Growth Public Schools
Appendix I. Typical Day for a Student

The school opens at 7:30 am each morning. The student will arrive between 7:30 am and 8:15 am. Prior to the start of school the student can check his progression towards goals on his Personalized Learning Plan with an adult, peer, or individually. He can complete homework, utilize study spaces, work with peers or group work partners or meet individually with a teacher.

At 8:15 am the student will attend an All School Meeting (ASM) where the students are celebrating values and ensuring a positive launch to the day. During this time, they might discuss a mindset focus for the week or a social emotional learning (SEL) habit they are working on as a school community. When there is not an ASM, he will be meeting with his Family Group which is comprised of approximately 12 students. During this time, he will have a personalized check-in with his mentor, which will inform content and instruction choices for the day and week.

Between 8:30 am and 9:45 am the student will engage in Project Based Learning (PBL). Depending what project the students are working on and what the student has in his Personalized Learning Plan, the student will be working through a project either individually or with a group.

At 9:45 am, he will go out for recess and then from 10:00 am to 11:30 am, he will work through another session of PBL. He remains in the same classroom all morning with a credentialed teacher and an assistant teacher with approximately 28 students in the classroom.

During PBL, students are working on engaging inquiry-based projects individually or in groups. The facilitator role is to guide instruction, asks questions and ensure students are meeting their academic goals. Ultimately, they will present their projects to parents and community members in an exhibition type environment.

At 11:30 am, he will be dismissed for lunch, which will last until 12:15 pm. At this time, he will either do music, art, or physical activity class. He will finish this class at 1:00 pm.

At 1:00 pm, he will start his personalized learning time. Similar to Montessori sustained work time, he will have 2 hours and 15 minutes to self-direct through different stations and educational technology. He will use his Personalized Learning Plan, which he has developed with the support of multiple adults, to determine how he uses his time. During this time, the facilitators and Habits of Success Coaches are guiding and observing students to support their decision making and ensuring they are working effectively to meet their goals. Other facilitators may be pulling students for remediation around literacy and math, or Habits of Success focus areas such as emotional self-management. Students are in larger rooms with a minimum of three facilitators supervising and other facilitators coming in to pull students based on their progress and their personalized plans and goals.

At 3:15 pm, he will meet with his Family Group and close the day with a circle reflection on the academic and SEL goals for the week either individually with his mentor or in a group activity.

The Friday schedule is a slightly different in that he will engage in an explicit SEL lesson for one hour, have a longer PBL time or Expeditions time (depending on the Friday), and have a longer time for art, music, or physical activity. Finally, he will close the day with an ASM to end his week on a fun and celebratory note.

Growth Public Schools
Appendix J. Sample Daily Schedule

Monday through Thursday

8:15-8:30 All School Launch Meeting or Family Group Time

8:30-9:45 Classroom Time (PBL)

9:45-10:00 Recess

10:00-11:30 Classroom Time (PBL)

11:30-12:15 Lunch

12:15-1:00 Daily arts/physical activity rotation
- Music/art (2 days a week)
- Physical activity (2 days a week)

1:00-3:15 Personalized Learning Time (PL)

3:15-3:30 Closing Circle
- Students meet in mentor groups of 12

Expeditions/Projects Friday Schedule

8:15-8:30 Family Group Time

8:30-9:30 SEL Lesson

9:30-9:45 Recess

10:00-11:30 Expeditions/Projects

11:30-12:15 Lunch

12:15-1:15 Arts/Physical activity

1:15-3:15 Expeditions/Projects

3:15-3:30 All School Meeting

Blended Learning Research Clearinghouse 1.0
May 2015

The Learning Accelerator

The Learning Accelerator is a nonprofit dedicated to transforming education by accelerating the implementation of high-quality blended learning in school districts across America. At its core, blended learning is a teaching model that combines in-person instruction and education technology that enables personalized learning and competency-based progression.

Blended learning is gaining momentum in public schools across the country, highlighting a need to better understand its effectiveness. The following report provides insight into the current body of knowledge around blended learning, including historical evidence for personalized learning and a summary of the implications of the K-12 blended learning research that has been promoted to date.

Where are we? The current body of knowledge

To date, most studies of effectiveness (defined in this resource as "improvements in intended outcomes when implemented in real life settings under ideal or routine conditions") associated with blended learning have focused on *online learning as a unique learning environment*, often in fully online or "virtual learning" settings, and/or with older adolescent or adult learners in higher education or industry settings. Because of this, there is no clear research evidence to date in public K-12 settings of the effectiveness of blended learning as an instructional model that integrates digital and face-to-face instruction in order to personalize learning and enable competency-based progression.

There is, however, an established body of evidence for personalizing or individualizing learning and facilitating student agency to foster self-regulated, intrinsically motivated learning, all of which blended learning can enable at scale. In addition, there is a growing number of studies that demonstrate that blended learning can in fact be successfully implemented in public K-12 school districts, and can be effective in meeting academic and non-academic goals for both student and teacher outcomes.

The Learning Accelerator

Historical Evidence for Personalized Learning

The following table highlights instructional elements of personalization that have been found to have large, positive effects on learning. As a rough guide, effect sizes of 0.5 or above are considered to be "medium" and those 0.8 or larger are considered "large." In his many meta-analyses of educational settings, professor John Hattie of University of Melbourne, Australia, suggested that an effect size of 0.4 or greater represents a "larger than average instructional effect." An effect size of 0.4 or greater is uncommon in randomized controlled studies in education, and is most likely to be found in the lower grades (K - 4). Many of these effective instructional elements are difficult to implement, scale, or sustain in traditional classrooms and are facilitated by blended learning.

INSTRUCTIONAL ELEMENT	COMMONLY STUDIED AS…	EXAMPLE EFFECT SIZE(S)
Individualized instruction[i, viii, ix]	reducing group size (to 1:1 if possible); providing instruction that is direct, explicit, and closely aligned with students' needs and prior knowledge; individualized remediation and feedback	2.0[ii] 0.82[iii] 0.65[iii]
Assessment & Feedback[i, vii, viii]	using formative assessments to inform instruction; conceptualizing assessments as learning; asking deep, explanatory questions; providing explanatory feedback that is immediate, and flows from student to teacher as well as teacher to student	1.13[iii] 0.61[iv] 0.41[iii]
Practice[v, ix]	providing opportunities and time for guided and independent practice, including homework	0.77[iv]
Promoting transfer[i, v, vi, viii]	varying the context of learning; using multiple representations of a problem and solutions, including nonlinguistic representations	0.75[iv]
Active learning[i, v, viii, ix]	facilitating self-regulated and intrinsically-motivated learning in which students have some control over and responsibility for setting and committing to relevant learning goals, pathways and pace; and are engaged in their learning	0.61[iii, iv]
Expectations[i]	setting high expectations and challenging goals for learning	0.52[iii]
Mastery-learning[v, viii, ix]	learning objectives that focus on mastery of competencies rather than recall of knowledge; scaffolded instruction in which students are engaged at their current level, and the teacher uses modeling, guided practice, and eventually independent practice to facilitate mastery; mastery-based feedback	0.5[iii]

Table Sources:

i. Alexander, P. A. & Murphy, P. K. (1998). The research base for APA's learner-centered psychological principles. In N. M. Lambert & B. L. McCombs (Eds), *How students learn: Reforming schools through learner-centered education.* (pp. 25-60). Washington, D.C.: American Psychological Association.

ii. Bloom, B. S. (1984). The 2 sigma problem: The search for methods of group instruction as effective as one-to-one tutoring. *Educational Researcher, 13*(6), 4–16.

iii. Hattie, J. (2003, October). *Teachers make a difference: what is the research evidence?* Paper presented at the annual meeting of Australian Council for Educational Research, Melbourne, Australia.

iv. Marzano, R. J., Pickering, D., & Pollock, J. E. (2001). *Classroom instruction that works: Research-based strategies for increasing student achievement.* Alexandria, VA: Association for Supervision and Curriculum Development.

v. National Center on Universal Design for Learning (2011). *Universal Design for Learning guidelines - version 2.0: Research evidence.* Retrieved from http://www.udlcenter.org/research/researchevidence/

vi. National Research Council. (2000). *How people learn.* Retrieved from National Academy Press website: http://www.nap.edu/openbook.php?record_id=9853

vii. Pashler, H., Bain, P., Bottge, B., Graesser, A., Koedinger, K., McDaniel, M., and Metcalfe, J. (2007). *Organizing Instruction and Study to Improve Student Learning* (NCER 2007-2004). Washington, DC: National Center for Education Research, Institute of Education Sciences, U.S. Department of Education. Retrieved from http://ncer.ed.gov

viii. U.S. Department of Education, Office of Education Technology (2014). *Learning Technology Effectiveness.* Retrieved from http://tech.ed.gov/wp-content/uploads/2014/11/Learning-Technology-Effectiveness-Brief.pdf

ix. Vosniadou, S. (2001). *How children learn* (Educational practices series–7). Retrieved from UNESCO International Academy of Education, International Bureau of Education website: http://www.ibe.unesco.org/publications/EducationalPracticesSeriesPdf/prac07e.pdf

Blended Learning Research Clearinghouse

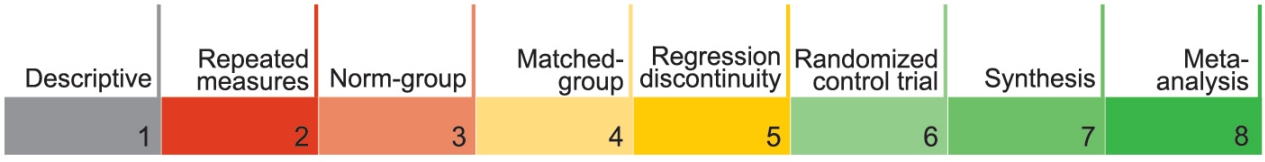
The Learning Accelerator's blended learning research clearinghouse is intended to provide a summary of the implications that can be gleaned from the K-12 blended learning research that has been promoted to date. The studies included here focus more on the effectiveness of blended learning implemented as a model or framework for improving teaching and learning, thus we have included few studies that focus on isolated elements of blended learning (such as Internet connectivity, or particular software, for example). In addition, we have included studies that are highly likely to be shared through public media or promoted as evidence for the effectiveness of blended learning.

Our goal is to provide those wishing to learn more about the evidence around blended learning with guidance on how to interpret this evidence, in order to facilitate understanding and continued measurement within the ecosystem. Our intent is for this to be a living and growing resource, therefore we will augment this clearinghouse over time as more measurement work is published.

About the Studies

The studies included here represent a range of research designs, and therefore a range of "research rigor." Because of this, not all of the findings are broadly applicable to all situations, and not all of the designs used can support "causal inferencing" (the reasoning that any of the reported findings or effects were caused by the program or intervention that was studied). In order to help readers more fully understand the implications of these different types of studies to their own context, we have included three indicators along with the descriptions of each study's implications - as described below:

"STUDY TYPE" refers to the underlying research design that was used in the study, and indicates the rigor of this design in supporting causal claims. Research design is also related to the likelihood of replicating the study's results with a different sample of participants (discussed in more detail below). In order of rigor, from most rigorous to least, the study types used in the clearinghouse are: meta-analysis, synthesis, randomized control trial, regression discontinuity, matched-group, norm-group, repeated measures, and descriptive. It should be noted that descriptive studies contain no statistical comparisons, and so do not at all support any degree of causal claims. Not all of these study types are currently represented in the clearinghouse.



“LIKELIHOOD OF REPLICATING RESULTS" refers to the strength of the research design in supporting the idea that the intervention described in the study "caused" the findings that were reported. Another way of thinking about "causality" is the likelihood that another team conducting the same study would find the same results (or the likelihood that the findings in the study were due to real differences in outcomes, rather than just chance). For more rigorous studies, the likelihood of replicating the results, or the likelihood that the intervention caused the findings, is high. For less rigorous studies, this likelihood is lower (which in this case simply means that if others implement blended learning as defined by the authors, there is a greater risk that implementation will not exhibit similar success as in the study.)

N/A

UNKNOWN LIKELIHOOD OF REPLICATION

SOME LIKELIHOOD OF REPLICATION

HIGH LIKELIHOOD OF REPLICATION

"ALIGNMENT" refers to the extent to which blended learning as described by the authors of the study was implemented as a model/framework for improving teaching and learning, with sufficient detail that anyone who read the study could replicate implementation. Knowing specifically what was being investigated in a study and how similar it is to what you are considering or currently implementing is another important factor in determining how applicable those findings are to your own situation or context.

Studies that do not include such descriptions of their implementation would be classified as having "low alignment of studied intervention to blended learning as an instructional model," simply because a reader would be unable to replicate implementation, or know how similar the intervention was to their own model, without having to seek more information from the authors. Other studies would be classified as having "low alignment..." if they focused on an isolated aspect of blended learning, rather than the broader model or framework.

LOW ALIGNMENT

MEDIUM ALIGNMENT

HIGH ALIGNMENT

The Learning Accelerator

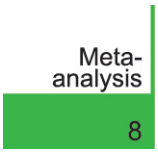
PUBLICATION TITLE

EVALUATION OF EVIDENCE-BASED PRACTICES IN ONLINE LEARNING: A META-ANALYSIS AND REVIEW OF ONLINE LEARNING STUDIES

QR CODE

YEAR	AUTHOR	ORGANIZATION
2010	Barbara Means, Yukie Toyama, Robert Murphy, Marianne Bakia, Karla Jones	Center for Technology in Learning (at SRI)

STUDY TYPE



LIKELIHOOD OF REPLICATION

ALIGNMENT

IMPLICATIONS

This meta-analysis provides evidence that more learning took place in online settings than face-to-face settings, with the most learning occurring in blended (both online and face-to-face) settings.

However, the studies analyzed here included mostly adult learning contexts, with only five studies in K-12 settings being rigorous enough to be included. Therefore, it is unknown how applicable these findings are to K-12 in general, and there is also no way to tease apart whether these differences were due to the setting alone, or differences in curriculum materials, instructional practices, and learning time, which varied from study to study and were unmeasured.

PUBLICATION TITLE

HANDBOOK OF RESEARCH ON K-12 ONLINE AND BLENDED LEARNING

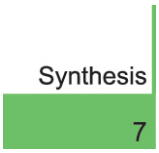
QR CODE

YEAR
2014

EDITOR
Richard E. Ferdig, Kathryn Kennedy

ORGANIZATION
Research Center for Educational Technology, Kent State University & MVU, Michigan Virtual Learning Research Institute

STUDY TYPE



LIKELIHOOD OF REPLICATION

ALIGNMENT

IMPLICATIONS

The goal of this handbook is to investigate the conditions under which online and blended learning can occur, so it is not surprising that, across the broad array of K-12 research considered here, the little evidence that exists does not support the idea that more learning occurs in online settings when compared to face-to-face settings.

However, this handbook does describe some of the conditions under which blended and online learning have been implemented with success and, perhaps more importantly, illustrates the need to conduct more research to better understand the instructional practices that occur in blended and traditional learning environments, the similarities and differences between practices that occur in the different learning environments, and whether or not each environment better facilitates any of the instructional practices that we already know to be effective in improving learning.

Each chapter also provides clear suggestions for future research and what approaches to research should be considered.

The Learning Accelerator

PUBLICATION TITLE
BLENDED LEARNING REPORT

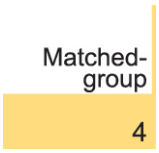
QR CODE

YEAR
2014

AUTHOR
Robert Murphy, Eric Snow, Jessica Mislevy, Larry Gallagher, Andrew Krumm, Xin Wei

ORGANIZATION
SRI International

STUDY TYPE



LIKELIHOOD OF REPLICATION

ALIGNMENT

IMPLICATIONS

In this report, different outcomes and study designs were (appropriately) used for different comparisons. Even so, each of the included studies had similar limitations, namely, that not enough is known about the comparison groups to know if any of the findings were specifically linked to blended learning implementation. Overall, the findings were mixed, and so did not provide consistent evidence to support the effectiveness of blended learning implementation in improving students' reading, English language arts, nor mathematics scores.

That being said, the qualitative findings can be used to generate future hypotheses and guide future research, as they shed light on the aspects of implementation that may be related to some of the academic outcomes (especially the negative outcomes) reported in these studies.

The Learning Accelerator

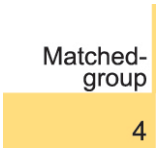
PUBLICATION TITLE
EARLY PROGRESS: INTERIM RESEARCH ON PERSONALIZED LEARNING

QR CODE

YEAR
2014

ORGANIZATION
RAND Corporation & the Bill and Melinda Gates Foundation

STUDY TYPE



LIKELIHOOD OF REPLICATION

ALIGNMENT

IMPLICATIONS

This study evaluates schools implementing personalized learning by examining learning growth on the NWEA Measures of Academic Progress. The study uses a virtual comparison group of students from schools using the same assessment and serving similar student populations.

The researchers mention several limitations of the study, including the assumptions that:

(1) the comparison schools are not implementing personalized learning, and that

(2) there were no other (unobserved) differences between the personalized learning and comparison groups.

If these assumptions did not hold, the study results could have been biased upward or downward.

Even if these assumptions held, however, still more work would need to be done to establish which personalized learning practices were driving the effects found in the study. The authors suggest that future reports from the project may include analyses that help to address some of the limitations of this preliminary report.

PUBLICATION TITLE

PROOF POINTS: BLENDED LEARNING SUCCESS IN SCHOOL DISTRICTS

QR CODE

YEAR
2015

ORGANIZATION
Evergreen Education Group & Clayton Christensen Institute

STUDY TYPE

LIKELIHOOD OF REPLICATION

ALIGNMENT

IMPLICATIONS

This series of two-page profiles provides examples of blended learning implementations in non-charter, public schools considered successful by the school or district in meeting measurable objectives related to student academic outcomes as determined by the districts. In addition, common traits across the group of districts are summarized on the landing page for the profiles.

Multiple models of blended learning are included and described in the profiles, as are specific measurable objectives for pursuing implementation, and specific practices that were implemented in each district.

Readers are also provided with details about the district itself (including performance before and after implementation) so that judgments can be made about the similarity between the different districts profiled here, as well as the reader's own district if applicable.

PUBLICATION TITLE

TRANSFORMING EDUCATION THROUGH DIGITAL AND BLENDED LEARNING

QR CODE

YEAR	AUTHOR	ORGANIZATION
2015	Don Soifer	Lexington Institute

STUDY TYPE

LIKELIHOOD OF REPLICATION

ALIGNMENT

IMPLICATIONS

This report provides a summary of best practices based on examples of successful implementations of blended learning across the country, along with theory-based discussions of lessons learned and areas where successes and challenges are likely to occur.

These recommendations could provide practical support to those just beginning to implement blended learning who are looking for information from others who have found success in their own implementation of blended learning, and have developed solutions to common implementation challenges.

PUBLICATION TITLE	QR CODE
[HYBRID LEARNING PROGRAM RESULTS: SUMMARY REPORT FOR ACADEMIC YEAR 2013-2014] [ACADEMIC YEAR: 2013-2014 PROGRAM RESULTS]	

YEAR	ORGANIZATION
2014	Dellicker Strategies, LLC

STUDY TYPE	LIKELIHOOD OF REPLICATION	ALIGNMENT
		

IMPLICATIONS

The first (summary) report provides examples of implementation in which hybrid learning was considered successful across multiple public districts in meeting academic and non-academic objectives for the districts that were implementing hybrid learning with fidelity as determined by the authors.

The second, more detailed, report contains information about the methodology used to determine the summary results in the first report. Hybrid learning is clearly defined by six practices, and 10 operational objectives that were measured and used to determine implementation fidelity. Comparison (non-hybrid) schools were also included where possible to contextualize findings.

These results, although descriptive, can be helpful to those interested in implementing blended learning models in similar districts and schools to the ones detailed here, in order to meet similar objectives to the ones described in these reports.

The Learning Accelerator

PUBLICATION TITLE

STUDENT MATHEMATICS PERFORMANCE IN THE FIRST TWO YEARS OF TEACH TO ONE: MATH

QR CODE

YEAR	AUTHOR	ORGANIZATION
2014	Douglas D. Ready, Ph.D.	Teachers College, Columbia University

STUDY TYPE

LIKELIHOOD OF REPLICATION

ALIGNMENT

IMPLICATIONS

The goal of this widely-publicized report was not to provide causal estimates (i.e., the research questions did not focus on causal links or evidence of effectiveness). Further, the study focused specifically on the New Classrooms/Teach to One program, rather than blended learning in general. (A current study is focused on identifying causal links between Teach to One and students' algebra outcomes - no findings have been reported from this ongoing study yet.)

Nonetheless, the findings from the 2014 study have been reported through multiple outlets as evidence both for and against the effectiveness of blended learning, thus its inclusion here is intended to clarify its implications.

Overall, these findings do not apply to understanding the effectiveness of blended learning as an instructional model, although they do suggest that the Teach to One program itself has promise, as results were rather mixed across grade levels and years.

Future Work

More research is needed in order to answer the underlying question of whether blended learning "works" or not. Some argue that the more interesting research question is "for whom, and under what conditions" does blended learning work. Regardless of the core research question being pursued, future studies would benefit from measuring the instructional and pedagogical aspects of both blended and comparison (usually traditional, or face-to-face) learning environments, so that findings can be linked to specific instructional practices and conditions.

The Learning Accelerator is partnering with others to further progress in this direction by creating a shared learning and research agenda to guide our collective measurement work across the sector. As more research is conducted, we will also continue to summarize, translate, and disseminate what is known about the effectiveness of blended learning - through updates to resources like this one, as well as the creation of additional resources to advance the measurement of blended learning across the nation.

The Blended Learning Research Clearinghouse 1.0 was compiled by TLA Partner Saro Mohammed.

If you know of studies or reports that could be included in future versions of this resource, please contact Saro at saro.mohammed@learningaccelerator.org.

For more information about The Learning Accelerator, please visit www.learningaccelerator.org.

The Learning Accelerator

summit
public schools

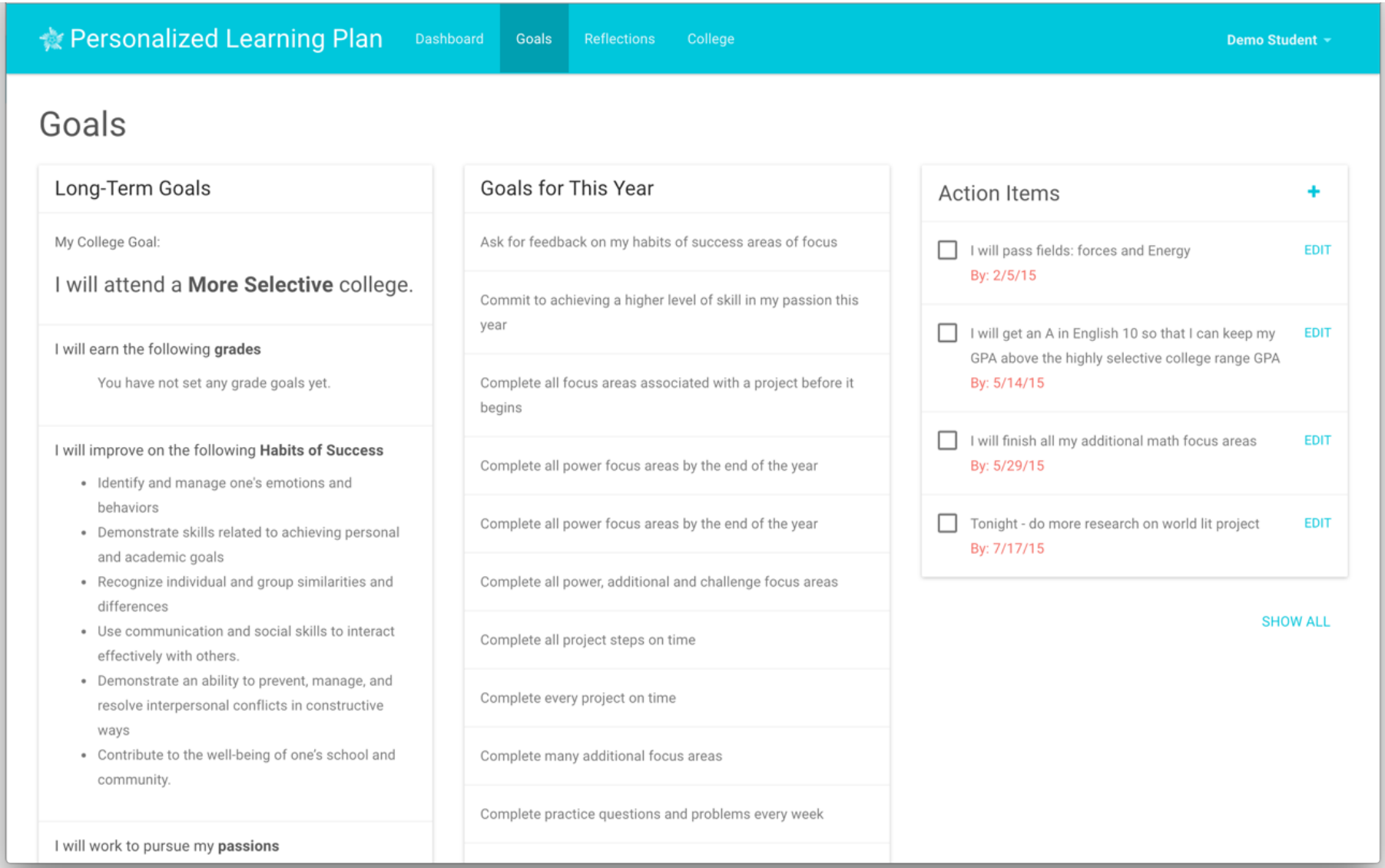
Developed by teachers at Summit Public Schools, the **Personalized Learning Plan (PLP)** is an online tool that allows teachers to serve as instructional coaches while students set individual goals, create roadmaps to achieve them, learn content at their own pace, and dive into meaningful projects that connect to the real world.

https://app.mysummitps.org/

Self-Directed Learning

Students set their own long-term goals and connect them to their daily actions.

