

Sound Basic Education for All

An Action Plan for North Carolina



In collaboration with Learning Policy Institute and
The William & Ida Friday Institute for Educational Innovation

An Exploration of School Success Factors to Inform the *Leandro* Action Plan



© 2019 WestEd. All rights reserved.

Suggested citation: Townsend, L., Mullennix, A., Tyrone, B. & Samberg, M. (2019). *Leandro Action Plan: Ensuring a Sound Basic Education for All North Carolina Students Success Factors Study*. Raleigh, NC: Friday Institute for Educational Innovation, North Carolina State University College of Education.

WestEd is a nonpartisan, nonprofit research, development, and service agency that works with education and other communities throughout the United States and abroad to promote excellence, achieve equity, and improve learning for children, youth, and adults. WestEd has more than a dozen offices nationwide, from Massachusetts, Vermont, Georgia, and Washington, D.C., to Arizona and California, with headquarters in San Francisco.

Contents

BACKGROUND	1
SUCCESS FACTORS OVERVIEW	3
RESEARCH APPROACH	5
Research Questions	5
Data Sources	5
Study Sample	6
FINDINGS ORGANIZED BY SUCCESS FACTOR	11
School Culture	11
Principal Leadership	14
Instructional Staff	16
Personalized Learning	19
Curriculum Resources and Digital Tools	21
Formative Assessment	23
Experiential Learning	25
Comprehensive Staffing and Support	28
Flexible Funding, Time, and Space	30

CONCLUSION	33
-------------------	-----------

REFERENCES	34
-------------------	-----------

APPENDIX A: SUMMARY OF SELECTED RELEVANT LITERATURE	35
--	-----------

APPENDIX B: RESEARCH PLAN	68
----------------------------------	-----------

APPENDIX C: INTERVIEW/FOCUS GROUP PROTOCOLS	72
--	-----------

APPENDIX D: QUALITATIVE CODE TABLE	78
---	-----------

List of Exhibits

Exhibit 1. Sample by participant type	6
Exhibit 2. Case study site descriptions	7
Exhibit 3. School culture success factor definition	11
Exhibit 4. Success factors in action — school culture	12
Exhibit 5. Principal leadership success factor definition	14
Exhibit 6. Success factors in action — principal leadership	15
Exhibit 7. Instructional staff success factor definition	16
Exhibit 8. Success factors in action — instructional staff	17
Exhibit 9. Personalized learning success factor definition	19
Exhibit 10. Success factors in action — personalized learning	19
Exhibit 11. Curriculum resources and digital tools success factor definition	21
Exhibit 12. Success factors in action — curriculum resources and digital tools	22
Exhibit 13. Formative assessment success factor definition	23
Exhibit 14. Success factors in action — formative assessments	24
Exhibit 15. Experiential learning success factor definition	25
Exhibit 16. Success factors in action — experiential learning	26
Exhibit 17. Comprehensive staffing and support success factor definition	28
Exhibit 18. Success factors in action — comprehensive staffing and supports	29
Exhibit 19. Flexible funding, time, and space success factor definition	30
Exhibit 20. Success factors in action — flexible funding, time, and space	31

Background

The people have a right to the privilege of education, and it is the duty of the state to guard and maintain that right. — North Carolina Constitution, Article I, § 15

To this end, five North Carolina (NC) low-wealth school districts filed a lawsuit, *Hoke County Board of Education v. State (Leandro)*, in 1994 that raised issues of adequacy and equity within the context of the school finance landscape. The school districts asserted that NC’s public school funding fell short of the amount necessary to provide for their students’ educational needs. The Supreme Court of North Carolina (the Court) ruled in 1997 that every child in the state has a constitutional right to an equal opportunity to receive a sound basic education; that the state is responsible for ensuring that right; and that it was failing to do so. The Court ruled that a “sound basic education” should afford students the following:

1. Sufficient ability to read, write, and speak the English language and a sufficient knowledge of fundamental mathematics and physical science to enable the student to function in a complex and rapidly changing society;
2. Sufficient fundamental knowledge of geography, history, and basic economic and political systems to enable the student to make informed choices with regard to issues that affect the student personally or affect the student’s community, state, and nation;
3. Sufficient academic and vocational skills to enable the student to successfully engage in post-secondary education or vocational training; and
4. Sufficient academic and vocational skills to enable the student to compete on an equal basis with others in further formal education or gainful employment in contemporary society.

Although the ruling in 1997 provided a benchmark for the quality of education all NC students should receive, the promise of a “sound basic education” remains an elusive goal that is still out of reach for many NC children. The current judge overseeing the *Leandro* case, Judge David Lee, opined that “the court record is replete with evidence that the *Leandro* right continues to be denied to hundreds of thousands of North Carolina children” (Lee, 2018).

In summer 2017, the litigants of *Leandro* filed a Joint Motion and Proposed Order in which they requested “an independent, non-party consultant to develop detailed, comprehensive, written recommendations for specific

actions necessary to achieve sustained compliance with the constitutional mandates articulated in this case.” Nationally renowned education consulting firm WestEd was chosen for this work and subsequently chose Learning Policies Institute (LPI) and the Friday Institute for Educational Innovation at NC State University to help craft the plan.

The Friday Institute Success Factors study ensures the Action Plan put forth by WestEd is informed by approaches that demonstrate sustained gains in student achievement. The study fits into the larger body of research being undertaken in response to the Joint Motion and Proposed Order. Results from this study will inform the action plan set forth by WestEd and will highlight schools and districts that have historically achieved success with their students.

This report is organized into four sections:

1. Success Factors Overview
2. Approach
3. Findings Organized by Success Factor
4. Conclusions

Success Factors Overview

The Success Factors Framework, herein referred to as success factors, was developed by the research team and outlines nine research-based practices that lead to conditions in schools that enable student success. When implemented in concert with one another, the success factors help foster effective districts and schools. The success factors are listed below (the research base for each element in the framework is discussed in Appendix A).

Success Factor #1: School Culture. A school culture in which all adults are committed to every student's success, and all students have supportive relationships with adults and experience a comfortable and safe environment that supports their social, emotional, and academic growth.

Success Factor #2: Principal Leadership. A principal in every school who is well prepared to serve as both a change leader and an instructional leader, to recruit and retain highly qualified teachers, and to cultivate a successful teaching and learning environment for all students.

Success Factor #3: Instructional Staff. A sufficient staff of teachers and others who support students' learning, with all instructional staff well prepared in evidence-based instructional approaches, content knowledge in the areas they teach, and strategies for successfully working with students with diverse backgrounds and learning differences.

Success Factor #4: Personalized Learning. Effective, evidence-based systems and practices for personalizing learning that account for variability in the pace, pathway, preferences, and needs of each student.

Success Factor #5: Curriculum Resources and Digital Tools. Curriculum resources and digital tools to support students' learning of the NC Standard Course of Study and more advanced topics.

Success Factor #6: Formative Assessment. Timely and ongoing formative assessments, aligned with the NC Standard Course of Study, used to inform and adapt instructional practices, consistently monitor student learning, and develop personalized learning pathways for each student.

Success Factor #7: Experiential Learning. Opportunities within and beyond the school walls for students to pursue their own interests and strengths and engage in experiential learning in which they apply their knowledge, collaborate, create, engage in authentic problem solving, and become self-directed lifelong learners.

Success Factor #8: Comprehensive Staffing and Supports. Providing staffing and supports for learning that go beyond classroom instruction to address social and emotional development, physical and psychological health,



hunger, and adverse childhood experiences through partnerships with families, other organizations in the community, and other schools.

Success Factor #9: Flexible Funding, Time, and Space. Allowance of autonomy to school and district leaders to tailor learning environments designed to meet the unique needs through the affordance of flexibility in areas such as funding structures, calendar options, and use of physical and virtual space.

Research Approach

This qualitative research study utilizes a case study approach which enables researchers to examine in depth a program, event, activity, process, or one or more individuals using a variety of data collection procedures over a sustained period of time (Merriam, 1998; Yin, 2017). For the purpose of this study, each case was defined in one of two ways, either as an individual school ($n = 3$) or a school district ($n = 4$).

Research Questions

This study was guided by the following research questions:

1. What exemplars of success factor implementation exist?
2. How do select schools/districts actualize success factors?
3. What elements are necessary to support factors for student success?
4. What barriers are faced by schools as they work to create conditions for student success, and how do they overcome them?

Data Sources

Archival data, artifacts shared by the school and/or district staff, school and classroom observations, and focus groups/interviews informed study findings. A brief description of each type of data is described below. Site visits were conducted between October 2018 and February 2019.

Archival data (e.g., publicly available census data, economic development plans and initiatives, performance and demographic data, performance data, principal/teacher turnover data, school improvement plans, technology plans, website mining, program design documentation, mission, vision, and Teacher Working Conditions Survey data) were used to determine which districts and schools to include in the study. After reviewing the information, district staff were contacted regarding participating in the study. During this time, participants were asked to review the Success Factor Framework to determine which elements might be highlighted during site visits.

Each site was visited over the course of one to two days. During each site visit, researchers followed a detailed protocol that included artifact collection (e.g., brochures, student work, newsletters, etc.), school tours, classroom observations, and face-to-face interviews or focus groups with different stakeholder groups (district and school leaders, teachers, students, parents, and various community members). Artifacts were used as evidence to contextualize practices taking place at each site. For observations, detailed field notes were gathered and analyzed to provide requisite answers for the research questions. Interviews and focus groups were digitally recorded. Researchers separated information provided to them by each success factor and further categorized segments of text into themes.

Study Sample

There were 207 participants in the study from various stakeholder groups described in Exhibit 1. Case study sites included the following: Edgecombe County Public Schools, Franklin County Public Schools, Greene County Public Schools, Henderson County Public Schools, Newton-Conover City Schools, Rowan-Salisbury Schools, and Northeast Academy for Aerospace and Advanced Technologies (see Exhibit 2 for detailed descriptions for participating schools).

Exhibit 1. Sample by participant type

Participant Type	Number of Participants
District-Level Leaders	68
School-Level Leaders	54
Teachers	32
Parents	8
Students	28
Other	28
Total	218

Exhibit 2. Case study site descriptions

Edgecombe County Public Schools

Edgecombe County Public Schools is a midsize rural district located in eastern NC that serves 5,853 students in grades Pre-K through 12. According to the NC School Report Cards, the district has 14 schools. Of those schools, 86% of the principals have 0–3 years’ experience, 14% have 4–10 years’ experience, and 0% have 10+ years’ experience. The district has a 94% attendance rate among its elementary, middle, and high school students. The largest class size is in grade 8 at 24 students. Edgecombe was selected because of its size and rural attributes, but it was also selected because of the innovative micro school approach.

	School Size	Economically Disadvantaged Students	Student Readiness Score (Middle and High Schools Only)	School Performance Grade	School Growth Score / Status
North Phillips Micro School of Innovation (8–9)	North <i>n</i> = 243 Phillips <i>n</i> = 122	North and Phillips Greater than 90%	North 10.9% Phillips 11.1%	North – C Phillips – F	86.6% / Exceeded 75.8% / Met
W. A. Pattillo Middle School (6–8)	<i>n</i> = 272	Greater than 90%	11.6%	D	81.8% / Met
Princeville Elementary School (K–5)	<i>n</i> = 248	Greater than 90%	–	D	78.1% / Met
West Edgecombe Middle School (6–8)	<i>n</i> = 306	Greater than 90%	25.7%	C	89.8% / Exceeded

Franklin County Public Schools

Franklin County Public Schools is a district of 16 schools that serve 8,105 students. Within Franklin County Public Schools is Franklin County Early College High School, a North Carolina Cooperative Innovative High School as well as an early college high school. The school was also selected because the demographics of the early college closely resemble the district demographic data. Further, the selection criteria for the early college is not an assumptive process based on intentional admittance of students who fit into a particular intellectual category (i.e., academically or intellectually gifted). The school follows the NC New Schools model, serving grades 9–13, with the fifth-year students classified as “Super Seniors.” The school originally enrolled 55 students in 2010 and now serves 188 students. Its academically and intellectually gifted population is 20%, and its populations of limited-English-proficient students and students with disabilities are both less than 10%. The overall district economically disadvantaged student (EDS) population is 70.96%.

	School Size	Economically Disadvantaged Students	Student Readiness Score (Middle and High Schools Only)	School Performance Grade	School Growth Score / Status
Franklin Early College High School (9–13)	<i>n</i> = 188	53.6%	48.9%	A	86% / Exceeded

Greene County Public Schools

Greene County Public Schools is a small, rural district that serves 3,016 students. The district has strong community partnerships, a system of providing social-emotional support for students, and, above all, a “can do” mentality toward various curriculum initiatives, namely, career and technical education (CTE), digital tools to enhance learning, science, technology, engineering, and math (STEM) education, and a challenge-based curriculum. Greene County Schools focuses on a hands-on district/school leadership approach. The schools utilize the Positive Behavior Interventions and Supports (PBIS) model to support school culture. Greene County Schools is an example of a school district that, despite barriers, is overcoming challenges to ensure that students are receiving opportunities to be successful throughout their access to a sound basic education. The district’s EDS rate is 100%.

	School Size	Economically Disadvantaged Students	Student Readiness Score (Middle and High Schools Only)	School Performance Grade	School Growth / Status
Greene Central High School (9–12)	n = 813	Greater than 90%	6.4%	C	91.1% / Exceeded
Greene County Middle School (6–8)	n = 695	Greater than 90%	27.2%	D	68.1% / Not Met
Greene Early College High School (9–13)	n = 164	Greater than 90%	32.6%	A	87.1% / Exceeded
Greene County Intermediate (4–5)	n = 496	Greater than 90%	–	C	86% / Exceeded
Snow Hill Primary (K–1)	n = 518	Greater than 90%	–	D	Not Applicable
West Greene Elementary (2–3)	n = 444	Greater than 90%	–	D	68.8% / Not Met

Henderson County Public Schools

Within Henderson County Public Schools, the district is divided into four sub-districts: East, Hendersonville, North, and West. Of the 23 schools that serve the 13,316 students, the district has 13 elementary schools, 4 middle schools, and 4 high schools. There is also an early college high school and an alternative high school, Henderson County Career Academy. Both the career academy and the early college are located in the same building, titled Innovation High School, on the campus of Blue Ridge Community College. Near Henderson County Career Academy is the Henderson County Career Academy Annex, an alternative setting apart from the regular setting at Henderson County Career Academy. The district’s EDS population is 53.33%.

	School Size	Economically Disadvantaged Students	Student Readiness Score (Middle and High Schools Only)	School Performance Grade	School Growth / Status
Henderson County Career Academy	n = 149	Greater than 90%	16%	ALT	ALT

Newton-Conover City Schools

Situated in the Southwest region of NC in Catawba County is Newton-Conover City Schools. The district has seven schools: three elementary, one middle, two high, and one special school. The total student enrollment is 2,982. The student population is primarily White and Hispanic, with the White student population at 45.99% and the Hispanic student population at 27.9%. The Black student population is approximately 12%, and the Asian student population is slightly over 6%. The NC Department of Public Instruction (NCDPI) classifies the school district as urban and midsize. As a city system, Newton-Conover City Schools is one of 15 city school systems in the state. One of the schools visited for the purposes of this study was the Summit at Newton-Conover. Students from Newton-Conover High School and Discovery High School apply for the program. The district's EDS population is 63.58%.

	School Size	Economically Disadvantaged Students	Student Readiness Score (Middle and High Schools Only)	School Performance Grade	School Growth / Status
Shuford Elementary	n = 492	58%	–	B	89.7% / Exceeded
Discovery High School	n = 234	19.2%	57.7%	A	83.1% / Met
The Summit at Newton-Conover	n = 40	–	–	N/A	N/A
Newton-Conover Middle School	n = 648	65.3%	41%	C	65.5% / Not Met

Rowan-Salisbury Schools

Rowan-Salisbury Schools is a midsize district that serves 18,924 students across 35 schools. The free and reduced lunch population is between 65% and 68%. It is a designated Renewal School System district, which grants all of the schools in the district flexibility of funding and resources, which aids the district in its mission to utilize technology as a vehicle for thinking differently. The district has a unique leadership team that has business, military, and legal experience in addition to education experience. Rowan-Salisbury Schools boasts a strong community relationship in which community leaders have been engaged with the schools for many years.

	School Size	Economically Disadvantaged Students	Student Readiness Score (Middle and High Schools Only)	School Performance Grade	School Growth / Status
Isenburg Elementary	n = 413	Greater than 90%	–	D	83.3% / Met
Landis Elementary	n = 485	Greater than 90%	–	C	81.1% / Met
North Rowan High School	n = 616	68.4%	21.9%	D	61% / Not Met
South Rowan High School	n = 948	48.9%	18.5%	C	71.7% / Met

Northeast Academy for Aerospace and Advanced Technologies

Northeast Academy for Aerospace and Advanced Technologies is a charter school that opened in 2016 with 120 students and currently serves 436 students in grades 7–12. Northeast Academy for Aerospace and Advanced Technologies is situated on the campus of Elizabeth City State University. There is no cost to attend Northeast Academy for Aerospace and Advanced Technologies, and the school provides free transportation across an eight-county region that includes Pasquotank, Perquimans, Camden, Chowan, Currituck, Gates, Pasquotank, and Perquimans counties, with most of its students currently coming from the first three Elizabeth City-Pasquotank Public Schools, Perquimans County Schools, and Camden County Schools.

	School Size	Economically Disadvantaged Students	Student Readiness Score (Middle and High Schools Only)	School Performance Grade	School Growth / Status
Northeast Academy for Aerospace and Advanced Technologies	n = 436	22.4%	42.6%	C	65.4% / Not Met

Note: School Size based on 2017–2018 School Report Card data. Student Readiness and Percentage Economically Disadvantaged based on 2017–2018 NCDPI Free and Reduced Lunch data. School Performance Grade and School Growth Score and Status based on 2017–2018 NCDPI released accountability data.

Findings Organized by Success Factor

The findings of the study are organized by the nine success factors. For each success factor, a vignette illuminating a specific practice or initiative at one of the case sites is presented and overall themes follow. For each theme nested under a success factor, a few illustrative examples are presented, though in many cases evidence of the theme might exist across all sites in the study.

School Culture

*A **school culture** in which all adults are committed to every student's success and all students have supportive relationships with adults and experience a comfortable and safe environment that supports their social, emotional, and academic growth.*

Exhibit 3. School culture success factor definition

Success Factors in Action

Observational Snapshot: School Culture

North/Phillips Micro School of Innovation

Edgecombe County Public Schools

Grades 8–9

30 Students

Every morning, the students at North/Phillips Micro School of Innovation say goodbye to one family and come to school to greet another, their school family. Every student at the Micro School is placed into one of three "houses": Spero (Hope), Isibindi (Courage), and Amistad (Friendship). Because the Micro School is contained within North High and Phillips Middle, it currently has 10 teachers and 30 students selected from those two schools, putting approximately 10 students per house and 1 teacher as the "head of the household."

The students are randomly placed into the houses, a process that involves the school staff filling opaque balloons with colored confetti that correlate to each house, followed by popping the balloons to see which house each student will join. The process of joining a house begins before the school year when all students participate in an offsite overnight team-building experience. The offsite experience is the first interaction students have with the Micro School staff and their future peers, and it is when the students, called "scholars," become a vested part of the school culture. "The amazing thing about what we're doing in the School of Innovation is that scholars have a heavy hand in creating the culture. ...Kids were invited to bring all of who they are into the space. The culture is very collaborative; scholars are very supportive of one another. Scholars are starting to be more open. I would describe our school as one that has open conversations and honest conversations" (principal, Micro School of Innovation).

The nature of the Micro School's culture is one of openness, and a vital component toward building that openness is the Roses in Concrete (RIC) social and emotional curriculum, which was created in-house. Scholars engage in it for one to three hours on Wednesdays, and it is rooted in identity development and empathy, with a focus on understanding self, community, and the world. The RIC curriculum is constantly improving; RIC 2.0 is scheduled to launch in fall 2019. In brief, if a house is a building or structure with a family who lives inside, then the RIC curriculum initiates the crucial conversations that happen around the dinner table. The houses "allow students to get together and have open and honest feedback on projects," and also encourage students to "engage in group talk on social and emotional topics" (principal, Phillips Middle School).

The family-like atmosphere at the Micro School is evident. With a small instructional staff and a small student population, coupled with the house system and focus on social and emotional learning, the school exudes a sense of togetherness that makes everyone involved feel welcome and wanted.

Exhibit 4. Success factors in action — school culture

OVERALL THEMES. Although district and school personnel in each case approached creating a positive school culture in a different manner, all alluded to its importance. Positive school culture set the tone to ensure other practices or initiatives could take root and grow. The following practices were observed as ways that school leaders were shaping positive school culture:

- Providing a family-like atmosphere
- Setting high expectations
- Promoting risk-taking
- Empowering students
- Engaging in intentional culture building
- Communicating clearly

Providing a positive family-like atmosphere. Cultivating an atmosphere with a trusting and caring staff was a priority among the sites. One parent explained that she specifically chose Henderson County Career Academy, an alternative, innovative high school that collaborates with a community college, because she wanted her daughter to be in an environment that "cared about her individual needs." In many instances, teacher and student participants expressed that a sense of caring and connectedness made them feel that they were a part of something special. Used frequently, the term *family* signaled deep and profound relationships developed and maintained in the school communities in the study. To foster such family-like relationships, cases of intentional practices were observed. In Edgecombe County Public Schools, a midsize rural district, Edgecombe Middle and Pattillo Middle students engage in the SPARK program, which is Speaking to the Potential, Ability, & Resilience in Every Kid. The principal at Edgecombe Middle explained that programs such as SPARK help to "create an understanding that 'we are in this together.'" Landis Elementary's principal (Rowan-Salisbury Schools, a designated Renewal School System, which that gives districts more flexibility if they have a lot of struggling schools), echoed a similar sentiment: "We know that the relationships they [the students] have in this building are the most stable ones they have."

Setting high expectations. In several instances, participants expressed the need to hold students accountable for making a sincere effort toward academic excellence. This pressure to achieve academically spurred many students to rise to the challenge; students believed that they could tackle rigorous work and excel — and they did. One student from Northeast Academy for Aerospace and Advanced Technologies, a public charter school serving students from multiple counties, offered, "It is a school for motivated students. If you are motivated, they will help you become smart." At Franklin County Early College High School, a high-poverty rural high school that collaborates with a local community college, teachers expressed their love for teaching at the school due to the consistent and clear high-level expectations for students across each of

the classrooms. The rigorous nature of the school atmosphere encouraged students to offer their maximum effort even if they struggled with the content. “Student buy-in is great. A sense of positive peer pressure exists. Students are highly and innately motivated and motivate each other,” said one Franklin County Early College High School teacher. Although some students faced challenges learning the content, systems of support such as teacher and peer tutoring and mentoring buoyed their efforts to succeed.

Promoting risk-taking. At several sites, willingness by leadership to take chances on novel approaches led to movement on tough issues plaguing their districts. The phrase “fail forward” was used repeatedly among district and school leaders in five of the seven cases. For example, Newton-Conover City Schools, a small urban district with a high EDS population, encouraged outside-the-box thinking to solve problems. District leadership empowered staff to try new ways to creatively solve problems without imposing a culture of fear and negative repercussions. For example, the district created the Teacherpreneur program, which enabled teacher leaders to pinpoint a specific problem they observed and develop a plan of action to solve that problem. In their classrooms, teachers were trusted to take chances, to reflect on the risk-taking process, and move forward with a lessons-learned approach. This philosophy resonated throughout the student population as well. Similarly, in Rowan-Salisbury Schools, a designated Renewal School System, leaders afforded students the opportunity to grow in an atmosphere that promotes stretching the bounds of students’ knowledge, experience, and abilities. Leaders in this district encouraged teachers to push students to engage in the productive struggle academically.

Empowering students. Student empowerment was evident at multiple sites in various forms, including student participation in teacher interviews, student-determined academic content selection and mode of learning, and student-informed school procedures. Affording students the opportunity to provide input on issues that directly impacted their school experience gave them a sense of ownership and buy-in to their education. For example, at Franklin County Early College High School, a high-poverty rural high school that collaborates with a local community college, students participate in the teacher hiring process. They have the opportunity to ask potential new teachers questions and provide feedback to the hiring committee, giving students a voice in their school experience, explained the principal. At Henderson County Career Academy, an alternative, innovative high school that collaborates with a community college, students provide input about their academic needs and career aspirations, and teachers offer a supportive culture that enables students to connect their individual interests to their secondary and post-secondary goals. One student said, “Here, we are not just a test score. The teachers are here to help us to do better. They do whatever it takes.”

Making culture a priority. All of the cases in the study engaged in intentional culture building within each of their contexts. They consistently sought ways to enhance the experience and engagement of all stakeholders by actively including them in creating positive learning environments. In Greene County Public Schools, a small, high-poverty rural district, administrators were making a concerted effort to ensure new teachers understood the culture of both the school and the community by taking them on community tours to provide a true sense of the full student experience from home to school. Similarly, upon assuming the role at West Edgecombe Middle School of Edgecombe Public Schools, a midsize rural district, the principal began a series of community visits, along with his teachers, to begin to make a cultural shift at the school. The goal of the visits was to learn more about the community, be more visible, and, ultimately, gain the trust of parents and students. He explained, “Part of the problem [with the school culture] was that the school wasn’t a warm and inviting environment. We needed to create an understanding that we are in this together.” A designated Renewal School System, Rowan-Salisbury Schools’ Isenberg Elementary also conveyed the sense of togetherness, as the school provided professional development for teachers and staff on understanding the student population, their backgrounds, social and emotional learning, resiliency, character education, and making the schools more culturally sensitive places.”

