice	Participant expressing ideas that they have gained knowledge on how to teach and/or grown as a professional educator by experiencing training by STL	2	33
Suggestions	Suggestions offered by the participants related to training structure, timing, and mode.	2	6
Support and Sustainability of STL	Support and Sustainability of STL	1	8
Value the Experience	This node contains all references to STL training being a great experience, professional development, and opportunity for the participants.	1	19
Positive Learning	All references to STL intervention being a positive learning, and empowering experience.	1	6

APPENDIX J. YEAR 2 INTERMEDIATE OUTCOMES

Table 5a. Session Feedback Analysis – Year 2

Session Day	C1	C2	Question Focus	Principal	Teacher Leader	Improvement Facilitator
1 (&2 TLI)	x		Advancing collective efficacy	x	x	x
1 (&2 TLI)		x	Understanding different ways teacher leadership is conceptualized		x	
1 (&2 TLI)	x		Drafting Plan-Do-Study-Act (PDSA) cycles for testing	x	x	x
1 (&2 TLI)		x	Understanding predictive power of early warning	x	x	
1		x	Being prepared to create a Watch List	x		
1 (&2 TLI)	x		Setting benchmarks for watchlists	x	x	x
1 (&2 TLI)		x	Collecting Quality evidence of student learning		x	
1 (&2 TLI)		x	Selecting key problem of practice in classroom		x	
1	x		Establishing firm family of measures	x		x
1 (&2 TLI)	x		Having concrete measures for success for building skills in other		x	
1 (&2 TLI)		x	Collecting Quality evidence of student learning			
1		x	Being able to distinguish an Improvement Science approach from other efforts			x
1 (&2 TLI)		x	Knowing key tenets of improvement science	x	x	

Session Day	C1	C2	Question Focus	Principal	Teacher Leader	Improvement Facilitator
1 (&2 TLI)		x	Creating interview protocol for understanding school outcomes	x	x	
1 (&2 TLI)	x		Communicating key messages and tools of improvement science		x	x
1	x		Communicating effectively about NC NIC work to different audiences	x		
1	x		Recruiting and leading new people	x		
1, 3	x		Updating schools network charter	x		
2	x		High-leverage areas on Driver diagram based on Watch List	x		x
2	x		Causal analysis on high-level drivers			x
2	x		Communication plan for watch list	x		
2	x		Plan for causal analyses at school			x
2	x		Determining essential artifact and measures to test change			x
2	x		Sharing PDSA cycle to determine whether to adapt, adopt or abandon	x		
2,4	x		Key learnings / misconceptions in PDSAs			x
2	x	x	Constructing empathy interview to better understand teachers' perspectives	x		
2	x		Drafting new PDSA building on tested practices	x		

Session Day	C1	C2	Question Focus	Principal	Teacher Leader	Improvement Facilitator
2		x	Drafting 3-year school aim & driver diagram	x		x
2		x	Key learnings from empathy interviews from students	x		x
2		x	Examining beliefs about powerful student learning	x		
3	x		Scale & measures for PDSA		x	
3 (&4 TLI)		x	Begin first student Learning Reflections Cycle		x	
3	x		Soliciting feedback from peers on Student Learning Reflection Cycle		x	
3 (&4 TLI)		x	Feedback practices in schools from data collection and reflection		x	
3 (&4 TLI)		x	Focus on student learning using video case studies		x	
3 (&4 TLI)		x	Creating data collection tools aligned with Student Learning Questions		x	
3 (&4 TLI)		x	Deepening practices of quality data collection and reflection		x	
3 (&4 TLI)		x	Protocol for reflexive dialogue with colleagues based on student observation		x	
3 (&4 TLI)		x	Strengthening listening and questioning skills		x	
3 (&4 TLI)		x	Begin first student Learning Reflections Cycle		x	
4		x	Knowing purpose of a Us			x

Session Day	C1	C2	Question Focus	Principal	Teacher Leader	Improvement Facilitator
4	x	x	Quarterly plan for collecting and analyzing data for watch lists	x	x	x
4	x	x	Capture learning on Networked Improvement Learning & Supports (NILS) platform			x
4		x	Determining data collection plan for PDSA	x		x
4	x	x	Key learnings from empathy interviews with teachers	x	x	
4	x	x	Crafting PDSA to Advance Collective Efficacy	x		x
4	x	x	Crafting PDSA tied to students on the watch list		x	
4	x	x	Key learnings from PDSA cycles	x	x	
4	x		Run charts to determine if an idea results in change or improvement		x	
5&6	x		Data collection plan for PDSA		x	
5	x	x	Identifying learning from PDSA cycle on collective efficacy	x		
5	x	x	Use of Watch List as a tool of improvement	x		
5	x		Holding effective NC NIC Team meetings	x		
5&6			Identifying practice to focus advance efficacy		x	
5	x	x	Construct run chart for PDSA			x

Session Day	C1	C2	Question Focus	Principal	Teacher Leader	Improvement Facilitator
5	x		Post run chart and artifacts from the change idea to Networked Improvement Learning & Supports (NILS) platform			x
5		x	Using NILS to share learning and learn from others			x
5		x	Understand purpose of run chart	x		x
5		x	Naming and addressing barriers to NC NIC Team	x		
5 (&TLI 6)		x	Reflecting on Student Learning Reflection Cycles and identifying areas for growth	x		
5 (&TLI 6)			Identifying target area for growth based on feedback from student surveys		x	
5 (&TLI 6)		x	Using a protocol for looking at student work with colleagues		x	
5 (&TLI 6)		x	Refining practice of Student Learning Reflection Cycle		x	
5 (&TLI 6)		x	Drafting classroom improvement to advance powerful student learning		x	
5 (&TLI 6)		x	Consider potential partners to scale the Student Learning Reflections Cycle		x	
5 (&TLI 6)		x	Understanding micro-credential processes and products		x	
Convening	x	x	Updating Driver Diagrams	x	x	x
Convening	x	x	Sharing PDSAs tied to primary drivers	x	x	x