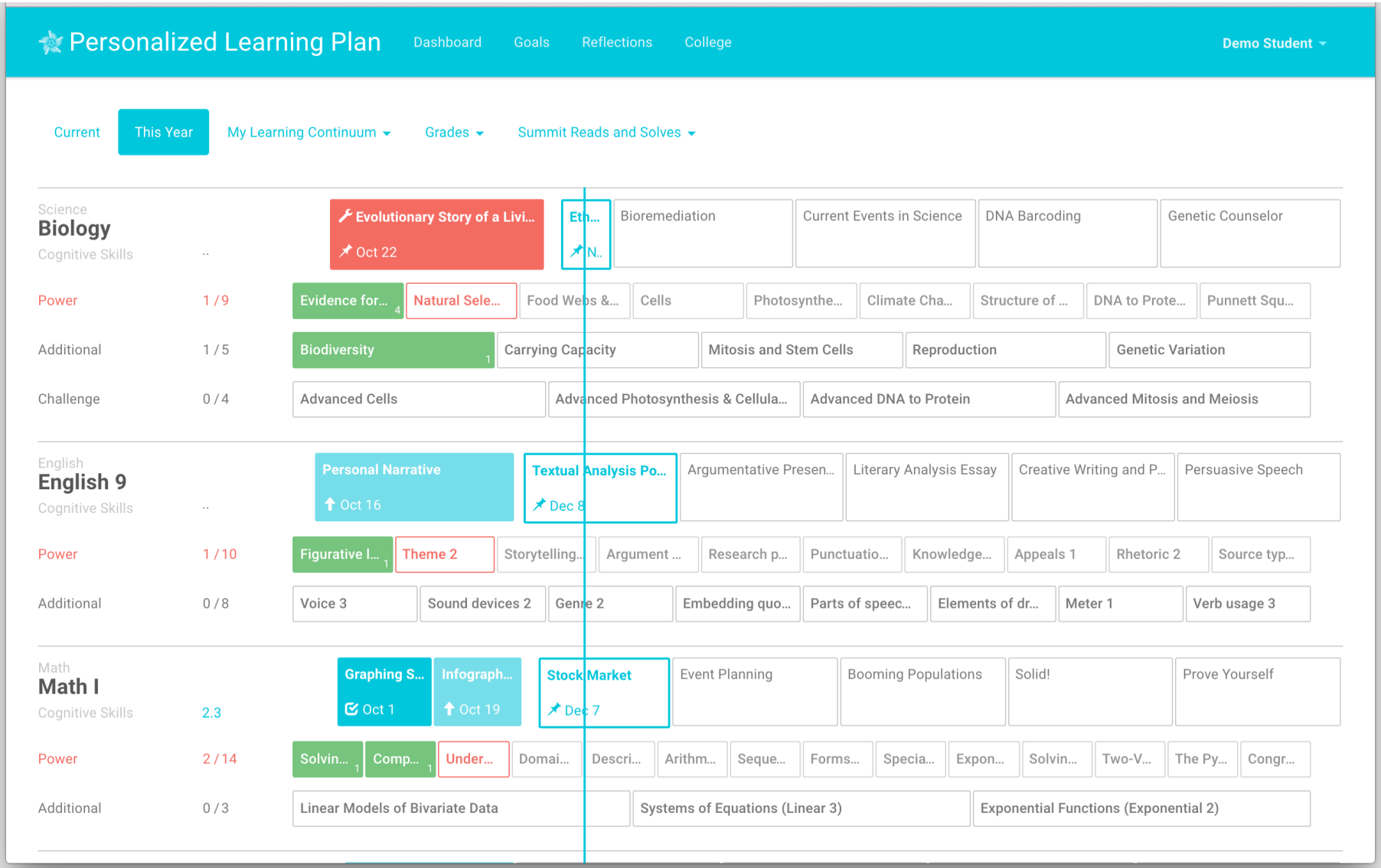
summit public schools



Competency-Based Content Progression

Students progress at their own pace through playlists of content and take assessments on demand.

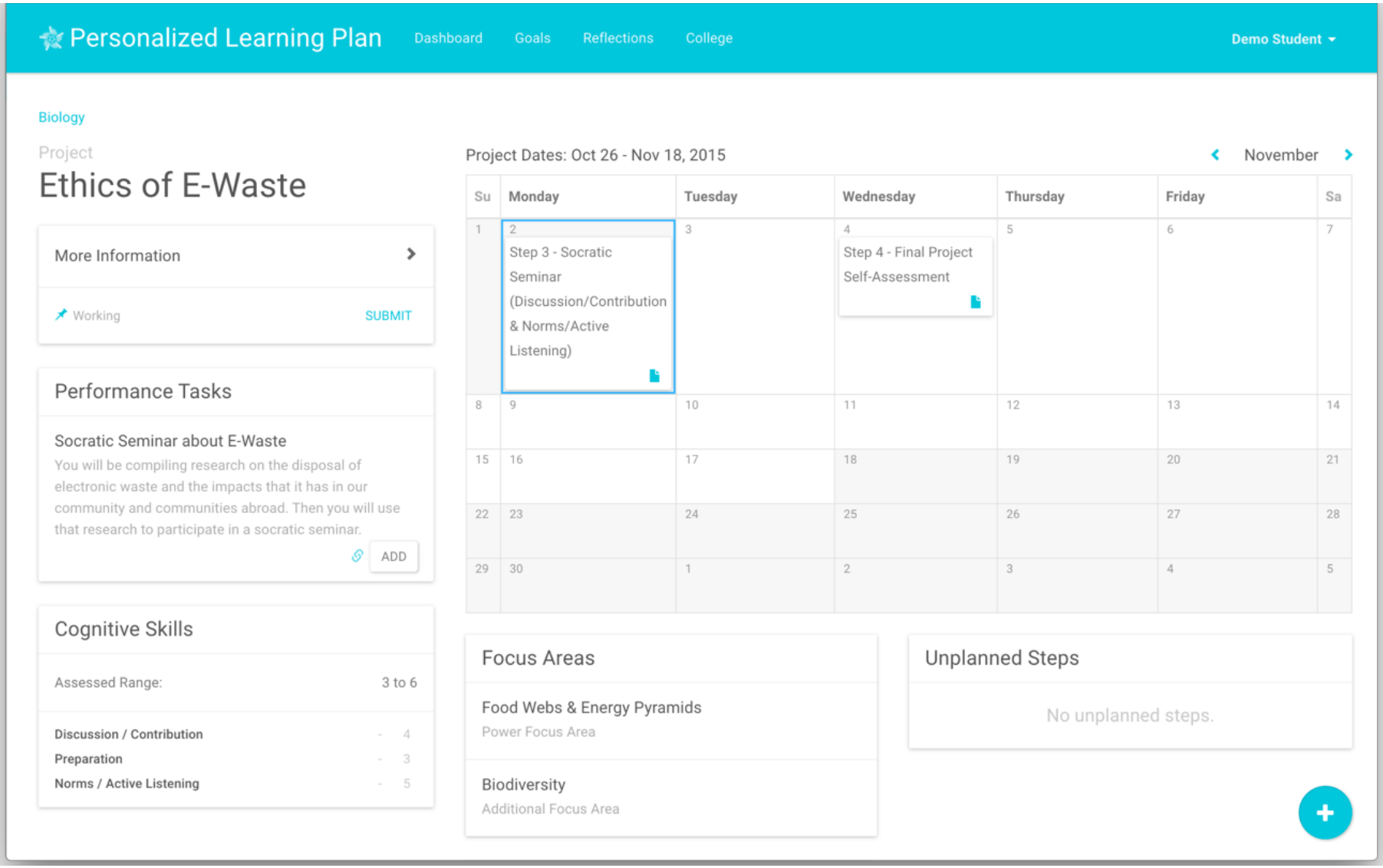
summit public schools



Project-Based Learning

Students build and demonstrate cognitive skills by working through rich, meaningful projects.

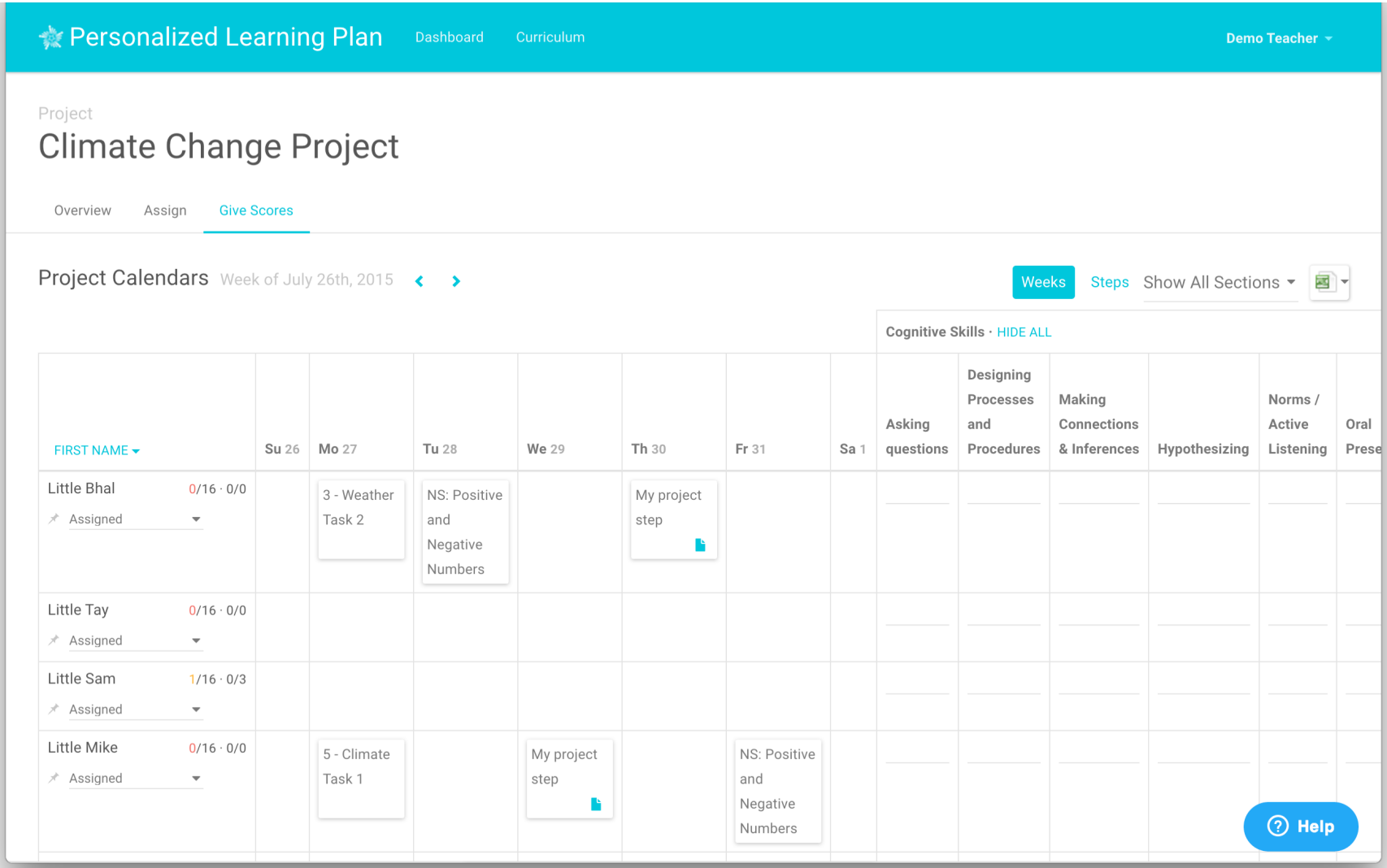
summit public schools



Facilitating Project-Based Learning

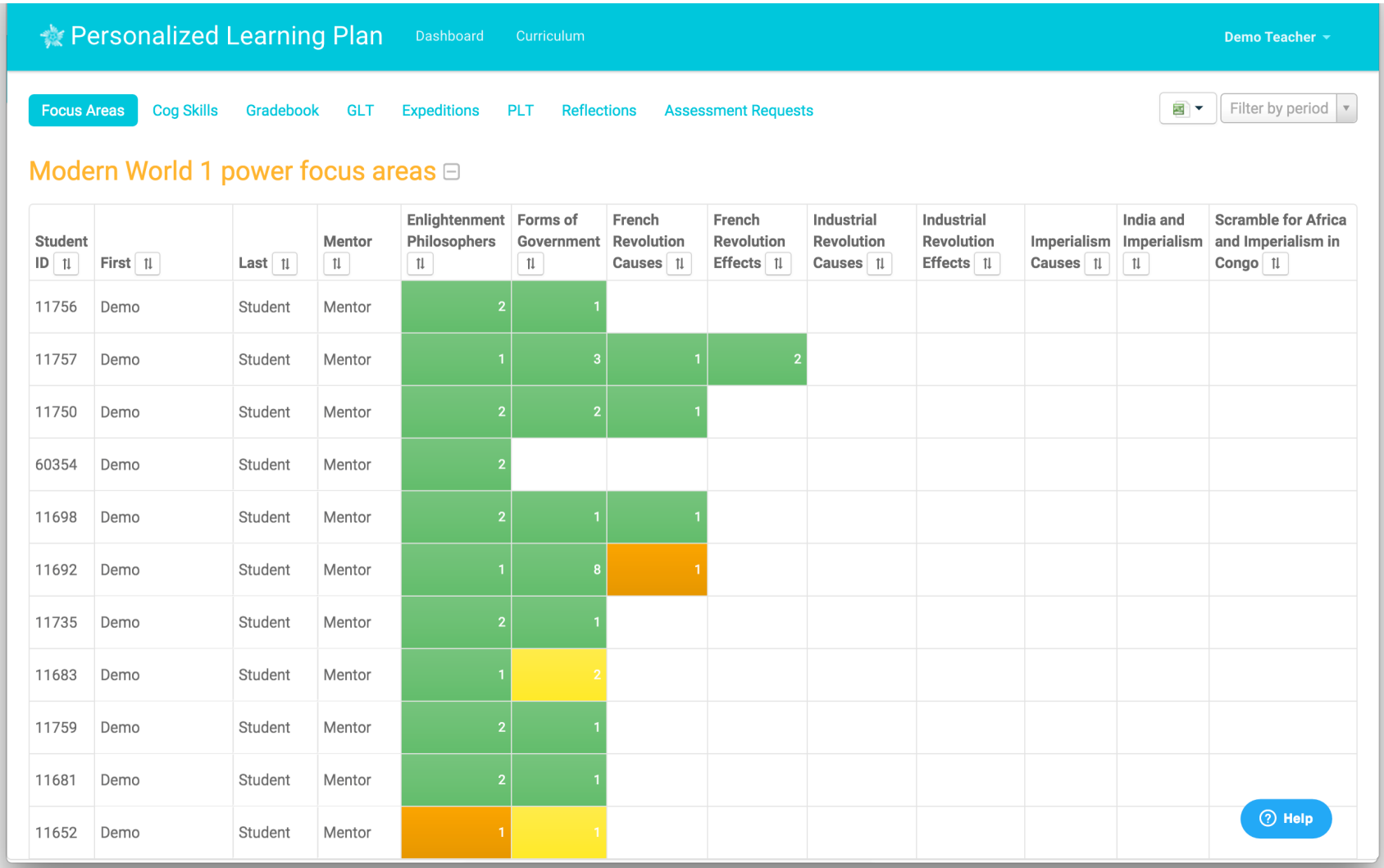
Teachers create projects for their students, provide feedback on student progress, and assess the final product on an interdisciplinary rubric of cognitive skills.

summit public schools



Understanding Performance Data

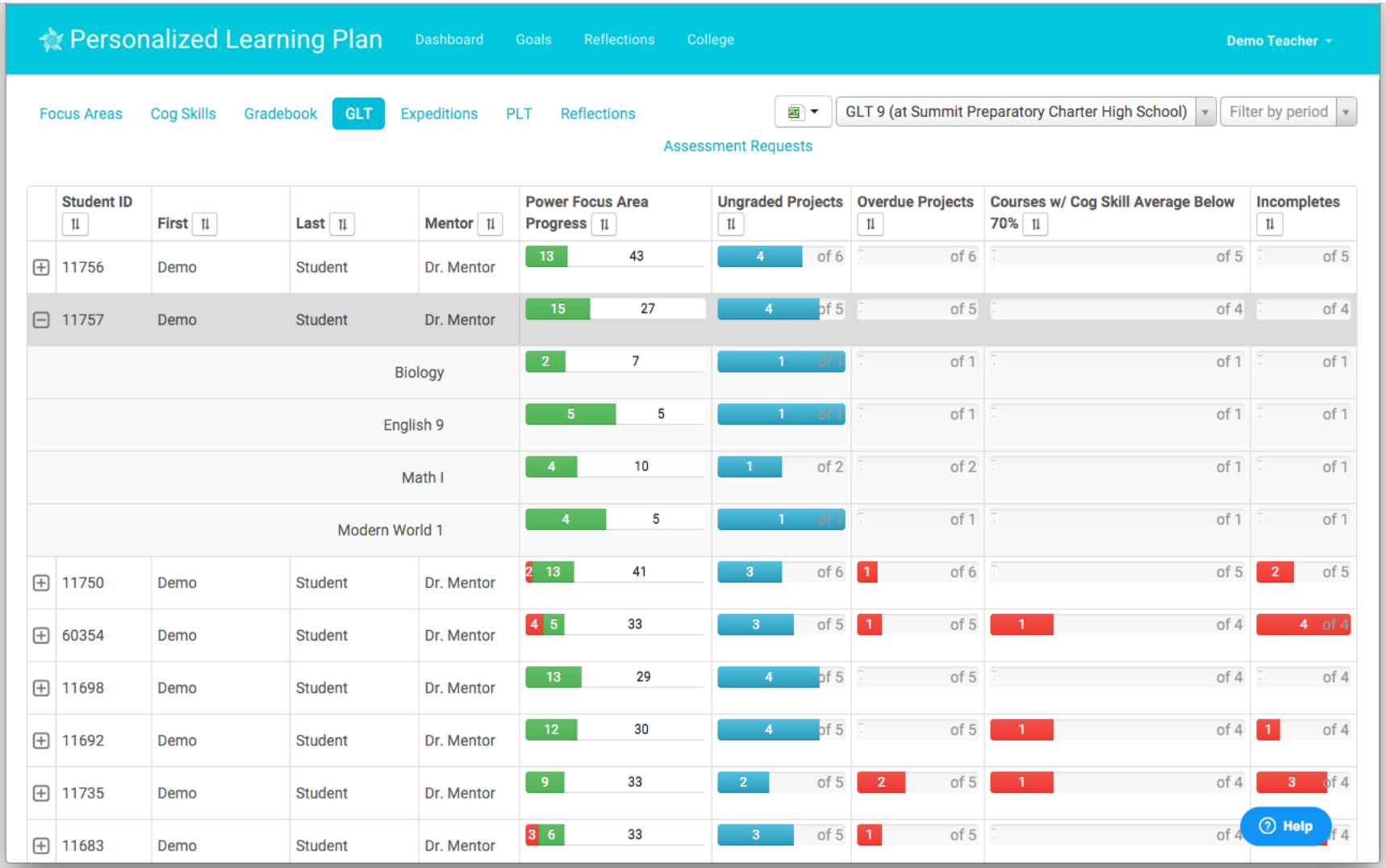
Student performance data in the PLP helps teachers understand trends at a glance, identify intervention opportunities, and provide quality feedback.



Student ID	First	Last	Mentor	Enlightenment Philosophers	Forms of Government	French Revolution Causes	French Revolution Effects	Industrial Revolution Causes	Industrial Revolution Effects	Imperialism Causes	India and Imperialism	Scramble for Africa and Imperialism in Congo
11756	Demo	Student	Mentor	2	1							
11757	Demo	Student	Mentor	1	3	1	2					
11750	Demo	Student	Mentor	2	2	1						
60354	Demo	Student	Mentor	2								
11698	Demo	Student	Mentor	2	1	1						
11692	Demo	Student	Mentor	1	8	1						
11735	Demo	Student	Mentor	2	1							
11683	Demo	Student	Mentor	1	2							
11759	Demo	Student	Mentor	2	1							
11681	Demo	Student	Mentor	2	1							
11652	Demo	Student	Mentor	1	1							

1:1 Mentorship

Each student using the PLP has at least one adult mentor who works with them individually to set goals and make a plan to achieve those goals.



12-2011

After the Final Bell: The Self-Directed Learning Practices of Elementary Teachers

Susan Renee Wagner
swagner4@utk.edu

To the Graduate Council:

I am submitting herewith a dissertation written by Susan Renee Wagner entitled "After the Final Bell: The Self-Directed Learning Practices of Elementary Teachers." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Education.

Colleen Gilrane, Major Professor

We have read this dissertation and recommend its acceptance:

Richard Allington, Ralph Brockett, Stergios Botzakis

Accepted for the Council:
Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

After the Final Bell: The Self-Directed Learning Practices Of Elementary Teachers

A Dissertation

Presented for the

Doctor of Philosophy

Degree

The University of Tennessee at Knoxville

Susan Reneé Wagner

December 2011

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ABSTRACT

Are elementary teachers self-directed learners? If so, do their learning activities outside their classrooms translate into their classrooms? The purpose of this study was to examine the relationship, if any, between elementary teachers' self-directed learning and activities in their classrooms. A two phase, mixed methods design first utilized a quantitative study from which the results were used to denote the type of data collected in the second, qualitative phase. The quantitative Phase I of this study involved using a survey instrument in order to identify self-directed learners and identify categories of teacher learners. These quantitative data were gathered through the use of the Self-Directed Learning Readiness Scale [SDLRS/LPA] (1977) which was administered online to 100 teacher respondents. The responses to the instruments were also analyzed statistically in order to generate descriptive statistics for this population of teachers. For the teachers in this study [N=100], the mean was 240.89 with a standard deviation of 2.019. The range was 91 and the variance was 407.735. This score fell within the "above average" range which indicated the teachers had developed an above average readiness for self-directed learning and determination of their own learning needs and goals and the ability to plan and carry out their own learning (Guglielmino, 2011). In Phase II, nine teachers scoring "high" and "above average" were interviewed. Results from the interviews revealed that teachers participate in self-directed learning activities which expressed their creative and professional selves. When the teachers in this study found that professional development did not meet the immediate needs of their classroom, they

planned and sought additional knowledge on their own. It was found that teacher self-directed learning actually included characteristics that research has found to be essential for successfully implemented professional development that results in improved student achievement. Implications of the study for practice and further research were also discussed.