Communicating clearly. Communication is a critical element in creating a family-like environment within schools (Ellerbrock, 2012), thus a common theme of ensuring adequate and timely communication was evident at every site visit in this study. A distinction between sharing information (one-directional) versus communication (bi-directional) surfaced. Schools found it useful to both share and communicate, but felt it was crucial to create an atmosphere in which stakeholders felt comfortable communicating about important issues relevant to them. Mechanisms for communication included in-person meetings (school-based and in the community), individual phone calls, phone messages, newsletters, applications (e.g., Classroom Dojo), school and district websites, and social media (Twitter and Facebook). Newton-Conover City Schools utilizes their district and school-based websites to articulate current events and provide useful links for parents, students, and staff. The website also links the district’s Twitter feed into the site; Tweets are sent out almost daily to inform the school community. Franklin County Early College High School’s use of Twitter to post daily shout-outs is another example of the use of social media to highlight the students and school and to share information in a timely manner.

Principal Leadership

A principal in every school who is well prepared to serve as both a change leader and an instructional leader, to recruit and retain highly qualified teachers, and to cultivate a successful teaching and learning environment for all students.

Exhibit 5. Principal leadership success factor definition

Success Factors in Action

Observational Snapshot: Principal Leadership

Franklin County Early College High School

Franklin County Public Schools

Grades 9–13

188 Students

When the new principal first arrived at Franklin County Early College High School, a high-poverty rural high school that collaborates with a local community college, she immediately knew that one of the first things she wanted to change about the school was the way it looked. Today, the formerly long, bare corridor through which all students, staff, and visitors walk every day is adorned with school recognition banners, photos of students graduating, college acceptance letters, and student projects: a visual representation of the academic excellence at Franklin County Early College High School. Through these displays, anyone visiting the campus can clearly see the intentional culture building that begins the moment student and staff enter the building.

Franklin County Early College High School’s culture is more than just banners on the wall. Behind the displays is a familial atmosphere that permeates the student body and staff. One teacher describes, “We’re a little limited on space, but she [the principal] tries to make things homey and comfortable.” In essence, the lack of space from being in a modular structure could be a barrier, but the principal consciously makes the most of the space, using it to help create the home-like culture.

In addition to setting the environmental tone of the school, the principal explains of taking up her position, “I took time to interview every student. I wanted to establish that rapport with them.” She recognizes that if she wants to make a profound impact on the school culture, she must take a deep dive into the students’ and teachers’ views of the school. Furthering that, according to the teachers, the principal purposefully creates

opportunities that remain a regular aspect of the school culture. These opportunities include ongoing communication through weekly staff meetings, a principal’s weekly newsletter to staff and families, and one-on-one discussions with students.

Exhibit 6. Success factors in action — principal leadership

I think that leadership cannot be underestimated. The person leading truly sets the tone. I think that trickles down to the teachers in the classroom and to the students...

—South Rowan High School Staff Focus Group

OVERALL THEMES. As suggested by the quote from a staff member in Rowan-Salisbury Schools, a designated Renewal School System, the quality of available leadership plays a large part in the success or failure of a school. Leithwood and Riehl (2003) echoed similar sentiments: “Scratch the surface on an excellent school and you are likely to find an excellent principal. Peer into a failing school and you will find weak leadership” (p. 2). The role of principal is multifaceted and crucial to creating the conditions necessary to support progress for each of the success factors (e.g., school culture and instructional staff). The prevailing thought among the case study principals was that their leadership preparation, which included traditional Master’s of School Administration programs and alternative programs, such as the Northeast Leadership Academy, that offers a residency program, provided the necessary foundation for their leadership practice. However, they believed that actively serving in the administrative role best sharpened their leadership skills. Across each of the case study sites, principals worked tirelessly to enact a series of processes and procedures to actualize each school’s overarching mission and vision. Effective leadership practices that case study principals were engaged in included the following:

- Offering social and emotional support to students, staff, and school community
- Supporting staff freedom and autonomy in school decisions

Offering social and emotional support. Principals must set a tone for a healthy atmosphere by attending to all the needs of their stakeholders. Principals in the study offered social and emotional support to their students, staff, and school community without hesitation. At Franklin County Early College High School, a high-poverty rural high school that collaborates with a local community college, the principal facilitated a book study on the *Growth Mindset* and shared an inspirational quote on a regular basis. The teachers also expressed that the principal connects with them by being open about her own challenges and openly supports teachers when they encounter their own personal challenges. In fact, a first-year teacher shared, “She comes by every day, or if not, every other day to ask how we’re doing. There was one day last year when I told her that I just did not know how we, my husband and I, were going to make it, and she ended up just cutting me a personal check.... Outside the school context, she is very involved and believes we all are a part of making the school successful.” At the student level, social, and emotional supports were also a priority among the sites, as the majority implemented PBIS, a system of rewarding social, emotional, and academic progress. PBIS is funded by the U.S. Department of Education’s Office of Special Education Programs and the Office of Elementary and Secondary Education. The Technical Assistance Center on PBIS supports schools, districts, and states to build systems capacity for implementing a multitiered approach to social, emotional and behavior support. (U.S. Office of Special Education Programs, 2019) Greene County’s PBIS model has helped decrease disciplinary referrals. In the same vein, Greene County, a small, high-poverty rural district, offered at-risk middle school males access to a mentor who actively sought to build healthy relationships.

Supporting staff freedom/autonomy. In several instances, staff members described feeling a sense of autonomy that allowed them to have a voice in school matters. Many teachers expressed that they are trusted to use their professional judgment to determine how the instruction transpires in their individual

classrooms. At both Henderson County Career Academy, an alternative, innovative high school that collaborates with a community college, and Franklin County Early College High School, a high-poverty rural high school that collaborates with a local community college, the teachers expressed gratitude that the principal supports their instructional practices and professional judgment. The Franklin County Early College High School principal remarked that she allows for freedom unless it becomes an issue. At Northeast Academy for Aerospace and Advanced Technologies, a public charter school serving students from multiple counties, the teachers have the freedom to design their own lesson plans based on the project-based learning instructional practice. Further, in Edgecombe County, a midsize rural district, teachers describe that administration “does not micromanage as long as the results are evident,” and that was evident at the Micro School, where teachers worked together with administration to develop and deliver a school-specific social and emotional learning (SEL) curriculum.

Instructional Staff

*A sufficient staff of teachers and others who support students’ learning, with all **instructional staff** well prepared in evidence-based instructional approaches, content knowledge in the areas they teach, and strategies for successfully working with students with diverse backgrounds and learning differences.*

Exhibit 7. Instructional staff success factor definition

Success Factors in Action

Observational Snapshot: Instructional Staff

Newton-Conover City Schools

Discovery High School

Grades 9–12

234 Students

When any school in Newton-Conover City Schools has a problem, its teacher leaders are empowered to find a solution that they believe will work best for their school. Specifically, the district looks to a select group of Teacherpreneurs, highly effective teachers who have respect and credibility among their peers and administrators and take a solutions-focused approach to problems and issues. By allowing this opportunity, Newton-Conover seeks to groom and empower these teacher leaders in their district as detailed in the Teacherpreneur mantra, “It’s not about having a seat at the table, it’s about helping set the table.” The teachers’ active participation and involvement with the school and district speaks volumes to their passion for having an impact beyond their own classrooms while continuing to be a classroom teacher.

Newton-Conover’s Teacherpreneurs program is based on Berry, Byrd, and Wieder’s (2013) book, *Teacherpreneurs: Innovative Teachers Who Lead but Don’t Leave*, in which the authors assert: “Teacherpreneurism is about finding grounded solutions to vexing problems that have the power to redesign archaic school routines and scale up system-wide improvement” (p. 8). In addition to reading the book, Teacherpreneurs engage in extensive training, namely NC Center for the Advancement of Teaching leadership modules, Newton-Conover leadership sessions, NCDPI leadership sessions, a book study with jigsaw process, and project feedback process utilizing the Critical Friends Protocol.

As an example of a Teacherpreneur project, Discovery High School (DHS), a “redesign high school,” follows a problem-based learning curricular approach. This learning approach, coupled with increased enrollment, creates significant challenges with scheduling. Based on enrollment, or average daily membership, the school

employs a small staff of eight full-time teachers and four part-time teachers. The school required an innovative solution to its scheduling problem due to the size of its staff, which limits the number of courses available to students. The complex problem of creating a workable schedule of courses presented the perfect opportunity to convene its Teacherpreneurs to plan, collaborate, and deliver a solution with the goal of seeking meaningful change that will lead to sustainable improvement.

To address this issue, the Teacherpreneurs read articles and reached out to others via social media. Then, Teacherpreneurs, administrators, counselors, and district curriculum leaders visited South Rowan High School — a school in the Rowan-Salisbury Public School System that is discussed in the Comprehensive Staffing and Supports snapshot. The Teacherpreneurs' plan of implementation involved modeling a flexible high school schedule after South Rowan's 45-minute, 60-minute, and 90-minute classes; applying for a flexible testing waiver for American History 1; and considering a flexible testing waiver for English 2 the following year. The results of this plan included the following: (1) Teachers were given the autonomy to select their preferred schedules; (2) DHS [administrators] worked with South Rowan's data manager and [administrators] to support them with PowerSchool changes; and (3) self-paced, semi-synchronous hybrid courses development will be included in future planning and collaborating.

Exhibit 8. Success factors in action — instructional staff

OVERALL THEMES. Retaining the best possible instructional staff was a high priority for school and district leadership across all cases in the study. Teachers and leaders were eager to share their opinions about school improvement efforts and their role in the process. The following practices surfaced as important for staff growth and student success:

- Engaging in teacher collaboration
- Participating in professional development
- Acting as teacher leaders
- Providing instructional support
- Offering student assistance

Engaging in teacher collaboration. Mechanisms for teachers to collaborate in meaningful ways were evident. Principals enabled work to progress by facilitating teachers having regularly scheduled planning time, often daily. Teachers were also afforded the opportunity to engage in long-range, extended planning sessions on teacher work days or during a regular school day with coverage by substitute teachers. Working in concert with one another enabled teachers to work toward the common goal of improving student outcomes. At Newton-Conover City Schools, a small urban district with a high EDS population, teachers collaboratively establish grade level norms and grade level, goal-oriented professional learning communities. The district also utilizes the Systematic Systems of Support protocol to foster teacher and administrator collaboration so that teachers feel substantially supported to make data-driven decisions about instruction. Similarly, at Northeast Academy for Aerospace and Advanced Technologies, teachers collaborated through peer observations and ongoing feedback in an effort to promote professional growth and to provide a more cross-curricular learning environment for their project-based approach.

Participating in professional development. Creating opportunities for teachers and administrators to grow and learn through professional development was a common practice among the sites. The professional development varied for each of the school districts and schools due to the desire to develop and provide content based on student assessment, teacher evaluation data, academic performance, district goals, social and emotional needs, interests, community needs, and other research-based areas in Pre-K–12 education. Beyond that, many sites featured teachers obtaining (NB) certification, such as Greene County Public Schools, Newton-Conover City Schools, and Franklin County Schools, each with about 10% NB-certified teachers. At Franklin County Early College High School, a high-poverty rural high school that collaborates with a local

community college, teachers conduct rolling rounds and give one another feedback, can attend Saturday sessions, and have several other professional learning opportunities available. “At the district level,” explained a teacher, “the county has trainings and monthly or semimonthly beginning teacher meetings. The county, for the lateral-entry teachers, is offering pretty good tuition reimbursement or paying for the training.” Newton-Conover City Schools, a small urban district with a high EDS population, also provides an extensive support system for NB certification, offering monthly candidate support sessions and a comprehensive website with links to supportive documents and sites.

Acting as teacher leaders. Schools naturally rely on teacher leaders to be an integral part of their school community. Across all the sites, teacher leaders served in enhanced capacities without leaving the classroom. In the case of small schools in the study, the Micro School of Innovation (three teachers on staff) and Franklin County Early College High School (seven teachers on staff), opportunities to fill leadership roles were abundant and often went beyond those that might be found in larger schools. The teacher leaders in these schools work in tandem with one another to keep the schools operating successfully. Greene County Public Schools takes a different approach with teacher leaders, as it has a Teacher Leadership Academy. Through this initiative, the participants, who are effective experienced teachers, offer one-on-one coaching opportunities and facilitate professional development sessions for the district. Other sites also purposefully created teacher leader programs, such as Newton-Conover City Schools’ Teacherpreneur program. The Teacherpreneurs function as a cohort, but each Teacherpreneur develops a plan to address a problem at his/her school.

Providing instructional supports. Though a teacher is essential to student learning, other instructional supports aid in their growth and development. Teaching assistants, paraprofessionals, retired teachers as mentors, online tools, and instructional coaches were among the assets that school districts were utilizing to provide higher-quality instruction. At Landis Elementary, in Rowan-Salisbury Schools, a designated Renewal School System, teacher assistants were used in lower grades to manage personalized learning rotations. Teacher assistants provided support for group and individual reading, writing, and math activities. Henderson County Career Academy used a variety of resources to support instruction, from online learning platforms like Edgenuity to teacher assistants so that students were provided with “ongoing and varied instructional support.”

Offering student assistance. The teachers at the participating sites consistently exceeded classroom requirements. At Northeast Academy for Aerospace and Advanced Technologies, a public charter school serving students from multiple counties, teachers provided Friday, Saturday, and Summer academic sessions. At Newton-Conover City Schools, a small urban district with a high EDS population, the primary goal is getting children what they need later in life; test scores and diplomas are a secondary goal. For example, the district hosted a cookout in an effort to cultivate positive relationships between students and their families with the local police department. Another example is the implementation of Genius Hour, which gives students a chance to focus on their passion projects outside assigned coursework. At Henderson County Career Academy, an alternative, innovative high school that collaborates with a community college, teachers often used their lunch periods to help students who needed more academic support. The helpful nature of teachers resonated throughout all of the sites, and the examples of teachers, administrators, and other staff members going beyond their call of duty were abundant.

Personalized Learning

*Effective, evidence-based, systems and practices for **personalizing learning** that account for variability in the pace, pathway, preferences, and needs of each student.*

Exhibit 9. Personalized learning success factor definition

Success Factors in Action

Observational Snapshot: Personalized Learning

Newton-Conover City Schools

Shuford Elementary

Grades Pre-K–5

492 Students

Imagine a school where students' eyes light up upon entrance, where teachers and administrators treat each child as an individual with individual needs, and where each child — regardless of grade level — can explain what they are learning and why that learning is valuable. This school is not make-believe; it is Newton-Conover City Schools' Shuford Elementary, and it is demonstrating the power of a personalized approach to learning. The principal believes that "personalized learning is a way of life," and that philosophy resonates throughout the entire school. Because of the personalized pathways, student learning is based on what students are able to know and do. Their individual needs determine their mastery of learning pathways, but all students work toward the same level of mastery.

In one classroom, a group of students sit on bean bags, some of them working on iPads while another reads a paperback book. Another student sits at a desk adorned with balloons and colored streamers — a special seat that a student can earn through either personal or academic achievement. Some small-group instruction is taking place. The teacher stops to provide instruction to the small groups, then she continues circulating around the room to make sure she is checking in with all students. At first glance, the classroom seems chaotic, but upon talking with the students, the learning is evident because each student is working on his or her own personalized pathway, a menu of activities for the week based on the individual needs of each student. Each pathway allows students to choose activities based on academic need and personal interest. To determine their pathway, students take an assessment to determine their pathway for the upcoming week — below-, on-, or above-grade level.

One teacher noted about this shift from teacher-centered to student-centered instruction, "We are way more student-centered than it ever was before. When I first started, I was mainly at the front of the room. It was a lot of textbooks and worksheets. The way we teach and how we teach has really shifted." As a result of the shift, students are able to discuss their learning progress because the sense of ownership is very high and students have voice and choice in what they learn and how they learn.

Exhibit 10. Success factors in action — personalized learning

OVERALL THEMES. Although the academic standards remain constant for each subject and grade level, the mechanism for mastering the material varies when employing a personalized learning approach. Personalized learning enables students to have their individual needs and preferences addressed. The manner in which the cases in the study deployed personalized learning varied to match school goals, student needs, and available resources. The research team observed educators facilitating personalized learning through several guiding actions, including:

- Allowing student choice
- Providing scaffolded learning
- Encouraging collaborative learning
- Engaging in innovative approaches

Allowing student choice. Giving students voice and choice in their learning provided them with the opportunity to feel more in control of and invested in their learning process. At Shuford Elementary in

Newton-Conover City Schools, a small urban district with a high EDS population, students worked on weekly instructional pathways, which resemble paper menus with three options — one for “on level,” one for “below level,” and one for “above level.” Students are placed on the pathway based on weekly assessments that measure student readiness for upcoming content. At Rowan-Salisbury, a designated Renewal School System, the schools used a web-based “playlist” (e.g., a menu of learning activities) tailored for each student. A Rowan-Salisbury senior administrator explained that “no two children who are going to Rowan-Salisbury schools are doing the same thing.” The district endeavors to provide a personalized experience that meets academic needs and personal preferences.

Providing scaffolded learning. Scaffolding learning strategies enable students to be presented with content in manageable pieces. Schools, like Franklin County Early College High School, a high-poverty rural high school that collaborates with a local community college, contend that they meet students where they are through scaffolding. Teachers explained that they have experienced the greatest degree of success by assessing student readiness for specific tasks and content and then providing a way for students to methodically work toward specific learning goals. If a student struggled, the teacher then adjusted the strategy as necessary until competency was attained. Likewise, if a student is moving forward at a faster pace, that student was not slowed down. A similar approach was evident at Henderson County Career Academy, an alternative, innovative high school that collaborates with a community college. Students who finished their work were propelled forward in their studies; students who needed additional support were provided that. Some students worked online through Edgenuity, a web-based, state-standards-aligned learning platform. Essentially, the environment at Franklin County Early College High School, Henderson County Career Academy, and other sites was one of meeting students’ needs regardless of the time or resource investment required.

Encouraging collaborative learning. Though personalized learning refers to the creation of an individualized learning plan or approach, utilizing collaboration as a mechanism to achieve learning targets was seen at all sites. One way collaboration was observed was Northeast Academy for Aerospace and Advanced Technologies’ use of the Critical Friends protocol, a “process [that] provides an opportunity both to solicit and provide feedback in a manner that promotes reflective learning” (Bambino, 2002). The process is designed to promote reflection, careful observation, dialogue, and debriefing. Group members, including the teacher and students, engaging in the process have roles and play an active part in the feedback process so that the student is gaining both “warm” and “cool” feedback from a variety of sources, according to Northeast Academy for Aerospace and Advanced Technologies students. Another example of collaborative learning was evidenced in a designated Renewal School System; Rowan-Salisbury Schools’ challenge-based curriculum specifically prompts students to practice collaboration and communication among themselves as peers, as well as with staff and community members. A North Rowan High School administrator shared why this is such a valuable component of education: “As both an administrator and parent, I’ve realized that students need more than reading, writing, math, science, and social studies. They need soft skills too. They need to be able to problem solve; they need to be able to think outside the box.”

Engaging in innovative approaches. Because personalized learning is an emerging field with limited research available on best practices, most of the administrators and teachers in this study were pioneering innovative approaches to personalized learning. Some schools, such as Edgecombe County’s North High School and Phillips Middle School developed smaller schooling settings within the larger schools, such as the Micro School of Innovation. With only three staff members and an average of 30 students, students receive a tailored education. Franklin County Early College High School, a high-poverty rural high school that collaborates with a local community college, adopted an 80/20 model in which teachers provide direct instruction for approximately 20% of the instructional time, and the other 80% is spent with students carrying the cognitive load by engaging in a variety of tasks, which could include writing, problem solving, and working in groups. This model means that students are involved in a great deal of collaborative work that requires

communication between one another and with the teachers. “Teachers use the 80/20 model as a goal ... to make [students] do the thinking,” explained a Franklin County Early College High School teacher. Other approaches throughout the study included cross-listing CTE and STEM courses, creating career academies based on career interests, flipping the classroom using digital tools and Google Classroom, and creating a virtual Genius Bar (Micro School of Innovation) where students could have real-time access to industry professionals. The possibilities seemed limitless, as the teachers and administrators were constantly brainstorming ways in which to meet the individual needs of the students.

Curriculum Resources and Digital Tools

Curriculum resources and digital tools to support students’ learning of the NC Standard Course of Study and more advanced topics.

Exhibit 11. Curriculum resources and digital tools success factor definition

Success Factors in Action

Observational Snapshot: Curriculum Resources and Digital Tools

Greene Central High School

Greene County Public Schools

Grades 9–12

813 Students

Students stand at the front of the room and present their project, maintaining an air of professionalism. They explain how workers in Fiji who transport timber, one of the country’s main exports, have a dangerous job, but that their prototype could make the work safer and more efficient. Their machine resembles a claw machine, with a line that drops down that can be loaded with an item, and uses a motor to safely move that item from point A to point B. All students in the STEM program are challenged to develop a working prototype of a machine that accomplishes a particular goal. Students are able to accomplish this using various digital tools. Their initial designs begin with a computer program to develop the blueprints. Some students then use 3D printers while others use a metal plasma cutter. All of this is part of the STEM grand challenge program at Greene Central High School.

The grand challenges are STEM-infused projects with a focus on project-based learning with a global perspective using the Engineering Design process. Grand Challenges are ongoing large-scale projects completed during the semester. Students work on research to support their ideas and products, develop blueprints of their product idea, select a presentation tool to deliver their information, gather recycled materials/supplies, and engineer/construct their product to address the issue from their chosen region. Teachers use rubrics to provide students with feedback along the way. Students present their products to their peers in the school or present to students at other schools in the district.

Greene County Schools developed a STEM program because of the need for science, technology, engineering, and mathematics, but STEM education at Greene also stands for *Strategies That Engage Minds*. Essentially, the district made the decision to stop investing in any sort of commercially available curricula and, instead, to develop its own curricula that considers its students’ individual social-emotional backgrounds, instructional needs, and personal interests. To develop the curricular resources, district leaders brought together 74 teachers who analyzed their own students’ data and vetted instructional practices to develop instructional frameworks that would work for their students. One result of this process is their homegrown STEM education program. Opfer, Kaufman, and Thompson (2016) explain that a school- or district-developed

curriculum is the most common type because it results in a tailored approach that fits a school's specific needs and context. Greene's district-specific program has produced strong assessment outcomes as well as growth in the development of strong 21st-century skills.

Exhibit 12. Success factors in action — curriculum resources and digital tools

OVERALL THEMES. The state's transition to digital and personalized learning and the use of varied formats — such as online tools, multimedia materials, and web-based applications — add to both the opportunities and the challenges of selecting these resources and using them to support teaching and learning. Schools across the study sample innovatively created and implemented curriculum resources and digital tools through four guiding approaches:

- Offering blended learning opportunities
- Creating design thinking activities
- Providing digital tools
- Offering career and technical education courses

Offering blended learning opportunities. All of the schools are incorporating digital tools to some degree into the curriculum. Shuford Elementary in Newton-Conover City Schools is a blended learning school that incorporates e-learning into all facets of its educational program — a personalized practice that enables students to work at their own pace. One Shuford teacher said, "Our school used to be more textbooks and worksheets. That shifted three or four years ago. We are a tech-rich environment, but we are not tech-focused. The technology just enhances what we are currently doing." Greene County Public Schools, a small, high-poverty rural district, is part of the state's Digital Learning Initiative — a personalized, K–12 digital-age education program to provide a smooth digital transition — and is an Innovation Academy, one of four in NC. The Innovation Academy provides a deeper dive into digital teaching and learning. Both of these components assisted Greene County in successfully becoming a 1:1 district that uses technology to provide more opportunities for students, such as Google Classroom, Grand Challenges, and cross-listing CTE and STEM academic courses.

Creating design thinking activities. Schools throughout this study exhibited a design thinking approach to academics. With design thinking, the students and teachers work in design teams that use cognitive, strategic, and practical processes. The approach is strategic and aligned with the Engineering Design Process. Greene County Public Schools' implementation of Grand Challenges was a prime example of design thinking activities. Students in Greene County's STEM program are challenged to respond to a current problem faced by humanity; the school chooses one of the 14 categories defined by the National Academy of Engineering and develops a working model prototype that addresses the problem. At Northeast Academy for Aerospace and Advanced Technologies, a public charter school serving students from multiple counties, students focus on identifying strategies and solutions to problems, even when the solution might not seem possible. According to Northeast Academy for Aerospace and Advanced Technologies students, this prompts them to engage in the four Cs — communication, collaboration, critical thinking, and creativity.

Providing digital tools. Face-to-face teaching practices were augmented using a variety of digital tools. In all of the schools, there was a significant investment in devices, network infrastructure, and professional development to ensure appropriate integration of technology. During visits at study sites, students were observed using a variety of devices including, but not limited to, computers, tablets, 3D printers, digital microscopes, video production tools, virtual reality goggles, and robots used to teach computer programming. At Rowan-Salisbury Schools, a designated Renewal School System, Landis Elementary students participated in a lesson about Jamestown in which they were able to "visit" the settlements while wearing virtual reality goggles. Once schools secured devices, there was a need for digital content. In Edgecombe County, a midsize rural

district, students used tools such as RazKids, Flocabulary, Kahoot, and Apex Learning. These tools were used to support student learning and allow students alternative means of attaining information, which also freed up teacher time to conference with individual students and conduct small-group instruction.

Offering Career and Technical Education courses. CTE enables high school students to earn vocational credits that can be applied toward their college degree or professional certification. Greene County Public Schools places great emphasis on CTE — students can engage in internships and take advantage of a cross-list of CTE classes as STEM courses. To accomplish that, the district has more than 60 local and regional business partnerships as well as some national connections. The CTE program also focuses on local needs and career opportunities, such as machining. Students of Greene County Public Schools, a small, high-poverty rural district, earned 1,082 credentials in the 2017–18 school year. Henderson County Career Academy is an alternative school that houses on-site vocational programs that lead students toward various certifications. Most high school graduates leave Henderson County Career Academy with vocational certifications and some college credits in addition to their high school diploma. A parent of a student at Henderson County Career Academy expressed her gratitude for such an opportunity, offering that her son was a dropout who is now a high school graduate with college credits, a job, and admission into college for the 2019–20 school year.