Session Day	C1	C2	Question Focus	Principal	Teacher Leader	Improvement Facilitator
Convening	x	x	Understanding role of an online tool (NILS) in advancing networked improvement	x	x	x
Convening	x	x	Clarifying Roles of NC NIC team members and sharing learnings			
Convening	x	x	Committing to concrete plan for year's school-based NC NIC Team work			

APPENDIX K. YEAR 2 INTERMEDIATE OUTCOMES - QUALITATIVE ADDENDUM

I think looking at it from the angle of the improvement science is so important. We'll try something and then we're like, oh well, it worked or not….but (improvement science) really makes us follow through with these ideas and what we're working on.
My hope would be that everybody would have the opportunity to participate in something like this.
- NIC Teacher

BUY-IN

I wouldn't even know (improvement science) was a thing unless we participated in STL and that just doesn't seem okay…Make sure your leaders know how to do (improvement science). Teach that to students when they're in their undergrad classes for college to be a teacher.
- (NC NIC Teacher)

I think from a professional perspective…I've gotten so much more from working with (STL facilitators) than I did in graduate school….you're comfortable talking to them about your weaknesses and sharing things that you may not do inside your district…It's a very free environment to do that. I think for staff, it just really builds leadership. I'm looking forward to the second year…I can see the progression of how it's going to be a successful opportunity for us.
- (NC NIC Principal)

SCALE

This has moved far beyond just the 4 walls of our classrooms, so now, they're really getting us ready to lead further than our classroom in our own school as well as within our district and even beyond that too. From the teacher perspective, where we started off with just academic approaches and improvement, we're now looking at things like attendance and social emotional and behavior, and we're applying the same improvement techniques to those aspects, which is awesome.
- (NC NIC Teacher)

When we really get clear about the issues that we're seeing within our own population, when we start to see improvements after we've tested our ideas and we're starting to actually see results, to scale that up…we're able to share now to other middle schools in our district and talk to other teachers a little bit about what we're seeing in our own classrooms and it's become kind of contagious… and we actually have value and credibility behind what we're teaching them because we have the data to back that up.
- (NC NIC Teacher)

SUSTAINABILITY

Normal initiatives are very much top down, where you might have a school improvement team, but at the end of the day, it's pretty much, this is a principal vision…so, this flips that model on its head and really allows teachers to work with other teachers to see what works for them, with which kids and why…and then once two or three teachers are using it, those two or three

teachers come to me and say, hey, look at what we're doing, what about if we give this to more teachers and maybe put some financial backing behind it.
- (NC NIC Principal)

SOCIAL EMOTIONAL LEARNING

So when we do…reviews with the stakeholders, students and their parents, to demonstrate why kids aren't coming to school, we found that a lot of our problem was actually in our locus of control. While we assumed it was things like transportation or secondary responsibilities, it actually was things like kids not feeling represented in what we were learning, and low historical gains in feeling student success, or the way in which we did discipline or how certain teachers talk to kids, or the fact that they had Math first block of the day. So, when we got really curious, we found that we could actually change all those things and so, we've embarked on an entire different master schedule.
- (NC NIC Principal)

IMPACT ON REMOTE LEARNING

(*Some of my students) don't have access to the internet. Using improvement science, I started this Pen Pal thing with my kids where I send them postcards and then I have some sort of social emotional activity that they respond to. Some children haven't done a stitch of academic work, but they're responding to these postcards and that's what I want because eventually, they're going to come back to school….and if I can keep up that positive connection to school, it's going to make next year and whoever their teacher is next year's job much easier.…I wouldn't have even done that if I had not been exposed to this program.*
- (NC NIC Teacher)

Some (approaches to remote learning) didn't work at all and instead of us being frustrated, we embraced that process and said, okay, we're going to end this now then because we agree that this doesn't work and we're going to try a new approach with this cohort of kids that we thought was missing. Whereas before, we would have just continued to do the same thing over and over again because that was the plan.
- (NC NIC Teacher)

APPENDIX L. WATCH LIST MARKERS

Creating a Watch List

High schools:

	Measure	**Frequency**
Ultimate Goal	**On time graduation**	Once/year
Attendance	Attendance watch list: 3 or more absences (excused or unexcused per quarter)	At least quarterly
Behavior	Behavior watch list: two or more mild or serious infractions OR any suspensions	At least quarterly
Course Performance	Course performance watch list: D/F in core class	Every grading period or interim grading period

Middle schools:

	Measure	**How often**
Ultimate Goal	**On time 9th grade promotion**	Once/year
Attendance	Attendance watch list: 3 or more absences (excused or unexcused per quarter)	At least quarterly
Behavior	Behavior watch list: Unsatisfactory conduct grade OR two or more mild or serious infractions OR any suspensions	At least quarterly
Course Performance	Course performance watch list: D/F in core class	Every grading period

Elementary schools:

	Measure	**How often**
Ultimate Goal	**Total number of students with Early Warning Indicators**	Once/year
Attendance	Attendance watch list: 3 or more absences (excused or unexcused per quarter)	At least quarterly
Behavior	Behavior watch list: Unsatisfactory conduct on report card OR 2 or more mild or serious infractions	At least quarterly
Course Performance	Course performance watch list: Not meeting 3rd grade reading standard OR below grade level on report cards OR D/F grades(1/2)	Every grading period

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