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Chapter 1: Introduction to the Problem

How do teachers do it all? Elementary teachers wear many hats: teacher, planner, accountant, trip coordinator, manager, along with being expert in many subject and content areas. Any visit to an elementary classroom would find the teacher not only teaching a whole group, guiding small groups, or providing one-on-one instructional support, but also doing countless other tasks as well. My own expectations of teaching were quickly dispelled amongst the daily mounds of paperwork, forms, and accounting that I had to do - often before the morning bell rang. There were absentee forms to turn in, money to count, yearbook orders to check off and turn in, in addition to field trips to plan, coordinate and collect money for. I also had to serve on committees and attend meetings on topics that did not directly affect my students' learning. Among all these unexpected peripheral activities, I still had to find time for planning my instruction and teaching my students.

Teachers act as role models for their students and facilitate the means in which student learning takes place. Teachers are constantly on the move, from student to student, from group to group, from meeting to meeting. All this ongoing activity occurs in order to successfully teach a curriculum that may encompass all content areas: reading, language arts, mathematics; geography, history, and science. When I entered the door to my first classroom, little did I realize that my learning had just begun. Subsequent years spent in evening classes pursuing graduate degrees while at the same time spending additional evenings grading papers, researching lesson ideas, and learning new

curriculum competed for valuable family personal time. I was still left with much to learn and know about this profession. While I may be writing an article review for a graduate class, I may also be designing a lesson utilizing GPS technology for finding latitude and longitude in the classroom.

With multitasking being a job prerequisite, I had little room for prescribed professional development without application for my classroom. I would balk at two-day seminars where I felt chained to my seat for hours on end, listening to presenters reading PowerPoint slides. Then, when back in the classroom, my frustration would mount when that two-days' worth of training did not match my grade level, subject area, or my required grade-level standards. Teachers who seek to offer the best instruction for their students must often look outside their district/school's professional development offerings in order to gain professional knowledge, stay current in their content areas, and develop better teaching methodologies in order to better facilitate student learning (Hill, 2009).

In my own practice as a teacher, I found I was linking my own personal learning pursuits to lessons within my classroom. The literature that I read in my own time was more often than not, children's literature. In turn I read and previewed my favorite books to my students who were more often than not inspired to check out the books that I had read and discussed with them.

When I learned to crochet, my class learned along with me. We crocheted scarves and bands creating arrays and rows and columns of colorful yarns all the while

incorporating state standards into the lessons. Student-created crafts were sold to help sponsor a grade-level trip to the Smoky Mountains Institute at Tremont.

When I stumbled upon geocaching after clicking a top ten search on the Yahoo news page, I discovered an outdoor treasure hunting game which used a GPSr to locate hidden "caches." I found this could easily translate into a lesson on latitude and longitude, map- reading skills, and get my students out of the classroom in an engaging geocache hunt.

Finally, my interest in learning how to play a mountain dulcimer through a series of YouTube video lessons sparked collaboration with our school's music teacher. This led not only led to her purchasing a mountain dulcimer, but also a grant in which we purchased a classroom set of mountain dulcimers. This single outside pursuit of mine led to history lessons on Appalachian culture and on American folk music which culminated in my students' performance during our school's annual Heritage Day's two-day festival.

I often wondered how many teachers brought their outside interests into the classroom, matched them with state standards and created lessons for their students. I saw my colleagues who were athletes outside the classroom combine movement in lessons, designing games to body map concepts or using exercise balls in the classroom after researching their use as seats on the internet. I know of one teacher whose weekend hiking trips in the Smokies led to a grade-level field trip and a lab on dissecting owl pellets.

These lessons that I mention above were not part of a classroom textbook. They were not offered as a district wide training. These lessons rose out of teachers own

interests and pursuits. When I learned about the area of self-directed learning as part of my adult learning class, I found an explanation for all the times that I brought my own learning into my classroom and the times when my colleagues had as well. I found myself wondering if teachers in general were more self-directed in their learning than others, and if they translated that learning into lessons for their students as well.

Statement of the Problem

Teachers who invest time and resources in directing their own learning may transfer that enthusiasm for learning and knowledge to their students in the classroom. For this dissertation, my goal is to focus the lens on the connection between the teacher as the self-directed learner and the teacher in the traditional mode of public education. I posit that self-directed learning can be further explored as an opportunity for professional growth for teachers which can result in a more personalized learning experience that will also benefit student learning in the classroom. While research into teacher professional development examines mandated or assigned teacher professional development programs, teacher professional development research has not fully examined the individual investigations and learning that teachers pursue in order to perfect their craft. Teachers are performing their own learning outside the typical staff development seminar or school-wide in-service. Whether to advance their knowledge, to prepare for a new content area or grade level, or to investigate new technologies to utilize in the classroom, many teachers are constantly learning and adding to their professional knowledge base on their

own - outside their mandated district and state professional development hours. It is this area of teacher self-directed learning that is lacking in the research literature.

Teacher professional development research has examined prescribed teacher professional development programs, yet what is not contained in the research are studies examining how individual teachers gather skills and knowledge on their own in order to perfect their expertise in the classroom (Mushayikwa & Lubben, 2009).

Purpose of the Study

The purpose of this study is to determine the relationships, if any, between self-directed learning readiness and elementary teaching. That is, do teachers identified as self-directed exhibit characteristics of self-directed learners, and if so, how do these characteristics and learning translate into their classroom instruction? I seek to identify and explore the self-directed learning activities of elementary teachers who direct their learning in order to obtain knowledge and skill sets which improve their lives and help them reach personal or professional goals. Through self-directed learning, teachers can further their teaching craft; pursue an interest which may impact classroom content; or learn for the sake of learning.

Research Questions

For this paper, my research questions are:

1. How do elementary teachers rate on the Self-Directed Learning Readiness Scale [SDLRS/LPA] (Guglielmino, 1977).

2. Do elementary teachers participate in self-directed learning activities?
3. What sorts of learning activities do teachers participate in outside of the school environment?
4. Do these learning activities translate into the classroom?

Need for the Study

Elementary teachers bring much to the classroom beyond the a scripted textbook lessons or end-of-chapter assignments (McCall, 2006). More often than not, those teachers identified as "exemplary" bring pieces of their lives into the classroom (Allington & Johnston, 2001; Haberman, 1995). Whether this means sharing their own collection of rocks with students, or guiding students through a genealogical study of the families within their communities, exemplary teachers create learning environments for their students which are motivating, challenging, and enlightening. These teachers go beyond the textbooks - they provide an "extra" dimension to their instruction which sets them apart.

By identifying these qualities, and perhaps by linking the self-directed learning of teachers to their teaching, a model of self-directed professional development can be shared which will assist preservice teachers, and current teachers to improve their practice. If teachers invest in their own learning needs and interests and link those with the needs of their students and school in order to facilitate learning, knowing how they do this may open a door for future professional growth that lies outside traditional professional development.

Definition of Terms for the Project

Self-Directed Learning: takes place among all types of people from many backgrounds outside the tradition, formal classroom. As defined by Malcolm Knowles (1975), self-directed learning is a:

> "process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and materials resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes" (p. 18).

Self-Directed Learning Readiness Scale/Learning Preference Assessment [SDLRS/LPA]: Developed by Guglielmino (1977), it is a 58 item instrument which has a 5 point scale that is used in evaluating an individual's perceptions along 8 factors which have been linked to self-directedness.

Chapter Summary

In this chapter, I have discussed the context and the need for examining the self-directed learning practices of elementary teachers. I detailed the problem, the four research questions for my investigation and the definitions I will be using in this study. The following chapter contains my literature review of the theoretical framework for this study, background of teachers and professional development, a literature of self-directed learning including self-directed learning models, research on self-directed learning in

teachers, the Self-Directed Learning Readiness Scale/Learning Processes Assessment (SDLRS/LPA) and its validity in research.

Chapter 2: Literature Review

Introduction

This chapter contains the theoretical rationale for this study along with a literature review of self-directed learning. Merriman (2009) suggested that researchers find the majority of their research topics within their field of work and personal interest. In order to examine self-directed learning in exemplary teachers, I have assumed a constructivist theoretical framework which acknowledges self-directed learning as a way of acquiring knowledge outside the formal classroom situation. As an educator, I am interested in examining the position of teacher as learner and how self-directed learners go about constructing knowledge for personal growth and use in the classroom. Admittedly, I have been self-directed in my own professional development, seeking to learn methods outside of the professional development offerings of my school district. It is the incongruence with professional development offerings and my actual educational needs as a teacher that has led me to investigate self-directed learning of elementary teachers.

Theoretical Framework

Olson (2003) reiterates that theorists and researchers situated within the constructivist paradigm believe that knowledge is built upon experiences of the learner. As an educator situated within the constructivist paradigm, I believe that learners construct knowledge based upon their individual experiences with their world and their day-to-day lives. Guba and Lincoln (2005), in an updated version of their categorized

research paradigms contended that within the ontology of constructivism, reality is relative, dependent upon the immediate and specifically constructed realities. Hatch (2002) expounded upon constructivist ontology: "constructive science argues that multiple realities exist that are inherently unique because they are constructed by individuals who experience the world from their own vantage points" (p. 15).

As a teacher, I am responding to the needs of students in my room, to my administration, and to my curriculum. Depending on the make-up of my students, I design lessons and instruction to fit their needs. Additionally, I seek information and training that will help me pursue my craft. Through my ongoing experiences as a teacher, I continuously build and renew upon my knowledge of educational methods and knowledge. Hatch (2002) stated that within the constructivist epistemology, researchers and participants are partners and that because of this relationship, total objectivity on the part of the researcher as in positivistic and postpositivistic paradigms is not realistically obtainable.

In contrast to those paradigms which hold that only one finite reality exists, constructivism holds that there are many interpretations of reality or knowledge and that the researcher does not discover or uncover this finite knowledge but "constructs" it, building upon the multiple perspectives of the researcher and participants (Merriam, 2009). Classroom educators see this everyday as each student shares his or own perspective within the classroom setting. In turn, educators constructing their own knowledge must build upon foundations from methods classes, professional development, and their everyday experiences.

The epistemology of the constructivist paradigm allows for such "co-created findings" as knowledge is subjective and the constructivist framework recognizes that knowledge is accumulated through "more sophisticated reconstructions" and "vicarious experience" (Guba & Lincoln, 2005). Hatch (2002) further explained that researchers and research participants work in partnership to coconstruct knowledge and that as such, researchers cannot be resigned to objective observers as with the positive and postpositivistic paradigms. This corroborates Merriman (2009) wrote that "the researcher is the primary instrument for data collection and analysis" (p. 15).

Teachers and Professional Development

Grootenboer (1999) was critical of educational research into the current practices of teacher professional development in that the research itself has been immaterial to teachers and disconnected from their daily classroom interactions and offers little influence on their teaching. Teachers are busy practitioners with a workload that does not end with the last ring of the school bell. They must evaluate any professional development they attend and weigh its importance as to its relevance to their daily practice.

As part of Goals 2000 (1993), the U.S. Department of Education stated that for teachers to steer students toward meeting the more rigorous standards set in place by the 2002 No Child Left Behind [NCLB] legislation, professional development would serve as the "bridge" that connects teachers at their present location in experience and knowledge to where they need to go in order to raise the achievement of their students. The U.S.

Department of Education espoused this mission statement for professional development: "The mission of professional development is to prepare and support educators to help all students achieve to high standards of learning and development" (pg. 2) and included 10 principles:

1. focusing on teachers as being key to student learning, but also including the entire school community;
2. focusing on "individual, collegial, and organizational improvement";
3. respects and nourishes the intellectual and leadership capacity of teachers and principals - all who are involved in the school community;
4. shows the best practices and research;
5. enables teachers to increase their knowledge and expertise in their content areas, in strategies and technologies;
6. promotes ongoing inquiry and improvement;
7. incorporates collaborative planning by the participants and the facilitators;
8. time and resources are substantial;
9. is guided by an overall long-term plan; and finally,
10. professional development is evaluated in a regular and timely fashion in order to judge the impact on its effectiveness on teachers and students learning (H.R. 1804--103rd Congress: Goals 2000: Educate America Act., pg. 2).

Likewise, the North Central Regional Educational Laboratory (2009) posted a framework of research-based teacher professional development on its website. These

phases of teacher professional development should be ongoing, overlap, and repeat and serve as guidelines for administration and teachers in selecting, conducting, and pursuing ongoing education. The phases included:

- Building a knowledge base
- Observing models and examples
- Reflecting on practice
- Changing practice
- Gaining and sharing expertise (pg. 1)

Despite these guidelines and recommendations, teacher professional development doesn't always attain such lofty goals or practical ones for that matter, and professional development as currently practiced has its fair share of critics. Hill (2009) asserted that in reality, the system that we call professional development is "broken" and called teacher development programs touting a "research proven" basis, such as school-based coaching and online content, as failing teachers and maintained that newer professional development trends like the Japanese lesson study method, weren't actually increasing time and commitment from teachers to professional development. Hill referred to many of these newer innovations in teacher professional development methods as "fads."

Despite the claims of professional development programs which tout glowing results based in scientific research, Hill found data that revealed most teachers "engage in only the minimum professional learning required by their state or district each year," (pg. 471). Despite all the research proven programs, teachers just weren't excited about

mandated professional development. Using data compiled from the National Center for Education Statistics, Hill reported that in a survey on teacher professional development, more than 50 percent of the teachers who answered only spent one day or less in professional development. Hill contended that the low turnout for professional development merely matched state minimal requirements for keeping teacher licensure up to date, which is on average 15 professional development days over a period up to five years. When there is lack of teacher choice in professional development opportunities coinciding with mandated professional development hours, one can see the lack of enthusiasm reflected in the turn-out figures. Offsite professional development requires a large effort on the part of the teacher in planning and commitment. Teachers must plan for travel, whether it be simply determining the directions for drive to a local meeting, or the more detailed planning required if an extended time away from home and classroom are required. Resources for expenses, child-care, food and necessities, while they may be reimbursed, are also considerations for teachers. Even when programs are brought in-house or in-district, teachers consider past experiences and can become jaded over new programs and discouraged over perceived lack of support once in the classroom.

Hargreaves and Dawe (1990) found a culture of contrived collegiality among teachers when interactions between teacher learning groups were controlled by administration. Teachers may be assigned to groups based upon their grade level or content area. Teachers may also be forced to study within a grade-level team which in the day-to-day operation of the school does not function as a team. While in the classroom, teachers can avoid teachers with whom they have had previous conflicts or differing

philosophies, yet when thrust together during professional development the contrived collegiality occurs. Due to these learning group dynamics, teachers may not fully participate and experience professional learning. When this occurs, it is in direct contrast to the desired goal of collaboration among teachers.

However, in another study, Grootenboer (1999) interviewed teachers who indicated that one of the benefits of their professional development experiences included gaining new ideas and meeting with other teachers who sought similar goals and ideas - a hopeful testimony to collaborative learning groups in these situations. One fact that these teachers did note was the lack of professional support they received once they returned to the classroom and were unable to apply their learning. Isolation in learning meant that they were sometimes the only teacher in the school building with the new learning, having only "bits and pieces" to utilize in their classroom (pg. 6). Teachers want to give their students the best education using the most effective educational methods and models and according to Grootenboer (1999), this was a substantially motivating factor for teachers to maintain and update their craft. Even when collaborative and supportive learning groups take place during professional development, isolation in the classroom remained a hurdle to implementing learning.

However, there is promise for teacher professional development. There have been some key findings about what is actually working in professional development (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009):

1. Sustained and intensive professional development is related to student achievement

2. Collaborative approaches to professional learning can promote school change that extends beyond individual classrooms
3. Effective professional development is intensive, ongoing, and connected to practice; focuses on the teaching and learning of specific academic content; is connected to other school initiatives; and builds strong working relationships among teachers

Gilrane, Roberts, and Russell (2008) evaluated the effectiveness of a professional development effort which was part of the Reading Excellence Act over a two-year period. After analyzing student achievement data along with intensive qualitative research collected from conducting observations of teachers, conducting semi structured interviews and focus-groups, taking school climate inventories, utilizing teacher questionnaires, and collecting teacher narratives the researchers found the following conditions supportive of teacher growth, change, and reflection:

1. Voice in determining professional development needs
2. Structures (materials, time, and collaborative planning space) in place to support teaching
3. Feeling supported by administrators and change facilitators in their efforts
4. Observing their student's success and having meetings to discuss assessment data that celebrated good news and emphasized areas for growth

Self-Directed Learning

While teachers work at connecting learning from traditional professional development courses and collaborations to the reality of their work in the classroom, other models of learning offer possibilities to enable them to do just that. One such model is self-directed learning. Self-directed learning offers teachers the opportunity to choose, plan, evaluate, and implement their own learning in the classroom and affords teachers control, something that standard teacher professional development has not.

Self-directed learning in and of itself is a way of life. People of all walks of life, ages, and careers participate in self-directed learning activities outside of the formal education classroom or training centers. According to Knowles (1975), self-directed learning is a:

> "process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and materials resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes" (p. 18).

Merriman, Caffarella and Baumgarter (2007) readily acknowledge that adults learn by themselves at different stages of their lives and for different purposes. They organized research and theory into self-directed learning within three areas: self-directed learning as goals of the learner; the process of self-directed study; and the personal attributes of self-directed learners. Adults study on their own as a result of life changes, interests, or in order to become part of a community. They organize their learning and

seek out resources and people in order to help them, and they have characteristics which enable them to monitor their learning and complete their goals. Many teachers have probably been involved in self-directed learning projects throughout their careers.

Brockett and Hiemstra (1991) affirmed that learning takes place throughout life. Self-directed learning, in regards to teacher professional development, can afford teachers opportunities to expand their knowledge base without teachers suffering some of the negative consequences that can reportedly follow the traditional, one-size-fits-all teacher professional-development programs. What is difficult for teachers and administrators within the institution of education to overcome on the way to beginning the path toward self-directed learning is the traditional belief that a learner needs a teacher, or instructor, in order to receive knowledge.

Models of Self-Directed Learning

Grow (1991) proposed the Staged Self-Directed Learning Model which Merriam, Caffarella & Baumgartner (2007) categorized as an instructional self-directed learning model. In examining teachers and teaching, with its own set of entrenched idiosyncrasies peculiar to the profession, Grow's (1991) staged model advances learners through four learning stages: from that of being the dependent learner who needs coaching; to the interested student who is inspired by the motivating instructor; to the involved learner working as an equal with a facilitator; finally culminating with the self-directed learner relying at times on a consultant. This model focused on teachers assisting learners by meeting them at their stage and describes the characteristic of teachers at each level.

Teachers effectively assisting the learner through the self-directed learning process must assume the appropriate instructional role depending upon the stage of the learner. K-12 teachers realize that learners need an authority figure and serve in that role daily. Self-directed teachers will need to examine the model from the viewpoint of being the learner as well. This model detailed the stages in which teachers can gain control of their own learning and progress to becoming self-directed learners themselves.

Grow (1991) contended that "being a dependent learner is not a defect; it can however be a serious limitation" (pg. 129). Many teachers in a professional development setting are placed in the role of the dependent learner. This dependency results in teacher dissatisfaction with their learning and the outcome of their professional development. Grow stated that in the public or institutional arena, self-directed learning as illustrated in stage four is not possible - with learners being highly self-directed and the teacher serving as a consultant. However, this type of learning situation is more often the norm for teachers practicing their craft. It is not uncommon for teachers to hear or read about a certain methodology, investigate that methodology on their own, and begin to implement it within their own classrooms. This is the self-directed learning that teachers frequently do, but teachers are seldom credited for this self-designed professional development and often don't recognize it as professional development themselves.

What is common in the typical professional development setting is a learner/teacher mismatch. This mismatch often occurs between the teacher or deliverer's style and the learner's stage of self-direction (Grow, 1991). When a teacher is just released from a one- or two-day professional development seminar, he or she may still be

a dependent learner and still thoroughly dependent on a teacher or coach for direction. A mismatch between stages of learner self-direction and level of teacher instruction explains the teacher-as-learner's inability to apply new knowledge when he or she returns to the classroom. There, the teacher's only connection to the professional development instructor may be that email address or printout of the presentation slides. The teacher - still a dependent, stage one learner - is not ready to be autonomous.

In truly self-directed learning, the learner, rather than a school administrator, principal or seminar leader, takes upon themselves responsibility for their learning. Brockett and Hiemstra's (1991) PROmodel (Figure 2-1) defined self-direction along two dimensions:

Figure 2. 1 The "Personal Responsibility Orientation" (PRO) Model.
Adapted from Brocket R.G. & Hiemstra, R. (1991) *Self-direction in adult learning: Perspectives on theory, research and practice*. New York: Routledge. P. 25. Used with permission.

First, it defined self-directed learning as an instructional method which involves the learner actually taking on the role of planning and essentially undertaking the learning and evaluation of their learning along the way. This matches the unaccredited type of learning teachers create for themselves. Meanwhile, a second dimension is then oriented toward the learner's personality. Are they ready for learning? For a teacher/learner attending a professional development training involving a technique or methodology (dimension one) which did not match their own philosophy of learning, that teacher is less likely to take up that knowledge and apply it in the classroom (dimension two).

The PRO-model of self-direction permits one to view teacher professional development through four factors and allows for the learner's ability to respond to their situations. Some teachers accept new programs and instructional methodologies quite readily. They have the wherewithal to ask for support; send that email; and the ability to self-asses their own learning in order to know when they need to seek assistance. Yet, there are other teachers, who for various reasons, are not willing or able to support themselves and cannot make that commitment to be responsible for their own learning. From this standpoint Brockett and Hiemstra (1991) posited the importance of having balance between the "learner's level of self-direction and the extent to which opportunity for self-directed learning is possible…" (, pg. 30).

Research on Self-directed learning in Teachers

Wang, West & Bentley (1989) reported that thirteen different groups had been targeted in self-directed learning research. While there are studies examining self-directed learning of K-12 students and how teachers can best facilitate K-12 learners in becoming self-directed learners, little research into the self-directed learning of public school teachers exists, particularly at the elementary school level. Despite interest in self-directed learning across many aspects of adult education, a quantitative content analysis of adult education research revealed that over a time span from 1980-1999, merely one percent of research articles in majority adult education literature examined self-directed learning (Ralph. G. Brockett, et al., 2000).

Within the research body on self-directed learning, I found targeted areas of adult education ranging from secondary high school teachers (Beatty, 1999); exemplary elementary principals (Guglielmino & Hillard, 2007); teacher performance appraisals (Rowe, 2000); teachers working with students as self-directed learners (Bolhuis & Voeten, 2004; Eilon & Kliachko, 2004); corporate and seminar trainers (Johnson, 2006); rural adults (Terry, 2006); breast cancer patients (Rager, 2004); and graduate nursing students and faculty (Lunyk-Child, et al., 2001). Of the previously noted content analysis of adult education literature by Brockett, et. al. (2000), one third were published in the *Journal of Continuing Education in Nursing* and none pertained to self-directed learning of teachers. Rowe (2000) concurred that "there appears a scarcity of empirical evidence to link concepts of SDL and teacher professional growth" (p. 7).

Within the K-12 community, Guglielmino and Hillard (2007) examined the use of self-directed learning in ten exemplary elementary principals using the Self-Directed Learning Readiness Scale [SDLRS/LPA]. They wanted to know how principals compared on the SDLRS/LPA to other previously studied groups such as corporate executives. They found that the exemplary principals - those principals whose schools excelled in growing reading scores for their districts, pursued self-directed learning. These principals engaged in self-directed learning not only for themselves, but they also fostered it for their teachers. Guglielmino and Hillard also found that the exemplary principals built shared learning communities within their schools. The principals were able to create their own plans for learning and conducted their own research, and they did not wait for mandates or guidelines from the state. When Guglielmino and Hillard compared the principals' scores on the Self-Directed Learning Readiness Scale (Guglielmino, 1977) to other groups, they found that these principals had the highest scores ever recorded on the SDLRS/LPA instrument. In the accompanying interviews with the 10 principals studied, the researchers were able to identify themes which were shared across the participants: teacher empowerment; innovation; shared leadership; and reliance on data to lead their schools. The principals were found not only to be highly self-directed, but also to enable self-direction in their staff. Guglielmino and Hillard (2007) found these principals were modeling self-directed learning for their faculties.

The Brocket and Hiemstra (1991) PROmodel can focus attention on the personal responsibility these school leaders exhibited in their self-directed learning and in supporting their staff. An interesting area for research that these findings highlight would

be how school climate and environment fostered by highly self-directed principals enhanced any self-directed learning in their teachers.