Formative Assessment

*Timely and ongoing **formative assessments**, aligned with the NC Standard Course of Study, used to inform and adapt instructional practices, consistently monitor student learning, and develop personalized learning pathways for each student.*

Exhibit 13. Formative assessment success factor definition

Success Factors in Action

Observational Snapshot: Formative Assessments

Newton-Conover City Schools

Shuford Elementary

Grades Pre-K–5

492 Students

Discovery High School

Grades 9–12

234 Students

At Shuford Elementary, a class of second graders work to complete their Reading Pathway. The students take a pre-assessment before they are placed on the appropriate pathway. Throughout the pathway, students color in the box on their pathway cards to signify the completion of tasks. At the end of the pathway, students take a post assessment. Throughout the duration of the instruction, students engage in online and offline activities, individually and in small groups, to deepen their understanding. They also take comprehension tests and make video recordings and explanations of their reading. The entire process of this elementary-based reading pathway, which takes a week, involves numerous points when the teacher checks in with the students and makes adjustments and conducts reteaching moments. The reason for this structure is, as a district administrator points out, to “try to make students not feel stressed about the testing ... it’s not a test, it’s a way to reflect on where you are at as a learner.”

One way that students are formatively assessed is through showing their knowledge and skills — and not through an optical answer sheet. The formative assessments might involve engaging in dialogue with

community members, as Discovery High School students did when working on a project titled “Street Sketch.” This project prompted students to work with the city of Newton to develop the comments section of what citizens want for the city streets revitalization initiative. During another project with the city of Newton, junior leaders spent time with the mayor, members of the city council, and other city leaders. Then the students who were still interested in working with the city developed a summative analysis that served as the culminating assessment — of timely business practices and what could be done to improve the city. The students became a subcommittee that worked on projects to present to the city council.

In essence, Newton-Conover City Schools provide varied opportunities for students to demonstrate their mastery of learning. Sometimes that demonstration takes the form of a multiple-choice test; other times, it is a project, presentation, discussion, video, or some other method that gives the teacher an indication as to progress in student learning.

Exhibit 14. Success factors in action — formative assessments

OVERALL THEMES. The case study schools used formative assessment as a mechanism to accurately measure student learning. Both high-technology (e.g., computer-based, mobile applications) and low-technology (e.g., paper, hand signals, exit slips) formative assessment options found their place in each classroom. Using this formative feedback enabled teaching and learning to be adjusted as needed to ensure the best possible learning outcomes. Ways that case study sites were implementing formative assessment with their students included:

- Engaging in conferencing with students
- Giving traditional tests (i.e., quizzes and tests)
- Employing diagnostic assessment data
- Using Multitiered Targeted Systems of Supports

Engaging in conferencing. With an increasing emphasis on discussions and communication, a common theme across the sites is the use of conferencing as a means of formatively assessing students. Newton-Conover, a small urban district with a high EDS population, uses conferencing as a way of developing lesson plans. Teachers develop their lesson plans and student pathways through a combination of data points, one of which is conferencing with students to gauge student understanding and adjust future instruction. Similarly, Edgecombe County Public Schools’ Pattillo Middle School has an extensive system of conferencing with students: “Every Monday, we do temperature checks with the kids. We read through these and make follow-ups with the students who need that follow-up based on their feedback.”

Giving traditional tests. A common theme derived from the site visits in this study is that all sites are using traditional tests as a means of informing instruction. The tests are not necessarily multiple choice, though some are in that format to help the students develop test-taking skills for the state’s multiple-choice assessments. Henderson County Career Academy, an alternative, innovative high school that collaborates with a community college, uses multiple choice tests and quizzes to help teachers quickly gather data for areas of further instruction. Henderson County Career Academy also uses Edgenuity, an online learning program that allows students to take quizzes and tests online. Edgecombe County Public Schools, a midsize rural district, uses traditional quizzes, which are given in a variety of modalities. Like Henderson County Career Academy, Edgecombe uses enhancements like Kahoot! to develop and deliver quizzes, which helps students stay engaged and provides teachers with timely data to make instructional adjustments in real time.

Employing diagnostic assessment data. Across the sites, a common theme was that schools recognize the need for diagnostic assessment data to inform instruction and improve the summative assessment performance. Greene County Public Schools, a small, high-poverty rural district, highlighted the NC Check-Ins as invaluable tools for informing instruction. The NC Check-Ins are grade-level interim assessments that

come directly from the NCDPI, and both the Check-Ins and the End of Grade (EOG) assessments share a common item bank; therefore, these early/periodic assessments are a strong predictor of students' EOG performance. In addition, one senior level Greene County Public Schools' administrator shared the use of online assessment tools that provide useful reports. "iReady is a diagnostic assessment that is very useful. mClass assessments are valuable also." Both of these provide intermittent data for teachers to reevaluate their instructional practices and make necessary adjustments based on students' needs. Newton-Conover City Schools uses exit tickets, as well as pre- and post-assessments, to readjust instruction on a daily basis. The exit tickets help teachers know whether students are learning the content or if they need to reteach it.

Using Multitiered Targeted Systems of Supports (MTSSs). With an increasing focus on the whole-child approach to educating children, the MTSS is an approach to meeting the various academic, behavioral, social, and emotional needs of students. The MTSS is an intervention system that schools are using to put evidence-based strategies into place for all students based on their individual needs; the tiered approach allows students to move up and down through the tiers based on students' needs for interventions. Henderson County Career Academy, an alternative, innovative high school that collaborates with a community college, has a binder in which each student's individualized plan is contained. The plans are not only for students who have Individualized Education Plans (IEP); rather, every single student has an MTSS plan so that as the student's needs change over time, the school can make documented, consistent adjustments based on the bigger picture of the student's academic career.

Experiential Learning

*Opportunities within and beyond the school walls to **pursue their own interests and strengths** and engage in **experiential learning** in which they apply their knowledge, collaborate, create, engage in authentic problem solving, and become self-directed lifelong learners.*

Exhibit 15. Experiential learning success factor definition

Success Factors in Action

Observational Snapshot: Experiential Learning

Henderson County Career Academy, Innovative High School

Henderson County Public Schools

Grades 9–12

149 Students

It's lunchtime at Henderson County Career Academy, and the culinary arts teacher for the ProStart Culinary Academy assists a student as she prepares a meal for visitors. The food service academy boasts a full-service kitchen space with a quaint, functional dining room. The student, wearing her culinary uniform, serves a salad and drinks, followed by the main dish of lasagna and a delicious éclair cake for dessert. Throughout the entire process of cooking, serving, and transitioning between courses, the student leads. The teacher is present, but she is more like a shadow in the student's presence — there when needed, observing otherwise.

At no point does the culinary teacher overshadow the student. The academy program allows students the opportunity to learn through practical experiences and to demonstrate what they know. In addition to the culinary program, there is a fire safety program that is operated in the same manner. In fact, a fully equipped fire station — complete with a working fire truck — is housed at the back of the school. Of the fire station, which is part of the public safety academy, a district leader explained, "Students in this academy can earn 17 of the 21 [public safety] certifications, so they can get most of the program completed while they are

here.” She also discussed that students in this academy are always showing what they know through practical exercises and scenarios under the direction of a fire chief who has more than 100 certifications and 26 years’ experience, giving students access to one of the area’s most highly trained individuals in public safety.

The other academies, which include mechatronics, art, and business, also allow students access to subject matter experts. All teachers at Henderson County Career Academy work toward facilitating a hands-on approach to learning that transpires in conjunction with traditional high school coursework. Essentially, the school is bridging the curriculum in such a way that students are able to learn through experiences as well as classroom instruction.

Exhibit 16. Success factors in action — experiential learning

OVERALL THEMES. Enhancing and expanding learning through experiential learning was a priority at each of the case study sites. Seen as a way to help students connect to the academic content, and in many cases provide true context for learning, experiential learning linked students to career and community interests. Ways to approach experiential learning among study participants included:

- Offering STEM or STEAM (science, technology, engineering, art, and math) based programs
- Providing inquiry-based learning
- Encouraging learner agency
- Developing community partnerships
- Pioneering innovative approaches
- Engaging in service-learning opportunities

Offering STEM or STEAM based programs. The inclusion of STEM/STEAM-based programs was a recurring theme among the sites in this study. Although all of the sites included a STEM or STEAM program, one of particular interest is the STEM education program in Greene County Public Schools, as this program is across all grade levels at varying degrees. At the high school level, students are completing both mini challenges and grand challenges, and at all levels, the district is working diligently to train its STEM and non-STEM teachers to improve their quality of teaching and improve personal and professional growth outcomes. Similarly, in Newton-Conover, a small urban district with a high EDS population, the schools are using a STEM instructional framework that combines STEM and project-based learning with the PBIS social and emotional learning framework.

Providing inquiry-based learning. Across all sites in the study, a common theme of instructional practice is inquiry-based learning, an active modality of learning that puts students at the center of the thinking and doing as they attempt to solve a problem, react to a scenario, or develop a presentation or prototype (Burch, 2014). The process involves responding to a driving question throughout the duration of the curricular unit, with the teacher acting as the facilitator throughout the process. At Northeast Academy for Aerospace and Advanced Technologies, a public charter school serving students from multiple counties, students work daily on identifying problems to solve in real-world contexts. The curriculum is challenge based, similar to Greene County Public Schools, a small, high-poverty rural district. The director of STEM at Greene explained that the objective is to expose students to global problems and allow students the time and autonomy to explore the “lens of personal interest” while utilizing the “Engineering Design Process,” which is a series of logical steps that work toward creating products, prototypes, and processes.

Encouraging learner agency. Affording students opportunities to explore their own interests was common across all of the sites. Newton-Conover City Schools, a small urban district with a high EDS population, for example, promoted personalized learning, which involved student voice and choice (Wolf, Bobst, & Mangum, 2017). The schools created learner profiles based on students’ learning styles and interests to guide the

students in selecting relevant and appropriate learning opportunities. At Discovery High School in Newton-Conover City Schools, students completed a senior project on a topic of their choice. At Henderson County Career Academy, an alternative, innovative high school that collaborates with a community college, students select the career academy to which they will belong. The academies were determined, in part, based on student interests — mechatronics, culinary arts, fire safety, art, and business. When asked if the students felt that there should be more academies, one student in the fire safety academy noted that students are interested in the currently available academies, but if there were other areas of interest and students made that known to the school, he felt that the school “would do its best to have those academies beyond what they have now.”

Developing community partnerships. Sites throughout the study exemplified a common theme of community partnerships. That means that schools are taking advantage of community organizations and systems of support that partner with the schools in varying capacities. The Summit at Newton-Conover City Schools, for instance, has a strong community college partnership that allows students to earn up to 28 college credits, and community college faculty even meet students at the district Central Office to provide classes instead of the students going to the community college campus. Students at Henderson County Career Academy, an alternative, innovative high school that collaborates with a community college, are able to take advantage of being housed on the campus of Blue Ridge Community College by taking community college courses. They also have the Jobs for America's Graduates program, a partnership with Communities. A senior level district administrator expressed that this program is a major asset because it includes a “follow-up of having someone for a year to help with jobs, references, etc. and allows students to have a greater opportunity with the monthly check-ins.”

Pioneering innovative approaches. Schools across the sites are taking innovative approaches to providing students with a variety of learning opportunities beyond the classroom. Greene County Public Schools, a small, high-poverty rural district, cross-lists CTE and STEM classes to provide students with a greater variety of classes. They also use supplies from recyclables and donations to create Makerspace-like areas where students can create and explore as they work on various projects, such as the grand challenges. Henderson County Career Academy, an alternative, innovative high school that collaborates with a community college, is providing blended learning opportunities and flexible scheduling based on students’ individualized pathways. That is, some students are cross-enrolled at the Career Academy and their home campus, whereas others are taking courses at Blue Ridge Community College and the Career Academy. Though the school must operate within the confines of the state’s calendar, the school is being as innovative as possible to give students multiple hands-on, innovative methods for learning the content as they matriculate through the school years.

Engaging in service learning opportunities. Guiding students toward being productive citizens who are active participants in service learning was also a common theme across the sites. Rowan-Salisbury Schools’ students volunteer at a variety of nonprofit organizations, such as Habitat for Humanity, Meals on Wheels, and Rowan Helping Ministries. Franklin County Early College High School students participate in Habitat for Humanity projects as well as science challenges that include community tours to better understand local businesses and lunch with community professionals. Franklin County Early College High School’s principal explained that this is a priority of the school because “community involvement exposes students to opportunities.”

Comprehensive Staffing and Support

Comprehensive staffing and supports for learning that go beyond classroom instruction to address social and emotional development, physical and psychological health, hunger, and

adverse childhood experiences, through partnerships with families, other organizations in the community, and other schools.

Exhibit 17. Comprehensive staffing and support success factor definition

Success Factors in Action

Observational Snapshot: Comprehensive Staffing and Supports

Henderson County Public Schools

Henderson County Career Academy, Innovative High School

Grades 9–12

149 Students

There's a knock on the door. Unsure of who might be visiting their home during the middle of a weekday, the homeowner answers the door. To her surprise, the visitor is the Youth Recovery specialist at Henderson County Career Academy. She has come because she received documentation that a young high school student dropped out of his traditional high school. Several months have passed since he dropped out, and the Youth Recovery specialist is at the home to understand the student's passions and see if he might be interested in finishing his high school credentials at Henderson County Career Academy. After learning that he enjoys computers and mechanics, the Youth Recovery specialist tells the student about Henderson County Career Academy's Mechatronics Career Academy. To his mother's surprise, he agrees to return to school, receives his high school diploma, earns college credit, and becomes a confident young man with ambition.

The Youth Recovery specialist is just one of the many crucial support staff members who serve the students at Henderson County Career Academy by providing comprehensive wrap-around support for each student at the school. Among the staff are two assistant principals, a dropout prevention and recovery counselor, a graduation coach, a guidance counselor, a career development coordinator/post-secondary counselor, a school nurse, a teacher assistant/online learning support specialist, a Homelink representative, two mental health specialists, and a Newcomer Center representative who also serves as the English as a Second Language teacher. A Henderson County deputy sheriff serves as the school resource officer. In addition, the Henderson County Board of Commissioners granted the school district \$540,000, enabling it to employ nine social workers, one who works solely at the Career Academy and its Annex, the alternative setting at Henderson County Career Academy.

The school offers additional comprehensive support services, such as on-site laundry facilities with donated laundry supplies, so that students can bring their laundry from home. On many occasions, the school provides food for students who go home to empty pantries. The principal expressed that her "one wish would be on-campus housing" so that she knows "each and every student at Henderson County Career Academy has a safe place to call home each night and a safe space to learn each day." That sentiment echoes through the halls of Henderson County Career Academy — a school dedicated to serving the social, emotional, and academic needs of all students, all of the time.

Exhibit 18. Success factors in action — comprehensive staffing and supports

Our goal was to make sure that [students'] social and emotional needs were met. They were then able to focus on what they needed to do in the classroom.

—Rowan-Salisbury Schools Administrative Focus Group

OVERALL THEMES. Removing barriers that prevent students from fully focusing on academics is at the core of this success factor. Ensuring there is comprehensive staffing and support to meet students' nonacademic

needs (e.g., nutrition, housing, mental health, social and emotional health) is key to ensuring students have the opportunity to better focus on their learning. Garnering support and resources from individuals within the school district and from external agencies expands the level of service that students and their families receive. Efforts to provide comprehensive staffing and support services included:

- Providing students access to support staff
- Brokering student-support services with community partners
- Implementing social-emotional learning resources
- Offering support to families

Providing access to support staff. Recognizing the importance of students having access to sufficient support staff, sites across this study worked diligently to provide access to support staff on a regular basis. Henderson County Career Academy’s extensive support staff is full time, and in the event that one of the staff members cannot be on campus, the district provides a substitute to cover that individual, as the district never conveys a mentality that “it’s just one day” without a person. At Rowan-Salisbury Schools, a designated Renewal School System, the same attitude toward access to mental health and social services staffing resonates throughout the district. As a member of the leadership team explained: “Our children are crying out for help.” To meet those needs, the district utilizes its flexible funding as a Renewal School System to hire the necessary support staff to meet the students’ needs. The district hired a social worker and guidance counselors who work with parents to organize community-based therapy as an additional student support.

Brokering services with community partners. As schools are intended to educate students, that means that the funding sources are allocated to instruction, salaries, and other areas that help to support the educational process. For that reason, across the sites, funding to support social and emotional needs was often a result of community partnerships. Edgecombe, a midsize rural district, takes advantage of the Rural Opportunity Initiative, a state-based national nonprofit organization dedicated to preventing dropouts among young people who have serious barriers to graduation and/or employment (Jobs for America’s Graduates, 2019). Another major community partner among the sites were the community colleges or institutes of higher education that enabled students to take college courses with free tuition through the Career and College Promise program. Though the tuition was free, students were still responsible for fees and books, thus preventing some students from accessing this benefit. Schools in the sample removed the barrier of cost by absorbing the cost of fees and books.

Implementing social and emotional learning supports. Though the state does not have a specified SEL curriculum, the schools in this study have developed such a curriculum or dedicated SEL time during the school day so that all students have access to the social and emotional skills needed to overcome trauma, manage difficult life circumstances, practice healthy self-care, develop a growth mindset, and function well within the school community. In Edgecombe County Public Schools, a midsize rural district, students engage in empathy interviews which are a human-centered approach to understand the feelings and experiences of others (Birchall, 2018) and SEL check-ins which are two- to three-minute emotional reflections (Himmelstein, 2019). The schools have safe spaces where students can cool down, and they use positive behavior approaches that reward students for good behavior and choices. Despite the district’s schools not having as many guidance counselors and mental health supports as they need, the central office administration and school-level administrators constantly reevaluate the students’ SEL needs so that they are intervening with the students before their needs become too overwhelming. At Rowan-Salisbury Schools, a designated Renewal School System, the district provides professional development on poverty and added behavioral specialists to the staff at Isenberg Elementary.

Offering support to families. The schools throughout this study did not limit their services to only students; all of the schools extended support to the families. At Henderson County Career Academy, an alternative,

innovative high school that collaborates with a community college, the administrators explained that it is not uncommon for parents to show up at the school in need of food or gas. The school has donated fuel cards and groceries because it is an extension of the community, and if families feel safe and comfortable to come to the school, then the school should provide or seek out community services to provide for the families. At Franklin County Early College High School, a high-poverty rural high school that collaborates with a local community college, the principal feels strongly about helping families — both the students’ and the teachers’ families. Similar stories were told throughout the other sites, as the administrators and teachers felt strongly about offering support to families when they are in need. Whether that was through personal efforts or access to community supports like Communities in Schools, local churches, food banks, or other entities, the common theme was that they went above and beyond to help.

Flexible Funding, Time, and Space

*Effective, flexible use of **funding, time and space.***

Exhibit 19. Flexible funding, time, and space success factor definition

Success Factors in Action

Observational Snapshot: Flexible Funding, Time, and Space

Northeast Academy for Aerospace and Advanced Technologies, a Public Charter School

Grades 9–12

436 Students

A hurricane hits. School has to be cancelled. Or does it? At Northeast Academy for Aerospace and Advanced Technologies, a public charter school, students are able to access the Remote Learning Protocol (RLP) to complete their school work so that their time out of school is used productively. The RLP is an innovative protocol system that trains students how to operate virtually with tools like video conferencing. Days on which the RLP is deployed are called digital learning days, and these days accomplish a twofold task: First, students fill seat time without physically being at the school, and second, teachers and learners alike are empowered to step outside the schooling box and take advantage of this innovative opportunity that does not require extended days into the summer months or eliminated teacher work days that are supposed to be reserved for professional development. In the event that the student has no Internet or power, the student is not penalized for the virtual absence. Students have the ability to download the assignments prior to an RLP day if they do not have Internet access at home. RLP assignments are diversified and not all are bound to electronic devices. RLP provides opportunities for students to engage in work in their communities, involve their family in data collection and surveys, and explore service learning.

As a charter school, Northeast Academy for Aerospace and Advanced Technologies has scheduling and calendar flexibility, making it exempt from the current state law that schools cannot start earlier than the Monday closest to August 26 and end no later than the Friday closest to June 11. The school also takes advantage of its flexibility in funding and space. The school was able to put a greater allocation of funding into the instructional resources than traditional public schools. Students, for example, have Chromebooks and Next Gen tools to enhance learning. In addition, Northeast Academy for Aerospace and Advanced Technologies provides transportation around the campus of Elizabeth City State University because the classes are spaced out around the campus. Students can take college courses there too. Essentially, because the school is not bound by state policies associated with funding, time, and space, Northeast Academy for Aerospace and Advanced Technologies operates on a flexible model.

Exhibit 20. Success factors in action — flexible funding, time, and space

OVERALL THEMES. Participants (i.e., district leaders, school principals, and teachers) from each case site in the study expressed a need for autonomy to make the appropriate decisions regarding setting the right context for the teaching and learning transpiring in their schools. There was an overwhelming desire to be trusted by authorities to make the decisions that would be best for their students. The following actions describe how some sites utilize flexibility:

- Allowing hiring flexibility
- Providing flexible student schedules
- Using remote learning
- Allowing flexible funding
- Utilizing school-built models for success

Allowing hiring flexibility. A common theme across the sites was the need to hire based on school or district needs so that the schools can have the right people on staff for the student population that the school serves. In Greene County Public Schools, a small, high-poverty rural district, the district assesses academic and SEL data to determine staffing needs. For example, the district superintendent explained that Instructional Coaches have been a vital component of their K–5 classrooms, especially for mathematics and literacy instruction because those are the areas where the most growth can take place. In Newton-Conover, a small urban district with a high EDS population, the schools determine whether they hire an Instructional Coach or Assistant Principal. A senior level administrator noted that she would like to have both, but funding does not allow for that; therefore, the district works closely with the schools to determine which staff will best serve their unique needs.

Providing flexible student schedules. Allowing students to provide input about their schedules and to have differing schedules was a recurring theme across many of the sites. Newton-Conover City Schools' Discovery High School has a unique schedule that consists of periods, ranging from 46 minutes to 140 minutes. Despite having to work within the confines of PowerSchool and certain calendar constraints, the school is making efforts to provide schedules that work for each individual student, explained a district administrator. At Rowan-Salisbury, a designated Renewal School System, schools do have flexible student schedules and are moving toward a year-round calendar with varying start times based on student needs. Henderson County Career Academy, an alternative, innovative high school that collaborates with a community college, has students cross-enrolled to meet both their high school and vocational certification needs, but the scheduling does conflict with the traditional calendar.

Using remote learning. Throughout the sites, a common practice is using remote learning to meet students' needs. That learning looks different from site to site, as some schools employ a RLP to allow video conferencing so that students can telecommute on certain days, whereas others take advantage of online learning platforms such as Edgenuity and Apex. With myriad digital tools and online learning opportunities, school districts recognize the value in providing a flexible scheduling opportunity through the inclusion of the remote learning. Northeast Academy for Aerospace and Advanced Technologies, a public charter school serving students from multiple counties, takes advantage of the RLP, as it allows students to continue learning in the event of inclement weather without having to extend their school year into the summer. Another example is Henderson County Career Academy, which provides credit recovery opportunities through Edgenuity, an online learning platform.

Allowing flexible funding. Despite constrained school budgets, the sites in this study actively sought out ways to utilize funds to the greatest extent. Many of the sites found other avenues for funding because they recognized the necessity to allocate funding based on the needs of the school. For example, an early

college has different needs than a career academy, and a project-based learning school has different financial needs than a Title I school that has federal funding. To illustrate, Rowan-Salisbury is now the state's only Renewal district, which allows for greater flexibility of funding based on the schools' needs. A school-based administrator explained, "Flexibility has allowed us to dream differently and think about school differently. [It is] nice to be able to think about funding, calendar, [and] hiring differently and to allow for innovative work." A similar sentiment was echoed at Northeast Academy for Aerospace and Advanced Technologies, as the school is a charter and therefore has complete flexibility on how its funding sources are allocated. The principal described this flexibility as vital because it allows them to hire full-time bus drivers and therefore serve students from several surrounding counties who would otherwise be unable to attend the academy.

Utilizing school-built models for success. Among the sites in this study, a common theme was the creation and utilization of school-built models that lead to student success. The models vary in purpose, but the common theme that schools are developing their own in-house approaches to schooling was apparent. One example was the career academy concept at Henderson County Career Academy. The career academies are partnered with the Communities in Schools, Jobs for America's Graduates program, which allows students opportunities to pursue their career interests while also completing their high school graduation requirements. The principal of Henderson County Career Academy expressed, "We have these academies based on student interest and community needs. Our population tends to thrive in this type of schooling environment, and that helps me to know we are doing what is best for student success." Newton-Conover, a small urban district with a high EDS population, developed its own school health model. The school system partnered with Catawba County Public Health, which provides three registered nurses who serve the students and also assist in planning and implementing a health education curriculum for both students and staff.

Conclusion

The Success Factors Framework offers a set of enabling conditions necessary for school success. Although presented separately here, success factors work together seamlessly to address district, school, teacher, and student needs. They are interconnected and overlap to the extent that in many cases one factor relies on another for its proper execution. As evidenced by the many examples presented throughout this case study, the manner in which a school or district implemented processes to enable the conditions associated with specific success factors varied widely. Implementation was need- and context-specific. There was no right or wrong way to actualize the elements of the framework. Ultimately, schools or districts must be afforded the flexibility to determine how they should approach cultivating environments conducive to school success.