Beatty (1999) combined self-directed learning with collegial and emotional support when researching a focus group of teachers in order to examine the idea that self-directed learners look to others and groups for additional learning support. While Guglielmino and Hillard (2007) found elementary principals modeling and fostering a climate of self-directed learning, Beatty (1999), in contrast, found that secondary teachers were isolated. Despite being leaders within their own classroom, they were afforded little interaction with adults their own age. Often, these interactions were at the discretion of administration or supervisors in charge of creating the teacher's schedules. The study found that teachers were more sensitive to being cut off from their creative flow than from salary and other working conditions. Support groups were able to overcome some of that isolation and encouraged self-directed learning among the secondary teachers.

Rowe (2000) examined the implementation of a teacher performance appraisal that encouraged teacher self-directed learning. Typically, teachers do not view an evaluation process as an opportunity for learning and growth. Rowe stipulated that a teacher appraisal process is all the more effective when it is directed by the teacher. Where teacher professional growth and development are concerned, the benefits of self-directed learning are not being utilized to their fullest. Self-directed learning would allow teachers a more positive learning experience. Rowe found that teachers' measures of efficacy influenced their attitudes in, and there subsequent success at, implementing an appraisal process based in self-directed learning. The teachers themselves came to

believe that the most effective appraisal and evaluations were self-directed. However, as with Beatty (1999), these findings also highlighted the barriers which hinder teacher and administrator relationships. Control was the primary issue for the teachers. Beatty found that extremes of internal or external loci of control could be mediated by participation in a study group where self-directed learning revealed powerful motivational effects for the teachers in the study.

Research (Beatty, 1999; Rowe, 2000) has shown that teacher professional growth is subject to teacher efficacy, self-directed learning, and many other individual factors. Greater levels of teacher efficacy and willingness to engage in self-directed learning would be indicators of success in a process of professional growth and development where teachers and administrators need to be partners in the process.

Grootenberger (1999) used teacher action research and collaborative group support in mathematics teachers' self-directed professional development. Participants reported a number of benefits in that the experience was collaborative and each had opportunities to reflect upon their teaching. Three issues were identified as important to their successful implementation of self-directed professional development: the role taken by school administrators as approving but not too intrusive; having time available to visit other teacher's classrooms without causing a disruption in other teachers' responsibilities while teachers left their classes; and finally the support of colleagues which was considered the most significant factor. This study highlighted the growth and learning that is possible within the collaborative support system of teacher collegial groups.

Despite its moniker, self-directed learning is not meant to describe a sole learner closeted alone at a desk in his or her home. "Self-directed learning is, ironically, highly collaborative," (Abdullah, 2001, pg. 2). Those undertaking self-directed learning projects seek out experts in order to further their own growth and learning. Teachers, new to certain methodologies or practices, seek out those who are experienced.

One area in which teachers are learning about self-directed learning is in enabling their own students to become more self-directed in their own learning. Bolhuis and Voeten (2004) explored teachers' conceptions of their students' learning and their own learning in Dutch high schools. The researchers administered a newly crafted Learning Inventory (Bolhuis & Voeten, 2004) to high school teachers in The Netherlands where change was underway to support newer models of student independent learning. They found that teachers expected greater tolerance for uncertainty in their own students than the teachers expected in themselves. These differing learning conceptions could lead to a teacher student mismatch with students who needed more guidance and structure from the teachers who in turn may think the students would learn well with independent, self-directed learning.

An example of teacher student mismatch can be seen through Eilon's and Kliachko's (2004) study which examined students' perceptions of their teacher's role in an internet-based science web course. The researchers found that students met with problems implementing the self-directed learning aspect of the on-line course and missed the traditional role and guidance of the teacher as well when learning on their own. These

findings seems to fit Grow's (1991) description of stage mismatch between teachers and students.

Bolhuis and Voeten (2004) suggested that teachers who identified as having low tolerance for uncertainty in learning in themselves and in their students could benefit from additional support and structure in their own learning and professional development. They also found that teachers believed they could continue learning and growing all throughout their teaching years, but their assumptions about their own students' learning weren't as broad and hopeful. Teachers' perceptions about student intelligence were that it was more stagnant and predetermined resulting in thinking which could limit teacher responsibility for student learning.

Transforming teachers' thinking and teaching methodologies from supporting their students' to supporting their own self-directed learning can be a difficult process. Cifuentes, Davis, & Clark (1996) studied such transformations in preservice teachers. Their findings revealed that preservice teachers do need more exposure to the work of the master teacher during their college courses in order to instill teaching methods other than lecture and to nurture self-directed learning of their own students.

Lunyk-Child, Crooks, Ellis, Ofosu, O'Mara, and Rideout (2001) undertook an examination into a nursing college's faculty and student perceptions of self-directed learning and the factors that make self-directed learning possible or obstruct self-directed learning. They found that faculty and student learners must forge a commitment to self-directed learning which has as its tenets the charge of empowering learners with the responsibility of their own decision making. In analyzing faculty interview transcripts,

they found that faculty were familiar with self-directed learning concepts, but were confused about their roles and about rating students. Students, in turn, considered the faculty to be sources of guidance, and wanted more support in the initial years of their program with clear statements of objectives. Students underwent a transformation which began with frustration, confusion, and dissatisfaction on the part of the learner. However, the learning process culminated with students emerging with greater confidence and increased knowledge and skills. Finally, faculty development was crucial to maintain high standards of competency in self-directed learning facilitation. While the researchers based this study on Taylor's (1986) self-directed learning model, one can see the possibility for teacher student mismatch at the college level. Grow's (1991) instructional self-directed learning model is also applicable here in viewing instructional mismatch.

We know that teacher professional development, like state-mandated standards for student learning, can be highly directed, yet personally unfulfilling for teachers, especially when they return to the classroom. Self-directed learning can prove to be a powerful and meaningful way for teachers to have control, choice, and growth in their own professional development. In order to become self-directed in their learning and in their professional development, teachers may have to overcome obstacles with administration. The over control of some administrators can be frustrating and taxing and afford no credibility to teacher self-directed learning. In contrast, some teachers may face a lack of collegial and administrative support for own beliefs about self-directed learning resulting in their own questioning of the validity of self-directed learning.

In order to make the most of this self-directed learning methodologies, teachers may need to overcome internal obstacles as well. While many adult learners can become self-directed in areas of interest, for teachers having taught in a traditional, teacher-directed learning establishment, the changing roles from that of bestowing or guiding knowledge to others to that of seeking knowledge can be difficult and frustrating. Teachers will need to transform their thinking about where knowledge comes from and who bestows that knowledge.

Self-directed learning does not mean that a teacher will take up a book, read it, learn it, and then do it. On the contrary, many complicated exchanges and social interactions occur before learning takes place and teachers will need to realize that the door to their classroom opens both ways. Seeking support from colleagues and building a community of shared knowledge builds support for their learning. Teachers need not be alone in their endeavors and must realize the necessity to seek guidance and mentoring when necessary.

Finally, I see that teacher self-directed learning is an area needing more research. Much of the current research looks at what is lacking in current programmed professional development for teachers or the relationship between teachers and administration and the instructional interplay between teachers and students. Teachers have been encouraged and perhaps have attended professional development seminars on how to encourage and foster self-directed learning in their student and within the classroom. However, one area of research that should be investigated is how teachers are self-directed in their own learning and what benefits do their students see from their teachers being self directed. Are

exemplary teachers self-directed? Also, the effects of highly self-directed principals on the self-directed learning of their teaching staff would be an avenue of research as well. Self-directed learning in elementary teaching is area of promise for both teachers and researchers.

Self-Directed Learning Readiness Scale

In this study, I looked for a means to identify teachers who were highly self-directed in their learning. The Self-Directed Learning Readiness Scale [SDLRS]was developed in 1977 by Lucy Guglielmino as a measurement of many complex skills, attitudes, and characteristics which determine an individual's ability to monitor their own personal learning (Guglielmino, 1977). Since its development, the SDLRS (also known as the Learning Preference Assessment [LPA] to eliminate response bias from those taking the instrument) has been used by over 500 organizations around the world and has been included in over 90 doctoral dissertations (Guglielmino, 1977).

Consisting of 58 likert-type questions, the SDLRS/LPA is provided in two formats for adult and children respectively. Adult respondents read positive and/or negative statements descriptive of learning practices and indicate the degree that each statement is characteristic of their own beliefs, attitudes, skills or actions. The research version of the instrument for larger organizations or institutions is scored by the developers, Guglielmino and Associates. Conversely, a self-scored version is available for individuals.

SDLRS/LPA Validity

In developing the SDLRS/LPA, Guglielmino (1977, 2011) used a three-round Delphi survey of 14 self-directed learning authorities who were entailed with listing and rating qualities which would be inherent in and descriptive of a self-directed learner. Those characteristics which obtained a median rating of desirable, necessary, or essential in self-directed learning were used in the design of individual items for the SDLRS/LPA. The instrument was then given to 307 subjects in Georgia, Virginia, and Canada for item analysis and to select any items for revision. A reliability of .87 was estimated for the SDLRS/LPA which was later expanded to the 58 - item instrument (Guglielmino, 2011).

Criticism of SDLRS/LPA

Since its introduction in 1977, the SDLRS /LPA has been scrutinized in the literature on self-directed learning. Long and Agyekum (1983, 1984) sought to validate the SDLRS/LPA by testing faculty and their students. Faculty at two colleges rated each student in the study along the same characteristics Guglielmino identified in her original study on the SDLRS/LPA. The authors posited that the characteristics identified by Guglielmino's SDLR could also be identified by college faculty in those students they closely observe. Faculty members were asked to identify their students who they deemed as self-directed in their learning. Conversely, these students completed various instruments along with the SDLRS/LPA such as the Agreement Response Scale and Rokeach's Dogmatism Scale. Despite an initial absence of an association between faculty

ratings and students' performance and after a follow-up (Long & Agyekum, 1984), Long and Agyekum deemed their findings supportive of SDLRS/LPA.

Brockett (1985) has also been cited in the literature for questioning the reliability of the SDLRS/LPA. Brockett considered the appropriateness of the instrument's use across different populations - specifically those with lower levels of educational attainment. He found a level of difficulty in completing the instrument for respondents with limited educational attainment. Noting Long and Agyekum's (1983) call for validation of the SDLRS/LPA based upon intensive experimenter observation, Brockett reflected upon his experience in oral readings of SDLRS/LPA items to elderly participants. Of his sample, 62.5% completed the instrument by having the experimenter read the inventory items to them, enabling investigator to observe specific items where difficulties occurred. Brockett observed that Likert designed items, which included reverse scoring and items written in double negatives were problematic. Also frustrating to respondents was the wording between the Likert five responses they were to select as their answer. Because of his observations, Brockett cautioned against problems administering the instrument to adults with low formal educational attainment and concluded that other types of learning should be included in the wording of items used to assess self-directed learning readiness.

Brookfield (1985) in fact criticized the field of self-directed learning for heavily focusing research on middle class adults and offered criticism to the likelihood that working-class adults with poor "educational attainments" (pg. 64) would regard survey

instruments like the SDLRS/LPA with suspicion. He also interjected that extensive usage of instruments would detract from the actual quality of learning that takes place.

Field (1989) investigated the SDLRS and called into question its structure, validity and reliability and questioned its widespread usage in research and conclusions based upon the instrument's categorization of populations as having characteristics of self-directedness. He claimed problems with the wording and structure of the scale itself and questioned the original methodology behind its development and put forth that rather than measuring an eight factor structure, instead the scale measures a homogeneous construct that suggests love or enthusiasm for learning and not self-directed learning. Therefore, research using the scale which identifies populations or persons as self-directed in their learning, would, in essence be flawed. Field then called for the disuse of the instrument in research. Guglielmino (1989) contended that Field's article contained many inaccuracies which led him to inaccurate conclusions. She also called into question his interpretation of key terms of the original study and his reanalysis of inventory items and supported her original research. Her conclusions were supported by Long (1989) and McCune (1989) who also examined Field's article and concluded that little contribution was made by it and that his analysis was flawed.

Delahaye and Smith (1995) used a correlation analysis with the Student's Orientation Questionnaire (SOQ) and found that the SDLRS/LPA had acceptable construct validity - but they recommended usage of the SDLRS/LPA only for respondents over 20 years of age. They noted that the SDLRS/LPA can be administered to children

but with them the validity and reliability are not as stable. However, they acknowledged that a vast number of studies supported the SDLRS/LPA.

Despite these concerns, a diverse body of research exists which has utilized the SDLRS to examine self-directed learning readiness and other variables and subjects. Some examples include: life satisfaction (Ralph. G. Brockett, 1985), medical students (Frisby, 1991), cross-cultural adaptability (Chuprina, 2001), resilience (Robinson, 2003), satisfaction in on-line higher educational courses (Fogerson, 2005), experiential learning environments (Jiusto & DiBiasio, 2005), achievement in face-to-face and two-way distance learning (Hsu & Shiue, 2006), and health promotion in the elderly (Hulsman, 2011). The SDLRS has been translated into 22 different languages and used in hundreds of studies and many theses and dissertations since its development in 1977 (Guglielmino, 2011) and is cited in adult education texts for is wide usage as a valid instrument (Ralph. G. Brockett & Hiemstra, 1991; Merriam, et al., 2007). My study focused on elementary teachers who have at least a bachelor's degree in order to obtain licensure to teach and should not have problems with the language or readability of it. Therefore, I chose to use this instrument in order to select teachers who are highly self-directed in learning for interviews.

Summary of Chapter

In this chapter, the theoretical foundation for this study comes out of constructivist foundations which posit that knowledge is built upon the experiences of the learner. Teacher professional development, though required, is often found lacking by the very

teachers required to take it. Self-directed learning poses several models, two of which can apply to this research: the PROmodel (Ralph. G. Brockett & Hiemstra, 1991) for addressing teachers as self-directed learners and the GROW model (Grow, 1991) teachers as instructors of self-directed learning. Research is lacking in the area of self-directed learning of elementary teachers within the realm of adult education. However, themes found in the existing literature reveal that self-directed learning is a life-long process and surprisingly collaborative. The main instrument for identifying characteristics of self-directed learning, the SDLRS/LPA, has been used for decades despite a few criticisms.

Chapter 3: Methodology

Merriam (2009) writes:

> In its broadest sense, research is a systematic process by which we know more about something than we did before engaging in the process. We can engage in this process to contribute to the knowledge base in a field (pure research), improve the practice of a particular discipline (applied research), assess the value of something (evaluation research), or address a particular, localized problem (action research). (p. 4)

Introduction

The questions proposed for this study examine the relationship, if any, between elementary teachers' self-directed learning and activities in their classrooms. This chapter will describe the methods used in conducting this study including sample selection, survey instrument, data collection, interviewing, and data analysis.

Mixed Methods Design

My purpose in conducting this study based upon my theoretical framework leads me to choose a mixed methods design for my research project. Huck (2008) defined mixed method studies as those studies where the researcher includes both a quantitative and qualitative element to the research design. Merriam stated that selecting a project design flows from the research question (2009). My questions, "How do elementary

teachers rate on the Self-Directed Learning Readiness Scale [SDLRS/LPA]? (Guglielmino, 1977)"; "Do elementary teachers participate in self-directed learning activities?"; "What sorts of learning activities do teachers participate in inside and outside of the school environment?"; and "Do these learning activities translate into the classroom?" show my intent to build on the knowledge base of self-directed learning research by investigating a previously unstudied group of learners.

While a mixed methods approach may seem incongruous to a constructivist framework, I would argue that this design fits well within the constructivist paradigm chosen for this study. Huck (2008) stated that in recent years educational researchers have begun using both quantitative and qualitative research designs and that support for a multimodal approach requires competency in both quantitative and qualitative methodologies. It was in this vein that I hoped to build upon existing knowledge in areas of pure research in the educational field through a quantitative component and to applied research through the qualitative portion in order to improve the practice of teaching and learning. I proposed using a variation of a Quan-Qual model design as described by Huck (2008). This mixed methods design first utilized a quantitative study from which the results were used to denote the type of data collected in the second, qualitative phase.

The SDLRS/LPA - Instrument

The quantitative aspect of my study involved using a survey instrument in order to identify self-directed learners and identify categories of teacher learners. These quantitative data were gathered through the use of the Self-Directed Learning Readiness

Scale [SDLRS/LPA] (Guglielmino, 1977) which was administered online to 100 teacher respondents. The responses to the instruments were also analyzed statistically in order to generate descriptive statistics for this population of teachers. In this study, teachers who responded to the online survey instrument in the quantitative Phase I are referred to as "respondents." Teachers respondents who chose to participate in the interviews during the qualitative Phase II are referred to as "participants."

Quantitative Respondents

Every school district in a southeastern state was sent an email describing the study and containing a link to the online survey. District contacts were asked to forward the email to elementary teachers in the district if participation in the study was permitted. The 100 teachers who responded to the SDLRS/LPA survey were volunteers who received the email and chose to follow the link and take the survey. Demographic data describing these teachers follow.

Table 3. 1 Race

Race		Frequency	Percent
Valid	African American	1	1.0
	Caucasian	95	95.0
	Biracial	1	1.0
	Other	2	2.0
	Total	99	99.0
Missing	No Answer	1	1.0
Total		100	100.0

As shown in Table 3.1, ninety-five percent of the survey respondents identified themselves as Caucasian in race with one African American respondent, one biracial, and two respondents selecting "other." One respondent did not answer this question on the survey.

Table 3. 2 Grade Teaching

		Frequency	Percent
Valid	Kindergarten	12	12.0
	First	14	14.0
	Second	12	12.0
	Third	6	6.0
	Fourth	7	7.0
	Fifth	8	8.0
	Specialist:	20	20.0
	Other:	21	21.0
	Total	100	100.0

In examining the grades these teachers taught we can see in Table 3.2 that the largest responses came from the primary grades with fourteen first grade teachers completing the online survey, twelve Kindergarten teachers, and twelve second grade teachers who responded as well. There were six third grade teachers who responded, seven fourth grade teachers who responded and eight fifth grade teachers who responded.

Interestingly, forty-one teachers identified themselves as "specialists" or "other." Both categories had the option to further identify their position by typing information in an additional comment field. Twenty respondents selected the "Specialist" category and

twenty-one chose “other.” Responses typed in online for the “Specialist” category are detailed in Table 3.3. Included are three special education and/or resource teachers; six reading and Title 1 teachers; one reading and gifted teacher; three art teachers and three music teachers (including one teacher who was both art and music); two physical education teachers; three guidance counselors, one school psychologist; one literacy coach and one ESL teacher.

Table 3. 3 Grade Teaching-Specialist

		Frequency	Percent
Valid		79	79.0
	1-2	1	1.0
	1st but now Pre-K Director	1	1.0
	6th	2	2.0
	counseling	1	1.0
	extracurricular	1	1.0
	Instructional Coach	1	1.0
	k-4	1	1.0
	K-5 Counselor	1	1.0
	learning leader	1	1.0
	Librarian	1	1.0
	pk	1	1.0
	pre school special educ.	1	1.0
	pre-k	1	1.0
	Pre-K	2	2.0
	Preschool	1	1.0
	reading	1	1.0
	sixth	1	1.0
	special education CDC teacher	1	1.0
	Speech Therapist	1	1.0
	Total	100	100.0

Teachers who further defined themselves in the specialist category included six PreK teachers and one PreK Director; three sixth grade teachers; two multiage teachers; one learning leader; one instructional coach; one librarian and one speech therapist and one respondent who wrote “extra curricular” and are shown in Table 3.4. This wide variety of responses is evidence of the structure of the schools today and the many

services offered to students beyond grade level instruction. Teachers in the follow-up interviews described their schools as including preschool for students and including sixth grade and grades beyond. Teachers specializing in reading instruction along with Literacy Coaches and English as a Second Language (ESL) are present in the faculty make-up of elementary schools as well. The respondents to my survey reflect these services and programs for students in our schools today.

Table 3. 4 Grade Teaching-Other

		Frequency	Percent
Valid		80	80.0
	art	1	1.0
	art/music	1	1.0
	ESL teacher	1	1.0
	guidance	1	1.0
	Literacy Coach	1	1.0
	Music K-6	1	1.0
	music pre K-8	1	1.0
	physical edu	1	1.0
	Physical Education	1	1.0
	reading	2	2.0
	Reading	1	1.0
	Reading and Gifted Ed.	1	1.0
	Resource Elementary	1	1.0
	School Psychologist	1	1.0
	special ed	1	1.0
	Special Education	1	1.0
	Title I	1	1.0
	Title Reading	1	1.0
	visual art	1	1.0
	Total	100	100.0

The teachers' who took the online survey reported their educational background. Twenty-nine percent of the teachers who responded had a master's degrees. Teachers with only a bachelor's degree made up twenty-four percent of the respondents. Twenty percent had a master's + additional graduate course work. And additional fourteen

percent of the teachers had an educational specialists degree or Ed.S. Table 3.5 breaks down the educational background of the survey respondents.

Table 3. 5 Educational Background

		Frequency	Percent
Valid	Bachelors	24	24.0
	Bachelors + graduate	13	13.0
	Masters	29	29.0
	Masters + graduate	20	20.0
	Education Specialist	14	14.0
	Total	100	100.0

The teachers were also asked about the schools where they taught. Fifty-nine percent of the respondents' schools were identified as Title 1 schools. The remaining forty-one percent listed their school as "public" as shown in Table 3.6.

Table 3. 6 Type of School

		Frequency	Percent
Valid	Public	41	41.0
	Public-Title 1	59	59.0
	Total	100	100.0

From Table 3.7, we see that the mean age of the survey respondents was 42.43 years with a standard deviation of 11.421. The mean number of years teaching was 15.37 with a standard deviation of 10.195.

Table 3. 7 Age and Years Teaching

Age and Years Teaching

	N	Minimum	Maximum	Mean	Std. Deviation
Please indicate your age:	100	24	68	42.43	11.421
Please indicate your years teaching:	100	1	43	15.37	10.195
Valid N (listwise)	100				

Qualitative Participants

Huck (2008) proposed that "valuable insights can come from the 'voices' of the individuals who serve as research participants and certain studies are clearly limited if they fail to include a qualitative component," (, p. 501). I selected a purposeful sample from the online SDLRS/LPA survey respondents to include in the qualitative interviews. A purposeful sample is one in which the researcher selects a sample to gain further insights, understanding, and the most knowledge (Merriam, 2009). In order to begin purposeful sampling, an initial list of selection criteria are important for narrowing the sample to those participants from whom I could learn the most from this study.

Based on the results of the inventory, I selected teachers who scored "high" and "above average" in self-directed learning readiness for the follow-up participant interviews in the second phase. Throughout the interview process I sought to identify themes that were common to highly self-directed teachers and compare these findings to previous studies (Guglielmino & Hillard, 2007) of other individuals who were also found to rate high on the SDLRS/LPA instrument. Also, I sought to discover from the teachers how, if any, of their learning projects translate into their classrooms.

Context of the Study

This study took place in the southeastern United States and involved teachers in various public elementary school settings. It was comprised of two phases: a quantitative phase which addressed question 1: How do elementary teachers rate on the Self-Directed Learning Readiness Scale? and allowed for a purposeful selection of participants for the second, qualitative phase which addressed the remaining questions: 2. Do elementary teachers participate in self-directed learning activities?; 3. What sorts of learning activities do teachers participate in inside and outside of the school environment?; and 4. Do these learning activities translate into the classroom?

Timeframe of the Study.

The timeframe for this study was the spring and summer semester of the 2011 school year. From the online site and communications, teachers were able to follow an embedded link to the SDLRS/LPA instrument that was made available online through the instrument vendor. The online website was open to respondents online for a period of two weeks in March which was sufficient to return the 100 responses needed for this project. After this time span, teachers seeking to complete the survey would see a message on screen that indicated the survey was closed and thank them for their interest in participating. After the survey closed, the data were downloaded into a Microsoft Excel file. Identifying personal or demographic informational fields were cut from a copy of the file which was forwarded to Guglielmino and Associates for processing and analysis while the original data file was maintained at the university by the researcher and office

of statistical research. Using the results from the SDLRS/LPA instrument, I ranked the teachers on the SDLRS/LPA and obtained descriptive statistics for my respondent population.

Phase I

I purchased and utilized the Self-Directed Learning Readiness Scale [SDLRS/LPA] developed by Guglielmino (1977) as the quantitative element of the study which comprised Phase I. A contract was negotiated between the researcher and the survey developer for the purchase of 101 surveys, for the survey instrument to be posted on the university's server, and for the researcher to apply additional fields for consent, demographic, and contact information which would be obtained by the researcher and maintained for confidentiality. The contract also stated the terms for Guglielmino and Associates to obtain the data from the university within a Microsoft Excel file minus any identifying demographic fields for data analysis. Also stated within the contract was that the Guglielmino survey instrument would maintain their copyright before their survey questions. They would approve an initial test run of the survey instrument and additional questions before the survey link was made active and sent to prospective participants. Once this adapted survey was tested and approved by both parties, it was moved to active status and a live link to the testing site was provided by the university statistics department.

Next, email addresses were obtained from a state education department online database of state school superintendents and school district contacts. In the early spring of

2011, all contacts on the state list were sent an email which stated the purpose of the research study, and requested them to forward the email which also contained the live survey link on to elementary teachers in their respective districts. Three school district supervisors chose to opt their teachers out of the survey due to the impending state TCAP tests in April of that year.

Within the survey, additional demographic questions were added at the beginning of the SDLRS/LPA instrument as well as a closing paragraph where teachers could indicate their willingness to participate in a future interview, to allow the researcher to identify their data and obtain their survey score and information about their learning preference. Teachers taking the survey were assigned a respondent number. The online survey was set-up to allow respondents to drop out of the survey at any time or skip questions by clicking within a box marked 'next.' Included in the online survey closing was permission by the participant to allow Guglielmino and Associates to see their data (without respondent identifiers) for data analysis purposes.

Phase II

The qualitative part of my project involved conducting semi-structured, focused interviews with these nine survey respondents. Lincoln and Guba (1985) wrote that the purposes of the interview method of data collection were to obtain constructions of the present, reconstructions of the past, projections of the future, and member checking of constructions developed by researchers. Hatch (2002) explained that interviews are essential if "capturing" the participant's position is a goal of the research.

Merriam (2009) stated that interviewing has been in use for centuries in the form of "census taking, surveys, and opinion polling" (p. 91). Merriam emphasized good questions as the key to obtaining good data and confirms that questions of varying types will yield varying types of answers, thus enabling the researcher to glean information which will target the focus of their study. Hatch (2002) emphasized that the kinds of interviews will be designated by the goals of the research, the research questions and the parameters of the study. Lincoln and Guba (1985) described interviews as being either structured or unstructured. In structured interviews, the researcher initially defines a problem and from that establishes a list of questions for respondents, whereas in unstructured interviews the questions arise from the respondents answers and viewpoint

Merriam (2009) stated that in general interview questions which elicit description and narratives are best for gathering data and there are also questions which should be avoided in interviews. Merriam illustrated four specific types of "good" questions. These include; hypothetical questions - where respondents are asked to describe an ideal situation, the devil's advocate question - where respondents are presented with the opposing side or view, ideal position - where respondents are prompted to tell about their ideal; and interpretive questions - in which the respondents are asked to interpret the researchers' explanation of their responses. Questions which lead the respondent or make assumptions about the answer lean toward obvious bias on the part of the researcher should not be included. Merriam also recommended against simple yes-or-no type questions which can effectively limit or close off any interview.

Merriam (2009) suggested following up good research questions with probes. While impossible to anticipate prior to the actual interview, Merriam stated that researchers can use probes for making adjustments in the interview direction and suggests using a variety of probes. Examples of probes include silence, nodding the head, saying "yes," or "uh huh," and can range from these simple utterances to questions of clarification or seeking more details.

Hatch (2002) described constructivist interviewers as working with the respondents so as to "co-construct understandings that are reported as interpretations or narratives," (p. 23). As a fellow teacher-researcher, my background and own personal experiences with teaching and self-directed learning will enable me to ask questions which will aid in this co-construction of teachers' narratives of their self-directed learning.

Because of my constructivist theoretical framework working within a Quan-Qual research design my interviews were semi-structured. The Interview Guide (see Appendix) consisted of fourteen questions which were asked of the participants in order to gain demographic information as well as open-ended questions to answer my remaining three research questions. Hatch (2002) emphasized that while a researcher uses an interview guide or schedule, they are open to the interview proceeding in the flow the participant takes them. In my interviews, I allowed respondents to answer questions naturally while using a more conversational context. Participants would sometimes address two questions within the reply to one. In the interviews, I tried to maintain a conversational and collegial tone. Being a teacher myself, and introducing myself as a practicing

classroom teacher allowed for an ease of conversation to happen within the interview process.

Participants. After the instrument SDLRS/LPA was administered, I sent emails to those teachers who had (1) scored "high" or "above average" on the instrument and (2) indicated willingness to participate in follow-up interviews in order to gain insight into how their approach to self-directed learning influences their teaching in the classroom as part of the qualitative element of the study. Teachers who replied that they would participate in these follow-up interviews sent a contact phone number, mailing address and time to call for the interview. These participants were sent a consent form to sign along with SASE to return to the researcher. From this list of teachers, I sent emails to the email addresses participants submitted through the online survey. Nine teachers contacted me with phone numbers and times for interviews.

Table 3.8 Teacher Participants - Phase II

Name[1]	SDLRS/LPA Score	Education Attainment	Years of Teaching Experience
Abby	252	Bachelors	15
Becky	246	Masters	29
Caroline	254	Ed.S.	11
Deborah	272	Ed.S	19
Evelyn	245	Bachelors	10
Fiona	266	Ed.S	37
Gilda	250	Masters	38
Helen	276	Bachelors	4
Irene	257	Ed.S.	31

[1] All names have been changed to protect respondent confidentiality.

All participants were female. Six had master's degrees including three teachers who had also obtained their education specialist degrees. The range of teaching experience within my interview group was 34 years, with the least experienced teacher having been in the classroom for four years and the most experienced teacher having taught for 38 years.

Procedures. The interviews lasted approximately twenty to thirty-five minutes and took place during the summer months of June and July, 2011. All interviews were conducted over the phone and recorded for subsequent transcription. Because the SDLRS/LPA instrument was made available online the respondents emerged from a statewide geographical base. Participants were sent a letter of consent which informed them of confidentiality measures that were taken. Therefore, participant interviews were conducted via telephone at their convenience. Merriam (2009) emphasized that analyzing data as it is collected is the preferred method of analysis. This method allows the researcher to begin with questions and themes at the very start of collecting to eliminate repetitious and voluminous amounts of data. Therefore data analysis took place with the conclusion of the administration of the online SDLRS/LPA after which, qualitative data analysis ran concurrent to and after the conclusion of respondent interviews.

Analysis. Themes as shown in Table 3.9 were derived from categories developed through convergence of coding of participants' transcripts. Using open coding as described by Merriam (2009), I assigned codes derived from participants' own words, word or phrase repetitions, and key words within participant answers and researcher notations. Transcribed text was then marked and highlighted to sort for common codes

among participant responses in order to seek patterns and commonalities as described by Coffey and Atkinson (1996). Each interview transcript was coded in this manner so that subsequent transcripts could be compared to previous ones. Codes were next combined into lists of groups or conceptual categories which encompassed many codes, quotes, or data. Some codes fit into more than one category.

The movement to interpretation was next as the categories were analyzed for meaning. Because we were working from an interview guide, many of the themes were obvious as answers to its questions. However, additional patterns or themes were mined from the categories which served to illuminate further the self-directed learning practices of elementary teachers and the meaning of that learning in their lives and careers.

Table 3.9 Themes

Theme	Categories	Examples of Codes
Creative Selves:	Learning for Pleasure, Escape, Crafting, Fine Arts, Social Networking, Vacation Learning, Reading for Pleasure, Lifelong Learning	drawing, family of learners, step aerobics, scrapbooking, painting, decorating, "stargazing," museum visits, travel, reading, decorating, sewing curtains, making pillows, baking birthday cakes, musicals, photography, embroidery, smocking,
Professional Selves:	Researching, Learning Strategies, Professional Networking, Learning Communities, Workshops, Seeking Resources, Classroom Application, Career Learning	Inclusion strategies, technology, Autism spectrum, project-based learning, learning stations, Japan unit, Kabuki dance, Hawaiian unit, Hawaiian dance, gardening, Title I, RTI, tiered interventions, reading instruction, teacher study groups, new position, new placement, career advancement, Praxis
Teachers as Readers:	Reading to Learn, Reading for Pleasure, Reading for Research, Reading Models, Teachers of Reading, Time for Reading	"I learn by reading," "I read for research," "I read for pleasure," "always reading books," ideas for classroom, no workshops available, prominent author, enrichment, time for moms, modeling reading, staring club, sharing books, recommending books, meeting authors, the sisters, Math their Way
Internet as Resource:	"My Best Friend is Google," Technology, Availability, Professional Research, Personal Research, Time, Access, Professional Content, Online Learning,	Rural location, internet, innovation, technologies, technology as a learning tool, smart phone, iPad, iPod, Zune, internet hotspot, wifi, vacation, library, YouTube, online learning, Cricket machine, serging machine,web 2.0
Teacher Self-Directed Partnerships:	Teacher Study Groups, Learning Partners, Mentors, Online Community, Professional Learning Communities, Teaching Teams, Book Clubs	Begin alone, join up, partners, groups, group learning, book clubs, workshop travel, collaboration, school, outside school, community, moms, friends, small town, students, sharing with teachers,
Application of Learning in the Classroom:	"Tweaked it," "Made it my own," Standards, Teachers as Readers, Modeling, Classroom Units, Integrated Lessons, Projects, Discussions, Strategies, Technology, Themes, Cultures, Book Clubs	Learning units, lesson plans, classroom themes, grade level standards, modeling reading, improving teaching skills, strategies, inquiry learning, integrate subjects, projects, disco ball, classroom improvements, grant funding, schoolwide project, garden project,
Teacher Reflection on Practice:	Validation, Partnerships, Changed Expectations, Evaluation, Feedback from Others, Professional Growth, Personal Growth, Professional Communities, Continued Learning, Career	Feel more capable, gained experience, identity validation, recognition, student reactions, joy to learn, change career path, job application, move on,

Trustworthiness

In Phase II, participants were interviewed and these interviews were digitally recorded and transcribed by the researcher and analyzed for themes related to the research questions. Constructivists contend that the assessment of the trustworthiness of qualitative data and analysis should be congruent with their philosophical assumptions. In assuming that multiple realities exist, and that knowledge is created by the learner; a one, definable "truth" is unattainable. Assuming a constructivist's stance, I followed Lincoln and Guba's (1985) four criteria for trustworthiness within qualitative or naturalistic studies: credibility, transferability, dependability and confirmability.

Credibility. Merriam (2009) explained that "because human beings are the primary instrument of data collection and analysis in qualitative research, interpretations of reality are accessed directly through their observations and interviews" (p. 25). Credibility addresses "internal validity" from the constructivist's perspective. Credibility denotes the reliability between the participants' constructions of their realities and the researcher's subsequent representations of this data. In my interviews, I recorded teachers' words and spent active, prolonged engagement (Lincoln & Guba, 1985; Merriam, 2009) within the data collected until I began to see and hear the same themes and data repeatedly resulting in data satiation. Referential adequacy of transcripts was maintained through archived digital recordings of interviews. From my lens as a researcher and as a practicing elementary teacher I maintained the learned context of trust that Lincoln and Guba (1985) assert is essential to establish credibility. It is within this context that these data are represented.

Transferability. While generalizability in the sense of quantitative research is not viable through a qualitative investigation, it is possible to provide “thick description” to enable the possibility of transfer by the potential appliers (Lincoln & Guba, 1985). As researcher, I have provided thick descriptions of participants’ self-directed learning experiences and activities. These details will enable readers to determine the transferability of the findings and results into their own contexts.

Dependability and Confirmability. Dependability is, in essence, "reliability" from the qualitative standpoint. The dependability of any particular study relates to whether it can be replicated with the same or similar participants within a similar context and have, as the end result, the same or similar findings. From a constructivist perspective, inasmuch as each participant constructs their own reality, “replication of a qualitative study will not yield the same results,” (Merriam, 2009 p. 222).

Confirmability. This corresponds to the "objectivity" of the findings. Qualitative researchers within a constructivist framework bring their own knowledge into their research. Conducting internal audits serves to examine the process of inquiry, establishes dependability, and also examines the product and interpretations which attest to the confirmability of the study (Lincoln & Guba, 1985). To audit my study, I kept digital recordings of raw data of actual interviews and transcriptions of interviews by participants. The data from these transcriptions in the form of process notes of codes and themes were maintained in research notebooks. In auditing my study, I examined my findings and recommendations to ensure they were supported by the data collected from this investigation as recommended by Lincoln and Guba (1985). These findings can be

traced back through the data process to the raw data, illustrating the audit trail which I have maintained. Throughout the reporting of my findings, I offered readers the data in the form of quotations from participants to confirm my conclusions and recommendations of the study.

Chapter Summary

In this chapter, I explain the methodology behind my project design. I used a two phase, Qual-Quan mixed methods design which allowed for selection of a purposeful sample using the SDLS/LPA instrument. This instrument was placed online in order to identify elementary teachers who were high or above average in self-directed learning. Those respondents who also left contact information were emailed about participating in a follow-up interview. Nine participants were interviewed via telephone and those interviews were transcribed for coding and identification of themes.

Chapter 4: Results

Introduction

Within this chapter, I describe the results for this two-phase, Qual-Quan research project. 100 elementary teachers from a southeastern state participated in an online survey which contained the SDLRS/LPA Self-Directed Learning Readiness Scale. Their results are presented in this chapter along with results from interviews with nine of the respondents.

Phase I: Quantitative Analysis of SDLRS/LPA

For this study, I analyzed descriptive data of the 100 survey respondents to the SDLRS/LPA instrument. Demographical frequency tables describe these respondents. My first research question was:

1. How do elementary teachers rate on the Self-Directed Learning Readiness Scale [SDLRS/LPA]?

This first question was addressed through the analysis of elementary teachers' SDLRS/LPA scores from the online survey instrument. Guglielmino (2011) reported that the adult mean on the SDLRS/LPA is 214 with the standard deviation of 25.59. In interpreting scores, scores are categorized that fall into five ranges. Scores between 58-176 are categorized as "Low" readiness for self-directed learning. Scores falling between 177-201 are in the "Below Average" category. Scores between 202-226 are considered "Average" readiness for self-directed learning. Scores between 227-251 are "Above Average" and scores between "252-290" are categorized as "High" readiness for self-

directed learning. Guglielmino (2011) includes a description of the types of jobs persons who score high on the SDLRS/LPA would perform better. Those jobs would contain tasks which would contain a higher proportion of problem solving, creativity, and change. Persons scoring high choose to determine their learning needs and go about implementing that learning whereas the average scorer would not be as comfortable in those situations which require them to be the sole planner of their learning needs. Those with low scores would prefer structured learning situations such as formal classrooms and courses. The ratings of the teachers are shown in Table 4.1.

Table 4. 1 Ratings of 100 Elementary Teachers on SDLRS/LPA

Category	Score Range	Number of Teachers	Percentage of Teachers
Low	58-176	0	0%
Below Average	177-201	5	5%
Average	202-226	19	19%
Above Average	227-251	43	43%
High	252-290	33	33%

For the teachers in this study [N=100], the mean was 240.89 with a standard deviation of 2.019. The range was 91 and the variance was 407.735. This score fell within the "above average" range which indicated the teachers had developed an above average readiness for self-directed learning and determination of their own learning needs and goals and the ability to plan and carry out their own learning (Guglielmino, 2011). The distribution of these scores is shown in the histogram in Figure 4.1.

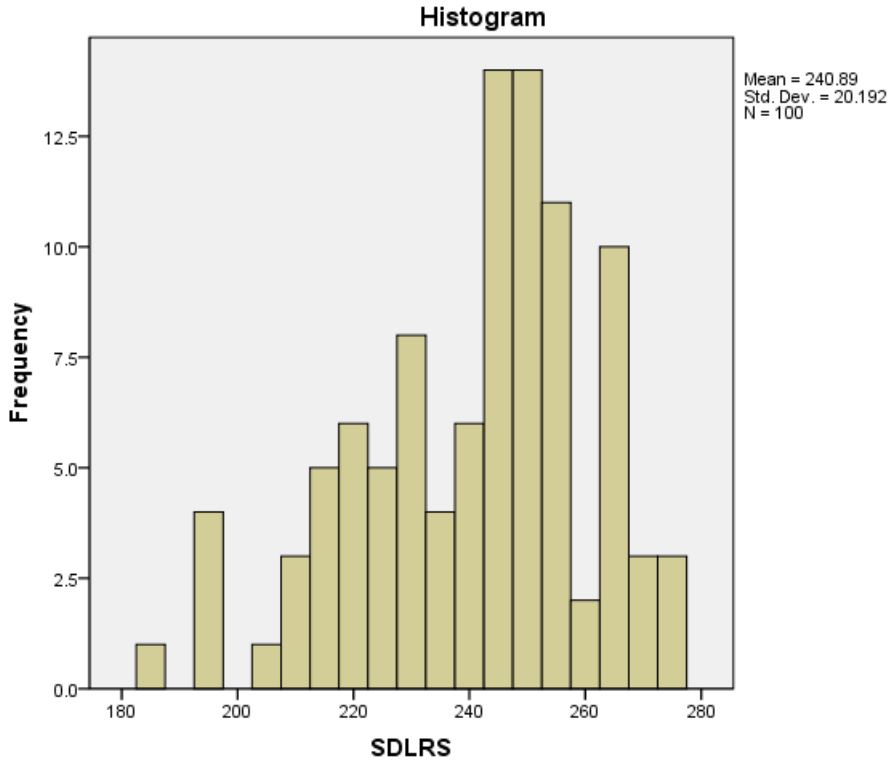

Figure 4. 1 Histogram of Participant SDLRS/LPA Scores

Phase II: Qualitative Analysis of Teacher Interviews

For Phase II, I used teacher interviews to identify key themes and topic areas which are predicated upon my remaining three research questions.

2. Do elementary teachers participate in self-directed learning activities?

3. What sorts of learning activities do teachers participate in outside of the school environment?

4. Do these learning activities translate into the classroom?

The teachers who participated in these interviews were nine of the participants from Phase I who were rated "high" or "above average" on the SDLRS/LPA and who were willing to be interviewed. They are listed in Table 4.2 below.

Table 4. 2 Teacher Participants Phase II

Name[2]	SDLRS/LPA Score	Education Attainment	Years of Teaching Experience	Grade Level or Teaching Assignment
Abby	252	Bachelors	15	Art and Music
Becky	246	Masters	29	1st Grade
Caroline	254	Ed.S.	11	3rd Grade
Deborah	272	Ed.S	19	Reading Specialist
Evelyn	245	Bachelors	10	3rd Grade
Fiona	266	Ed.S	37	Librarian
Gilda	250	Masters	38	1st grade - Preschool Director
Helen	276	Bachelors	4	3rd Grade
Irene	257	Ed.S.	31	Special Education

Teacher Self-Directed Learning: Creative Selves and Professional Selves

I found that the elementary teachers that I surveyed and interviewed do participate in self-directed learning activities. What was apparent in my research is that for the teachers, these activities fell into two categories: activities which were categorized as creative outlets for the teachers and did not necessarily relate to their teaching profession

[2] All names have been changed to protect respondent confidentiality.

and those professional learning projects which were closely tied to their teaching or professional selves.

Teachers define learning. Initially, I asked the teacher participants to define learning. Many teachers paused, stymied at how to put their definition into words, others needed clarification on whether the question was about their own learning or that of their students. Becky, a second grade teacher asked, "I don't know how to put that into words. Do you mean my learning or the children's learning?" Irene, a special education teacher related learning in this way:

> It is those behaviors which are truly learned. Skills that a child doesn't come with. You have to teach them. They also have to be able to discern between at home and at school, in the public, out on the playground, those types of things. So learning is a lifelong endeavor that we all go through.

I found this would be a common occurrence in my interviews as the line for teachers between their learning and designing learning for their students blurred at times. Such is the world of teaching and the teachers' concept of selves meshed with their professional identities. With additional prompting and further reflection teachers responded about their learning in these ways:

> "For me, learning is to expand what I don't know."
>
> "That's just a lifelong process. You are going to learn until the day you die."
>
> "It is where you just have a need to know something."

> "Like in education, I would go and learn new methods and it wouldn't be something that I was required to do, it was just something that I wanted to do to improve my teaching in the classroom."

Teachers as lifelong learners. What I found central to teachers' comments was how many of them saw that learning was a lifelong and active endeavor which takes place outside the confines of the classroom and was an integral part of their identity as teachers. These teachers were always learning and seeking out knowledge which often was initiated from situations within their own classrooms, job or grade level transitions, student behavior, or district mandates which left them needing or desiring more knowledge.

The majority of teachers expressed how they learned in terms that are used in designing and creating lessons for their students. Teachers reported that they were "hands-on" learners, preferring to learn by doing or "kinesthetic learners," Deborah, a reading specialist with 19 years of teaching experience described how she learned:

> I've got to get in there and do it and work my way through the problems that I encounter. So, that's the way I learn best. I have to be approached with problems that I need to find solutions for, then I've got to get in there and work it out…and sometimes it's an unconventional way, but rarely is it because a teacher stood up and lectured to me.

Fiona, a 37-year teaching veteran and currently a librarian described the way in which she learned: “I learn best hands-on. If I can see it, do it, take it apart, put it back together, I’m good on it. If I just hear it, you know, it doesn’t really sink in.”

A third grade teacher with ten years experience, Evelyn reported that she learned best through trial and error application. “I really learn best when I apply it in the classroom and do trial and error and see how it works best for me when I teach.”

Many teachers coupled this description with also needing visuals or having to “see it” to be able to learn. Deborah described herself as being an experiential learner which she saw as being unconventional in the traditional sense of learning. The sole elementary fine arts teacher, Abby, replied that she was an “auditory” learner, learning best through sound and music.

Reading was often described as a pathway or gateway to learning. Caroline reported that she was “…definitely more of a language-based learner, just reading something on my own,” and confessed that:

> I enjoy reading more than anything. I try to be a hands-on teacher, because I know that is research based, and I know it helps children but I am definitely more of a language based learner, just reading something on my own.

Expressed in their interviews was the feeling for these teachers that learning was a need that they had to fulfill. Again, learning as a “lifelong endeavor” beginning in their own childhood and continuing through their own schooling, career, and until “the day you die.” Their learning was modeled for them by their parents and witnessed by their own

children and continued through their various stages of life. "I live close to my mom…she's in her eighties and she's still learning," Fiona said as she explained her self-directed learning and offered her mother as a role model for how she planned to continue learning throughout her life. Deborah described how compelling learning was:

> I think that, that it is where you just have a need to know something. Where you don't need to know it the learning's probably not going to take place. As for myself, I just have to always be learning something. If I'm not learning something, I'm just bored…I just wanna take on something all the time.

Teacher Learning Activities

Teachers' creative selves. The teachers that I interviewed listed many types of creative learning projects which they pursued. Just as Deborah described how compelling learning was for her, teachers often described these activities as lifelong interests or projects that they "had to try" and pursued for pleasure or out of curiosity. Deborah related her interest in scuba diving as something that she thought would be interesting to try. She described her initial interest in the sport was due to the fact that it was a "thinking man's sport" which required having to learn about "depth and pressure." She enjoyed learning about sports which require a fair amount of thinking and problem solving. This coincides with many teachers who also saw learning as a sort of challenge to overcome.

Gilda, a former first grade teacher and current preschool director discussed her creative learning project. "I'm learning to smock," she said. She described smocking as a type of sewing decoration that was traditionally used to decorate children's clothing.

While she explained that she had no grandchildren of her own, it was something that she always wanted to learn how to do and to create for the grandchildren of her friends. She knew how to sew and embroider and had an embroidery machine, yet smocking was something that she felt she wanted to master, as years before it had been such a challenge for her. Abby, the fine arts teacher explored jewelry making in her free time:

> Because I am an artist, I don't get a lot of free opportunities because I am creating lesson plans for other kids. And I have a family, so it [jewelry making] is something that I can do easily in my free time.

Teachers' professional selves. The learning activities mentioned by teachers most often were the self-directed learning activities that teachers pursued related to their professional selves. All the teachers in my interviews related self-directed learning activities as investigations into ways to improve their teaching in their classroom in order to improve their student learning.