References

- Bambino, D. (2002). Critical friends. *Redesigning Professional Development*, 59(6). Retrieved from https://www.schoolreforminitiative.org/wp-content/uploads/2014/02/t_l2_critical-Bambino.pdf
- Berry, B., Byrd, A., & Wieder, A. (2013). *Teacherpreneurs: Innovative teachers who lead but don't leave*. San Francisco, CA: Jossey-Bass.
- Birchall, T. (2018). *How to conduct empathy interviews*. Tempe, AZ: Zion and Zion. Retrieved from <https://www.zionandzion.com/how-to-conduct-empathy-interviews/>
- Burch, P., Good, A., Heinrich, C. & Wanger, C. (2014). Digital tools in K-12 classrooms and student achievement: Weighing the evidence. Scholars Strategy Network. Retrieved from https://www.mitpressjournals.org/doi/full/10.1162/edfp_a_00224
- Ellerbrock, C. (2012). Creating a family-like ninth-grade environment through interdisciplinary teaming. *Urban Education*, 47(1), 32–64. Retrieved from <http://dx.doi.org/10.1177/0042085911427736>
- Himmelstein, S. (2019). *Six ways to check in with teens*. Stanford, CA: Center for Adolescent Studies. Retrieved from <https://centerforadolescentstudies.com/6-ways-check-with-teens/>
- Jobs for America's Graduates. (2019). *About JAG*. Retrieved from <http://www.jag.org/>
- Lee, Judge W. D., State of North Carolina Superior Court, Wake County. Ruling, March 7, 2018.
- Leithwood, K. A., & Riehl, C. (2003). *What we know about successful school leadership*. Philadelphia, PA: Laboratory for Student Success, Temple University.
- Merriam, S. B. (1998). *Qualitative research and case study applications in education* (2nd ed.). San Francisco: Jossey-Bass Publishers.
- Opfer, V. D., Kaufman, J., & Thompson, L. (2016). *Instructional resources to support standards implementation*. In *Implementation of K–12 state standards for mathematics and English language arts and literacy: Findings from the American Teacher Panel* (pp. 23–56). Santa Monica, CA: RAND Corporation.
- U.S. Office of Special Education Programs. (2019). *Positive behavioral interventions and supports*. Retrieved from <https://www.pbis.org/>
- Wolf, M. A., Bobst, E., & Mangum, N. (2017). *Leading personalized and digital learning: A framework for implementing school change*. Cambridge, MA: Harvard University Press.
- Yin, R. K. (2017). *Case study research and applications: Design and methods*. Los Angeles, CA: SAGE.

Appendix A: Summary of Selected Relevant Literature

The information in this section is a summary of selected relevant literature, including books, scholarly articles, and other sources of information pertaining to the following success factors:

- » School Culture
- » Principal Leadership
- » Instructional Staff
- » Personalized Learning
- » Curriculum Resources and Digital Tools
- » Formative Assessments
- » Experiential Learning
- » Comprehensive Staffing and Supports.

School Culture

Schools extend children’s development of thought and language, presenting new concepts, shaped by experiences beyond those of the home, and ideally, giving them access to other worlds and other ways ... [and] schools have a culture of their own — one that may not be continuous with the culture of the child’s home.

—Kutz, Roskelly, & Freire, 1991

Research provides evidence that a positive school culture, regardless of the external elements surrounding the school, is necessary for children to be successful. Such a culture involves adults who are committed to every

student's success, as well as a place where all students have supportive relationships with adults and experience a comfortable and safe environment that supports their social, emotional, and academic growth.

Providing a family-like atmosphere. Battistich, Solomon, Kim, Watson, and Schaps (1995) conducted a study to determine if their basic assumption that “students’ feelings of acceptance and support, combined with the feeling that they are making important contributions to the group, help to create and maintain feelings of identification with, and commitment to, the group and acceptance of its expressed goals and values” (p. 629). Their study of 24 elementary schools involved student completion of four questionnaires, for a total of 4,515 responses regarding the students’ perceptions of their sense of belonging and feeling of being a part of a community within the schools. Their study findings showed that “individual students’ sense of school community is positively related to a wide range of attitudinal, motivational, and behavioral variables” (Battistich, Solomon, Kim, Watson, & Schaps, 1995, p. 649). These implications, explained the researchers, showed that “students’ motivation is enhanced in schools in which they feel cared for, supported, valued, and influential — schools that they experience as communities” (p. 652).

Setting high expectations. Maranto and Shuls (2011) conducted a close examination of Arkansas-based KIPP Delta schools’ approach to building a school culture where students flourish. In their study, they collected, reviewed, and analyzed data from 12 days of visits at KIPP Delta schools. Their study also included an analysis of 33 KIPP schools and 33 public schools, as they wanted to analyze approaches to personnel recruitment. During the site visits, the researchers spoke with most of the administrators and teachers to determine the underlying reasons for KIPP schools’ success. Their findings presented that KIPP takes several approaches that worked toward the overall impression of a school with high expectations: college pennants on the walls; referring to students as “scholars”; and, hiring teachers who “embrace the mission” (Maranto & Shuls, 2011, p. 54). Maranto and Shuls (2011) explained that administrators and teachers consistently reminded students of the value in learning and future-driven goals. They reported that one student was crying in the hallway, and the principal approached her: “Honey, I want you to go back in there so you can learn so much so you can go to college when you get bigger. Do you want to be a doctor or a teacher like your teacher?” (Maranto & Shuls, 2011, p. 54). They also reported that such conversations about college readiness were “omnipresent” (Maranto & Shuls, 2011) throughout the schools. Essentially, the researchers expressed KIPP’s overt attention to career and college readiness and intentionally having career- and college-minded conversations with students on a regular basis. Regarding KIPP’s recruitment procedures, they concluded that “KIPP Delta succeeds at its stated mission [*to create and support schools that empower students from underserved communities to develop the knowledge, skills, and character traits necessary to pursue a college education and a life of value, joy, and integrity*], probably because of its careful attention to culture building” (p. 56).

Hege and Dovico (2018) devised several strategies for creating a “limitless school” where the leaders, teachers, students, and other stakeholders thrived. They determined setting goals and expectations was an essential element of a sound school culture. By that, they meant that a school with an “organized culture” did not get there simply by “guessing their way to success” (p. 9). Rather, schools with a positive school culture worked hard and diligently to improve the school culture. Hege and Dovico (2018) used a Rubik’s Cube to provide an analogy about improving a school culture, offering that school leaders cannot “give up and quit trying to solve the problems” if they encountered obstacles in their endeavors. They further stated that even once the “puzzle” shows that all

pieces are in place, the school still has a journey ahead — a journey that involves “looking for new ways to help students succeed” (p. 9). To reach success, the authors also discussed examples for building a positive school culture in a limitless school: “Starting the new school year off with giant decals of the students hanging around the school. Using the Rubik’s Cube as a metaphor for [] stakeholders coming together makes the concept concrete. Having parents or students write heartfelt testimonies about your school” (Hege & Dovico, 2018, p. 9–10).

Promoting risk-taking. Limited research on promoting risk-taking in schools has been produced; however, risk-taking in industry and innovation has been a topic of discussion for many years. Hodges (2015) explored the idea of failing forward during the risk-taking process. She defined failing forward as a means of learning from mistakes and making adjustments based on those mistakes (Hodges, 2015). Building on that, Hodges (2015) contended that working in the technology field meant there must be risk-taking as well as failure because that was how possible solutions were created. Hodges (2015) reported that industry underwent a cultural shift, and those working in industry fostered a mentality that failure — and learning from that failure — is acceptable and necessary in order to make progress.

Empowering students. Guay (2016) explored the importance of fostering a culture with high student motivation to increase student success. The study determined that although a student’s intrapersonal matters affect a student’s performance in school, a student’s motivation while at school was a major determinant in whether or not the student would succeed. The findings revealed that students who were motivated to be at school through engagement and empowerment, for example, resulted in greater student achievement. Essentially, when students were engaged and empowered in school settings, their overall motivation to learn increased.

Kallick and Zmuda (2017) explored student empowerment as a means of encouraging students to think critically and creatively as they solved authentic problems. The empowerment process involved personalizing student learning so that students’ interests become a consideration of the curriculum (Kallick & Zmuda, 2017). They explore this need in a variety of contexts, from schools serving mostly affluent students to schools serving students from low-wealth families. Further, they provided an explanation as to why both groups, to include those in between the spectrum of socioeconomic status, were apt to feel like school was not a place where they could be creative. Through a personalization model that included voice, co-creation, social construction, and self-discovery, students were more empowered to “think, create, share, and discover” without the suppression that schooling traditionally imposed (Kallick & Zmuda, 2017, p. 19). Above all, though, they concluded that the top question school leaders must always ask is whether or not the practices in place are sustainable and what cultural legacy will remain (Hege & Dovico, 2018; Johnson, 2005) once the current teachers, parents, administrators, and students are gone (Kallick & Zmuda, 2017).

Engaging in intentional culture building. Ellerbrock’s (2012) study of three high schools’ freshman students and their teachers examined the intentional ways schools create a positive school culture. The study sought to determine if developing responsive ninth grade environments through the use of an interdisciplinary teaming of teachers’ strategy would lead to increased student support through a more personalized, supportive learning environment. The study findings revealed that communication was the most important aspect of developing the supportive, family-like environment (Ellerbrock, 2012). Further, the result of that family-like relationship was a greater overall culture that resonated throughout the school (Ellerbrock, 2012; Hege & Dovico, 2018).

Communicating clearly. Using mixed-methodology that included case study methods and survey measures, Eilers and Camacho (2007) analyzed data of an urban elementary school that was failing in terms of state assessment scores. Then, after replacing the principal with one who embodied several characteristics — such as being proactive, collaborative, and communicative with district administration and school staff — and implementing several changes, the school changed drastically. The researchers explained several challenges the principal had to overcome in his newfound role: “a history of test scores below state and national averages, persistent student mobility and poverty, and a slate of veteran teachers with limited will to change” (Eilers & Camacho, 2007, p. 619). One of his first steps was to create learning communities where teachers had a place to communicate and collaborate with one another about their professional practices so that they could collectively improve and boost one another up where there were shortfalls. That was difficult, according to the principal, because most of his staff were adamant about not changing; however, he took all of the teachers away on a two-day offsite workshop about team building and adventure learning (Eilers & Camacho, 2007, p. 620). He used an outside consulting agency to conduct the workshop. Then, he created grade-level teaming with a common prep time. Also, teachers discussed that the principal practiced and preached a “no excuses” ruling that encouraged teachers to embrace the changes because the principal was providing support throughout the changes, leaving no room for feeling unsupported (Eilers & Camacho, 2007, p. 620–621). Another step the principal took was to take advantage of the district’s specialist in curriculum and testing because he recognized the need to strengthen the curriculum and assessment throughout the school. The principal said of this specialist: “The [state Department of Education] should have given her the \$10,000 that they’re giving to people from the state because I use her” (Eilers & Camacho, 2007, p. 622). In other words, he relied on her assistance and felt that for what she was doing, she should have been further compensated; the principal believed wholeheartedly in utilizing the people the district has available because they know the students, schools, curriculum, and so forth (Eilers & Camacho, 2007).

Principal Leadership

At the school level, the principal is the primary person responsible for ensuring safety and standards are upheld, but the principal is also much more than that. The principal is the lead learner who sets the tone for the school culture. The ways in which the school culture becomes established, alongside the performance of the students, is often what determines whether or not the school principal is an effective leader.

Mode of principal preparation program. Several contributing factors work toward ensuring schools are equipped with high-quality principals, and one factor is the state’s involvement in the principal preparation program. In his report directed toward all states and their approaches to hiring and retaining high-quality principals, Manna (2015) claimed that because a principal’s influence on student success is nearly as great as that of a teacher, the school administrator must be a top priority. He further stated that one of any state’s most important means of impacting the school leadership is to influence the principal preparation programs:

States possess unambiguous authority to oversee the organizations that prepare principals, and they also approve the specific degree programs that institutions of higher education offer. States can help promote the quality of principal preparation programs and help provide

information to potential principal candidates so they can select strong programs that will prepare them to become excellent principals. (Manna, 2015, p. 9)

One recommendation was to allow the state licensing authority to incentivize programs for their improvement (Manna, 2015). Another recommendation was to have the state serve as the managing institution for the principal training programs, as having one entity serving as the gatekeeper of information could improve knowledge of how all principals across the state receive training. The belief was that this process would also prompt the state to draw upon best practices in other states (Manna, 2015). Finally, a recommendation that was believed to have promising results with high-quality principals was to “sunset current programs and require them to meet a high set of standards before admitting future students” (p. 9) because some programs need extensive improvement that must happen before any additional future principals enter those programs and, in turn, enter the schools with little-to-no success (Manna, 2015).

Offering social and emotional support. Being socially knitted is one of several facets of a principal’s role. In fact, based on extensive research on professional learning communities, DuFour (2002) found that a principal is better equipped to lead a successful school when the questions “To what extent are the students learning the intended outcomes of each course?” and “What steps can I take to give both students and teachers the additional time and support they need to improve learning?” are posed (p. 7). These questions elicited a shift from the focus on teaching to the focus on learning. That might involve external factors, to which the principal must bridge home and school culture; it might involve scaffolded supports that involve necessary support personnel (DuFour, 2002).

Brackett and Rivers (2012) made the case for why social and emotional learning must be an everyday component of the school day. They provided ample evidence about the needs across America’s schools, offering that the focus on testing has prevented so many educators from taking care of the whole child — a focus on the social, emotional, and academic. They also offered that, despite a growing body of evidence that promotes incorporating social and emotional learning into schools, until legislation makes it a requirement, the impact would be minimal, if at all, because of the testing culture that was created as a result of the No Child Left Behind Act (Brackett & Rivers, 2012).

Supporting staff freedom/autonomy. The National Association of Elementary School Principals and National Association of Secondary School Principals (NAESP & NASSP) (2013) collaboratively found that current literature on principal impact on student success is underestimated because the principal has an extensive effect on student achievement. In fact, the organizations found that principals who looked at their daily role as a checklist of tasks to complete, such as keeping the school safe and clean, were individuals who could most benefit from forwarding staff members’ autonomy to make decisions and serve as teacher leaders (NAESP & NASSP, 2013). They included discussion on the principal’s allocation of time to daily responsibilities, offering that principals who foster leadership within the school could help the principal in fulfilling his or her role as the instructional leader (NAESP & NASSP, 2013). That process, according to the report, must involve offering unrestricted support and encouragement to teachers who have ideas and a willingness to help others throughout the school (NAESP & NASSP, 2013).

Mitchell (1990) examined Leadership Behavior Description Questionnaire studies that explored various types of organizations, namely, military, corporate, government, education, and medical, and the conclusion was that

there are two specific types of leaders: transactional and transformational. Transactional leaders focus on “things and tasks” and transformational leaders focus on “ideas and people” (Mitchell, 1990, p. 18). Even though the principalship might require one to be both transactional and transformational, depending on the circumstances, Mitchell (1990) offered: “The reason administrative work is predominantly transformational in character is that professional workers have to be socially knitted into a coordinated unit before high productivity results from their individual efforts” (p. 40). In other words, when people (i.e., staff members) felt that they were a vital part of the organizational community through the leader’s value imposed on the people and the experience and ideas they bring to the organization, authentic, transformational change transpired.

Engaging in intentional relationship building. Miller (2009) studied 12 years’ data on North Carolina public school principals to determine how principal turnover affects schools. She found that when a new principal takes the position, the average time for a principal to recover from previous poor accountability ratings was two years because the school was still feeling the effects of the previous administration and the new principal was in the process of establishing change in that time (Miller, 2009). In her findings, she recognized that over the 12-year span, more than half of the principals left their positions within four years, and some schools had as many as seven different principals (Miller, 2009). She also determined that schools with no principal transitions resulted in higher teacher retention and higher test score growth, and she determined that with principal transitions, teacher turnover was higher and test score growth was lower (Miller, 2009). Finally, an important element of Miller’s (2009) findings was that when teachers have a strong relationship with the administrator, such teachers might feel compelled to resign from the school if that particular administrator resigns, whereby demonstrating that a principal’s role in establishing relationships can have both a positive effect (e.g., loyalty to the school) and negative effect (e.g., resignation from the position).

Sebring and Bryk (2000) reported on eight years’ worth of research on Chicago Public Schools, determining that a principal’s role in establishing relationships throughout the school is essential to the overall success of the school. They found that of the three major ways that principals have a positive impact, one of the most important is strengthening parent and community ties to the school through participation in school events and creating the School Improvement Plan (SIP) (Sebring & Bryk, 2000). They determined: “How people behave, interact, learn, and work together is what breathes life into a school. Schools that are improving are characterized by cooperative work relations among all adults ..., [and] this requires a strong base of social trust among teachers, between teachers and parents, between teachers and the principal, and between teachers and students” (Sebring & Bryk, 2000, p. 442). In addition, teachers reported that principals who worked to build relationships and trust were ones who listened to teacher input and presented “opportunities to influence important affairs” (Sebring & Bryk, 2000, p. 443).

Instructional Staff

Research shows that a strong instructional staff is crucial to the success of a school and that the process of growing the instructional staff influences the overall effectiveness of the school. Mincu (2015) determined that the most advantageous means to attaining and sustaining student improvement was through a high-quality instructional staff. Further research showed that such staff embodied the following characteristics: acting as teacher leaders, participating in professional development, providing instructional support, and offering student assistance.

Acting as teacher leaders. Sebastian, Allensworth, and Huang (2017) explored teacher leadership in schools in their study that sought to examine more than 40 years of research on school improvement and school leadership as both pertained to the building principal, not distributive leadership. The researchers aimed to determine if teacher leadership mediated the relationship between principal leadership and student achievement (Sebastian, Allensworth, & Huang, 2017). Through an analysis of several data sources, which included standardized test scores from state-administered grade-level tests and teacher and student survey data on the perceptions of climate and instruction, the findings revealed that “school learning climate is the most important factor linking principal leadership and student growth”, and that the relationship of the two was “completely mediated through teachers’ influence in decision-making processes” (Sebastian, Allensworth, & Huang, 2017, p. 95). The researchers also amplified that the study findings were limited, but that “the strongest implication for policy and practice from this study pertains to the leaders’ work in improving school climate and the importance of sharing this work with teacher leaders” (Sebastian, Allensworth, & Huang, 2017, p. 96).

Participating in professional development. Bransford, Vye, Stipek, Gomez, and Lam (2009) looked at the subsystems affecting schools and instruction inside the schools. They used the analogy that the subsystems were not necessarily contributing to a “healthy elephant” (Bransford, Vye, Stipek, Gomes, & Lam, 2009). Their findings offered several ways to ensure the elephant is healthy; one such recommendation was to create an equitable education system that forwards all students, regardless of ability level or socioeconomic circumstances, with high-quality education and education supports to ensure that the process of healing the elephant toward total health is done holistically, with all subsystems in consideration (Bransford, Vye, Stipek, Gomes, & Lam, 2009, p. 1). One noteworthy subsystem was teacher preparation, which was determined to be the initial professional development that an educator encountered (Bransford, Vye, Stipek, Gomes, & Lam, 2009). One essential component of teacher preparation, noted the authors, was “[knowledge] of how students learn”; “knowledge of effective teaching practices”; and, “how teacher learning should influence teacher education” (p. 12).

Opfer, Kaufman, and Thompson (2016) explained that teachers were also asked to explain the professional development they receive and need; they determined that “although most teachers received less than one day of professional development on their main materials, about 31% of all mathematics teachers and 38% of all [English language arts]/literacy teachers indicated that they had ‘no need’ for additional professional development” (p. 53). Only a small portion of respondents, 5% to 10%, expressed having a “high need for additional curriculum specific [professional development]” (Opfer, Kaufman, & Thompson, 2016, p. 53). Teachers are using their own materials, generated in-house, or district-selected materials, and that only 30 to 50% of teachers felt that their instructional materials were standards-aligned practice (Opfer, Kaufman, & Thompson, 2016). As such, even though teachers did not state a need for professional development, that such a small portion of teachers felt they were teaching a standards-aligned curriculum indicated that they do, in fact, need professional development to ensure that they are providing standards-aligned instruction that results in student achievement.

Johnson, Sondergeld, and Walton (2019) conducted a study to gain insight about teachers’ understanding and use of formative assessments so that the researchers could provide information to the educational community about such a minimally researched aspect of education. Their study consisted of classroom observations of three school districts from three states: Colorado, Tennessee, and Texas (Johnson, Sondergeld, & Walton, 2019). The findings revealed that although teachers throughout the three districts were using formative assessments

to inform their instruction, the means by which the formative assessments were created, given, and analyzed varied to a great degree (Johnson, Sondergel, & Walton, 2019). The authors concluded that teachers must have professional development on formative assessment, and teachers in teacher preparation programs must have formative assessment included in their academic training.

Carpenter (1989) also conducted an early study that furthered the value of formative assessments as an intentional strategy to make tweaks to instruction in order to help students to a greater degree. His study involved two randomized first-grade teacher groups (Carpenter, Fennema, Peterson, Chiang, & Loef, 1989). The experimental group went to a monthlong professional development workshop to understand how children problem-solve when working with addition and subtraction in mathematics; the control group did not go to that training, but did attend a few workshops during the school year that were said to be minimal in comparison to the monthlong workshop (Carpenter, Fennema, Peterson, Chiang, & Loef, 1989). Then, both groups worked with students during the observation phase of the study (Carpenter, Fennema, Peterson, Chiang, & Loef, 1989). Experimental teachers were observed listening more to students and paying attention to their processes while working out the math problems (Carpenter, Fennema, Peterson, Chiang, & Loef, 1989). The study indicated the value of professional development training to teach teachers how to use formative assessment to inform their instruction and make adjustments based on not only what students have already learned, but also how the students performed the learning process (Carpenter, Fennema, Peterson, Chiang, & Loef, 1989).

Providing instructional support. Hattie (2009) pointed out that despite numerous studies, publications, and so forth, classrooms looked very similar to how they looked 200 years ago. He provided valuable insight about instructional strategies that have worked in other schools, such as one of the most basic elements of providing instructional support (Hattie, 2009). He referenced the instructional support provided to Maori (New Zealand) students — when a teacher gives students adjusting feedback that allows students to learn from their mistakes and make necessary adjustments, students become more capable of understanding the learning process and that learning is a process (Hattie, 2009).

Ladd and Hemelt (2016) looked at the effects of teaching assistants and resources to improve student learning. They specifically focused on the state of North Carolina and the personnel cutbacks in education that were made during the recession (Ladd & Hemelt, 2016). Their study revealed that teacher assistants have “positive effects on student test scores in reading,” with positive effects being statistically significant for “racial subsamples and the subsamples of schools defined by poverty status” (Ladd & Hemelt, 2016, p. 27). For math scores, they stated that the results were not as evident, but the minority population of students showed apparent positive effects (Ladd & Hemelt, 2016). They concluded, “[We] find that teacher assistants help to boost school-level proficiency rates in both math and reading and that teacher assistants reduce absentee rates and tardy rates” (Ladd & Hemelt, 2016, p. 27).

Offering student assistance. Genius Hour in schools was created as a means of allowing students to explore their own interests and passions while an educator facilitates the learning process (Simos, 2015). While the students were working, the teacher’s role was to move about the classroom helping students based on their learning styles and needs; students drove this process, but teachers carefully interacted and moderated the process (Simos, 2015). Simos found that this process allowed teachers to offer assistance when students wanted it, which was a process that fostered independence and helped students build their creativity while thinking critically. Unlike a

traditional classroom where the teacher drove instruction, Genius Hour prompted students to enter the zone of unfamiliarity and discomfort, but peers and the teacher were there to offer assistance when needed (Simos, 2015).

Gartner and Reissman (1994) explored the dated discussion of peer tutoring because the concept was mostly dismissed as useful in previous research studies. Previous findings concluded several reasons why peer tutoring was not considered valuable, from peer tutors being average teachers with slightly elevated knowledge than their peers to providing limited means to reaching academic goals (Gartner and Reissman, 1994). However, in their revamped analysis of the literature on peer tutoring, Gartner and Reissman (1994) found that it was actually one of the most cost-effective ways to help all types of students, including learning disabled (Kunsch, Jitendra, & Sood, 2007), increase academically for both the tutor and tutee as long as the tutoring process involved established guidelines so that all parties understood the roles, responsibilities, and objectives with the tutoring (Gartner & Reissman, 1994; Webb, 1989).

Personalized Learning

Providing personalized learning is an emerging concept in education. Research offers that personalized learning varies from school to school and district to district, but, in general, the concept is that students' individualized learning needs and styles are taken into consideration so that lessons are scaffolded accordingly (Vygotsky, 1978).

Allowing student choice. Wolf, Bobst, and Mangum (2017) explained in *Leading Personalized and Digital Learning: A Framework for Implementing School Change* that “personalized learning is not accidental and chaotic, and it is not putting each student in front of a computer to work independently” (p. 4). Instead, the authors found that personalized learning is an “avenue to increase agency among all learners in our schools and ensures that instruction meets the needs of each student” (Wolf, Bobst, & Mangum, p. 2). Finally, and perhaps capturing the essence of personalized learning, the authors determined that schools moving toward a personalized learning approach must remember the value of learner agency, which they refer to as “voice and choice,” combined with empowering and engaging students (Wolf, Bobst, & Mangum, 2017, p. 110).

Kallio's (2017) research examined the importance of voice and choice in a study that considered learning space design when implementing personalized learning. Kallio (2017) explored whether space helped encourage or hinder student voice, choice, and student agency. Based on previous research that showed teachers practicing personalization in the classroom, many teachers had dramatically changed their classrooms to incorporate personalization, through developing flexible seating environments and fostering a classroom culture of fluidity and movement as necessary and based on the learning of the individual student (Kallio, 2017). The study sample consisted of 12 schools, elementary, middle, and high school levels. Some were charter, others were considered neighborhood or magnet, with neighborhood being public. The sample schools varied in location (i.e., urban, suburban, and rural) and five of the schools were free and reduced-price lunch schools. Some of the sites involved students in the design process, and none of the sites had desks in rows (Kallio, 2017, p. 67–8). Students took “brain breaks” to engage in movement and get their minds and bodies refocused (Kallio, 2017, p. 69). The results of the study demonstrated that the physical space in a classroom did not equate to student learning outcomes, but students' voice and choice in their learning space helped the students build agency among themselves and to

feel like they had a sense of community and belonging (Kallio, 2017). Kallio also stated that future studies should explore whether the flexible seating negatively or positively affects student learning.

Providing scaffolded learning. Pane, Steiner, Baird, Hamilton, and Pane (2017) of the RAND Corporation conducted a study that found that personalized learning, or “instruction that is focused on meeting students’ individual learning needs while incorporating their interests and preferences,” was increasing due to the inclusion of personalized computing devices and software that supports individual learning (p. 2). Their study also revealed that schools approached personalized learning to varying degrees and that the traditional schooling approach was still evident in a personalized learning environment; however, school staff that are allowed to choose the most appropriate digital or nondigital curriculum materials and who have time to plan and collaborate about the curriculum are often more apt to provide a personalized learning experience to students because of the powerful scaffolding nature of personalized learning (Pane, Steiner, Baird, Hamilton, & Pane, 2017; Dennen, 2007).

Engaging in collaborative learning. While Bingham, Pane, Steiner, and Hamilton (2018) made specific remarks regarding the implementation and improvement of personalized learning, Smith (2018) also made recommendations to ensure a truly personalized approach. In her study, which is a case study of her own classroom, Smith (2018) discussed a student-generated unit that prompted the students to plan the unit and allowed students to choose to work in groups different from their regular groupings or pairings. The teacher and students spent two weeks looking at essential questions and understandings in order to design their own essential questions and intended understandings on the topic of survival (Smith, 2018). Students also “crafted guiding questions, objectives, discussions, and final assessments” (Smith, 2018, p. 69). The findings of the study exposed that some students did not do as well with the unit because students varied in their own levels of “independence” — one student explained that he would definitely design and implement another student-driven unit, whereas another student stated: “ ‘I wouldn’t want to do another student-designed unit again because I don’t feel like I had enough knowledge to be in charge of what I do. I need someone to tell me specifically what to do otherwise I just fool [around] or talk the entire class’ ” (Smith, 2018, p. 68). Essentially, the students seemed to enjoy the process of creating the unit — to include selecting the topic — but students’ opinions of the implementation process of the unit were divided (Smith, 2018).

Engaging in innovative approaches. Pane (2017) discussed that in personalized learning schools, small, albeit valuable achievement gains were noticeable. Those gains were statistically significant in mathematics, but the results were positive in both mathematics and reading (Pane, 2017). These findings were of a study from a 2015 sample, and Pane noted that personalized learning was emerging at that time; however, he also offered that personalized learning could prove to be highly effective for students (Pane, 2017).

Personalized learning is, indeed, becoming a common phrase throughout many schools, both in North Carolina and nationwide, but the process of its implementation is not without issues and inconsistencies. In their study, Bingham, Pane, Steiner, and Hamilton (2018) defined personalized learning as “a technology-based instructional model designed to tailor instruction to student needs, strengths, and interests to promote mastery of skills and content” (p. 455). The authors sought to respond to three research questions, two that pertained to challenges associated with personalized learning at varying levels — within the schools and at the core instruction level. Their third question examined recommendations to policymakers, administrators, and practitioners interested

in implementing professional learning to improve learning for traditionally underserved students (Bingham, Pane, Steiner, & Hamilton, 2018). Through a case study analysis, the findings revealed, “At the school level, there appeared to be strong commitment to implementing PL [personalized learning]. Administrators, teachers, and students recognize the potential of a PL environment and worked to enact that vision. However, some systemic and structural supports were not yet in place to help schools consistently and completely enact PL” (Bingham, Pane, Steiner, & Hamilton, 2018, p. 485). An overarching support that was lacking was bandwidth and technology support for ongoing, daily issues with accessing the web-based material and tools and general support for technology equipment (Bingham, Pane, Steiner, & Hamilton, 2018). Finally, a key finding of the study was that in order for personalized learning to happen effectively, “Teacher professional development and preparation programs need to keep up with the development of new school models. The development of tools and skills needs to be in line with the needs of teachers in a PL setting” (Bingham, Pane, Steiner, & Hamilton, 2018, p. 484).

As a prominent and vocal figure in education, Sir Ken Robinson, alongside Lou Aronica, presents the complex and challenging issues in South Carolina’s public schools in 2013. Robinson and Aronica (2015) explained that South Carolina’s reading and math scores were well below the national average, and the schools were, in general, needing transformation. In 2012, a group of educators submitted a report pointing out all of the “issues and the challenges” to the South Carolina State Board of Education, and the result was a partnership with the nonprofit organization New Carolina (renamed the South Carolina Council on Competitiveness in 2014) to develop and launch TransformSC (Robinson & Aronica, 2015, p. 227). Though the initiative was still in progress as of the writing of their book, the authors explained that the premise of the transformation included many of the key points discussed throughout the text of *Creative Schools*: “These South Carolina schools are prioritizing technology, shifting to project-based learning models, developing undervalued skills like problem solving and communication, and giving teachers significantly more freedom while still holding them accountable for outcomes” (p. 228). They also shifted the focus from test scores to ensuring students are college or career ready. The most difficult aspect of enacting changes through TransformSC was changing the culture in education because, though “everybody agrees that we need to change” (p. 229), actually changing is a completely different matter (Robinson & Aronica, 2015). However, the decision to create conditions within schools so that schools can transform included the following: fostering health through enthusiastic learners, expert teachers, and an uplifting vision; nurturing the ecology through inspiring leaders, alignment and coherence, and well-focused resources; promoting fairness through partnership and collaboration, strategic innovation, and advocacy and permission; providing care through high standards, intelligent accountability, and continuous professional development; and changing course through policymaking and state educational strategies that reflect the shift from “standardization to personalization” and “from conformity to creativity” (Robinson & Aronica, 2015, p. 238).

Curriculum Resources and Digital Tools

Offering blended learning opportunities. Ferdig and Kennedy’s (2018) research involved the practice of blending innovative technologies with research-based instructional practices in order to devise a high-quality learning experience. They explored the novelty of online and blended learning as a field within education that remains relatively new in the educational realm. In fact, Ferdig and Kennedy (2018) discussed that K–12 schools did not actually begin to use online enhancements to instruction until the mid-1990s and that more than two decades

later, online learning development has expanded but still brings many challenges to online, blended, and digital learning. They discussed several driving factors for including online and blended learning because they found blended learning to be one of the most advantageous ways of personalizing students' learning. In a close examination of the conceptual frameworks of online and blended learning, blended learning can encompass the following: distance learning, technology-enhanced learning, distributed learning, blended learning, e-Assessment, Human Computer Interaction, teacher technology integration, instructional design, and computer-supported collaborative learning (Ferdig & Kennedy, 2018; Halverson, Spring, Huyett, Henrie, & Graham, 2017).

Christensen, Horn, and Staker (2013) sought to better understand the impact of blended learning on education both currently and in the future through *disruptive innovation theory*. The disruptive theory, in opposition to the sustaining theory, implies that the innovation is merely an implementation of the simpler, easier, and less expensive option that could bring students and teachers a viable option that would work for the time being (Christensen, Horn, & Staker, 2013). Examples of sustaining blended learning include the Flipped Classroom, Lab Rotation, and Station Rotation because they effectively use the traditional classroom, or face-to-face instruction, and an online classroom to deliver content and engage the students (Christensen, Horn, & Staker, 2013). The authors concluded that when educators decide to use blended learning, they must look at its use through the disruptive innovation theory to determine if it will be sustainable and produce outcomes beyond the immediate future.

Creating design thinking activities. In Razzouk and Shute's (2012) study, they determined that design thinking, which involved a highly interactive learning process, also resulted in greater academic gains. In a conceptual representation that consisted of four quadrants, they placed the concept of design in the synthetic/real quadrant, whereas the other quadrants were analytic/symbolic, synthetic/symbolic, and analytic/real (Razzouk & Shute, 2012). What this meant was that "design falls in the fourth quadrant because it is highly synthetic and strongly concerned with real-world subject matter" (Razzouk & Shute, 2012, p. 334), a statement echoed by Stam's (2011) research on real-world, authentic learning as well. In addition, design thinking was an iterative and interactive process that constantly revolves and evolves through the process (Razzouk & Shute, 2012). Of additional importance was that they attribute several characteristics to a design thinker (p. 336):

- » Human- and environment-centered concern
- » Ability to visualize
- » Predisposition toward multifunctionality
- » Systemic vision
- » Ability to use language as a tool
- » Affinity for teamwork
- » Avoiding the necessity of choice

Providing digital tools. Across the United States, case studies of school districts and schools are being produced to inform the public on ways in which educators are employing a host of digital tools as a means of enhancing digital literacy, digital citizenship, and student success across content areas. In Omaha, Nebraska, the Common Sense Digital Citizenship Recognized District program recognized Omaha Public Schools, a district that serves 93 schools and more than 52,000 students (Common Sense, 2018). The rate of economically disadvantaged students was substantial at 74% (Common Sense, 2018). Therefore, Omaha Public Schools shifted its focus to include learning technologies and an innovative approach for all students (Common Sense, 2018). In two years, the district included more than eight million dollars worth of devices, and that was only in the middle and high schools (Common Sense, 2018) because, as the case study explained, it was an extensive process of construction and renovation to include such technology across the district. To ensure that the district-wide integration was successful, OPS used a train-the-trainer model through the Microsoft Innovative Educators program, which provided professional development on technology integration (Common Sense, 2018). The district also had days dedicated to digital citizenship, and these included lessons on digital citizenship, community outreach presentations to families, and parent-teacher conferences (Common Sense, 2018). The schools that were taking advantage of the digital initiatives were making intentional efforts to inform the school community, and the teachers at the schools were well trained and confident enough to ensure that their efforts were improving student outcomes (Common Sense, 2018).

Burch, Good, Heinrich, and Wanger (2014) analyzed the implementation of digital tools and the possibility that such an implementation would further the divide between those who have access to a high-quality education and those who do not have access because of limited funding for the devices (i.e., computers, netbooks, handheld devices). The authors found that an additional problem with effectively implementing digital tools in instruction was that the purchasing authority rarely consulted with school-level administrators or classroom teachers, but those were the individuals who were left to figure out how to use the devices (Burch, Good, Heinrich, & Wanger, 2014). Therefore, in their study of after-school tutoring programs that did and did not use digital tools, they looked at the quality of instruction (Burch, Good, Heinrich, & Wanger, 2014). They determined that human beings in the classroom are necessary — that is, digital tools cannot replace a teacher (Burch, Good, Heinrich, & Wanger, 2014). Also, the impact of digital tools for English learners and students with disabilities was limited (Burch, Good, Heinrich, & Wanger, 2014). They found that with the increase of digital programming, conducting an in-depth evaluation of the initiatives would help guide educators in ensuring that digitizing education was a meaningful strategy that helped all learners, regardless of socioeconomic background or learning abilities and needs (Burch, Good, Heinrich, & Wanger, 2014).

In Opfer, Kaufman, and Thompson's (2016) study, they reviewed common curriculum resources teachers accessed for both English and math courses. The majority of participants, both elementary and secondary, reported using materials that they developed themselves or that the district developed or selected (Opfer, Kaufman, & Thompson, 2016). Other materials accessed included EngageNY, Everyday Mathematics/Everyday Learning, Harcourt Math or HPS Math, and Go Math (Opfer, Kaufman, & Thompson, 2016). Secondary teachers accessed a greater variety beyond those resources, such as Glencoe Math, Envision Math, Prentice Hall, Investigations in Number, Data, & Space, and Eureka Math (Opfer, Kaufman, & Thompson, 2016). For English, the most common response was that teachers used materials they developed themselves or materials developed or selected by

their districts, but leveled readers/texts, Trade Books, and Accelerated Reader (Renaissance Learning) came in close behind (Opfer, Kaufman, & Thompson, 2016). At the bottom of the list were programs and digital tools such as Book It! Program, Harcourt Reading, RAZ-Kids, Engage NY, and Scholastic's Reading 180 (Opfer, Kaufman, & Thompson, 2016).

Offering career and technical education. Through an exploration of causal impact, Dougherty (2018) investigated the relationship between high school CTE programs and four elements, including test scores, completion rates, certification credits earned, and students' persistence, as related to low-income families. Dougherty (2018) offered that low-income families were an "overrepresented" population in CTE programs. The conclusion of his study revealed that students from low-income families were often at risk of dropping out, thus this population might most benefit from CTE programs (Dougherty, 2018). He labeled this phenomenon as one in which both policymakers and educators should find interesting and noteworthy of close examination, "particularly compelling from both an educational and social policy perspective" (Dougherty, 2018). In addition, he pointed out that other states should look to Massachusetts' CTE program if they need further guidance in making a substantive CTE program because it had made evident labor-market returns (Dougherty, 2018).

Engaging in play-based learning. Stagnitti, Baily, Hudspeth Stevenson, Reynolds, and Kidd (2015) analyzed two groups of students (54 total students — one group that was part of a play-based curriculum [experimental group] and one group that was part of a traditional curriculum [control group]). The play-based curriculum involved ongoing opportunities for children to engage in "non-threatening and intrinsically enjoyable" activities with interactions among other children and the teaching staff and 30-minute periods of self-initiated pretend play (Stagnitti, Baily, Hudspeth Stevenson, Reynolds, & Kidd, 2015, p. 402). The children in the experimental group improved on all standardized measures, as well as grammar and language usage (Stagnitti, Baily, Hudspeth Stevenson, Reynolds, & Kidd, 2015). Beyond that, the authors found that children involved in play-based curricular activities are more advanced in play and oral language skills during the initial six months of formal schooling.

Formative Assessments

Assessing student learning is necessary for an educator to determine if the student is learning the curriculum; assessment helps the teacher make adjustments in the instructional process before too much time lapses, thus resulting in students' learning gaps. However, the No Child Left Behind testing culture suggested that assessment was summative, or that it had a finality to it. Though summative assessments were proven vital to determining comprehensive learning among students, formative assessments help teachers make instructional shifts during the learning process. Formative assessments differ from classroom to classroom and school to school, but the common denominator is that the assessing happens during the instructional lesson or unit and prompts the teacher to make changes, such as through reteaching, changing the amount of dedicated time on a particular topic if students already understand and are ready to move forward, and so forth.

Engaging in conferencing. Providing feedback and receiving feedback, both means of formative assessment, require intentional effort from both teacher and student, but feedback protocols can be useful tools in ensuring that the feedback process makes effective use of time and produces quality results. Bambino (2002) explored the

commonly utilized National School Reform's Critical Friends Group, to include the tuning protocol and consultancy protocol, in both providing feedback to and receiving feedback from students. The protocol was also used with teachers who met monthly to analyze one another's lessons and student work. Bambino (2002) concluded: "The structure and format of Critical Friends Groups create opportunities for colleagues to challenge their own practice as well as that of their peers" (p. 27) in a nonthreatening way.

Student-Led Conferences (SLCs) and Student-Led Meetings (SLMs) were explored in Dreas-Shaikha's (2018) study of a middle school. In her research, Dreas-Shaikha (2018) analyzed SLCs as systematic processes that allowed students to ask questions and engage in dialogue to inform the teacher, encourage the students to take ownership of their learning, and to prompt students to work on soft skills (p. 4). Several questions were posed as probing questions that the teacher asked if students needed to explain further or clarify their verbiage (Dreas-Shaikha, 2018). The questions ranged from "What did you mean by that?" and "Would you like to explain?" to more general questions like "What do you need?" and "What will help?" (Dreas-Shaikha, 2018, p. 8). The researcher concluded that both practices, SLCs and SLMs, provided students with opportunities to have "voice, responsibility, and autonomy in their learning" (Dreas-Shaikha, 2018, p. 15). However, both practices also required the teacher to make a diligent effort in fostering the conference process (Dreas-Shaikha, 2018).

Giving traditional tests. Duckor and Holmberg (2017) explored the use of formative assessments through a variety of delivery modalities to determine if any one particular approach, such as traditional quizzes, exit slips, or interim tests, made a greater difference in the students' learning. They determined that "deep formative assessment practices blur the line between instruction and assessment. Most people associate assessment with quizzes, homework, and test events: the 'stuff' of classroom assessment and evaluation. But assessment for learning occurs *during* our lessons" (Duckor & Holmberg, 2017, p. 6). As such, formative assessment could look like a traditional quiz, such a multiple choice or constructed response, or it could be a simple knowledge check between the teacher and student (Duckor & Holmberg, 2017). Finally, Duckor and Holmberg (2017) pointed out that often, teachers "forget that reposing a question, scaffolding a probe with a sentence frame, or reintroducing a think-time procedure in response to students' verbal and nonverbal action — or inaction! — are assessment strategies that have as much or more power than traditional classroom assessment tools such as worksheets or quizzes" (p. 30).

Black and Wiliam (2009) provided a clear definition of formative assessment, communication, and contingency based on the Assessment Reform Group, which expressed that formative assessment is any means of measuring student learning through evidence-gathering and interpreting on the part of the teacher or other students; further, the assessment process must provide guidance as to "next steps" in instruction (p.9). Teachers who used formative assessments were doing so to gather information that would guide their next steps in instruction (Black & Wiliam, 2009). Furthering that, formative assessments were not an end to learning; instead, the assessments were intermittent opportunities for students to demonstrate their learning and inform the teacher (Black & Wiliam, 2009). The formative assessment process, the authors noted, also involved feedback and reflection as a means of diagnostic data that informs both the teacher and learner.

Employing diagnostic assessment data. Formative assessment does not always need to involve the teacher. Leenknecht and Prins (2018) conducted an experimental study that involved formative assessment in grade six.

The study included 95 participants, and the purpose was to investigate peer formative assessment (Leenknecht & Prins, 2018). The researchers discussed that a typical barrier to formative assessment is that many peers feel that they do not have the ability to assess one another and will, thus, provide low-quality feedback; teachers echo the same sentiment (Leenknecht & Prins, 2018). However, the researchers offered that there are key benefits associated with peer assessment as a means of diagnostically assessing student data. One benefit was that students felt empowered to take ownership of their learning because they were using their social and communication skills to give and receive criticism (Leenknecht & Prins, 2018). Although student engagement was high with peer formative assessing, Leenknecht and Prins (2018) stressed the importance in communicating and reminding students of the standards that are being assessed. This helped students to explicitly know what they needed to be assessing of one another and what their own student work should encompass (Leenknecht & Prins, 2018). The authors noted that high-quality peer feedback should include a feedback form, whereby the student had access to a tangible reference during the necessary revision process that follows the feedback sessions.

Using Multitiered Targeted Systems of Supports. Long before formative assessment became a common term in modern education, Fuchs (1991) conducted a study with trained teachers to have them implement a curriculum-based formative assessment program as a means of gathering student evidence to determine their understanding of the content. Using randomized assignment, half of the 33 teachers in the study were observed using the program to make greater instructional adjustments than teachers who merely observed the class informally without a specific plan or purpose, as the program gave the other teachers (Fuchs, 1991). Therefore, the study revealed that formative assessment included strategies and techniques that were intentional and based upon students' learning styles and needs, which varied from learner to learner (Fuchs, 1991).

Utley and Obiakor (2015) explained in their research on Multitiered Targeted Systems of Supports (MTSSs) that when the MTSS framework, which involved both response to intervention and positive behavioral interventions and supports (PBIS), was implemented, the result could be substantial in student learning and behavior. Further, MTSS's built-in social and emotional learning was found to be extremely necessary in modern education (Elias et al., 1997; Utley & Obiakor, 2015). Utley and Obiakor (2015) concluded: "District leadership in MTSS provides schools with political and administrative support, training and technical assistance, layered in-service curricula, data-based decision making systems for ongoing evaluation, and access to interagency relationships for supporting student health and wellbeing" (pp. 1–2).

Experiential Learning

According to Kolb's (1984) experiential learning theory (ELT), learning is "the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience" (p. 41). Basically, students learn from reflecting on their experiences. Kolb's (1984) ELT drew greatly from the works of John Dewey, Kurt Lewin, and Jean Piaget — well-known psychologists who helped shape educational reform through their research and findings. In particular, Dewey (1963) distinguished between traditional education and a progressive model that incorporates real-life experience, and Kolb's learning model was based on that of Dewey's, as well as the contributions from Lewin and Piaget. Kolb and Kolb (2005) explained that ELT was built on six principles, to include the notion that "learning is a process that engages students to

enhance their learning and provides feedback on their efforts,” and that any sort of learning is “relearning” and a “holistic process” (p. 194). In addition, the learning process involves “conflict, differences, and disagreement,” as students engaged in the learning process are creating knowledge and entering into “synergetic transactions between the person and the environment” (p. 194). Kolb’s (1984) experiential learning cycle illustrated how *concrete experiences* are the basis for *reflections*, which then form the basis for *abstract concepts* that can be *actively tested*, which leads to the creation of new experiences. As it is a cyclic process, the ELT evidenced the iterative nature involved.

Though experiential learning is a subset of experiential education, the two are not synonymous (though the terms are often used interchangeably). Itin (1999) attempted to clarify the distinction between the two:

Learning is best considered as the process of change that occurs for the individual... Education, on the other hand, is best considered as a process between an educator and student. This transactive experience may also include the larger institutional forces (e.g., the educational system). Learning and education are different constructs and, given this, experiential learning and experiential education are different constructs as well. (p. 91)

Itin (1999) defined experiential learning as “changes in the individual based on direct experience” (p. 91), and claimed that any definition of experiential education “must include or make clear the transactive component between teacher and learner” (p. 92) and “must consider the larger system level issues of education ... in the learning environment” (p. 92).

The National Society for Experiential Education (NSEE) presented the following eight principles of good practice for experiential learning activities: intention, preparedness and planning, authenticity, reflection, orientation and training, monitoring and continuous improvement, assessment and evaluation, and acknowledgement (NSEE, 1998).

Experiential learning can be effective for all kinds of students, but it has especially benefited adult students who have been out of school for many years, learners motivated to learn through personal experience or who struggle to succeed in formal classroom settings, and those planning to pursue nontraditional professions (Cantor, 1995). Essentially, a large body of research on experiential learning focused on higher education. As such, Yardley, Teunissen, and Dornan (2012) found that medical students’ growth was most observed during residency because that is when students are practically applying content to make real-world and social-emotional connections. Burch et al. (2014) found that experiential learning activities tend to result in greater student learning and student appreciation for the learning process, thus indicating a positive component of schooling. The study revealed that there is a relationship between experiential learning exercises and student learning outcomes because students were placed at the center of learning. The researchers did note, however, that little research had been conducted on student perceptions toward experiential learning. Burch, Good, Heinrich, and Wanger (2014) concluded that even without that research on student perceptions, when possible, educators should add experiential components to solidify new knowledge.

Offering STEM and STEAM-based programs. The demand for employees with science, technology, engineering, and mathematics (STEM) knowledge and skills is growing (Lacey & Wright, 2009). However, many students are not

prepared for future STEM careers. According to the National Assessment of Educational Progress, approximately 75% of U.S. eighth graders were not proficient in mathematics as of the study's completion, and there were significant achievement gaps in mathematics between white and minority and high- and low-poverty students (Hill et al., 2008). To address these issues and meet the need for future STEM workers, schools began offering programs explicitly focused on STEM and STEAM (science, technology, engineering, art, and math) learning. STEAM emerged in recognition of the important role artistic and creative thinking play in engineering (Watson & Watson, 2013).

According to the Committee on Highly Successful Schools or Programs in K–12 STEM Education, “effective [STEM] instruction capitalizes on students’ early interest and experiences, identifies and builds on what they know, and provides them with experiences to engage them in the practices of science and sustain their interest” (Committee on Highly Successful Schools or Programs in K–12 STEM Education & National Research Council, 2011, p. 18).

A preliminary meta-analysis of the literature on integrative approaches to STEM learning conducted by Becker and Park (2011) determined that students who were exposed to integrative approaches — “approaches that explore teaching and learning between/among any two or more of the STEM subject areas, and/or between a STEM subject and one or more other school subjects” (Sanders, 2009, p. 21) — demonstrated increased STEM learning outcomes. Wai, Lubinski, Benbow, and Steiger (2010) found, “A richer and deeper density of advanced educational experiences in STEM (e.g., STEM AP courses, math or science fairs, tutoring in mathematics) was associated with noteworthy accomplishments in STEM among mathematically talented and motivated young adolescents” (p. 870).

Providing inquiry-based learning. Inquiry-based learning is a form of active learning wherein students ask questions and conduct research to answer them, modeling the process professional scientists and researchers use to construct knowledge (Keselman, 2003). Inquiry-based learning is a process which requires the development and use of problem solving skills (Pedaste et al., 2012; Pedaste & Sarapuu, 2006). Students engaging in inquiry-based learning typically complete a self-directed learning process by conducting research, such as an experiment, to understand how different variables are connected (Wilhelm & Beishuizen, 2003).

A literature review conducted by Pedaste, Mäeots, Leijen, and Sarapuu (2015) found that several studies “support the effectiveness of inquiry-based learning as an instructional approach” (p. 48) and improvements in technology have made applications of inquiry-based learning more successful (de Jong, Sotiriou, & Gillet, 2014). Inquiry-based learning is internationally regarded as crucial to developing a scientifically literate community (European Commission, 2007; National Research Council, 2000).

Two popular models of inquiry-based learning are project-based learning and problem-based learning. As defined by Blumenfeld, Soloway, Marx, Krajcik, Guzdial, and Palincsar (1991), project-based learning is “a comprehensive approach to classroom teaching and learning that is designed to engage students in investigation of authentic problems” (p. 369). Project-based learning requires students to ask a question and complete a project in pursuit of the answer, though it is acceptable for teachers to ask a question and then let students conduct their projects in response (Blumenfeld, Soloway, Marx, Krajcik, Guzdial, & Palincsar, 1991). It is important that the question

does not have a strictly predetermined answer so that students are free to develop their own approaches in response. According to Blumenfeld, Soloway, Marx, Krajcik, Guzdial, and Palincsar (1991), “As students investigate and seek resolutions to problems, they acquire an understanding of key principles and concepts” (p. 372). In this way, projects connect student learning to real-life experiences. One benefit of project-based learning is that it has been found to increase student interest in learning (Blumenfeld, Soloway, Marx, Krajcik, Guzdial, and Palincsar 1991). Other studies have found that project-based learning had a positive impact on attendance rates for economically disadvantaged students (Creghan & Adair-Creghan, 2015) and that STEM project-based learning experiences helped decrease the achievement gap in mathematics between low- and high-performing students (Han, Capraro, & Capraro, 2015).