Teachers chose these self-directed learning activities as a means of supporting or enhancing their current teaching strategies and methodologies or as a result of dissatisfaction with the status quo in their classroom. Caroline, a third grade teacher, discussed a change in her classroom situation. The previous school year, she had two students who were autistic, a new experience for her as a general education teacher. She related that she had to "do a lot of research," and found out about the autism spectrum and that her students were on opposite ends in behavior and abilities. Through her research, she was able to advocate for her students in order to meet their needs in the

classroom and get the services she felt her students deserved. In regard to her self-directed learning Caroline stated, “professionally, it just happens to be what was going on in my classroom that particular year.” During her present year at the time of the interview, she was dealing with an openly defiant student. She investigated and found a free teacher workshop on behavior disorders and disabilities that could help her with her student in the classroom.

Other teachers recounted how they initiated their self-directed learning activities as a reaction to transition, grade level moves, or district mandates. Deborah, a current reading specialist, detailed how when she first became a talented and gifted teacher that she “took so many conferences, gifted conferences and just read books after books,” to help her with her position. Later on in her career, she was asked to do reading interventions by her curriculum director. “I didn’t have a clue what that would entail.” She described how she “took off” and learned everything that she could. She realized that those techniques that she utilized in her classroom as a general educator wouldn’t work for students with dyslexia or other reading disabilities. She investigated the Orton-Gillingham reading method, several comprehension strategies and other methods that she hadn’t needed to know as a general education teacher in order to become proficient in her new position. These were additional investigations initiated on her own.

Teachers as readers

For teachers, reading is their initial starting point for their learning projects. Abby, the fine arts teacher, said that when she was trying to learn something on her own she began by reading a book. Books are a major resource of information for these teachers. A book recommendation from a friend, principal or colleague can be a springboard for individual research. Caroline reported that for her personal interests, books were what interested her. This interest translated into her professional life as well for when she was researching autism in her classroom, she did a lot of research which began with reading books on autism.

Teachers were able to cite the author of those strategies and methodologies they had learned, through reading, to implement for their classroom. Becky, a second grade teacher said that she was "always reading books related to teaching and research and going to workshops," and added for her creative self that she even taught herself to crochet by reading a book and "just doing it." For her professional self, Becky's reading and research led her to travel to Portland, Oregon to attend a workshop by "The 2 Sisters," Gail Boushey and Joan Moser, who had developed another approach to teaching literacy in their classrooms.

Gilda, the new preschool director, recalled a time when she was researching ways to incorporate learning centers into her classroom:

> That's when I saw the Debbie Dillar book. I got to reading one of her books and it sort of piqued my interest and I kept working and working till I could find where she was doing a workshop.

Irene, a special education teacher for grades K-8 explained an experience with a teacher compensation program for her state. After moving from a state in the west, she learned that her current state offered a compensation incentive package that was new to her. She investigated the program and reported that:

> I did a lot of investigation…in order to enhance my learning and to participate in something that I felt like would be a good match for me. So I went through that and I remember that being a time that I had to do a lot of self-motivation to get information. I'm a real searcher for new strategies and the different ways that I might be able to teach my students.

Teachers were also readers who initiated collaborative learning groups centered around a specific strategy. Evelyn investigated learning projects for her third grade class. She formed a reading group around the book*, Inquiry Circles in the Elementary Classrooms* by Stephanie Harvey. She explained that she had first studied the book on her own, then formed a reading group with nine other teachers who wanted to learn about strategies along with her. At the time of our interview, her group had been trying the methods in the classroom and meeting together to discuss how they were working. "It was just phenomenal!" Evelyn said when describing the strategies she learned. Still yet, Caroline also formed a book circle with other teachers in her school:

> …it's strictly for fun. I mean we do discuss school issues since we all work at the same school. You know we do discuss our job, but it is really more of a personal

> kind. We were all moms who run with our children constantly. We are never doing anything but schoolwork….we just decided that we were going to take a one time a month and make time for us with no kids. We decided to do a book club since we always talk about what we are reading.

"My Best Friend is Google"

The internet was the most often cited resource for teacher self-directed learning, serving as a jumping-off point for teachers who were able to "search" and "Google" terms of interest which led to more research. Teachers described being able to investigate types and locations of workshops available to them on the specific strategy they were investigating. From these investigations, they were able to schedule time and family around the workshop or training. Teachers often stated that their location in rural communities was no longer a barrier to learning with the internet as a resource. Along with workshops, and books, teachers were also able to use email to contact mentors - those experts in the area they were learning.

Fiona, the school librarian, uses the internet to learn about trends in children's literature and top book selections for her students. "I've put in more modern reading selections; they have just been greatly improved. I did away with a lot of the old stuff they are not going to read and put in [books] they are going to read…you can access on the internet. Even Amazon.com…tells me what's out there." Helen, a third grade teacher who was suddenly faced with her first year as an inclusion teacher without support from her

district said, " I had to look a lot online and try to find books about teaching in an inclusion classroom. So that's one area I had to go out and find stuff on my own."

Evelyn's creative interest in dance, combined with a bit of internet research on cultures led her to learn about the dances of Hawaii. "I researched it. I found dances on YouTube that I thought the kids could easily learn. So I learned it myself and then I took it to school and taught it to them." Researching a way to teach another culture, Evelyn used her self-directed learning of cultural dances and directly brought that insight and knowledge to her students. Gilda, also used YouTube for her self-directed learning on her smocking projects. "I live in a small town so I can't always get to classes in the bigger cities. What I've done is get on the internet and find somebody actually doing it. Then I go and try that, and you can keep watching it over and over again."

In addition, these teachers' self-directed learning aided them in other, more formal types of learning. Deborah, when pursuing her master's degree found herself far from the availability of professors and a quite a distance in time from her last research paper. She relied heavily on the internet as a resource to self-direct her learning about how to write a research paper. Now, she finds herself sharing this information with other teachers who need help in writing papers. "So, you know, I just go online and tried to learn as much as I could. Thank goodness for the internet!"

Technology was the gateway for many self-directed learning projects. Teachers were also learning about and utilizing the latest technology such as smart phones, e-readers, and tablets along with web 2.0 applications. Caroline utilized Amazon's Kindle e-reader for her pleasure reading group. Fiona confessed that while she was on vacation

and her family was swimming in the pool, she was poolside learning about her newest job transition from elementary librarian to middle school librarian: “I spent my time at the pool on the internet looking up ways to make a good middle school library.” Gilda utilized a cell phone carrier’s “hotbox” so that she can have uninterrupted internet access at home in the rural area where she lives as well. She also learned about her tablet, the Motorola Zoom:

> I didn’t want to get left behind on some of the technology as I get advanced in age. My husband died two years ago, so I am staying busy of course. I am trying lots of different projects that I can do that I feel like will probably keep me on top of things and then it will also help me in the classroom, too.

Teacher Self-Directed Learning Partnerships

The teachers in this study did use and discuss their learning activities with their students and fellow teachers. While self-directed learning implies a solitary learner, my teacher participants were not alone in their self-directed learning projects. Many teachers mentioned “partnering up” with another teacher or friend after a topic of learning is chosen. While teachers asserted that the initial investigation and research into the topic is done solo, afterward a partner, often another teacher if the learning project is professionally based, is found. If the project is a creative project, family and friends are often asked to “join up.” Together, the partners attend workshops, teach each other skills or trade and bounce ideas off of each other. A partner may act as a sounding board before entering into a larger group learning community.

Abby reported that she will utilize the internet to make that connection to a learning partner or mentor, “You know people who aren’t in my subject area. I teach with a lot of really intelligent people. I will pick their brains as well.” Caroline did the same when she partnered with a couple of other teachers to learn about inclusion. Together they visited other schools and classrooms where inclusion was in place in order to implement it in their own classrooms successfully. Without the necessary supports from her administration and special education department, she felt this was necessary to do her job well.

Fiona paired with another woman in trading learning projects. She had just acquired a Cricket machine for cutting out shapes and letters electronically. Another woman had a recently purchased serge machine, a sewing machine that cuts the raw edge of the fabric as it sews and finishes seams. Fiona was already an expert at the serge machine and the other woman also had the Cricket machine. So, they agreed to a learning partnership where each one acted as a mentor/teacher to the other. Fiona found that this benefited her as she used her new knowledge in creating displays and bulletins in her library. Gilda also noted a friend to whom she was able to go in learning smocking techniques: “She jumped right in, so we are doing it together.”

Helen’s interests lie in visiting museums and in photography. She merged the two interests and takes advantage of trips to city museums around the country, taking photographs to bring back to the classroom. She partnered with her father who is a photographer. Later in the classroom, she brought in these photographs to show her students to enrich their learning.

Teacher learning partnerships are not limited to two people. After an initial pairing or partnering, the teacher will often form or join a group with the same or similar learning goal in mind. This is what Fiona did when she formed a teacher reading group centered on the book, *Inquiry Circles in the Elementary Classroom* by Stephanie Harvey. As a group, the teachers studied the strategies and techniques and tried them out in their classrooms.

Again, as with the types of self-directed learning projects these book clubs fell into two categories, professional purposes or pleasurable purposes. Caroline was involved in a book group with other teachers and parents from her community "just for fun." She reported that the group formed out of a need to break away from their constant roles as parents and teachers. So, they arranged to meet once a month to talk about what they were reading.

Out of this discussion I discovered that Caroline also developed a "little community" of professional learners as well after she initiated a self-directed learning project. She invited other teachers and professionals who were also interested in learning about the same topics she was interested in. However, while she would join up or invite other members into her group, she stressed that these were usually topics which she initiated on her own. Evelyn said the same:

> I'll start learning on my own, but then I love talking about it. So I want to find other people that are interested in the same things as me so that we can bounce ideas off each other. I always learn great things from other people and their ideas.

Other learning partnerships involved groups working as teaching teams. One teacher's investigations would lead to collaborative planning among a group. Evelyn had the opportunity to bring her love of dance into the classroom by teaching her students to dance the Hawaiian Hula dance. She was part of her grade level team's investigation into the Hawaiian culture. Each teacher investigated a different aspect of the Hawaiian culture with one teacher taking volcanoes and teaching their students the science and geology behind the volcanoes of Hawaii and another teacher taking the food and animal resources and teaching Hawaiian cuisine. Gilda provided another example of a teaching team when she used her experience as a quilt maker to develop story quilts which were shared not only by teachers in her grade level, but also as a school wide project later on. Helen's investigations into astronomy and atmosphere led to teamwork when she shared her learning with teachers at her school to enable them to create lessons for their students as well.

Occasionally, however, teachers could be met with resistance to sharing their learning efforts. Teachers mentioned having negative reception at their school when they shared or applied their self-directed learning projects. Fiona related being met with negative reactions when she initiated technology for teachers through the school library. "A lot [of teachers] were afraid of technology." These colleagues were resistant and balked at learning because of their fears.

Becky's own personal interests in learning about gardening spurred a garden project for her first graders. After doing research and matching her ideas to standards in math and science for her students and bringing in books for her students, she set about

creating a garden in her school. However she also found that teachers at her school were not receptive to her project. “At that time, I was teaching with some negative teachers. A lot of teachers would watch it. I don’t think that many thought it was beneficial...but I saw a lot of benefits in it.” The teachers in this study valued partnerships, and regretted when they were not possible with their teacher colleagues.

Teacher Application of Learning in the Classroom

Teacher learning activities did translate to the classroom. Teachers surprised themselves when reflecting upon even the areas of creative learning they undertook that translated into classroom strategies, lessons, and modeling for their students along with the professional self-directed learning they undertook.

Making it “my own.” Those teachers who sought out their own professional development through self-directed learning admitted that while they often attended workshops, read books, and sought mentors, they were “always tweaking” these strategies and methodologies to “make it my own.” Evelyn related an instance where she and other teachers visited the Ron Clark Academy. She was impressed with a celebration device that was used in the classroom as a reward. A button was pressed and a disco ball dropped from the ceiling. Music played and the students were allowed to dance. She “tweaked” this idea and developed her own “freak out” dance that students could use to celebrated hard work and that allowed them to have movement in the classroom. Without the hardwired technology of an elaborate disco ball, Evelyn was still able to analyze a

reward method and merge it with her personal interest in dance and create a reward dance of her own.

The teachers who pursue reading as learning also bring that experience into their classrooms. Becky used in her interest in reading to model to her students as part of her reading instruction. “I mean just when I teach reading, even in first grade, I talk about what good readers do and what I as a reader do.” Caroline does that as well when she sets up book clubs in her classroom. She discusses the fact that she and other teachers in the school make up their own book club:

> We see students out at various community events. You know, we’ll all have our books and Kindles out and the kids will come up and say, ‘What are you doing?’ We say, ‘Hey Mrs. Jones and I are in a book club and this is a book [referring to the Kindle].

Deborah even modeled her self-directed learning process to her students. “They know I’m always learning. I involve them in it and tell them what I’ve learned.” When teaching, if they come upon a fact or something they don’t know, she will stop and model for her students how she goes about researching to solve the problem. “I don’t think a lot of times kids have good models of that in their homes.” The teachers I interviewed gave examples of bringing their learning into the classroom and developing lessons for their students. And these were not random arts and craft sessions or cookie-cutter coloring sheets. Teachers were careful to match their developing lessons to grade level standards as Becky did when she created her garden using standards for math and science. Deborah

summed up most of the teachers attitudes about standards when she said that if her students were able to learn to problem solve and think for themselves, the state assessed standards achievement would happen for them. The teachers saw the value in translating that love of learning to their students.

Teacher Reflection on Practice

The teachers interviewed for this study professed they were life-long learners. One project often led to another and then another. They were always striving to improve their craft and improve upon their capacity as teachers. In their pursuit of learning they were able to find self-validation for their work. I found that while teachers were often required or mandated to learn or train in certain strategies and methodologies, these teachers recognized the distinction between what was required of the job and what they felt they must be learning as part of their own self validation as a teacher. Gilda said,

> Like in education, I would go and learn new methods and it wouldn't be something that I was required to do, it was just something that I wanted to do to improve my teaching in the classroom.

The teachers' validation could be found in forged partnerships, in recognition for the strategies used in their classrooms, and through solicitation by others for their expertise. Yet, while teachers appreciated any validation they received, they moved on to their next learning goal or project. Fiona, the librarian, had completely updated her elementary school's library and added new technologies such as iPads, laptops and iPods.

She had made elaborate bulletin boards and updated the book selections and had received lots of praise for her work. Yet, at the time of our interview she was planning to leave her library behind to start work at a middle school:

> I'm walking away from it. I'm turning around and walking away from it and going to one that needs to be worked on. I felt like I'd gone as far as I could go at that school. I think I had a great library for the kids, but there just wasn't a whole lot left to improve on. I can go to the middle school library…trying to make it the best library, because libraries now are so much of a media center now. They are not just a place to get a book anymore.

Throughout the interviews, teachers, while enthusiastic about their self-directed learning projects, were able to identify pitfalls and stumbling blocks they have faced along the way. Non-supportive administrators, "the powers that be," could hamper implementation of strategies and lessons inside and outside the classroom. One teacher who designed a lesson around her sewing and embroidery skills had to bring in volunteers to sew for her students because the "powers that be" would not allow the students to sew themselves. Other teachers in the grade level or school can become a stumbling block if they are not open to or are critical of the method or strategies being implemented.

Summary of Qualitative Results

The results of my study show that teachers who took my online survey were high or above average in self-directed learning readiness. Teachers I interviewed did

participate in self-directed learning activities and participated in many types of learning activities. These activities I categorized as investigations of their creative selves and professional selves. The teachers in this study offered many illustrations into the ways they translated their self-directed learning activities not only into the classroom, but also as partners with their friends and fellow teachers.

Figure 4.2 illustrates the self-directed learning process used by the elementary teachers in this study. They start with an idea or an interest which they explore through one or more pathways: by partnering with a fellow learner, by reading, by using the internet, and/or by seeking out a mentor. From there, they might collaborate in groups or attend workshops on their way to practicing and using their new learning. Finally, they reflect and decide where or if to re-enter the process. Validation comes when they experience success as learners.

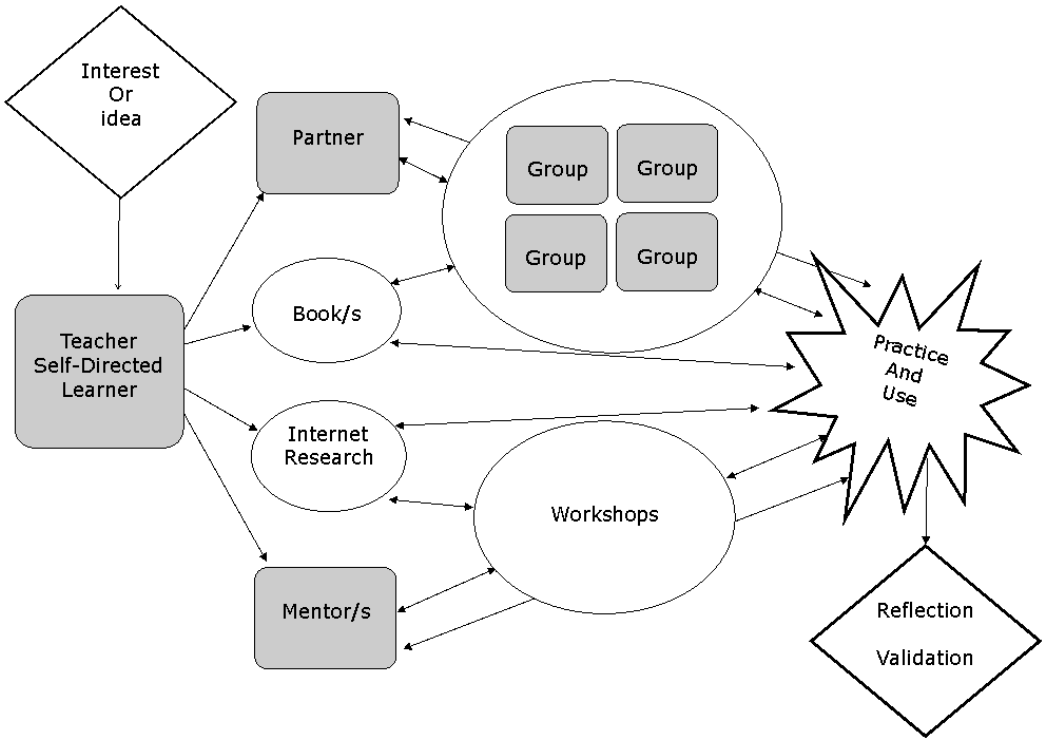

Figure 4. 2 Self-Directed Learning Process of Elementary Teachers

Upon further examination of this process, this study reveals that not only do teachers plan, coordinate, and conduct their self-directed learning, but also that this learning paralleled conditions (discussed in chapter two above) that have been found to be present in successful professional development that leads to increased student learning. Specifically, the teachers' own learning met the following criteria:

1. Teachers had *autonomy and agency* in that they decided what they would learn based upon their personal interests or ideas for their classroom.
2. Teacher learning was *sustained over time* as teachers learned, developed, and established their craft.

3. Teachers established or joined a *learning community* in the form of book clubs, team collaboration, or learning groups.
4. Teachers often sought *outside experts* in the form of mentors/authors.

Chapter Summary

This chapter has discussed the results of the four research questions. Phase I addressed the first research question regarding the self-directed learning readiness of elementary teachers. The quantitative data revealed that teachers taking the online SDLRS/LPA demonstrated a significant readiness for self-directed learning. Phase II examined questions two through four via qualitative interviews. The second question sought insight into whether elementary teachers participated in self-directed learning activities. The nine teachers interviewed for this study all participated in self-directed learning. Question three addressed the sorts of learning activities the teachers participated in outside of the school environment. Teachers participated in creative and professional learning projects outside of school. The final question investigated whether or not the teachers' learning activities outside of school translated into their classroom. The teachers self-directed learning pursuits translated to classroom activities and were shared with partners, their colleagues and learning communities.

Chapter 5 Discussion

Introduction

This study has examined the self-directed learning readiness of elementary school teachers and their self-directed learning practices. This final chapter will provide a discussion of the results of the study based on the four research questions, the study's conclusions, and the implications for future research and practice. This Quan-Qual study consisted of two phases. Phase I addressed question one: How do elementary teachers rate on the Self-Directed Learning Readiness Scale/ Learning Preference Assessment [SDLR/LPA]? One hundred elementary school teachers in a southeastern state were surveyed online with the SDLRS/LPA instrument and were found to be significant in their readiness for self-directed learning. Phase II addressed the remaining three questions:

- Do elementary teachers participate in self-directed learning activities?
- What sorts of learning activities do teachers participate in outside of the school environment?
- Do these learning activities translate into the classroom?

Nine participants who scored "high" or "above average" on the SDLRS/LPA were interviewed about their self-directed learning activities. This study sheds light on the self-directed learning practices of this little-researched group in the area of self-directed learning. The results of this investigation show that self-directed learning can be engaging and powerful professional development.

This investigation was grounded within two models of self-directed learning: Brockett and Heimestra's (1991) Personal Responsibility Orientation PRO-model and Grow's (1991) Staged Self-Directed Learning Model. The PRO-model was selected as a basis for examining the teacher as learner and the Staged-Self-Directed Learning Model (Grow, 1991) for examining self-directed teacher historically as teacher.

The PRO-Model illustrates the personal characteristics of a learner, in this study, the elementary teachers as learners and the external factors that predispose individuals to pursuing, planning and implementing their learning projects along with those internal personality characteristics that allow an individual to accept responsibility for learning. By sampling 100 elementary teachers and investigating their self-directed learning readinesss through the SDLRS/LPA instrument, we were able show significant results. Further interviews with nine teachers who scored "high" or "above average" revealed a propensity for self-directed learning in two areas of their personalities: their creative selves and their professional selves.

Teachers in this study were self-directed, describing many diverse self-directed learning projects from jewelry making to scuba-diving. However, what also became apparent is that teachers were also undertaking their own self-directed professional development. All teachers discussed their ongoing learning projects for improving their teaching, improving their classroom and improving student learning.

Conclusions

Not "bored out of my gourd:" Self-directed learning is engaging, powerful professional development. Self-directed learning can be engaging, powerful professional development in comparison to prescribed, top-down, mandated professional development. This study shows that teachers who are self-directed in their learning were compelled to research and conduct their own professional learning. In fact, their personal character was such that they are driven to continuously pursue learning which will improve their content area knowledge and their teaching methodologies. And, perhaps more importantly, they enjoy it.

When the teachers in this study found that professional development did not meet the immediate needs of their classroom, they planned and sought additional knowledge on their own. Their learning, actually included characteristics that research has found to be essential for successfully implemented professional development that results in improved student achievement (Darling-Hammond & McLaughlin, 1995; Darling-Hammond, et al., 2009; Gabriel, Day, & Allington, 2011; Gilrane, et al., 2008).:

1. offering sense of autonomy and ownership
2. sustained over time
3. creating or a professional learning community,
4. seeking mentors and experts

Autonomy. Teachers in this study chose the path of their learning which enabled them to have ownership of their learning. For their professional selves, they reflected on

needs of their students, their content knowledge needs, and needs of their school in choosing areas to pursue. This understanding of the need for learning along with full ownership of the learning process permitted change to take place. Morrow and Casey (2004) reported that motivation for change is highly individual. When teachers identify the need and self-direct their learning change is the result. Teachers mentioned how their teaching was changed through the professional self-directed learning projects they undertook. The intrinsic motivation which spawned their self-directed learning projects was often brought about by teacher compulsion for learning and their own viewpoint that they could always be improving. These viewpoints fit research on exemplary teachers (Allington & Johnston, 2001; Haberman, 1995).

Self-directed learning for these elementary school teachers grew out of those intrinsic characteristics of the learner as illustrated in the PRO-model (Ralph. G. Brockett & Hiemstra, 1991). And because their self-directed learning was a natural outcome of these intrinsic characteristic, these teachers experienced engaged autonomy often described by exemplary teachers (Gabriel, et al., 2011) . Teachers whose self-directed learning led to successes in the classroom were able to show their results to their principals rather than be mandated to produce results through scripted or prescribed methods. When teachers experienced this freedom in decision making and were commended by colleagues, parents, and administrators, they felt validated as professionals.

Sustained over time. I found that these teachers were intensively engaged in their learning projects for extended periods of time. Teachers would begin with research and

investigation and move toward connecting with partners, reading books, seeking mentors and joining or building communities of learning. This necessitated extended learning and planning and commitment on their part and persistence. Again, qualities desirous of exemplary teachers.