Problem-based learning originated in medical education in the 1950s and has been adapted into numerous fields over time (Savery & Duffy, 1996). Barrows’ (1992) model of problem-based learning, developed for secondary education, entails presenting students with a problem and requiring them to engage in self-directed learning to determine a solution to the problem (Savery & Duffy, 1996). Teachers may be available as facilitators to answer students’ questions during this process, but students are otherwise totally responsible for their own research (Savery & Duffy, 1996). After the self-directed learning, students then reflect on their research and reexamine the problem, repeating the cycle if necessary (Savery & Duffy, 1996). It is important that problem-based learning address real issues because, since students are free to explore all aspects of the problem, consistent information is necessary (Savery & Duffy, 1996). In addition, real problems are more engaging, and students are motivated to learn the solutions to real-world problems (Savery & Duffy, 1996). Hung, Jonassen, and Liu’s (2008) review of the problem-based literature noted that multiple topics have been effectively taught using problem-based learning, including mathematics (Cognition and Technology Group at Vanderbilt, 1993), science (Kolodner et al., 2003; Linn, Shear, Bell, & Slotta, 1999), literature (Jacobsen and Spiro, 1994), history (Wieseman and Cadwell, 2005), and microeconomics (Maxwell, Mergendoller, and Bellisimo, 2005). Problem-based learning has been implemented effectively in rural, suburban, and urban schools (Delisle, 1997; Fogarty, 1997), as well as with all levels of academically or intellectually gifted K–12 students (Dods, 1997; Gallagher, 1997; Gallagher, Sher, Stepien, & Workman, 1995; Stepien and Gallagher, 1993; Stepien, Gallagher, & Workman, 1993) and economically disadvantaged students (Stepien and Gallagher, 1993).

Encouraging learner agency. Based on Bandura’s (1977) social learning theory, Martin (2004) defined agency as “the capability of individual human beings to make choices and to act on these choices in ways that make a difference in their lives” (p. 135). Thus, learner agency, sometimes called self-regulated learning, allows students to explore their own interests, but requires that they take the initiative to do. According to van Lier (2008):

The main principle involved is that learning depends on the activity and the initiative of the learner, more so than on any “inputs” that are transmitted to the learner by a teacher or a textbook. This does not, of course, diminish the need for texts and teachers, since they fulfil a crucial mediating function, but it places the emphasis on action, interaction, and affordances, rather than on texts themselves. (p. 1)

Previous research on learner agency has found that allowing personal agency increases students’ motivation to work harder and persevere through challenges (Ford, 1992; McCombs & Marzano, 1990). Learner agency has

resulted in meaningful learning experiences and knowledge that students care about because it is relevant to their interests (Zimmerman, 2001). A study that implemented learner agency in an online learning environment by Lindgren and McDaniel (2012) found “significant benefits of employing narrative and increasing student choice on interest and perceived relevance of the course material, critical thinking, and the acquisition of design skills” (p. 344).

Developing community partnerships. (See *Brokering services with community partners* below.) One way schools have developed partnerships with community members and organizations is through the Communities in Schools (CIS) initiative. CIS is a national organization that works in public and charter schools to “build ... relationships that empower students to succeed inside and outside the classroom” (CIS, 2019), with a focus on economically disadvantaged and at-risk students. A comprehensive five-year national evaluation of CIS found that CIS high schools had improved on-time graduation rates and reduced dropout rates (Porowski & Passa, 2011).

An important partner for K–12 schools, especially high schools, has been community colleges. Though community colleges originated as extensions of high schools, they have evolved over time into their own educational system (Cohen & Brawer, 1996). However, community colleges and high schools have begun to reconnect through partnerships to improve college completion rates (Barnett & Hughes, 2010). Community college and high school partnerships that give students the opportunity to earn college credit while in high school, such as dual enrollment, have yielded promising results (Hoffman, Vargas, & Santos, 2009). Hoffman, Vargas, and Santos (2009) explained that well-designed programs that provide college-level work in high schools have tremendous effects, specifically resulting in increasing student motivation to go to college, reducing costs for students to include those who are historically underserved at the college level, and reducing the amount of time it takes for a student to be in college post–high school (p. 44). Positive outcomes of dual-enrollment programs have included: participating high school students enrolled in college at higher rates than nonparticipating students (Florida Department of Education, 2004a); participating Hispanic and Black students enrolled in college at higher rates than Whites and other ethnic groups (Florida Department of Education, 2004a, 2004b); participating students who attended college were more likely to still be enrolled two years after high school and have higher GPAs compared with nonparticipating students (Karp, Calcagno, Hughes, Jeong, & Bailey, 2007); economically disadvantaged and low-performing participating students benefited to a “greater extent than their dual enrollment peers who enter[ed] college courses with more social, economic, and educational advantages” (Karp, Calcagno, Hughes, Jeong, & Bailey, 2007, p. 63).

Other forms of partnership between community colleges and high schools include outreach and recruitment, early assessment, CTE pathways, summer bridge programs, and early and middle college high schools (Barnett & Hughes, 2010). Outreach and recruitment programs help students learn about and navigate the process of matriculating into college (Barnett & Hughes, 2010). Early assessments attempt to highlight areas in which students are not yet college ready so that they may improve those skills and be better prepared for college (Barnett & Hughes, 2010). Programs in California and Texas have shown evidence that early assessment has increased the proportion of students who are college ready (Howell, Kurlaender, & Grodsky, 2010; Kerrigan & Slater, 2010). CTE pathways are federally funded programs that aim to improve high school–to–college transitions “by linking the last two years of high school with the first two years of college through technical programs that include rigorous academic content” (Barnett & Hughes, 2010, p. 61). Cellini (2006) claimed that CTE programs are more

successful in getting students to enroll in community colleges rather than traditional four-year postsecondary programs, though it has also been found that high school students who participate in CTE tend to graduate more quickly than their nonparticipating peers (Sweat & Fenster, 2005). Summer bridge programs are intensive summer programs that seek to prepare students for college in a variety of subject areas, often by introducing them to college norms and expectations (Barnett & Hughes, 2010). Outcomes for students who attended summer bridge programs have included higher retention rates, including for underrepresented and economically disadvantaged students (Ackermann, 1990; Garcia, 1991; Myers & Drevlow, 1982; Santa Rita & Bacote, 1997) and improved academic performance (Bengis, L., 1991). Early and middle college high schools, as described by Barnett and Hughes (2010):

... are small high schools created by a partnering school district and a postsecondary institution, most often a community college. They target students traditionally underserved in college and encourage them to take college courses while still enrolled in high school. Early college high schools are explicitly designed to offer students the opportunity to graduate high school with one to two years of college credit earned, or even an associate degree. (p. 62)

In North Carolina, early college students were found to be more likely to become college ready than similar, non-early college students (Edmunds, 2006). There was also little to no achievement gap found between minority and nonminority students in early colleges, and notably, underserved males of color performed as well as their female and white male peers (Kim & Barnett, 2009).

High schools also often partner with traditional, four-year universities and colleges through credit-based transition programs that attempt to ease students' transition from high school to college by allowing them to take college courses and receive college credit while still in high school (Fowler & Luna, 2009). Credit-based transition programs have been found to be cost effective and to improve secondary schools' retention and increase graduation rates (Fowler & Luna, 2009).

Pioneering innovative approaches. In his research on the process of innovation in school organizations, Daft (1978) described four steps in the process of innovation: idea conception, proposal, decision to adopt, and implementation. Daft (1978) found that teachers are the most active source of technical innovations in schools, providing approximately 70% of innovative technical ideas. Superintendents initiated 45% of administrative innovations, followed by principals (22%) and teachers (13%). In districts with higher teacher professionalism (typically advanced degrees), teachers offered 93% of technical innovations (Daft, 1978). Most teacher technical innovations were prompted by administrators and adopted, but technical innovations proposed by administrators could be resisted by teachers and were less likely to be adopted (Daft, 1978). As a result, Daft (1978) recommended that administrators collaborate with teachers before proposing technical innovations.

Engaging in service-learning opportunities. Service learning opportunities allow students to participate in educational experiences while serving their community. According to Bhaerman, Cordell, and Gomez (1998), service learning is characterized by "active participation, thoughtfully organized experiences, focus on community needs and school/community coordination, structured time for reflection, opportunities for application of skills and knowledge, extended learning opportunities, and development of a sense of caring for others" (p. 4).

Multiple reviews of service learning literature have found that service learning is associated with many positive student outcomes. Billig (2000) summarized and consolidated findings that found service learning: has a positive effect on public school students' personal development; is associated with decreased risky and delinquent behaviors; has a positive effect on students' interpersonal and cultural skills; develops students' sense of social responsibility; helps students acquire academic and career skills; improves teacher-student respect and overall school climate; and leads to positive perceptions by community members about school-aged youth.

In a follow-up review, Furco and Root (2010) noted that only a quarter of the published research on service learning had been tested under a certain set of research conditions required by the U.S. Department of Education to consider an innovation evidence-based. By focusing only on those studies, they determined that students who participate in service learning show improvements in reading and language arts skills; have improved engagement, motivation, and attitudes toward school; and enhanced civic responsibility and citizenship, personal skills, and social skills (Furco & Root, 2010). Furco and Root (2010) also noted that "not all service learning is equal" (p. 18) and recommended that practitioners refer to Billig and Weah's (2008) "K-12 Service-Learning Standards for Quality Practice."

Comprehensive Staffing and Support

Comprehensive staffing and support requires that every school have an adequate supply of appropriately trained staff such as counselors, social workers, nurses, psychologists, and school resource officers. These individuals assist with the whole child and social and emotional learning (SEL) elements that research has shown are necessary for student success. However, in a report for the North Carolina Justice Center, Nordstrom (2019) claimed, "Despite the importance of certified support staff, state investment has fallen by over nine% over the past decade. In FY 08-09, North Carolina schools received 5.1 instructional support positions per every 1,000 students, compared to only 4.6 positions per 1,000 students in FY 18-19" (p. 8).

Providing access to support staff. In order for students to benefit from support staff services, they must be able to actually access them. Comprehensive school counseling programs, for example, have had positive effects on student outcomes, such as student achievement (Cary & Martin, 2015). The American School Counselor Association (ASCA) recommends a student-to-counselor ratio of 250:1 (ASCA, 2017); however, the National Association for College Admission Counseling (NACAC) and the ASCA collaboratively reported that North Carolina's ratio for the 2014-15 school year was 378:1 (NACAC & ASCA, 2015). According to NACAC and ASCA (2015), "Access to a school counselor can make a significant difference in student persistence/retention, students' postsecondary aspirations, and students' likelihood of enrolling in postsecondary education. To realize such results, school counselors must operate in an environment free of overwhelmingly large student caseloads" (p. 1).

School nurses have similarly been reported as overburdened, with an average national student-to-nurse ratio of 750:1, even though smaller ratios correlate to improved student health outcomes (Guttu, Engelke, & Swanson, 2004). According to Lineberry and Ickes (2015), "In order for medically fragile and chronically ill children to receive a comparable education to their healthy peers, a considerable amount and variety of health services must be provided at school. Such services are commonly provided by school nurses" (p. 23). School resource officers

support school-based crisis prevention and intervention efforts (James, Logan, & Davis, 2011) and have been positively associated with reductions in violence in schools (Johnson, 1999; Theriot, 2009). When school guidance counselors are overloaded, they are unable to equitably serve all students which affects students' education and career advancement (Corwin, Venegas, Oliverez, & Colyar, 2004). School social workers can help improve student attendance and grades through academic intervention plans (Huffman, 2012; Teasley, 2004).

Brokering services with community partners. Community involvement in schools has benefited students in many ways. As Gross, Haines, Hill, Francis, Blue-Banning, and Turnbull (2015) wrote:

Research shows schools that develop strong community partnerships have (a) a higher percentage of students performing on grade level (Sheldon, 2003), (b) increased parental volunteerism (Anderson et al., 2010), (c) supported school reform efforts (McAllister, 2013), (d) increased student test scores (Blank, Melaville, & Shah, 2003; Sheldon, 2007), (e) increased student attendance rates (Sheldon, 2003, 2007; Sheldon & Epstein, 2004), and (f) connections for students to learning opportunities outside of school (Blank et al., 2003). (p. 10)

Joyce Epstein has researched the effects of community and family school involvement since the 1980s. Epstein's (1987) overlapping spheres of influence model proposed that students' home, school, and community experiences overlap and interact to influence children's development, including academic achievement. In *School, Family, and Community Partnerships: Your Handbook for Action*, Epstein, Sanders, Simon, Salinas, Jansorn, and van Voorhis (2002) listed community collaboration as one of the six types of involvement that can contribute to school improvement through "increased skills and talents through enriched curricular and extracurricular experiences"; "awareness of careers and options for future education and work"; and "specific benefits linked to programs, services, resources, and opportunities that connect students with community" (p. 16).

Schools that partner with external agencies such as universities, businesses, nonprofit organizations, social service providers, and other organizations benefit from "the increased resources, supports, and relationships resulting from the development of trusting school-community partnerships" (Gross, Haines, Hill, Francis, Blue-Banning, & Turnbull, 2015, p. 18). These benefits may include, but are not limited to, student teachers, professional development, health care, mental health supports, developmental disability resources, free or subsidized programming, funding, support for student families, student enrichment opportunities, and infrastructure improvement (Gross, Haines, Hill, Francis, Blue-Banning, & Turnbull, 2015). Valli, Stefanski, and Jacobson (2014) developed a typology of school-community partnerships and noted that the most basic model is *family and interagency collaboration*. In this model, schools and external agencies coordinate the delivery of health, social, and additional education services to support students and their families (Valli, Stefanski, & Jacobson, 2014). These efforts have resulted in improved student achievement; higher attendance and graduation rates; increased use of school buildings; community pride and engagement; improved student behavior and attitudes; increased teacher satisfaction; increased parent satisfaction; greater family and neighborhood stability (Valli, Stefanski, & Jacobson, 2014, p. 722.)

Domina and Ruzek (2012) conducted a quasi-experimental evaluation of partnerships between universities and school districts in California and found that "comprehensive K-16 partnerships substantially increase student

graduation and nonselective university enrollment rates in participating school districts, but that these effects take time ... local partnerships are an effective, but resource- and time-intensive, K–16 school reform strategy” (p. 243).

Implementing social emotional learning supports. SEL is “the process through which children and adults understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions” (Collaborative for Academic, Social, and Emotional Learning, 2019). SEL plays a critical role in attaining academic and personal success (Elias et al., 1997). When schools provide substantial, consistent SEL programs, students demonstrated documented academic success (Elias et al., 1997; Peyton et al., 2008). Peyton (2008) found that students who developed social-emotional skills had improved self-perceptions and perceptions of others, as well as improved behavior.

There is no universal SEL model. The Collaborative for Academic, Social, and Emotional Learning (CASEL) — a leading proponent of SEL — outlines three principles to help school and district leaders select an appropriate SEL program: (1) SEL adoption should be led by a team that engages diverse stakeholders in the process; (2) SEL programming should be implemented “within systemic, ongoing district and school planning, programming, and evaluation” (p. 31); and (3) local context should be considered (CASEL, 2013). Successful implementation of SEL includes providing job-embedded professional development and supports for teachers, administrators, and other school personnel (CASEL, 2013).

Offering support to families. Michael, Dittus, and Epstein (2007) analyzed data from the Centers for Disease Control and Prevention School Health Policies and Programs Study, which included all 50 states and the District of Columbia. They determined that family involvement in student education strongly correlated to positive student learning outcomes, increased attendance rates, and improved school programming. They further explained that although family and community involvement was apparent in all states, the degree to which the involvement occurred varied greatly, thus providing evidence that schools need to improve their communication and collaboration with school community families (Michael, Dittus, & Epstein, 2007).

Reynolds et al. (2007) offered that participation in a school-based early childhood intervention program had lasting, positive outcomes for participating students. Their study reviewed the long-term effects of a program that primarily served at-risk students from preschool through the third grade (Reynolds et al., 2007). An important feature of the program was the provision of services to and engagement of parents, including parenting education, requiring parents to volunteer in the classroom and attend school events and field trips, opportunities for additional educational attainment, and home visits (Reynolds et al., 2007). Students and their families also received health and nutrition services (Reynolds et al., 2007). As a result, preschool participants in the program as adults “had comparatively higher rates of educational attainment and health insurance, lower rates of more severe criminal behaviors including felony arrests, convictions, and incarceration, and lower rates of depressive symptoms” (Reynolds et al., 2007, p. 737).

Flexible Funding, Time, and Space

Public schools are often bound by specific funding categories that stipulate how the funds can be applied, restricting the ability to apply funding based on a school's specific needs. Restrictions are also imposed on time (i.e., calendar flexibility, scheduling) and space (where education occurs). Research indicates that allowing a provision of flexible funding, time, and space can be advantageous for schools seeking to meet students' varying needs.

Allowing hiring flexibility. In a study of charter schools, Gross (2011) reported that charter schools' approach to recruiting and hiring teachers varies from the approach traditional public schools take in recruitment and hiring efforts. She found that a charter school principal hired a surfer as a teacher at his school in Hawaii who was able to lead a surf club, which was of great interest to the student body (Gross, 2011). Gross also found that many principals were aligning with local educator preparation programs because that created a student-to-teacher pipeline. Gross (2011) concluded that a major hiring issue with traditional public schools, as opposed to charter schools, was that "district or school hiring teams focus on general background factors such as certification, teacher exam scores, and years of teaching experience" (p. 11), instead of focusing on areas such as the teacher's fit within the school community (i.e., programs, students, vision, mission, etc.).

Providing flexible student schedules. Flexibility in scheduling can occur from the individual student up to the school calendar level. Flexible student scheduling can take many forms — block, rotating, A/B block, and multiple period flex scheduling are just a few examples — but the goal is ultimately to allow students flexibility so that they may access the education they need at the time and for the duration they need it. Discussions of flexible student scheduling go back to the mid-1900s, when Robert Bush (1961) wrote about how high schools across the country were experimenting with flexible schedules. Though educators at the time recognized that students benefited from longer class periods in some subjects and shorter periods in others, Bush (1961) lamented that one of the major obstacles preventing flexible student scheduling was technology's inability to automate it. Bush (1961) wrote that once educators determined what flexible student scheduling should look like and technology advanced enough, "we may then expect a change to take place in the high school which will be as dramatic in its break-through as have been the achievements in recent years in the physical and biological sciences" (p. 208).

Block scheduling is the most-studied form of flexible scheduling. A longitudinal study that compared three kinds of scheduling — traditional, A/B block, and 4x4 block — found that students in 4x4 block scheduling had greater improvements in reading and mathematics Levels tests and ACT exams (Lewis, Dugan, Winokur, & Cobb, 2005). Zepeda and Mayers (2006), in *An Analysis of Research on Block Scheduling* wrote, "Block scheduling appeared to increase student grade point averages and improve school climate, but the results regarding its effects on standardized test scores and attendance were inconsistent" (p. 137).

Flexible scheduling may also benefit school staff (Gross, 2011). One study found that teacher-librarians in schools with flexible and/or mixed schedules consulted with teachers four times more often and developed "more integrated units of study" when compared with teacher-librarians in schools with fixed schedules (Haycock, 1998, p. 28). Haycock (1998) also found that teacher-librarians with flexible schedules spent more time planning and

were more engaged in student assessment. However, Zepeda and Mayers (2006) asserted that, based on an analysis of 58 empirical studies, the effects of block scheduling on changes in teachers' practices are inconclusive.

Regarding calendar flexibility, North Carolina is currently one of 14 states that prescribe when public schools can start and end the school year (North Carolina General Assembly, 2017). The North Carolina Department of Public Instruction sets the school calendar parameters for all non-year-round public schools. Currently, schools cannot start before the Monday closest to August 26 and local boards of education cannot open earlier than the Monday closest to August 19 (School Calendar, 2012). Schools cannot end later than the Friday closest to June 11 (School Calendar, 2012). The only exception to this end date is if the local school board needs to extend the calendar year for compliance with instructional days (185) or hours (1,025) (School Calendar, 2012).

A 2017 report to the Joint Legislative Program Evaluation Oversight Committee by the Program Evaluation Division (PED) of the North Carolina General Assembly found that the current school calendar law benefits the tourism industry at the expense of student performance (North Carolina General Assembly, 2017). Organizations representing education interests have requested school calendar flexibility so that high school exams can be scheduled before winter break and schools and districts can align to the community college calendar (North Carolina General Assembly, 2017). School calendar flexibility would also allow low-performing schools to address summer learning loss (Gross, 2011), which affects the majority of students — regardless of income, gender, race, or IQ — to some degree, but economically disadvantaged students are affected the most (North Carolina General Assembly, 2017). The PED ultimately determined that “no modification to the State’s school calendar law satisfies multiple competing interests” (p. 1) and recommended that the General Assembly “provide school calendar flexibility for schools and districts identified as low-performing by the State Board of Education, and direct the NCDPI to evaluate whether a modified school calendar increases student performance in low-performing schools and districts” (p. 1).

Using remote learning. Technology makes it possible for schools to reach more students, more often. Online learning has been successfully used to provide flexibility to students so that they may continue learning outside the classroom (Wicks, 2010). Online and virtual schools use remote learning, as do blended learning models and virtual school days (also called virtual snow days or remote instructional days). Virtual school days allow schools to continue delivering instruction despite factors that would normally disrupt student learning and cost schools time and money, such as inclement weather days. Multiple states, such as Illinois, Indiana, Minnesota, New Hampshire, Ohio, Pennsylvania, and more, have begun allowing students to work from home through adverse weather days as well (Wicks, 2010). Virtual school days, typically termed e-learning days, are a relatively new innovation, and as such, research regarding their efficacy and outcomes is limited.

Previous research about the effect of missed instructional days provides some insight as to the value of using remote learning to make up missed school days. One study on the effect of absences due to bad weather determined that student learning was minimally affected as a result of school closures (Goodman, 2014). Essentially, when all students are affected by a coordinated school closure, teachers are able to prepare for students to learn at home and to make up lost instruction when school resumes (Goodman, 2014). The results of the study also indicated that individual and sporadic student absences — specifically, students who stayed home on days when the weather was bad, but school remained open — had a greater negative effect on

learning than did schoolwide closures (Goodman, 2014). However, this research contradicts previous studies that claimed unplanned school closures had a significant effect on student learning (Marcotte, 2007; Marcotte and Hemelt, 2008; and Hansen, 2013).

No matter the effect on student learning, excessive school closures are expensive. For example, in 2015 when Montgomery County Public Schools in Maryland had to remain open on June 15 to make up for one snow day — it originally had to make up three, but received waivers for two of the days — the interim superintendent estimated that it would cost the school system up to \$750,000 to cover the additional required personnel costs (Brick, 2015).

Allowing flexible funding. In 2016, the North Carolina General Assembly PED determined that allotment-specific and systemic issues adversely affected North Carolina’s distribution of K–12 resources (North Carolina General Assembly, 2016). Regarding allotment-specific issues, the PED found that wealthier counties were benefiting from greater access to resources and teachers due to the allotment structure (North Carolina General Assembly, 2016). Further, students with disabilities and English learners were also suffering from inadequate resources (North Carolina General Assembly, 2016). Overall, the PED concluded, “Small county funding is duplicated and unsubstantiated. Low-wealth funding is overly complex and could be improved to more precisely reflect a county’s ability to generate local revenue. Hold-harmless policies result in a maldistribution of resources for disadvantaged students” (North Carolina General Assembly, 2016, p. 1). The recommendations included two options: either “overhaul the system for how resources are distributed by using a weighted student funding model” or “reform the current allotment system by addressing individual allotment deficiencies and providing direction to improve transparency and accountability” (North Carolina General Assembly, 2016, p. 1).

In an effort to make its schools more equitable, in 2013, California enacted a funding model that gives districts more power in deciding how to allocate funds (Baumgardner, Frank, Willis, & Berg-Jacobson, 2018). Previously, state funding was distributed via strict categorical grants; the new system now distributes funds “according to the level of student need, and district leaders have much more flexibility to make spending decisions” (Baumgardner, Frank, Willis, & Berg-Jacobson, 2018, p. 1). A technical report for the Learning Policy Institute evaluated the impact of California’s school finance reform on academic achievement and the composition of district spending and found that “Local Control Funding Formula (LCFF)-induced increases in district revenue has a ‘strongly significant’ impact on average high school graduation rates for all students in the state” and that “LCFF-induced increases in district revenue led to a significant reduction in the average school-level student-to-teacher ratio and significant increases in per-pupil expenditures, average teacher salaries, and instructional expenditures” (Johnson & Tanner, 2018, p. i).

Utilizing school-built models for success. North Carolina has a Renewal status for schools or districts that meet certain criteria. Renewal “permit[s] schools to extend the school day, use funds in ways not designated by the state, hire teachers for positions other than those for which they are licensed, and more” (Hinchcliffe & Granados, 2018). Renewal schools are allowed to extend the school day or alter the school calendar for an earlier or later start in the school year, instead of the August 26th and June 11th stipulations.