Teacher-created professional learning communities and mentors. The teachers in this study involved in self-directed learning were not learning on their own. They created partnerships and formed professional learning communities within their schools as grade level teams, groups working on a shared goal, and as teachers reading books. The power of learning communities is documented in professional development research (Darling-Hammond & McLaughlin, 1995; Darling-Hammond, et al., 2009; Gabriel, et al., 2011; Gilrane, et al., 2008; Richardson, 2003). However, the need is documented, but what is hard to escape is the contrived collegiality that Hargreaves and Dawe (1990) found was so often foisted on teachers as they go through the motions of prescribed professional development. Nevertheless, through self-directed learning, teachers willingly build communities of learning, seeking out other like minded learners or motivating others to join them on their journey - their enthusiasm for learning contagious.

Impact on student achievement: While we have no information on whether these teachers' students experienced enhanced achievement, research tells us that exemplary teachers do share their personal learning with their students (Allington & Johnston, 2001; Haberman, 1995). Exemplary teachers bring their personal learning activities and their individual likes and interests into their classrooms. Just as this study highlights, the teachers interviewed brought their learning projects into their classrooms by matching

state standards, designing lessons, and creating curriculum which allowed their students to see their own excitement for learning and share in learning as well. It is not unusual for these teachers to use these personal learning projects to garner enthusiasm and generate connections to their students. These teachers illustrate Grow's (1991) fourth stage: Learner's of High Self-Direction, having confidence of what they needed to learn and possessing the skills to get it done. However, we still do not know if these teachers enabled self-direction in their own students.

Haberman (1995) reported that in creating interviews for locating STAR teachers for urban schools, one of the characteristics of these teachers were that they were:

> Typically involved in some life activity that provides them with a sense of well-being and from which they continually learn. It might be philately, Russian opera, a Save the Wolves Club, composing music with computers, travel or some other avocation from which they derive meaning as well as pleasure. Inevitably, they bring these activities and interests into their classrooms and use them as ways of involving their students in learning. It is quite common to find teacher's special interests used as foci that generate great enthusiasm for learning among the students. The grandiose explanation for this phenomenon is that people who continually experience learning themselves have the prerequisites to generate the desire to learn in others.

These elementary teachers engaged in self-directed learning exhibited this desire to learn and elicited that desire in their students, which is recognized in research to result

in greater student achievement. They brought sewing, music, photography, technology, and their love of reading into the classroom and modeled what learners do for their students.

Autonomy and Agency Lead to Effective Book Clubs

The teachers interviewed listed reading as a way to initiate their learning projects. Reading and reading information on the internet were mentioned by all the teachers as initial pathways for their self-directed learning. Teachers formed partnerships and book clubs in order to have collegial support and a network of their peers. Descriptions of the Teachers as Readers program (Carmichael, 2001; Ruurs, 2006) revealed a highly-defined program with specific steps teachers must follow regarding the number of group members, the types of books to offer, and times to meet. Such highly defined groups can have a tendency to retreat into "contrived collegiality" when what is desired is true collegiality. The ad hoc groups formed by the teachers in this study had no set number of members, no set meeting format, and no reports to fill out. What they did have were teachers who had vested interests and autonomy to choose to join the group. Teacher as Readers holds great promise if it is authentic and avoids issues of contrived collegiality.

The teachers in this study who pursued reading for creative and professional learning projects were able to model what good readers do in their classrooms and also model lifelong reading with purpose for their students. Dobler (2009) in a case study of one teacher's evolution to becoming a more proficient reader posited that a teacher who develops better understanding of their own personal comprehension strategies through

professional reading and reflection may also lead to more effective reading instruction. Teachers who teach reading and writing must also be practitioners (Brooks, 2007). Teachers who are self-directed in their learning are readers, reading for pleasure and for information.

Implications

The teachers in this study were passionate about their self-directed learning, and brought that enthusiasm into the classrooms with them. This is in sharp contrast to attitudes about professional development which is typically one-stop whistle shop - those mini-workshops which exist outside a teacher's content area, grade level, or even classroom management style which seem to serve as a means for fulfilling the minimal hours needed for professional development. Teachers will attend these meetings, follow along, and return to their classrooms and do their own investigations. This study leads to several implications for practice and for further research.

Implications for practice

SDLRS/LPA as a screening tool. We know that teachers who project their enthusiasm for learning and their learning projects into the classroom are desired teacher prospects (Allington & Johnston, 2001; Haberman, 1995; McCall, 2006). Therefore, the Self-Directed Learning Readiness Survey/Learning Preference Assessment or an adapted version of it could possibly be used as an interview tool in hiring prospective teachers along with other interview guides. While self-directed learning is not, by itself, an

indicator of effective teaching, the SDLRS/LPA could be useful to administrators in identifying teachers whose professional development path might be a non-traditional one. Principals could then be prepared to support, rather than to quash, these individuals.

Nurturing teachers with high self-directed learning readiness. Teachers possessing high or above average readiness for self-directed learning and who pursue self-directed learning personally and professionally should be mentors for other teachers in their building. These teachers are already forming their ad hoc learning committees. Rather than stifling this innovation within their schools, administrators should embrace and encourage this type of learning. Micromanaging the autonomy out of these teachers would be a risk here, as this learning is teacher-initiated. Administrators need to cultivate this type of professional development and not crush it, realizing that not all teachers are self-directed learners, but can perhaps join up with those teachers that are in these ad hoc professional learning communities. Administration should also allow and give professional development credits for those teachers who undertake self-directed learning projects with care that over documentation does not stifle these teachers' initiatives.

Take advantage of the internet. All these teachers readily utilized the internet for self-directed learning. Colleges of teacher education should consider targeting and cultivating those teachers who have this self-directed learning readiness. Ways they can do this are by offering more internet courses and opening this portal to students early in their careers so that this aspect of the self-directed learning process is well-rehearsed by the time they have a classroom placement. Inquiry-based projects should be encouraged where self-directed learning readiness traits can be maximized in pursuing professional

and research interests. Teacher colleges should consider developing online teacher resources for preservice teachers and their graduates. Rather than maintaining websites with general program information, colleges of education can sponsor a teacher education site for collecting lesson plans, book reviews, forums for sharing information and finding mentors, and focused online learning groups.

Implications for Further Research

There is much room for future research into the self-directed learning readiness of teachers. This study only examined 100 teachers and cannot be generalized to the entire population of teachers. Other populations of teachers should be examined, including those in middle school and high school, and in other geographic areas. Also, research which examines the other end of the SDLRS/LPA scores - those teachers who scored low on the SDLRS/LPA - should prove intriguing.

Finally, self-directed readiness research has developed out of adult education and psychology. Adult education and teacher education programs should collaborate on research as teachers are adults and professional development is adult learning. These realms of research have so much to contribute and collaboration on future research would seem a natural fit.

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Appendices

Appendix A

System Supervisor Letter

Dear Supervisor,

Your system is invited to participate in a dissertation research project which examines self-directed learning practices of elementary school teachers. This study will entail two parts.

First, elementary teachers will complete an online survey related to their educational and learning pursuits outside of the classroom and in addition to planned professional development. The survey should take approximately 25 minutes to complete.

Secondly, ten teachers who rank as scoring "high" in self-directed learning readiness will be selected for personal interviews. Potentially, teachers from your system may be asked for an interview should they rank "high" on the survey.

The interviews will last approximately one hour. The researcher will use the information gathered from the interview to identify themes among teachers who are self-directed learners. The resulting data will be written as the researcher's PhD dissertation.

The results of this study may be helpful in planning future teacher learning projects in the future.

Sincerely,
Susan R. Wagner

Please sign and date verifying your approval:

Name: _____ Date: _____

School System: _____

Appendix B

Informed Consent Statement

After the Final Bell:
The Self-Directed Learning Practices of Elementary Teachers

You are invited to participate in a research study investigating self-directed learning practices of elementary teachers. The researcher for this project is a graduate student from The University of Tennessee and an elementary classroom teacher.

This study is divided into two phases. The first phase includes completion of the online SDLRS/LPA/Learning Readiness Scale. From among these participants, ten individuals will be asked to participate in an interview about their self-directed learning experiences. Before and throughout this research process, you may ask questions about the study. The researcher is willing to share her research findings with you after the completion of the project.

The interview will be digitally recorded for later transcription by the researcher. All digital files and transcription notes will be stored in a locked filing cabinet in the Bailey Education Complex at The University of Tennessee at Knoxville.

Confidentiality

All information you provide for the study will remain confidential. This includes all identifying and demographic information. Data pertaining to this study will be securely stored in a locked file cabinet at the Bailey Education Complex at The University of Tennessee at Knoxville and will be available only to the principal researcher conducting this study.

The results of the research along with descriptive statistics and participant quotations will be published at a future date. Your name will not be included within the research dissertation and your identity will be keep confidential and known only to the researcher. To preserve anonymity, pseudonyms will replace actual names of participants in the use of direct quotes from interviews.

Data from the study may be used by other researchers in the form of secondary data after the study is completed. No references to this data in printed reports or publications could link or identify participants in this study.

_____ Please initialize to indicate you have read and understand this page.

Risks/Benefits

There are no known risks or negative effects to the participant as a result of participation in this study.

Benefits to participation are additional insights into self-directed learning readiness and participation in a qualitative study which seeks insights into teacher learning practices. Your participation will contribute to the literature on teacher education

Contact Information

If you have any questions about the study or the research procedures, please contact Susan R. Wagner at the Department of Theory and Practice in Teacher Education, Baily Education Complex, The University of Tennessee at Knoxville. You will be able to reach her at [email address]. If you have questions regarding your participation in this study, contact the University of Tennessee Research Compliance Services of the Office of Research (865-974-3466).

Participation

Your participation is the study is voluntary and you may redraw at anytime from the study. Should you decide to do so, your data will be destroyed.

Consent

I have read the above information and have received a copy of this form. I agree to participate in this study.

Participant's signature:_____ Date:_____

Researcher's signature:_____ Date:_____

Appendix C

Online Instrument

Dear Elementary Teacher,

You are invited to participate in a research study investigating elementary teachers and learning. The researcher for this project is a graduate student from The University of Tennessee and an elementary classroom teacher. This study is divided into two phases. The first phase includes completion of the online Learning Preference Assessment.

All information you provide for the study will remain confidential. This includes all demographic information as well as identifying information for those who choose to give it at the end. Data pertaining to this study will be available only to the principal researcher conducting this study and her advisor and Guglielmino and Associates, the firm processing the data.

The results of the research along with descriptive statistics and participant quotations will be published at a future date.

Anonymous data from the study may be used by other researchers in the form of secondary data after the study is completed. No references to this data in printed reports or publications could link or identify participants in this study.

Your completion of the online survey serves as your agreement to participate in the study.

Susan R. Wagner
The University of Tennessee

- ☐ Yes, I agree to participate. Continue to the survey
- ☐ No, I am opting out of the survey

Next

The next questionnaire is designed to gather data on learning preferences and attitude towards learning. After reading each item, please indicate the degree to which you feel that statement is true of you. Please read each choice carefully and select the number of the responses which best expresses your feeling.

There is no time limit for the questionnaire. Try not to spend too much time on any one time on any one item, however. Your first reaction to the question will usually be the most accurate.

Previous Next

Please read each choice carefully and select the number of the responses which best expresses your feeling.

	Almost never true of me; I hardly ever feel this way	Not often true of me; I feel this way less than half the time	Sometimes true of me; I feel this way less than half the time.	Sometimes true of me; I feel this way about half the time.	Almost always true of me; there are very few times when I don't feel this way	No Answer
1. I'm looking forward to learning as long as I'm living.	☐	☐	☐	☐	☐	☐
2. I know what I want to learn.	☐	☐	☐	☐	☐	☐
3. When I see something that I don't understand, I stay away from it.	☐	☐	☐	☐	☐	☐
4. If there is something I want to learn, I can figure out a way to learn it.	☐	☐	☐	☐	☐	☐
5. I love to learn.	☐	☐	☐	☐	☐	☐

6. It takes me a while to get started on new projects.	☐	☐	☐	☐	☐	☐
7. In a classroom, I expect the teacher to tell all class members exactly what to do at all times.	☐	☐	☐	☐	☐	☐
8. I believe that thinking about who you are, where you are, and where you are going should be a major part of every person's education.	☐	☐	☐	☐	☐	☐
9. I don't work very well on my own.	☐	☐	☐	☐	☐	☐

Previous Next

Please read each choice carefully and select the number of the responses which best expresses your feeling.

	Almost never true of me; I hardly ever feel this way	Not often true of me; I feel this way less than half the time	Sometimes true of me; I feel this way less than half the time.	Sometimes true of me; I feel this way about half the time.	Almost always true of me; there are very few times when I don't feel this way	No Answer
10. If I discover a need for information that I don't have, I know where to go to get it.	☐	☐	☐	☐	☐	☐
11. I can learn things on my own better than most people.	☐	☐	☐	☐	☐	☐
12. Even if I have a great idea, I can't seem to develop a plan for making it work.	☐	☐	☐	☐	☐	☐
13. In a learning experience, I prefer to take part in deciding what will be learned and how.	☐	☐	☐	☐	☐	☐
14. Difficult study doesn't bother me if I'm interested in something.	☐	☐	☐	☐	☐	☐
15. No one but me is truly responsible for what I learn.	☐	☐	☐	☐	☐	☐
16. I can tell whether I'm learning something well or not.	☐	☐	☐	☐	☐	☐
17. There are so many things I want to learn that I wish that there were more hours in a day.	☐	☐	☐	☐	☐	☐

18. If there is something I have decided to learn, I can find time for it, no matter how busy I am.	☐	☐	☐	☐	☐	☐

Previous Next

Please read each choice carefully and select the number of the responses which best expresses your feeling.

	Almost never true of me; I hardly ever feel this way	Not often true of me; I feel this way less than half the time	Sometimes true of me; I feel this way less than half the time.	Sometimes true of me; I feel this way about half the time.	Almost always true of me; there are very few times when I don't feel this way	No Answer
19. Understanding what I read is a problem for me.	☐	☐	☐	☐	☐	☐
20. If I don't learn, it's not my fault.	☐	☐	☐	☐	☐	☐
21. I know when I need to learn more about something.	☐	☐	☐	☐	☐	☐
22. If I can understand something well enough to get a good grade on a test, it doesn't bother me if I still have questions about it.	☐	☐	☐	☐	☐	☐
23. I think libraries are boring places.	☐	☐	☐	☐	☐	☐
24. The people I admire most are always learning new things.	☐	☐	☐	☐	☐	☐
25. I can think of many different ways to learn about a new topic.	☐	☐	☐	☐	☐	☐

26. I try to relate what I am learning to my long-term goals.	☐	☐	☐	☐	☐	☐
27. I am capable of learning for myself almost anything I might need to know.	☐	☐	☐	☐	☐	☐

Previous Next

Please read each choice carefully and select the number of the responses which best expresses your feeling.

	Almost never true of me; I hardly ever feel this way	Not often true of me; I feel this way less than half the time	Sometimes true of me; I feel this way less than half the time.	Sometimes true of me; I feel this way about half the time.	Almost always true of me; there are very few times when I don't feel this way	No Answer
28. I really enjoy tracking down the answer to a question.	☐	☐	☐	☐	☐	☐
29. I don't like dealing with questions where there is not one right answer.	☐	☐	☐	☐	☐	☐
30. I have a lot of curiosity about things.	☐	☐	☐	☐	☐	☐
31. I'll be glad when I'm finished learning.	☐	☐	☐	☐	☐	☐
32. I'm not as interested in learning as some other people seem to be.	☐	☐	☐	☐	☐	☐
33. I don't have any problem with basic study skills.	☐	☐	☐	☐	☐	☐

34. I like to try new things, even if I'm not sure how they will turn out.	☐	☐	☐	☐	☐	☐
35. I don't like it when people who really know what they're doing point out mistakes that I am making.	☐	☐	☐	☐	☐	☐
36. I'm good at thinking of unusual ways to do things.	☐	☐	☐	☐	☐	☐

Previous Next

Please read each choice carefully and select the number of the responses which best expresses your feeling.

	Almost never true of me; I hardly ever feel this way	Not often true of me; I feel this way less than half the time	Sometimes true of me; I feel this way less than half the time.	Sometimes true of me; I feel this way about half the time.	Almost always true of me; there are very few times when I don't feel this way	No Answer
37. I like to think about the future.	☐	☐	☐	☐	☐	☐
38. I'm better than most people are at trying to find out the things I need to know.	☐	☐	☐	☐	☐	☐
39. I think of problems as challenges, not stop signs.	☐	☐	☐	☐	☐	☐
40. I can make myself do what I think I should.	☐	☐	☐	☐	☐	☐
41. I'm happy with the way I investigate problems.	☐	☐	☐	☐	☐	☐

42. I become a leader in group learning situations.	☐	☐	☐	☐	☐	☐
43. I enjoy discussing ideas.	☐	☐	☐	☐	☐	☐
44. I don't like challenging learning situations.	☐	☐	☐	☐	☐	☐
45. I have a strong desire to learn new things.	☐	☐	☐	☐	☐	☐

Previous Next

Please read each choice carefully and select the number of the responses which best expresses your feeling.

	Almost never true of me; I hardly ever feel this way	Not often true of me; I feel this way less than half the time	Sometimes true of me; I feel this way less than half the time.	Sometimes true of me; I feel this way about half the time.	Almost always true of me; there are very few times when I don't feel this way	No Answer
46. The more I learn, the more exciting the world becomes.	☐	☐	☐	☐	☐	☐
47. Learning is fun.	☐	☐	☐	☐	☐	☐
48. It's better to stick with the learning methods that we know will work instead of always trying new ones.	☐	☐	☐	☐	☐	☐
49. I want to learn more so that I can keep growing as a person.	☐	☐	☐	☐	☐	☐

50. I am responsible for my learning - no one else is.	☐	☐	☐	☐	☐	☐
51. Learning how to learn is important to me.	☐	☐	☐	☐	☐	☐
52. I will never be too old to learn new things.	☐	☐	☐	☐	☐	☐
53. Constant learning is a bore.	☐	☐	☐	☐	☐	☐
54. Learning is a tool for life.	☐	☐	☐	☐	☐	☐

Previous Next

Please read each choice carefully and select the number of the responses which best expresses your feeling.

	Almost never true of me; I hardly ever feel this way	Not often true of me; I feel this way less than half the time	Sometimes true of me; I feel this way less than half the time.	Sometimes true of me; I feel this way about half the time.	Almost always true of me; there are very few times when I don't feel this way	No Answer
55. I learn several new things on my own each year.	☐	☐	☐	☐	☐	☐
56. Learning doesn't make any difference in my life.	☐	☐	☐	☐	☐	☐
57. I am an effective learner in the classroom and on my own.	☐	☐	☐	☐	☐	☐
58. Learners are leaders.	☐	☐	☐	☐	☐	☐

Previous Next

Please indicate your age:

Previous Next

Please indicate your race:

- African American
- Asian/Pacific Islander
- Caucasian
- Hispanic
- Native American
- Biracial
- Other

Previous Next

Please indicate your years in teaching:

Previous Next

Please indicate what grade level you teach:

- [ ] Kindergarten
- [ ] First
- [ ] Second
- [ ] Third
- [ ] Fourth
- [ ] Fifth
- [ ] Specialist:

- [ ] Other:

Previous Next

In what type of school do you teach?

- [ ] Public
- [ ] Public-Title 1
- [ ] Private
- [ ] Parochial
- [ ] Charter
- [ ] Other

Previous Next

What is your educational background?

- Bachelors
- Bachelors + graduate
- Masters
- Masters + graduate
- Education Specialist
- Doctorate

Previous Next

Snce this instrument has not been widely used with elementary teachers, I would like to interview some of you who completed the survey, to see how its results relate to what you tell me about yourself as a learner and a teacher.

Would you be willing to let me contact you, and for me to know your results on the survey?

- I give Susan Wagner permission to contact me with more information about a follow up interview.
- I do not wish to be contacted for follow-up.

Previous Next

Please enter in your name and email address.

Name:

Email address:

Previous Next

You have completed the survey. Thank you for your participation in this project.

Appendix D

Interview Guide for Study

1. Tell me about your educational background.
2. How many years have you been teaching and in what grades?
3. What subjects do you teach?
4. Describe the school where you teach.
5. How do you define "learning"?
6. On the online survey, you rated as a "highly self-directed learner." How do you see your learning as self-directed?
7. Can you give examples of times where your learning was self-directed?
8. In what ways do you learn best?
9. How would you compare your learning style with others?
10. How do feel your students learn best?
11. What sorts of activities do you pursue outside of your classroom?
12. What sorts of barriers or obstacles, if any, have you encountered in pursuing activities or learning outside the classroom?
13. What sorts of aids or supports, if any, have you encountered in pursing activities or learning outside the classroom?
14. Which activities that you have pursued outside the classroom, do you find yourself using or discussing with your students or fellow teachers?
15. Do your students see you as a learner?
    If so, how do you communicate or share your own learning with your students?
16. Do you feel that knowledge you have gained outside the classroom impacts your teaching within your classroom? If yes, can you describe specific examples?
17. Would you choose to pursue an activity outside the classroom on your own, with the goal to aid your classroom teaching?
18. How do you go about learning a new teaching methodology or curriculum program?
19. What types of additional training or professional development have you had?
20. Which of these is most memorable to you and why?
21. It is often said that teachers are the hardest students to teach. How do you feel about this statement?

    Thank you for your time and participation in this study.

VITA

Susan Wagner is an elementary educator with Blount County Schools in Tennessee. She received her Master's degree in Instructional Technology and Curriculum from the University of Tennessee and her undergraduate degree from Maryville College in Child Development and Learning with teacher licensure. While a student at Maryville College, she received the college's Child Development Award. Her elementary teaching experience includes multiage instruction and curriculum design. Susan has provided professional development in creative writing instruction. Her research interests include motivating struggling readers, creative writing, technology in reading instruction, and teacher education. Susan is a member of the International Reading Association and a 2008 recipient of Outstanding Teacher of the Year from Tennessee Humanities.

What is Project Based Learning?[1]

In Project Based Learning, students are pulled through the curriculum by a meaningful question to explore, an engaging real-world problem to solve, or a challenge to design or create something. Before they can accomplish this, students need to inquire into the topic by asking questions and developing their own answers. To demonstrate what they learn, students create high-quality products and present their work to other people. Students often do project work collaboratively in small teams, guided by the teacher.

Although it is easier to define what PBL is not (e.g., worksheets disconnected from larger intellectual inquiry), it is more difficult to define what it is… and in one sentence. Here is our best attempt:

Project Based Learning is a systematic teaching method that engages students in learning important knowledge and 21st century skills through an extended, student-influenced inquiry process structured around complex, authentic questions and carefully designed products and learning tasks.

A project should be a rigorous learning experience. It is not the dessert you serve students so they can "have fun" or "get a hands-on experience" after a traditional unit of instruction. Instead, a project is the main course that organizes the unit. In most cases, it's helpful to actually think of the project as the unit.

The length of a project can vary. Most projects take from 2-4 weeks to complete, assuming students work on them for only part of a day. Some may be longer, as you'll see when you read about our Spotlight Projects. If you try to rush a project, there isn't enough time to fully include all the essential elements listed below—and students won't learn as much or as well.

A project has typical phases, although no two projects are alike. There is a beginning, middle, and end.

Projects can take many forms. We use the term "PBL" broadly, including under its umbrella such similar instructional methods as problem-based learning, design challenges, place-based learning, the use of complex case studies and simulations, and guided inquiry. Other writers distinguish these types of learning from Project Based Learning. We believe they share common characteristics and are more alike than different.

A project could be:

- An exploration of a philosophical question, such as "What is a healthy community?"

[1] http://bie.org/images/uploads/general/4880a4a5dc5f83fc2283da3efaada6cb.pdf

- An investigation of a historical event or a natural phenomenon n A problem-solving situation, either real or in a fictitious scenario n An in-depth examination of a controversial issue

- A challenge to design a physical or computer-based artifact, develop a plan, or produce an event

- A challenge to create a piece of writing, multimedia, or work of art for a particular audience or purpose

Snapshots of Projects in K-5

Projects come in many shapes and sizes. Here are some quick glimpses of project work in K-5 classrooms that show how varied PBL can be:

Kindergarteners learn about food groups and assemble pictures for menus they create to explain a healthy Thanksgiving meal, which they present to parents and other students.

Fourth graders study maps and primary source documents as they take the role of Spanish missionaries deciding where to build the 22nd California mission[2] (if there was to be one) and what it might look like.

A first grader revises a butterfly drawing for his team until it looks good enough to include in a boxed set of illustrated cards of state wildlife that the class is creating.