References

- Ackermann, S. P. (1990). *The benefits of summer bridge programs for underrepresented and low income students*. Paper presented at the annual meeting of the American Education Research Association, Boston, MA.
- American School Counselor Association. (2017). ASCA Position Statements. Retrieved from <https://www.schoolcounselor.org/asca/media/asca/PositionStatements/PositionStatements.pdf>
- Bambino, D. (2002). Critical friends. *Redesigning Professional Development*, 59(6). Retrieved from https://www.schoolreforminitiative.org/wp-content/uploads-2014/02/t_l2_critical-Bambino.pdf
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Barnett, E., & Hughes, K. (2010). *Community college and high school partnerships*. The White House Summit on Community Colleges Conference Papers.
- Barrows, H. S. (1992). *The tutorial process*. Springfield, IL: Southern Illinois University School of Medicine.
- Battistich, V., Solomon, D., Kim, D., Watson, M., & Schaps, E. (1995). Schools as communities, poverty levels of student populations, and students' attitudes, motives, and performance: A multilevel analysis. *American Educational Research Journal*, 32(3), 627–658. Retrieved from https://www.jstor-org.prox.lib.ncsu.edu/stable/1163326?pg-origsite=summon&seq=22#metadata_info_tab_contents
- Baumgardner, C., Frank, S., Willis, J., & Berg-Jacobson, A. (2018). *Finding a path toward equity: What states can learn from the transformation of California's school funding model*. San Francisco, CA: WestEd. Retrieved from <https://www.wested.org/wp-content/uploads/2018/03/ERS-Path-Toward-Equity.pdf>
- Becker, K., & Park, K. (2011). Effects of integrative approaches among science, technology, engineering, and mathematics (STEM) subjects on students' learning: A preliminary meta-analysis. *Journal of STEM Education: Innovations and Research*, 12(5/6), 23–37. Retrieved from <https://eric.ed.gov/?id=EJ943196>
- Bengis, L. (1991). *SEEK and college discovery summer programs: Prefreshman, English-as-a-second language, postfreshman, and science mathematics & technology institutes, 1990 evaluation report*. New York, NY: City University of New York, Project SEEK.
- Bhaerman, R., Cordell, K., & Gomez, B. (1998). *The role of service-learning in educational reform*. National Society for Experiential Education. Needham, MA: Simon & Schuster.
- Billig, S. (2000). Research on K–12 school-based service learning: The evidence builds. *The Phi Delta Kappan*, 81(9), 658–664. Retrieved from <https://digitalcommons.unomaha.edu/cgi/viewcontent.cgi?article=1003&context=slcek12>
- Billig, S., & Weah, W. (2008). K–12 service-learning standards for quality practice. *Growing to Greatness: The State of Service Learning*, 8–15. Saint Paul, MN: National Youth Leadership Council.
- Bingham, A. J., Pane, J. F., Steiner, E. D., & Hamilton, L. S. (2018). Ahead of the curve: Implementation challenges in personalized learning school models. *Educational Policy*, 32(3), 454–489. Retrieved from <https://doi.org/10.1177/0895904816637688>
- Black, P., & William, D. (2009). Developing the theory of formative assessment. *Educational Assessment, Evaluation and Accountability*, 21(5). Retrieved from <https://link.springer.com/article/10.1007/s11092-008-9068-5>
- Blumenfeld, P. C., Soloway, E., Marx, R. W., Krajcik, J. S., Guzdial, M., & Palincsar, A. (1991). Motivating project-based learning: Sustaining the doing, supporting the learning. *Educational Psychologist*, 26(3/4), 369–398. Retrieved from <https://www.scribd.com/document/323977493/Motivating-Project-Based-Learning-Sustaining-the-Doing-Supporting-the-Learning>
- Brackett, M., & Rivers, R. (2012). Transforming students' lives with social and emotional learning. *Yale Center for Emotional Intelligence*. Retrieved from <http://ei.yale.edu/wp-content/uploads/2013/09/Transforming-Students%E2%80%99-Lives-with-Social-and-Emotional-Learning.pdf>
- Bransford, J., Vye, N., Stipek, D., Gomez, L., & Lam, D. (2009). Equity, excellence, elephants, and evidence. *Harvard Education Publishing Group*. Retrieved from https://www.hepg.org/HEPG/Media/Documents/intro_role-of-research-in-ed-improvement-4.pdf
- Brick, K. (2015, March). MCPS last day of school to cost big bucks. *MyMCMedia*. Retrieved from <https://www.mymcmmedia.org/mcps-to-make-up-one-snow-day/>
- Burch, P., Good, A., Heinrich, C., & Wanger, C. (2014). Digital tools in K–12 classrooms and student achievement: Weighing the evidence. *Scholars Strategy Network*. Retrieved from https://www.mitpressjournals.org/doi/full/10.1162/edfp_a_00224
- Bush, R. (1961). The problem of a flexible schedule in high school. *Educational Leadership*, 18(4), 205–208. Retrieved from http://www.ascd.org/ASCD/pdf/journals/ed_lead/el_196101_bush.pdf
- Cantor, J. A. (1995). *Experiential learning in higher education: Linking classroom and community*. ASHE-ERIC Higher Education Report, 7. Washington, DC: The George Washington University, Graduate School of Education and Human Development.
- Carey, J. C., & Martin, I. (2015). *A review of the major school counseling policy studies in the United States: 2000-2014*. Amherst, MA: The Ronald H. Fredrickson Center for School Counseling Outcome Research and Evaluation
- Carpenter, T., Fennema, E., Peterson, P., Chiang, C., & Loeff, M. (1989). Using knowledge of children's mathematics thinking in classroom teaching: An experimental study. *American Educational Research Journal*, 26(4), 499–531. Retrieved from https://www.jstor.org/stable/1162862?seq=6#metadata_info_tab_contents

- Cellini, S. R. (2006). Smoothing the transition to college? The effect of tech-prep programs on educational attainment. *Economics of Education Review* 25(4), 394–411. Retrieved from [10.1016/j.econedurev.2005.07.006](https://doi.org/10.1016/j.econedurev.2005.07.006)
- Christensen, C., Horn, M., & Staker, H. (2013). Is K–12 blended learning disruptive? An introduction of the theory of hybrids. *Clayton Christensen Institute for Disruptive Innovation*. Retrieved from <https://www.christenseninstitute.org/wp-content/uploads/2013/05/Is-K-12-Blended-Learning-Disruptive.pdf>
- Cognition and Technology Group at Vanderbilt. (1993). Anchored instruction and situated cognition revisited. *Educational Technology*, 33(3), 52–70. Retrieved from <https://dixieching.wordpress.com/2009/11/07/anchored-instruction-and-situated-cognition-revisited-ctgv/>
- Cohen, A. M., & Brawer, F. B. (1996). *The American community college*. San Francisco: Jossey-Bass, Inc.
- Collaborative for Academic, Social, and Emotional Learning. (2013). *2013 CASEL Guide: Effective Social and Emotional Learning Programs: Preschool and Elementary School Edition*. Retrieved from <http://casel.org/wp-content/uploads/2016/01/2013-casel-guide-1.pdf>
- Collaborative for Academic, Social, and Emotional Learning. (2019). *What is SEL?* Retrieved from <https://casel.org/what-is-sel/>
- Committee on Highly Successful Schools or Programs in K–12 STEM Education & National Research Council. (2011). *Successful K-12 STEM education: Identifying effective approaches in science, technology, engineering, and mathematics*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/13158>
- Common Sense. (2018). *Omaha Public Schools: Digital literacy*. Retrieved from <https://district.ops.org/DEPARTMENTS/InformationManagementServices/InternetSafetyDigitalCitizenshipTips.aspx>
- Communities in Schools. (2019). *Communities in Schools*. Retrieved from <https://www.communitiesinschools.org/>
- Corwin, Z. B., Venegas, K. M., Oliverez, P. M., & Colyar, J. E. (2004). School counsel: How appropriate guidance affects educational equity. *Urban Education*, 39(4), 442–257. Retrieved from <https://eric.ed.gov/?id=EJ690761>
- Creghan, C., & Adair-Creghan, K. (2015). The positive impact of project-based learning on attendance of an economically disadvantaged student population: A multiyear study. *Interdisciplinary Journal of Problem-Based Learning*, 9(2). Retrieved from <https://docs.lib.purdue.edu/ijpbl/vol9/iss2/7/>
- Daft, R. L. (1978). A dual-core model of organizational innovation. *The Academy of Management Journal*, 21(2), 193–210. Retrieved from https://www.jstor.org/stable/255754?seq=1#metadata_info_tab_contents
- de Jong T., Sotiriou, S., & Gillet, D. (2014). Innovations in STEM education: The Go-Lab federation of online labs. *Smart Learning Environments*, 1(3). Retrieved from <https://slejournal.springeropen.com/articles/10.1186/s40561-014-0003-6>
- Delisle, R. (1997). *How to use problem-based learning in the classroom*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Dennen, V. (2007). Is K–12 blended-learning disruptive? An introduction of the theory of hybrids. Cognitive apprenticeship in educational practice: Research on scaffolding, modeling, mentoring, and coaching as instructional strategies. Retrieved from http://ocw.metu.edu.tr/pluginfile.php/9106/mod_resource/content/1/Dennen.pdf
- Dewey, J. (1963). *Experience and education*. New York, NY: Collier.
- Dods, R. F. (1997). An action research study of the effectiveness of problem-based learning in promoting the acquisition and retention of knowledge. *Journal for the Education of the Gifted*, 20, 423–437. Retrieved from <https://doi.org/10.1177/016235329702000406>
- Domina, T., & Ruzek, E. (2012). Paving the way: K–16 partnerships for higher education diversity and high school reform. *Educational Policy*, 26(2), 243–267. Retrieved from <https://doi.org/10.1177/0895904810386586>
- Dougherty, S. (2018). The effect of career and technical education on human capital accumulation: Causal evidence from Massachusetts. *Education Finance and Policy*, 13(2), 119–148. Retrieved from https://www.mitpressjournals.org/doi/full/10.1162/edfp_a_00224
- Dreas-Shaikha, M. (2018). Student-led conferences: Empowering students through self-assessment and reflection. *Assessment and Evaluation in the Global South*. Retrieved from <https://files.eric.ed.gov/fulltext/ED591424.pdf>
- Duckor, B., & Holmberg, C. (2017). *Mastering formative assessment moves: 7 high-leverage practices to advance student learning*. Alexandria, VA: ASCD.
- DuFour, R. (2002). The learning-centered principal. *Beyond Instructional Leadership*, 59(8), 12–15. Retrieved from http://www.ascd.org/publications/educational_leadership/may02/vol59/num08/The_Learning-Centered_Principal.aspx
- Edmunds, J. (2006). Study of the efficacy of North Carolina's Learn and Earn early college high school model. *Institute of Education Sciences*. Retrieved from <https://ies.ed.gov/funding/grantsearch/details.asp?ID=211>
- Eilers, A., & Camacho, A. (2007). School culture change in the making: Leadership factors that matter. *Urban Education*. Retrieved from <https://journals.sagepub.com/doi/10.1177/0042085907304906>
- Elias, M. J., Zins, J. E., Weissburg, R. P., Frey, K. S., Greenberg, M. T., Haynes, N. M., Kessler, R., Schwab-Stone, M. E., & Shriver, T. P. (1997). The need for social and emotional learning. *Promoting Social and Emotional Learning*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Ellerbrock, C. (2012). Creating a family-like ninth-grade environment through interdisciplinary teaming. *Urban Education*, 47(1), 32–64. Retrieved from <http://dx.doi.org/10.1177/0042085911427736>

- Epstein, J. L. (1987). Toward a theory of family-school connections: Teacher practices and parent involvement. In K. Hurrelmann, F. Kaufmann, & F. Losel (Eds.), *Social intervention: Potential and constraints* (pp. 121–136). New York, NY: DeGruyter.
- Epstein, J. L., Sanders, M. G., Simon, B. S., Salinas, K. C., Jansorn, N. R., & Van Voorhis, F. L. (2002). *School, family, and community partnerships: Your handbook for action* (2nd ed.). Thousand Oaks, CA: Corwin.
- European Commission. (2007). Science education now: A renewed pedagogy for the future of Europe. Brussels, BE: Author. Retrieved from http://ec.europa.eu/research/science-society/document_library/pdf_06/report-rocard-on-science-education_en.pdf
- Ferdig, R., & Kennedy, K. (2018). *Handbook of research on K–12 online and blended learning* (2nd ed.). Pittsburgh, PA: ETC Press.
- Florida Department of Education. (2004a). *Dual enrollment students are more likely to enroll in postsecondary education*. Tallahassee, FL: Author.
- Florida Department of Education. (2004b). *Impact of dual enrollment on high-performing students*. Tallahassee, FL: Author.
- Fogarty, R. (1997). *Problem-based learning and other curriculum models for the multiple-intelligences classroom*. Arlington Heights, IL: IRI Skylight Training and Publishing.
- Ford, M. (1992). *Motivating humans: Goals, emotions, and personal agency beliefs*. Newbury Park, CA: Sage.
- Fowler, M., & Luna, G. (2009). High school and college partnerships: Credit-based transition programs. *American Secondary Education*, 38(1), 62–76.
- Fuchs, D. (1991). Effects of curriculum-based measurement and consultation on teacher planning and student achievement in mathematics operations. *American Educational Research Journal*, 28(3), 617–641. Retrieved from <https://doi.org/10.3102/00028312028003617>
- Furco, A., & Root, S. (2010). Research demonstrates the value of service learning. *The Phi Delta Kappan*, 91(5), 16–20. Retrieved from <https://doi.org/10.1177/003172171009100504>
- Gallagher, S. A. (1997). Problem-based learning: Where did it come from, what does it do, and where is it going? *Journal for the Education of the Gifted*, 20(4), 332–362. Retrieved from <https://eric.ed.gov/?id=EJ553973>
- Gallagher, S. A., Sher, B. T., Stepien, W. J., & Workman, D. (1995). Implementing problem-based learning in the science classroom. *School Science and Mathematics*, 95, 136–146. Retrieved from <https://doi.org/10.1111/j.1949-8594.1995.tb15748.x>
- Garcia, P. (1991). Summer bridge: Improving retention rates for underprepared students. *Journal of Freshman Year Experience*, 3(2), 91–105. Retrieved from <https://eric.ed.gov/?id=EJ433111>
- Gartner, A., & Riessman, F. (1994). Tutoring helps those who give, those who receive. *Educational Leadership*, 52(3), 58–60. Retrieved from <http://www.ascd.org/publications/educational-leadership/nov94/vol52/hum03/Tutoring-Helps-Those-Who-Give-Those-Who-Receive.aspx>
- Goodman, J. (2014). *Flaking out: Student absences and snow days as disruptions of instructional time*. Cambridge, MA: National Bureau of Economic Research. Retrieved from <https://www.nber.org/papers/w20221.pdf>
- Gross, B. (2011). Inside charter schools: Unlocking doors to student success. *National Charter School Research Project*. Retrieved from <https://files.eric.ed.gov/fulltext/ED519943.pdf>
- Gross, J. M. S., Haines, S. J., Hill, C., Francis, G. L., Blue-Banning, M., & Turnbull, A. P. (2015). Strong school-community partnerships in inclusive schools are ‘part of the fabric of the school ... we count on them’. *School Community Journal*, 25(2), 9–34. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1085646.pdf>
- Guay, F. (2016). The virtue of culture in understanding motivation at school: Commentary on the special issue on culture and motivation. *British Journal of Educational Psychology*. Retrieved from <https://onlinelibrary.wiley.com/doi/full/10.1111/bjep.12105>
- Guttu, M., Engelke, M. K., & Swanson, M. (2004). Does the school nurse-to-student ratio make a difference? *Journal of School Health*, 74, 6–9. doi:10.1111/j.1746-1561.2004.tb06593.x
- Halverson, L., Spring, K., Huyett, S., Henrie, C., & Graham, C. (2017). Blended learning research in higher education and K–12 settings. *Learning, Design, and Technology*. Retrieved from https://link.springer.com/content/pdf/10.1007/978-3-319-17727-4_31-1.pdf
- Han, S., Capraro, R., & Capraro, M. M. (2015). How science, technology, engineering, and mathematics (STEM) project-based learning (PBL) affects high, middle, and low achievers differently: The impact of student factors on achievement. *International Journal of Science and Mathematics Education*, 13(5), 1089–1113. Retrieved from <https://eric.ed.gov/?id=EJ1074282>
- Hansen, B. (2013). School year length and student performance: Quasi-experimental evidence. *SSRN Electronic Journal*. Retrieved from https://www.researchgate.net/publication/228713629_School_Year_Length_and_Student_Performance_Quasi-Experimental_Evidence
- Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. London, UK: Routledge.
- Haycock, K. (1998). Collaborative cultures, team planning, and flexible scheduling. *Emergency Librarian*, 25(5), 28. Retrieved from <https://go.galegroup.com/ps/anonymous?id=GALE%7CA30086614&sid=googleScholar&v=2.1&it=r&linkaccess=abs&issn=03158888&p=AONE&sw=w>
- Hege, A., & Dovico, A. (2018). *The limitless school: Creative ways to solve the culture puzzle*. San Diego, CA: Dave Burgess Consulting.
- Hill, H. C., Blunk, M. L., Charalambous, C. Y., Lewis, J. M., Phelps, G. C., Sleep, L., & Ball, D. L. (2008). *Mathematical Knowledge for Teaching and the Mathematical Quality of Instruction: An Exploratory Study*. *Cognition and Instruction*, 26(4), 430–511. <https://doi.org/10.1080/07370000802177235>

- Hinchcliffe, K. & Granados, A. (2018). *In NC, some low-performing schools get flexibility to help struggling students*. Retrieved from <https://www.wral.com/in-nc--some-low-performing-schools-get-flexibility-to-help-struggling-students/17414770/>
- Hodges, S. (2015). Not getting it right the first time. *Equipment Leasing & Finance; Washington*, 31(4). Retrieved from <https://search-proquest-com.prox.lib.ncsu.edu/docview/1704359305?pq-origsite=summon>
- Hoffman, N., Vargas, J., & Santos, J. (2009). New directions for dual enrollment: Creating stronger pathways from high school through college. *New Directions for Community Colleges*, 2009(145), 43–58. Retrieved from <https://eric.ed.gov/?id=EJ834634>
- Howell, J. S., Kurlaender, M., & Grodsky, E. (2010). Postsecondary preparation and remediation: Examining the effect of the early assessment program at California State University. *Journal of Policy Analysis and Management*, 29(4). doi:10.1002/pam.20526
- Huffman, A. M. (2012). Students at risk due to a lack of family cohesiveness: A rising need for social workers in schools. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 86(1), 37–42. Retrieved from <https://doi.org/10.1080/00098655.2012.731022>
- Hung, W., Jonassen, D. H., & Liu, R. (2008). Problem-based learning. In M. Spector, D. Merrill, J. van Merriënboër, & M. Driscoll (Eds.), *Open Learning Environments* (pp. 485–506). New York, NY: Springer.
- Itin, C. (1999). Reasserting the philosophy of experiential education as a vehicle for change in the 21st century. *Journal of Experiential Education*, 22(2), 91–98. Retrieved from <https://www.ryerson.ca/content/dam/experiential/Reassertingthephilosophyofexperientialeducation.pdf>
- Jacobsen, M., & Spiro, R. J. (1994). A framework for the contextual analysis of technology-based learning environments. *Journal of Computing in Higher Education*, 5(2), 3–32. Retrieved from <https://link.springer.com/article/10.1007/BF02948569>
- James, R. K., Logan, J., & Davis, S. A. (2011). Including school resource officers in school-based crisis intervention: Strengthening student support. *School Psychology International*, 32(2), 210–224.
- Johnson, B. (2005). *Overcoming “Doom and Gloom”: Empowering Students in Courses on Social Problems, Injustice, and Inequality*. *Teaching Sociology*, 33(1), 44–58. <https://doi.org/10.1177/0092055X0503300104>
- Johnson, C., Sondergeld, T., & Walton, J. (2019). A study of the implementation of formative assessment in three large urban districts. *American Educational Research Journal*. doi:10.3102/0002831219842347
- Johnson, I. M. (1999). School violence: The effectiveness of a school resource officer program in a southern city. *Journal of Criminal Justice*, 27(2), 173–192.
- Johnson, R. C., & Tanner, S. (2018). *Money and freedom: The impact of California’s school finance reform*. Palo Alto, CA: Learning Policy Institute.
- Kallick, B., & Zmuda, A. (2017). *Students at the center: Personalized learning with Habits of Mind*. Alexandria, VA: ASCD.
- Kallio, J. (2017). The built pedagogy of K–12 personalized learning programs as designed opportunities for student voice and choice. Presented at the Transitions Inhabiting Innovative Learning Environments Symposium, Grand Rapids, MI. Victoria, AU: Innovative Learning Environments and Teacher Change.
- Karp, M. K., Calcagno, J. C., Hughes, K. L., Jeong, D. W., & Bailey, T. (2007). *The postsecondary achievement of participants in dual enrollment: An analysis of student outcomes in two states*. New York, NY: Community College Research Center, Teacher College, Columbia University.
- Kerrigan, M. R., & Slater, D. (2010). *Collaborating to create change: How El Paso Community College improved the readiness of its incoming students through Achieving the Dream*. New York, NY: Community College Research Center, Teachers College, Columbia University, and MDRC.
- Keselman, A. (2003). Supporting inquiry learning by promoting normative understanding of multivariable causality. *Journal of Research in Science Teaching*, 40, 898–921.
- Kim, J., & Barnett, E. (2009). *2007–08 MCNC early college high school students: College coursework participation and performance*. NCREST Brief. New York, NY: National Center for Restructuring Education, Schools, and Teaching (NCREST), Teachers College, Columbia University.
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.
- Kolb, A. Y., & Kolb, D. A. (2005). Learning styles and learning spaces: Enhancing experiential learning in higher education. *Academy of Management Learning & Education*, 4(2), 193–212.
- Kolodner, J. L., Camp, P. J., Crismond, D., Fasse, B., Gray, J., Holbrook, J., Puntambekar, S., & Ryan, M. (2003). Problem-based learning meets case-based reasoning in the middle-school science classroom: Putting Learning by Design™ into practice. *The Journal of the Learning Sciences*, 12(4), 495–547.
- Kunsch, C., Jitendra, A., & Sood, S. (2007). The effects of peer-mediated instruction in mathematics for students with learning problems: A research synthesis. *Learning Disabilities Research & Practice*, 22(1), 1–12.
- Kutz, E., Roskelly, H., & Freire, P. (1991). *An unquiet pedagogy: Transforming practice in the English classroom*. Portsmouth, NH: Boynton/Cook Publishers.
- Lacey, T. A., & Wright, B. (2009). Occupational employment projections to 2018. *Monthly Labor Review*, 132(11), 82–123.
- Ladd, H., & Hemelt, S. (2016). *Teaching assistants and nonteaching staff: Do they improve student outcomes?* Washington, DC: National Center for Analysis of Longitudinal Data in Education Research.
- Leenknecht, M., & Prins, F. (2018). Formative peer assessment in primary school: The effects of involving pupils in setting assessment criteria on their appraisal and feedback style. *European Journal of Psychology of Education*, 33(1), 101–116.

- Lewis, C. W., Dugan, J. J., Winokur, M. A., & Cobb, R. B. (2005). The effects of block scheduling on high school academic achievement. *NASSP Bulletin*, 89(645), 72–87.
- Lindgren, Robb & Mcdaniel, Rudy. (2012). *Transforming online learning through narrative and student agency*. Educational Technology and Society. 15. 344-355.
- Lineberry, M., & Ickes, M. (2015). The role and impact of nurses in American elementary schools: A systematic review of the research. *The Journal of School Nursing*, 31(1), 22–33. doi:10.1177/1059840514540940
- Linn, M. C., Shear, L., Bell, P., & Slotta, J. D. (1999). Organizing principles for science education partnerships: Case studies of students learning about ‘rats in space’ and ‘deformed frogs.’ *Educational Technology Research Development*, 47(2), 61–84.
- Manna, P. (2015). Developing excellent school principals to advance teaching and learning: Considerations for state policy. Wallace Foundation. Retrieved from <https://www.wallacefoundation.org/knowledge-center/Documents/Developing-Excellent-School-Principals.pdf>
- Maranto, R., & Shuls, J. (2011). Lessons from KIPP Delta. *The Phi Delta Kappan*, 93(3), 52–56.
- Marcotte, D. E. (2007). Schooling and test scores: A mother-natural experiment. *Economics of Education Review* 26(5), 629–640.
- Marcotte, D. E., & Hemelt, S. W. (2008). Unscheduled school closings and student performance. *Education Finance and Policy* 3(3), 316–338.
- Martin, J. (2004). Self-regulated learning, social cognitive theory, and agency. *Educational Psychologist*, 39(2), 135–145.
- Maxwell, N. L., Mergendoller, J. R., and Bellisimo, Y. (2005). *Problem-based learning and high school macroeconomics: a comparative study of instructional methods*. J. Econ. Educ., 36(4), 315–331.
- McCombs, B., & Marzano, R. J. (1990). Putting the self in self-regulated learning: The self as agent in integrating will and skill. *Educational Psychologist* 25(1), 51–69.
- Michael, S., Dittus, P., & Epstein, J. (2007). Family and community involvement in schools: Results from the school health policies and programs study 2006. *Journal of School Health*, 77(8), 567–587.
- Miller, A. (2009). Principal turnover, student achievement, and teacher retention. Unpublished manuscript. Princeton, NJ: Princeton University. Retrieved from https://www.researchgate.net/publication/228365293_Principal_Turnover_Student_Achievement_and_Teacher_Retention
- Mincu, M. (2015). Teacher quality and school improvement: What is the role of research? *Oxford Review of Education*, 41(2), 253–269.
- Mitchell, D. (1990). *Principal leadership: A theoretical framework for research*. The National Center for School Leadership Project Report. Retrieved from <https://files.eric.ed.gov/fulltext/ED327952.pdf>
- Myers, C., & Drevlow, S. (1982). Summer bridge program: A dropout intervention program for minority and low-income students at the University of California, San Diego, presented at the Annual Meeting of the American Education Research Association.
- National Association of College Admission Counselors & American School Counselor Association. (2015). State-by-state student-to-counselor ratio report: 10 year trends. Retrieved from <https://www.nacacnet.org/globalassets/documents/publications/research/state-by-state-ratio-report.pdf>
- National Association of Elementary School Principals and National Association of Secondary School Principals (2013). *Leadership matters: What the research says about the importance of principal leadership*. Reston, VA: Author.
- National Research Council. (2000). *Inquiry and the national science education standards*. Washington, DC: National Academy Press.
- National Society for Experiential Education. (1998). *Eight principles of good practice for all experiential learning activities*. Presented at the 1998 Annual Meeting, Norfolk, VA. Retrieved from <https://www.nsee.org/8-principles>
- Nordstrom, K. (2019). *Effective and equitable: Creating a shared vision for North Carolina schools*. Raleigh, NC: North Carolina Justice Center.
- North Carolina General Assembly. (2016). *Allotment-specific and system-level issues adversely affect North Carolina’s distribution of K–12 resources*. Final report to the Joint Legislative Program Evaluation Oversight Committee.
- North Carolina General Assembly. (2017). *No modification to North Carolina’s school calendar law satisfies multiple competing interests*. Final report to the Joint Legislative Program Evaluation Oversight Committee.
- Opfer, V. D., Kaufman, J., & Thompson, L. (2016). Instructional resources to support standards implementation. In J. H. Kaufman, V. D. Opfer, & L. E. Thompson (Eds.), *Implementation of K–12 state standards for mathematics and English language arts and literacy: Findings from the American Teacher Panel* (pp. 23–56). Santa Monica, CA: RAND Corporation.
- Pane, J. (2017). What emerging research says about the promise of personalized learning. RAND Corporation. Retrieved from https://www.rand.org/pubs/research_reports/RR1365.html
- Pane, J., Steiner, E., Baird, M., Hamilton, L., & Pane J. (2017). Informing progress: Insights on personalized learning implementation and effects. Santa Monica, CA: RAND Corporation. Retrieved from https://www.rand.org/pubs/research_reports/RR2042.html
- Payton, J., Weissberg, R.P., Durlak, J.A., Dymnicki, A.B., Taylor, R.D., Schellinger, K.B., & Pachan, M. (2008). *The positive impact of social and emotional learning for kindergarten to eighth-grade students: Findings from three scientific reviews*. Chicago, IL: Collaborative for Academic, Social, and Emotional Learning.
- Pedaste, M., Mäeots, M., Leijen, Ä., & Sarapuu, S. (2012). Improving students’ inquiry skills through reflection and self-regulation scaffolds. *Technology, Instruction, Cognition and Learning*, 9(1/2), 81–95.

- Pedaste, M., & Sarapuu, T. (2006). Developing an effective support system for inquiry learning in a web-based environment. *Journal of Computer Assisted Learning*, 22(1), 47–62.
- Porowski, A., & Passa, A. (2011). The effect of Communities in Schools on high school dropout and graduation rates: Results from a multiyear, school-level quasi-experimental study. *Journal of Education for Students Placed at Risk*, 16(1), 24–37.
- Razzouk, R., & Shute, V. (2012). What is design thinking and why is it important? *Review of Educational Research*, 82(3), 330–348.
- Reynolds, A. J., Temple, J. A., Suh-Ruu, O., Robertson, D. J., Mersky, J. P., Topitzes, J. W., & Niles, M. D. (2007). Effects of a school-based, early childhood intervention on adult health and well-being: A 19-year follow-up of low-income families. *Archives of Pediatrics & Adolescent Medicine*, 161(8), 730–739. doi:10.1001/archpedi.161.8.730
- Robinson, K., & Aronica, L. (2015). *Creative schools: The grassroots revolution that's transforming education*. New York, NY: Penguin Books.
- Sanders, M. (2009). STEM, STEM education, STEM mania. *Technology Teacher*, 68(4), 20–26.
- Santa Rita, E., & Bacote, J. B. (1997). The benefits of college discovery prefreshman summer program for minority and low-income students. *College Student Journal*, 31, 161–173.
- Savery, J., & Duffy, T. M. (1996). Problem-based learning: An instructional model and its constructivist framework. In B. G. Wilson (Ed.), *Designing constructivist learning environments*. Englewood Cliffs, NJ: Educational Technology Publications.
- School Calendar. (2012). Retrieved from <http://www.dpi.state.nc.us/fbs/accounting/calendar/>
- Sebastian, J., Allensworth, E., & Huang, H. (2017). The role of teacher leadership in how principals influence classroom instruction and student learning. *American Journal of Education*, 123(1), 69–108.
- Sebring, P., & Bryk, A. (2000). School leadership and the bottom line in Chicago. *The Phi Delta Kappan*, 81(6), 440–443.
- Simos, E. (2015). Genius Hour: Critical inquiry and differentiation. *English Leadership Quarterly*, 38(1), 2–4.
- Smith, E. (2018). Exploring survival: A student-led unit in the seventh-grade English classroom. *English Journal*, 107(5), 66–71.
- Stagnitti, K., Baily, A., Hudspeth Stevenson, E., Reynolds, E., & Kidd, E. (2015). An investigation into the effect of play-based instruction on the development of play skills and oral language. *Journal of Early Childhood Research*, 14(4), 389–406.
- Stam, B. L. (2011). The power of real-world application. *Leadership*, 40(3), 12–15.
- Stepien, W. J., & Gallagher, S. A. (1993). Problem-based learning: As authentic as it gets. *Educational Leadership*, 50(7), 25–29.
- Stepien, W. J., Gallagher, S. A., & Workman, D. (1993). Problem-based learning for traditional and interdisciplinary classrooms. *Journal for the Education of the Gifted*, 16, 338–357.
- Sweat, I. J., & Fenster, M. J. (2005). *The effect of tech prep on student progress toward graduation*. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Quebec.
- Teasley, M. L. (2004). Absenteeism and truancy: Risk, protection, and best practice implications for school social workers. *Children & Schools*, 26(2), 117–128.
- Theriot, M. T. (2009). School resource officers and the criminalization of student behavior. *Journal of Criminal Justice*, 37(3), 280–287.
- Utley, C., & Obiakor, F. (2015). Special issue: Research perspectives on multi-tiered system of support. *Learning Disabilities: A Contemporary Journal*, 13(1), 1–2.
- Valli, L., Stefanski, A., & Jacobson, R. (2014). Typologizing school-community partnerships: A framework for analysis and action. *Urban Education*, 51(7), 719–747.
- Van Lier, L. (2008). Agency in the classroom. In J. P. Lantolf & M. E. Poehner (Eds.), *Sociocultural theory and the teaching of second languages* (pp. 163–186). London: Equinox.
- Vygotsky, L. S. (1978). Interaction between learning and development. In M. Cole, V. John-Steiner, S. Scribner, & E. Souberman (Eds.), *Mind in society: The development of higher psychological processes* (pp. 29–39). Cambridge, MA: Harvard University Press.
- Wai, J., Lubinski, D., Benbow, C. P., & Steiger, J. H. (2010). Accomplishment in science, technology, engineering, and mathematics (STEM) and its relation to STEM educational dose: A 25-year longitudinal study. *Journal of Educational Psychology*, 102(4), 860–871.
- Watson, A. D., & Watson, G. H. (2013). Transitioning STEM to STEAM: Reformation of engineering education. *The Journal for Quality and Participation*, 36(3), 1–4.
- Webb, N. (1989). Peer interaction and learning in small groups. *International Journal of Educational Research* 13(1), 21–39.
- Wicks, M. (2010). *A national primer on K–12 online learning: Version 2*. International Association for K–12 Online Learning. Retrieved from <https://files.eric.ed.gov/fulltext/ED514892.pdf>
- Wieseman, K. C., & Cadwell, D. (2005). Local history and problem-based learning. *Social Studies and the Young Learner*, 18(1), 11–14.
- Wilhelm, P., & Beishuizen, J. J. (2003). Content effects in self-directed inductive learning. *Learning and Instruction*, 13, 381–402. doi:10.1016/S0959-4752(02)00013-0
- Wolf, M. A., Bobst, E., & Mangum, N. (2017). *Leading personalized and digital learning: A framework for implementing school change*. Cambridge, MA: Harvard University Press.
- Yardley, S., Teunissen, P. W., & Dornan, T. (2012). Experiential learning: Transforming theory into practice. *Medical Teacher*, 34(2), 161–164.

Zepeda, S. J., & Mayers, R. S. (2006). An analysis of research on block scheduling. *Review of Educational Research*, 76(1), 137–170.

Zimmerman, B. J. (2001). Theories of self-regulated learning and academic achievement: An overview and analysis. In B. J. Zimmerman & D. H. Schunk (Eds.), *Self-regulated learning and academic achievement: Theoretical perspectives* (pp. 1–37). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Appendix B: Research Plan

Purpose

The purpose of this study is to offer an overview of the school success factors designed to provide a sound basic education for all students, explore examples of success factor implementation in North Carolina schools, and highlight supports and barriers to success factor implementation. The final report will summarize the identified success factors and provide illustrative school case studies demonstrating how schools have made systemic, sustainable improvements that result in significant increases in achievement.

Theoretical/Conceptual Framework — Success Factors

Based upon the literature, a set of key success factors have been identified.

In order to ensure that every student receives a sound basic education, North Carolina must provide every student with the following:

1. A **school culture** in which all adults are committed to every student's success, and all students have supportive relationships with adults and experience a comfortable and safe environment that supports their social, emotional, and academic growth.
2. A **principal** in every school who is well prepared to serve as both a change leader and an instructional leader, to recruit and retain highly qualified teachers, and to cultivate a successful teaching and learning environment for all students.
3. A sufficient staff of teachers and others who support students' learning, with all **instructional staff** well prepared in evidence-based instructional approaches, content knowledge in the areas they teach, and strategies for successfully working with students with diverse backgrounds and learning differences.
4. Effective, evidence-based systems and practices for **personalizing learning** that account for variability in the pace, pathway, preferences, and needs of each student.
5. **Curriculum resources and digital tools** to support students' learning of the North Carolina Standard Course of Study and more advanced topics.

6. Timely and ongoing **formative assessments**, aligned with the North Carolina Standard Course of Study, used to inform and adapt instructional practices, consistently monitor student learning, and develop personalized learning pathways for each student.
7. Opportunities within and beyond the school walls to pursue their own interests and strengths and engage in experiential learning in which they apply their knowledge, collaborate, create, engage in authentic problem solving, and become self-directed lifelong learners.
8. **Comprehensive staffing and supports** for learning that go beyond classroom instruction to address social and emotional development, physical and psychological health, hunger, and adverse childhood experiences, through partnerships with families, other organizations in the community, and other schools.
9. Effective, flexible use of **funding, time, and space**.

Sample

Selected based on their adherence to/exemplary performance on one or more of the success factors. Sampling Strategy based upon the following factors:

- » Proficiency level/growth disaggregated by variables (student groups: family income, ethnicity, limited English proficiency, special needs)
- » Locale (urban/rural) (use U.S. Census categories)
- » Graduation rate (school level)
- » Region of state
- » Size of school
- » School level
- » Disciplinary referrals/occurrences

Research Questions

1. What exemplars of success factor implementation exist? [**Success Factors**]
2. How do select schools/districts actualize success factors? [**Success Factors**]
3. What elements are necessary to support factors for student success? [**Supports**]
4. What barriers are experienced/faced by schools as they work to create conditions for student success, and how do they overcome them? [**Barriers**]
5. What are the costs of selected success factor implementations? What resources are typically allocated when delivering selected success factors? What are the average costs associated with these resources? How are these costs distributed among stakeholders? [**Costs**]

Data Sources and Analysis Sources

- » Interviews (district administrators, principals, teachers, parents, community members)
- » Archival Data: Publicly available U.S. Census data, economic development plans/initiatives, performance and demographic data, performance data, principal/teacher turnover data, school improvement plans, tech plans, website mining, program design documentation, mission, vision, Teacher Working Conditions Survey
- » Observations and researcher reflections

	Research Questions	Data Sources
Success Factors	RQ1. What exemplars of success factor implementation exist? [Success Factors]	<ul style="list-style-type: none"> • Researcher Reflections • Interviews with district and school administrative staff • Archival data <ul style="list-style-type: none"> – Demographic data – Performance data – District plans – School board goals – Mission/vision – History – Teacher credentials (National Board certification, master's degree,, lateral entry) – Turnover rate – Teacher Working Conditions Survey
	RQ2. How do select schools/districts actualize success factors? [Success Factors]	<ul style="list-style-type: none"> • Observations • Interviews with various stakeholders <ul style="list-style-type: none"> – District and school administrative staff – Teachers – Community members
Supports	RQ3. What elements are necessary to support factors for student success? [Supports]	<ul style="list-style-type: none"> • Observations • Interviews with various stakeholders <ul style="list-style-type: none"> – District and school administrative staff – Teachers – Community members
Barriers	RQ4. What barriers are experienced/faced by schools as they work to create conditions for student success, and how do they overcome them? [Barriers]	<ul style="list-style-type: none"> • Observations • Interviews with various stakeholders <ul style="list-style-type: none"> – District and school administrative staff – Teachers – Community members

	Research Questions	Data Sources
Costs	RQ5. What are the costs of selected success factor implementations? What resources are typically allocated when delivering selected success factors? What are the average costs associated with these resources? How are these costs distributed among stakeholders? [Costs]	<ul style="list-style-type: none"> • Observations • Interviews with various stakeholders <ul style="list-style-type: none"> – District and school administrative staff – Teachers – Community members • Program records and data regarding the resources utilized in the program(s) of interest: • Personnel (including school staff and community and volunteer contributions) • Facilities • Materials/resources • Other (could include transportation, staff training, community partnerships, etc.)

Appendix C: Interview/ Focus Group Protocols

Introduction

Thank you all for taking the time out of your schedules to be here today. We value your effort and promise not to go over the allotted time.

My name is (XXX), I will be the moderator today, and assisting me is (XXX), who will be taking notes. We work for the Friday Institute at North Carolina State University, and as you know, we are conducting a research study to inform the *Leandro* Action Plan. We want to learn about successful practices that lead to student success. Your responses will provide critical information to the research team.

Before we begin, I'd like to go over a few disclosures:

Your participation in this study is voluntary. It is your decision to participate in this study, to not participate, or to stop participating at any time.

The session will be digitally recorded in order to have a complete record of our discussion. The discussion will be kept completely confidential; any information obtained from you that can identify you will be disclosed only with your permission. We will use code numbers in the management and analysis of the focus group data and your name will not be associated with any discussion results.

Today's discussion will be loosely structured and informal. We have several questions and hope to hear from everyone. You may ask clarifying questions any time.

We expect our discussion to last about an hour.

TURN ON RECORDER. STATE AT BEGINNING OF RECORDING:

"This is (YOUR NAME), interviewing (INTERVIEWEE'S NAME/ROLE) on (DATE) at (SCHOOL/DISTRICT NAME) for the *Leandro* Success Factors Study."

Opening question

Interview:

Please tell us your name.

What is your role and how long have been with the district/school/community agency?

Preparation

To help facilitate our discussion, please find a list of the success factors for our study. (Hand them a paper copy.)

1. A **school culture** in which all adults are committed to every student’s success, and all students have supportive relationships with adults and experience a comfortable and safe environment that supports their social, emotional, and academic growth.
2. A **principal** in every school who is well prepared to serve as both a change leader and an instructional leader, to recruit and retain highly qualified teachers, and to cultivate a successful teaching and learning environment for all students.
3. A sufficient staff of teachers and others who support students’ learning, with all **instructional staff** well prepared in evidence-based instructional approaches, content knowledge in the areas they teach, and strategies for successfully working with students with diverse backgrounds and learning differences.
4. Effective, evidence-based systems and practices for **personalizing learning** that account for variability in the pace, pathway, preferences, and needs of each student.
5. **Curriculum resources and digital tools** to support students’ learning of the North Carolina Standard Course of Study and more advanced topics.
6. Timely and ongoing **formative assessments**, aligned with the North Carolina Standard Course of Study, used to inform and adapt instructional practices, consistently monitor student learning, and develop personalized learning pathways for each student.
7. Opportunities within and beyond the school walls to pursue their own interests and strengths and engage in **experiential learning** in which they apply their knowledge, collaborate, create, engage in authentic problem solving, and become self-directed lifelong learners.
8. **Comprehensive staffing and supports** for learning that go beyond classroom instruction to address social and emotional development, physical and psychological health, hunger, and adverse childhood experiences, through partnerships with families, other organizations in the community, and other schools.
9. Effective, flexible use of **funding, time, and space**.

Prior to our arrival, it was determined that we would focus on:

(List the factors for participants) _____

We will ask you to describe how you approach the specific success factor area followed by questions about supports, barriers, ways to overcome barriers, and cost information.

School Culture

1a. Describe the culture in your district/school. (probe for history — how has it changed over time?)

1b. What initiatives do you have in place that help ensure students feel supported socially, emotionally, and academically?

What do you need to support your implementation of XX (success factor)?

What challenges do you face as you strive to implement XX (success factor)?

What do you do to overcome the challenges?

What are the costs and resources associated with this factor?

Principal

2a. Tell me about the principal(s). How does he/she work to implement change in the school? Mission? Vision?

2b. How do you approach recruitment and retention of staff?

What do you need to support your implementation of XX (success factor)?

What challenges do you face as you strive to implement XX (success factor)?

What do you do to overcome the challenges?

What are the costs and resources associated with this factor?

Instructional Staff

3a. Let's talk about your instructional staff. How would you describe their level of initial and ongoing preparation? (probe for content and pedagogy)

3b. How do they approach working with all students (race, gender, socioeconomic status, regular ed, special ed, learning differences)?

What do you need to support your implementation of XX (success factor)?

What challenges do you face as you strive to implement XX (success factor)?

What do you do to overcome the challenges?

What are the costs and resources associated with this factor?

Personalized Learning

4a. How does your school/district approach personalized learning? (probe for pacing, pathways, learning preferences)

What do you need to support your implementation of XX (success factor)?

What challenges do you face as you strive to implement XX (success factor)?

What do you do to overcome the challenges?

What are the costs and resources associated with this factor?

Curriculum Resources and Digital Tools

5a. Describe how you approach the procurement and implementation of materials that support how your staff approaches curriculum delivery. (probe: how decisions are made, programs used, support for programs, personnel involved)

What do you need to support your implementation of XX (success factor)?

What challenges do you face as you strive to implement XX (success factor)?

What do you do to overcome the challenges?

What are the costs and resources associated with this factor?

Formative Assessments

6. What is your approach to the use of formative assessments? (probe: how often, who authors them)

6b. How are formative assessment results used to make instructional changes? (probe: differences across grade level and subject, professional learning/coaching to support this practice)

What do you need to support your implementation of XX (success factor)?

What challenges do you face as you strive to implement XX (success factor)?

What do you do to overcome the challenges?

What are the costs and resources associated with this factor?

Experiential Learning

7a. Let's discuss how you approach experiential learning. What are some opportunities for students to explore beyond the classroom? (probe for club examples, community partnerships)

What do you need to support your implementation of XX (success factor)?

What challenges do you face as you strive to implement XX (success factor)?

What do you do to overcome the challenges?

What are the costs and resources associated with this factor?

Comprehensive Staffing and Supports

8a. One area that stands out lately is addressing the whole child. How do you address all the needs of students/families?

8b. With what organizations do you partner to help meet student/family needs?

What do you need to support your implementation of XX (success factor)?

What challenges do you face as you strive to implement XX (success factor)?

What do you do to overcome the challenges?

What are the costs and resources associated with this factor?

Flexible Funding, Time, and Space

9a. Exercising flexibility is one area we would like to discuss. Here are some areas we'd like to learn about: funding, time/scheduling, and space. What are some creative ways you allocate your spending?

9b. How have you changed your school calendar or school schedule?

9c. How have you reallocated/reclaimed space in your school/district/community?

What do you need to support your implementation of XX (success factor)?

What challenges do you face as you strive to implement XX (success factor)?

What do you do to overcome the challenges?

What are the costs and resources associated with this factor?

Closing Question

That is all for our questions associated with our framework. We have two more:

Are there other initiatives or programs that you would like for us to know about?

Is there anything else you would like to share about your district/school/community?

Community Interview

- 1) Tell us about your program/initiative.
- 2) How do you interface with XX School/District?
- 3) In what ways do you support students and families to meet their needs?
- 4) How does your work impact student success?
- 5) What other supports would benefit student success?
- 6) What are the barriers to student success in your community?
- 7) How could these barriers be overcome?
- 8) What are the costs and resources associated with the services you provide?

Thank you

I would like to thank you for your participation. Your comments will be very helpful to informing the *Leandro* Action Plan. I want to mention again that what you have shared with us is confidential. No part of our discussion that includes names or other identifying information will be used in any reports or presentations coming from this research. Thank you for participating in today's discussion. We appreciate your taking the time and sharing your perspective with us.

Debriefing for moderator and note taker (after participant has left)

- » What were the themes?
- » What are the most important points that we've learned today?
- » What was surprising or unexpected?
- » What quotes were particularly helpful?
- » Does anything need to be changed before the next visit?

Appendix D: Qualitative Code Table

Success Factors	Theme	Theme Descriptors
SF1: SCHOOL CULTURE Developing a school culture in which all adults are committed to every student’s success, and all students have supportive relationships with adults and experience comfortable and safe environment that supports their social, emotional, and academic growth.	providing a family-like atmosphere	school/district presents family-like atmosphere
	setting high expectations	students held to high-level of academic standards
	promoting risk-taking	“fail forward” – individuals are willing to take chances on novel approaches.
	empowering students	students afforded opportunity to exercise some level of control over or provide input on things that directly influence or impact them
	engaging in intentional culture building	participating in actions that would enhance a school or district; involve all stakeholders
	communicating clearly	actions that enhance communication between all stakeholders (parents, students, teachers, community, etc.); newsletters, phone calls, one-on-one meetings, conferences, outreach efforts to engage in dialogue and discussion with school community
SF2: PRINCIPAL LEADERSHIP A principal in every school who is well prepared to serve as both a change leader and an instructional leader, to recruit and retain highly qualified teachers, and to cultivate a successful teaching and learning environment for all students.	having high-quality mode of principal preparation programs	principal preparation programs: NELA, NELA 2.0, NELA-DST, NCALD’S TPP Programs, NCSU Principal Fellows, transfer from other state agency
	offering social and emotional support	seeks ways to assist staff and students when their SEL needs affect their abilities to function at the school
	supporting staff freedom/ autonomy	intentional support for staff freedom/ autonomy concerning myriad areas in school
	engaging in intentional relationship building	efforts to build relationships and rapport among the school community

Success Factors	Theme	Theme Descriptors
SF3: INSTRUCTIONAL STAFF A sufficient staff of teachers and others who support students' learning, with all instructional staff well prepared in evidence-based instructional approaches, content knowledge in the areas they teach, and strategies for successfully working with students with diverse backgrounds and learning differences.	engaging in teacher collaboration	teachers work with one another to offer support and ongoing communication regarding student success
	exhibiting driven and motivated characteristics	teachers exhibit a growth mindset and push through difficult times with a positive, "can do" attitude
	acting as teacher leaders	roles teachers take to be leaders within the confines of their positions as teachers
	participating in professional development (PD)	teachers participate in PD opportunities and PD opportunities are provided to teachers
	providing instructional support	teaching assistants, paraprofessionals, online tools, etc. to aid in instruction
	offering student assistance	teachers seek to assist students in many capacities
SF4: PERSONALIZED LEARNING Effective, evidence-based systems and practices for personalizing learning that account for variability in the pace, pathway, preferences, and needs of each student.	allowing student choice	students afforded opportunity to exercise some level of control over or provide input on things that directly influence or impact them
	providing scaffolded learning	process of modeling or demonstrating learning, taking a step back, and offering support for whole class
	encouraging collaborative learning	students and teachers encouraged to work with one another in variety of capacities
	engaging in innovative approaches	progressive educational approaches combining technologies, digital tools, and instructional techniques not of a traditional type
SF5: CURRICULUM RESOURCES & DIGITAL TOOLS Curriculum resources and digital tools to support students' learning of the North Carolina Standard Course of Study and more advanced topics.	offering blended learning opportunities	uses technology-enhanced learning to support students' growth (i.e., online learning systems, videos, learning extensions, etc.)
	creating design thinking activities	cognitive, strategic, and practical processes by which design concepts are developed by designers and/or design teams
	providing digital tools	digital learning initiatives or implementations
	offering CTE courses	academic and technical skills, knowledge and training necessary to succeed in future careers
	engaging in play-based learning	children learn well when they are mentally active, engaged, and social can make meaningful connections to their lives

Success Factors	Theme	Theme Descriptors
SF6: FORMATIVE ASSESSMENTS Timely and ongoing formative assessments, aligned with the North Carolina Standard Course of Study, used to inform and adapt instructional practices, consistently monitor student learning, and develop personalized learning pathways for each student.	engaging in conferencing	teacher to student and student to student feedback opportunities
	giving traditional tests (i.e., quizzes and tests)	traditional assessment measures
	employing diagnostic assessment data	pre-/post- test information; benchmark assessments to guide instruction
	using Multitiered Targeted Systems of Supports (MTSSs)	systems to support struggling students (response to intervention– and MTSS-type models)
SF7: EXPERIENTIAL LEARNING Opportunities within and beyond the school walls to pursue their own interests and strengths and engage in experiential learning in which they apply their knowledge, collaborate, create, engage in authentic problem solving, and become self-directed lifelong learners.	offering STEM/STEAM-based programs	science, technology, engineering, (arts) and mathematics programs
	providing inquiry-based learning	project-based learning, problem-based learning, etc.
	encouraging learner agency	students allowed to explore their own interests
	developing community partnerships	systems of support provided by community organizations
	pioneering innovative approaches	new ideas that create value when they are implemented
	engaging in service learning opportunities	volunteer, community-service experiences
	offering clubs	extracurricular school-based clubs
SF8: COMPREHENSIVE STAFFING AND SUPPORTS Comprehensive staffing and supports for learning that go beyond classroom instruction to address social and emotional development, physical and psychological health, hunger, and adverse childhood experiences, through partnerships with families, other organizations in the community, and other schools.	providing access to support staff	counselors, psychologists, social workers, nurses, SROs
	brokering services with community partners	provide connections to services available in the community
	implementing social emotional learning supports	providing readily available support staff, curriculum, etc. to support students' social-emotional learning and behavior
	offering support to families	school/district offers services to students (food, clothing, referrals)
SF9: FLEXIBLE FUND, TIME, SPACE Effective, flexible use of funding, time, and space.	allowing hiring flexibility	ability to hire based on needs of school
	providing flexible student schedules	students provide input in their schedules and can have differing schedules than their peers
	using remote learning	learning through means that do not require students to be present
	allowing flexible funding	ability to allocate funding based on needs of school
	utilizing school-built models for success	build models in-house (Restart, Renewal, career academies, etc.)