Fifth graders analyze the pH of soil and water samples while searching for clues to determine sources of pollution in their town.

Second graders reflect on why we remember certain events as they prepare to record podcasts of themselves telling a story about an experience, with descriptive details, a logical sequence, and a conclusion.

Third graders learn heating, cooling, and basic engineering principles while designing nest houses that will keep squirrels warm in the winter and cool in the summer.

First graders learn about the power of wind while designing, building, and testing model sailboats using recycled materials.

Fifth graders learn about urban planning while assessing the aesthetics of the neighborhood around their school, constructing maps that identify positive and negative characteristics, and recommending improvements.

First graders investigate the contents of suitcases filled with diaries, family photographs, artifacts, maps, and architectural drawings. They generate questions to

[2] http://pblu.org/projects/the-22nd-california-mission

investigate about family life in their local community long ago so they can create a video on the topic.

Third graders email opinion pieces on what they think should be done with vacant land in their community to an economic development agency for feedback before submitting them to a local newspaper.

Kindergarteners make four different kinds of puppets with help from a local theatre company as they plan how to re-tell classic children's stories in a puppet show.

Second graders try to guess how much food, school supplies, or other kinds of items they could buy with 1000 pennies, then create shopping lists and visit local stores and websites to compare prices to prepare for a presentation about where to buy things.

Fourth graders create a blog to publish their writing on the theme of "What It's Like to Be 10" after reading memoirs of childhood by various authors.

A kindergarten class studies local wildlife and observes the life cycle of animals kept in the classroom, as they make a field guide about their county's woodland creatures.
Fifth graders take the role of medical school students and try to determine what might be causing a patient's symptoms: a problem in the respiratory or circulatory system.

Third graders dig deep into the history of their urban neighborhood though interviews, research, and field visits, then create museum exhibits in the school library.

First graders learn about communities, rules and laws as they help their school develop behavior rules for different parts of the playground and campus, making posters and a video to share with other students.

Fourth graders decide to save a local endangered species by starting a conservation effort and restoring creek habitats.

Second graders run a lunchtime pizza business for two days, culminating a study of what work is like, in which they interviewed people at local businesses.

Fifth graders learn to collect and display data and plot points on a graph as they figure out which cell phone plan is best for their family and prepare a presentation to their parents and classmates.

Habits of Success Common Assessment Plan

Introduction

Habits of Success represent a crucial quadrant of college readiness at Summit Public Schools. Habits of Success "collectively facilitate goal-directed effort (e.g., grit, self-control, growth mindset), healthy social relationships (e.g., gratitude, emotional intelligence, social belonging), and sound judgment and decision making (e.g., curiosity, open-mindedness). Longitudinal research has confirmed such qualities powerfully predict academic, economic, social, psychological, and physical well-being." Our own experience over ten years and across our network of nine schools confirms that Habits of Success are one of the most important predictors of whether our students can succeed inside and outside of Summit. Teaching character, mentoring, and fostering self-direction are key parts of the Summit experience that parents and students consistently rate among their top reasons for choosing our schools. The stickiest issue around Habits of Success, both in the research community and at our schools, is how to measure and give feedback on them. One of our favorite adages around data is that not everything that can be counted counts, and not everything that counts can be counted. Our deep dive into the research, work with researchers and schools across the country, and our own pilots at Summit suggest that our schools are ripe to take on the difficult work of assessing Habits of Success.

How to Cultivate and Assess Habits of Success

It is very difficult to actively develop qualities that you cannot name; it is impossible to do so at scale. Thus, we need a common language for all of the dimensions that we consider Habits of Success.

We believe that a portfolio approach to assessing these Habits of Success is possible, and we have already laid much of the groundwork to collect such assessment information. A portfolio approach acknowledges the complexity of Habits of Success. These Habits are nuanced in a way that no one measure can tell the whole story. Because Habits grow over time, sometimes over years, a portfolio allows learners to document, reflect upon, and add to the story of their growth over time.

The tables below are designed to explain the specific Habit, why we value it, and the assessment we will use to capture data about that particular Habit.

summit public schools

Emotional Intelligence

What this is

Drawing largely from the CASEL framework, emotional intelligence includes the following:

Self-awareness and self-management
- Emotional awareness and management
- Self-advocacy

Social awareness and interpersonal skills
- Social awareness
- Cultural competence
- Effective communication
- Conflict management

Decision-making and leadership skills
- Decision-making
- Responsibility
- Community contribution

Why we value it

This is our starting place for all things Habits of Success; emotional intelligence is the most comprehensive framework that we believe really matters for students.

Research highlights:
- **Better academic performance**: higher grades and test scores are strongly correlated with these skills
- **Improved attitudes and behaviors**: greater motivation to learn, deeper commitment to school, increased time devoted to schoolwork, and better classroom behavior
- **Fewer negative behaviors**: decreased disruptive class behavior, noncompliance, aggression, delinquent acts, and disciplinary referrals
- **Reduced emotional distress**: fewer reports of student depression, anxiety, stress, and social withdrawal

Emotional intelligence matters intuitively and it matters empirically. We all want our children to be self-aware, generous, kind, culturally competent people. So while emotional intelligence matters because it leads to greater success in school and life, it also matters because it matters; it allows us to develop thoughtful, contributing members of society.

Assessment process

1. During the Community Time session immediately before Expeditions, students access Likert scale surveys (where 1 represents “Strongly Disagree” and 5 represents “Strongly Agree”) through the PLP Tool to assess themselves on nine dimensions of emotional intelligence. (See the emotional intelligence table above for the nine dimensions.) For each survey statement, students will provide a rationale for their rating.

2. During the ensuing Expeditions, mentors also assess their mentees along the same nine dimensions using a Likert scale. Others can also submit assessments for students of their choice; a student’s Project Teacher, Community Teacher, Tutor, Expeditions Teacher, School Leader, parents, and peers can all opt-in to providing assessments of the student on these emotional intelligence dimensions.

3. Following Expeditions, mentors and students utilize their first 1:1 check-ins for their “EI check-ins,” focusing their conversations on how calibrated they are in their separate assessments, and bringing to bear all of the optional assessments that were submitted.

Self-directed Learning Behaviors	
What this is Drawing largely from the work of David Yeager, Carol Dweck, and Chris Hulleman, self-directed learning (SDL) behaviors include the following: 1. Strategy-shifting 2. Appropriate help-seeking 3. Challenge-seeking 4. Persistence 5. Response to setbacks	**Why we value it** Self-directed learning is us giving students the confidence and ability to make choices for themselves. The behaviors are manifest in effective, efficient learning, and they represent the behaviors that truly support students in moving beyond college-prepared and on to college-ready. Our approach comes from holding students' hands for years and getting them to college, but seeing many of our students not be able to successfully navigate the world beyond our highly-scaffolded walls. We want to build their skills so that even though they experience many challenges and failures here, they are better prepared with the underlying skill set that will propel them to success in college and beyond.

Assessment process

We will quantitatively capture and analyze metrics that represent proxies for students' self-directed learning behaviors. We will then compare them to students' overall academic performance to search for trends. Such metrics that represent proxies include (but are not limited to):

- Length of time since a student has attempted a content assessment
- Number of unique resources accessed prior to a student's first content assessment
- Types of resources (diagnostic assessment, Checks for Understanding, standard resources) accessed prior to a student's first content assessment
- Number of unique resources accessed between content assessment attempts
- Students' usage patterns (click patterns) through a playlist
- Checkpoint completion (red/yellow/green, to be included as a new feature in the PLP Tool) and timeliness

We will also capture qualitative data around students' SDL behaviors. The Guest Teaching Team (when they are covering for other teachers) will provide qualitative evidence of observed SDL behaviors based on 1:1 check-ins and observations, and record this data to share with the relevant faculty.

Much of the quantitative assessment of students' SDL behaviors will be done via back-end data analysis of PLP Tool usage in partnership with SRI (Stanford Research Institute). This research will be ongoing and built on incredibly rich data sets because all Summit students, as well as our Basecamp partners across the country, use a single learning platform that promotes self-directed learning. Ultimately, this analysis will

attempt to identify effective and efficient patterns of learning within the PLP Tool. Based on these findings, we can administer targeted surveys and in-platform mindset interventions to those students who show a need. We can also utilize teacher-administered interventions in instances when in-platform interventions are not effective.

Self-directed Learning Cycle	
What this is We believe students develop their SDL behaviors by continually completing a 5-step cycle: 1. Set a goal 2. Make a plan to achieve that goal 3. Learn towards that goal 4. Show what you've learned 5. Reflect on the process	**Why we value it** The SDL cycle is essential as a method for bringing SDL into daily work and interactions. We want all students to have long-term goals about which they are passionate, and to become experts at creating plans to accomplish those goals while also taking the time to continually monitor whether they're on track or not, and how they should be adapting to most effectively and efficiently move towards their goals. Providing students the opportunity to continually display SDL behaviors through this 5-step cycle reaches these ends: • **Success beyond our walls**: holding students' hands to the door of college is inherently different than giving them the skills and habits to succeed in and beyond college • **Develop skills employers want**: these are the behaviors for which employers hire in the 21st century • **Empowerment**: knowing you have the skills to set and meet your goals is motivating, and a key component of our equity agenda
Assessment process We will quantitatively and qualitatively capture and analyze students' steps through the SDL cycle and subsequently compare them to students' overall academic performance to search for trends. More specifically, we will track and report the following measures: • Quality of student reflections • On-time work submission • Length of time since a student set a goal • Length of time since a student self-reported completing a goal • Average length of time for a student to accomplish a goal • Length of time since a student recorded an action item • Length of time since a student self-reported completing an action item • Average length of time for a student to complete an action item	

Changes to the interface of the PLP Tool will allow for more natural recording of students' goals, action items, and reflections, thus automating the flow of the check-in process between mentor and student (see images below).

With these measures recorded in the PLP Tool, they can then be put up against students' academic performance in order to analyze trends and determine the highest-leverage steps of the SDL Cycle. Once these trends have been identified and shared out, teachers can provide even more targeted coaching to mentees.

Learning Strategies

What this is

Learning strategies are the concrete tools students can use to organize their time and work. According to Camille Farrington et al., they "are processes and tactics one employs to aid in the cognitive work of thinking, remembering, or learning. Effective learning strategies allow students to leverage academic behaviors to maximize learning." Here is a sampling of some categories of learning strategies, along with high-leverage examples within each category that serve our students well:

Time management
- Calendaring, prioritizing

Note-taking
- Cornell Notes, graphic organizers, summarizing

Test-taking and studying
- Flashcards and mnemonic devices, eliminating wrong answers, overcoming anxiety

Reading comprehension
- Chunking, skimming, pre-reading

Why we value it

These strategies will serve students well at Summit and beyond for several reasons, including:
- **Increased self-efficacy**: helping students build an "I can do this" mindset
- **Tangible, teachable building blocks**: KWL, note-taking, chunking, graphic organizers - these learning strategies are flexible, bite-sized, and teachable
- **Part of a cycle of increased performance**: having strategies leads to persistence and engagement in the face of challenge, which lead to academic growth and achievement

Assessment process

We will pilot three assessments of students' learning strategies within PLT.
- For Middle School students, we will assess 1) time management (effective use of the SDL Cycle), 2) note-taking strategies, and 3) effective playlist usage.
- For High School students, we will assess 1) time management (effective use of the SDL Cycle), 2) note-taking strategies, and 3) study strategies.

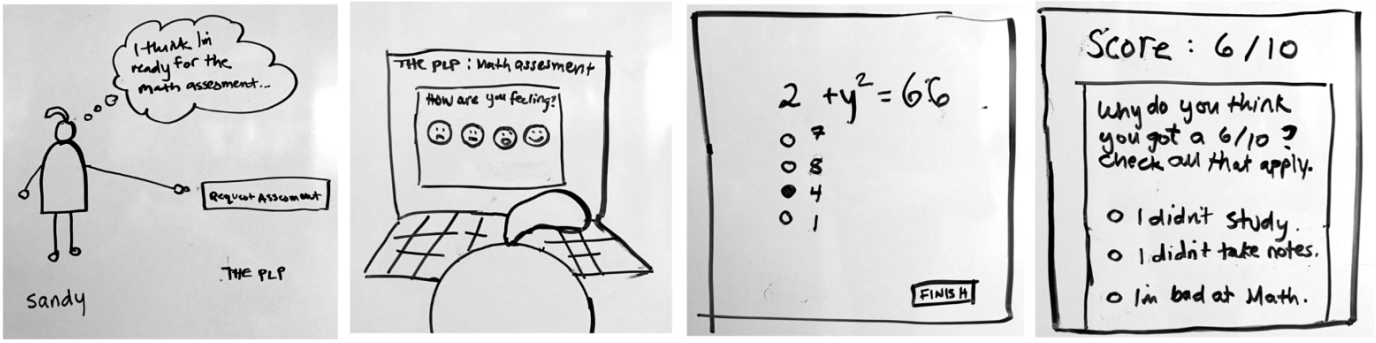
To earn a badge, students will need to show proficiency with a handful of steps along the way towards completing a particular badge. (A Trivial Pursuit puzzle piece is a helpful analogy here, if you're familiar with that.) For example, for a student who wants to earn

the note-taking strategies badge, along the way s/he will need to 1) show evidence of notes taken from a PPT resource, 2) show evidence of notes taken from a video-based resource, 3) show a variety of note-taking structures and ways of organizing notes, and 4) provide a written reflection that shows meta-cognition about what s/he learned through this process and when s/he would use different note-taking strategies. Upon passing all pieces of the assessment, students will receive a badge within the PLP Tool, identifying them as proficient with that particular learning strategy.

Academic Mindsets	
What this is Drawing largely from research conducted by Camille Farrington et al. in the 2012 Chicago Consortium for School Research (CCSR) report, academic mindsets include the following: **Academic belonging** - a feeling that I am a member of this community. I'm a student. I can be successful here. **Growth mindset** - My effort leads to my learning, success, and growth. **Self-efficacy** - I have the ability to make changes and to accomplish my goals. **Belief in the value of this work** - I have an understanding of and belief in the work I'm doing, why it's important, and how it will add value to my life.	**Why we value it** Productive academic mindsets are important for many reasons, including being an underlying value system that leads to success (or leads to self-defeat). They are proven, time and again, to relate to success in academic institutions and beyond; they are predictive of academic performance, both in terms of achievement and overall growth.
Assessment process We will push out "pop-up" questions through the PLP Tool at various stages of a student's learning process to assess students' sense of belonging, mindset, and value of what they're learning at specific moments. Such pop-ups will provide us with information that will allow us to explicitly compare students' responses during these pivotal learning moments to their academic performance in those moments, as well as determine appropriate points in students' learning processes for interventions. (See SDL Behaviors above for additional context.)	

Example use case: At the precise moment when a student requests a content assessment, a pop-up question asks, “How are you feeling right now?", along with a series of faces that express certain emotions. Following completion of the content assessment, another pop-up will ask, "Why do you think you received the score that you did?", along with with a list of choices like, “I’m good (or not good) at this subject”, “I studied (or did not study) for this assessment,” and the like. We will then package all of these data points to find correlations between students’ mindsets and their performance. Such analysis will also shine a light on pivotal moments in students’ learning processes when interventions will prove useful.

What a journey for a student experiencing “pop-ups” would look like:



Based on Sandy’s frowny face response and her selection of “I’m bad at Math,” an appropriate mindset intervention in this case would share how intelligence is malleable. Subsequently, we can then also track what happens to Sandy as a result of this intervention to gauge its effectiveness and continue to iterate appropriately.

School and Classroom Culture	
What this is We can measure our school and classroom culture through two surveys: YouthTruth and a homegrown survey. Aligned with Summit’s core characteristics of respect, responsibility, courage, compassion, curiosity, and integrity, these surveys offered twice per year serve as a balancing measure to check our system. The information they provide allows us to ensure that students have the opportunities and supports they need to demonstrate their Habits of Success.	**Why we value it** As Ferguson, Philips, Rowland, and Friedlander in the October 2015 Harvard University Achievement Gap Initiative show, “Student ratings of teaching quality were good predictors of value added test score gains…[they] correlated with classroom observation ratings by trained professionals… and were more reliable than [either VAT or professional observation ratings].” We want to hold ourselves accountable to creating learning environments that set students up for success on developing the habits and skills required for college and

	career readiness.

Assessment process

Administrations of the YouthTruth survey supplemented by a homegrown survey allow us to hear directly from students if we are effectively creating environments that allow them to become self-directed learners.

Research has repeatedly shown that students are adept at assessing the learning environment, particularly along the dimensions of:

- Does this environment support my learning?
- Do the adults in this place care about me?
- Do my teachers/mentors organize learning effectively?

We can use results from these surveys as a balancing measure of our assessment system to ensure that we provide school- and classroom-based cultures that promote self-directed learning.

A NEW WAVE OF SCHOOL INTEGRATION

Districts and Charters Pursuing Socioeconomic Diversity

Halley Potter and Kimberly Quick, with Elizabeth Davies | February 9, 2016

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A NEW WAVE OF SCHOOL INTEGRATION

Districts and Charters Pursuing Socioeconomic Diversity

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EXECUTIVE SUMMARY

Students in racially and socioeconomically integrated schools experience academic, cognitive, and social benefits that are not available to students in racially isolated, high-poverty environments. A large body of research going back five decades underscores the improved experiences that integrated schools provide. And yet, more than sixty years after *Brown v. Board of Education*, American public schools are still highly segregated by both race and class. In fact, by most measures of integration, our public schools are worse off, since they are now even more racially segregated than they were in the 1970s, and economic segregation in schools has risen dramatically over the past two decades.

Some schools and communities, however, are bucking the national trend and working to provide the benefits of diverse schools to more students.

In this report, we highlight the work that school districts and charter schools across the country are doing to promote socioeconomic and racial integration by considering socioeconomic factors in student assignment policies.

Key findings of this report include:

- *Our research has identified a total of 91 districts and charter networks across the country that use socioeconomic status as a factor in student assignment.* When The Century Foundation (TCF) first began supporting research on socioeconomic school integration in 1996, it could find only two districts that employed a conscious plan using socioeconomic factors to pursue integration. In 2007, when TCF began compiling a list of class-conscious districts, researchers identified roughly 40 districts

This brief can be found online at: http://apps.tcf.org/a-new-wave-of-school-integration.

that used student socioeconomic status in assignment procedures. Nine years later, TCF has found that figure has more than doubled, to 91, including 83 school districts and 8 charter schools or networks.

• *The 91 school districts and charter schools with socioeconomic integration policies enroll over 4 million students.* Roughly 8 percent of all public school students currently attend school districts or charter schools that use socioeconomic status as a factor in student assignment.

• *The school districts and charter networks identified as employing socioeconomic integration are located in 32 different states.* The states with the greatest number of districts and charters on the list are California, Florida, Iowa, New York, Minnesota, and North Carolina.

• *The majority of districts and charters on the list have racially and socioeconomically diverse enrollments.* All but 10 districts and charter schools on the list have no single racial or ethnic group comprising 70 percent or more of the student body. All but 17 of the districts and charters have rates of free or reduced price lunch eligibility that are less than 70 percent.

• *The majority of the integration strategies observed fall into five main categories: attendance zone boundaries, district-wide choice policies, magnet school admissions, charter school admissions, and transfer policies.* Some districts use a combination of methods. The most common strategy for promoting socioeconomic integration used by districts and charters on our list is redrawing school attendance boundaries, observed in 38 school districts; 25 districts include magnet schools that consider socioeconomic status in their admissions processes; 17 districts have transfer policies that consider socioeconomic status; 16 districts use some form of district-wide choice policies with explicit consideration of diversity in the design of these programs; and 10 charter networks and school districts have charter school lottery processes that consider socioeconomic status in order to promote diverse enrollment.

The push toward socioeconomic and racial integration is perhaps the most important challenge facing American public schools. Segregation impedes the ability of children to prepare for an increasingly diverse workforce; to function tolerantly and enthusiastically in a globalizing society; to lead, follow, and communicate with a wide variety of consumers, colleagues, and friends. The democratic principles of this nation are impossible to reach without universal access to a diverse, high quality, and engaging education.

The efforts of the districts and charters we identified provide hope in the continuing push for integration, demonstrating a variety of pathways for policymakers, education leaders, and community members to advance equity.

INTRODUCTION

More than sixty years after *Brown v. Board of Education*, American public schools are still highly segregated by both race and class. The signs of separate and unequal education are visible today in small and large ways. In Washington, D.C., a public school with 11 percent low-income students and one with 99 percent low-income students are located just a mile apart.[1] In New York City, a metropolis with 4 million white people, a Latina high school student may have to wait until college to meet her first white classmates.[2] In Pinellas County, one of the most affluent communities in Florida, a 2007 ordinance creating "neighborhood schools" dismantled decades

of desegregation efforts and created a pocket of high-poverty, racially isolated, under-resourced schools that have become known as "failure factories."[3] Sadly, the examples of this persistent problem go on.

As Americans consider the consequences of an education system that increasingly sorts students by race and class, it is also important to recognize the efforts of school districts and charter schools that are attempting to find another path.

In New York City, for example, parents and advocates at half a dozen elementary schools successfully fought for new admissions lottery procedures to promote diversity.[4] In Eden Prairie, Minnesota, a superintendent and a group of Somali refugee parents led the charge to create more equitable school boundaries.[5] And in Rhode Island, the mayor of an affluent suburban town spearheaded legislation to create regionally integrated charter schools that would draw students from rich suburbs and struggling cities together in the same classrooms.[6] These efforts, along with other examples from across the country, demonstrate that there are a variety of approaches available to policymakers, education leaders, and community members committed to advancing equity and integration.

In this report, we highlight the work that these ninety-one school districts and charter schools across the country are doing to promote socioeconomic and racial integration by considering socioeconomic factors in student assignment policies. The report begins with background on school segregation, and the remedying role that integration strategies based on socioeconomic status can play. Building on research that The Century Foundation (TCF) has released throughout the past decade, the report then presents our latest inventory of school districts and charter schools that are using socioeconomic integration strategies—outlining our methodology, examining the characteristics of the districts and charters included, and explaining the main types of integration methods encountered.

The efforts of these districts and charter schools range in size and strategy, but their stories all provide hope in the continuing push for integration and equity.

SCHOOL SEGREGATION TRENDS —AND THE DAMAGE CAUSED

By most measures, our public schools are more racially segregated now than they were in the 1970s.[7] Nationwide, more than one-third of all black and Latino students attend schools that are more than 90 percent non-white. For white students, these statistics are reversed: more than a third attend schools that are 90–100 percent white.[8]

Part of the reason for this surge in racial segregation is that American communities are increasingly stratified by social class. Research from TCF fellow Paul Jargowsky finds that while the percentage of American neighborhoods suffering from concentrated poverty dropped throughout the 1990s, this trend has reversed, having steadily risen since 2000.[9] As a result, America's public schools have also become more economically stratified. A 2014 study found that economic segregation between school districts rose roughly 20 percent from 1990 to 2010, while segregation between schools within a district also grew roughly 10 percent.[10]

Increasing socioeconomic and racial stratification of schools is also a result of changing education policies. As busing-based integration efforts largely ended in the early 1980s and courts began to severely limit districts' ability to use racial and ethnic identifiers to achieve demographic balance, most communities gradually returned to so-called neighborhood schools that tether school attendance zones to real estate. Today, many higher income families who have purchased high-property-value homes in certain districts feel as if their

child deserves to attend the school that they shopped for through the housing market, regardless of the implications for children whose families cannot access those spaces.

Socioeconomic and racial segregation have become related and often overlapping phenomena—a trend that the Civil Rights Project calls "double segregation."[11] Schools with mostly black and Latino students also tend to be overwhelmingly low-income.[12] At the kindergarten level, for example, a majority of black and Latino students attend schools with more than 75 percent non-white classmates and high average poverty rates. However, most white kindergartners, even those from poor families, attend schools with mostly middle-class, white classmates.[13] We see related patterns in housing: poor black and Hispanic families are more likely than poor white families to live in neighborhoods with the most extreme poverty.[14]

This stark segregation has profound negative implications for student outcomes. A large body of research going back five decades finds that students perform better academically in racially and socioeconomically integrated schools than in segregated ones. Students in integrated schools have been shown to have stronger test scores and increased college attendance rates compared to similar peers in more segregated schools.[15] In the words of one 2010 review of fifty-nine rigorous studies on the relationship between a school's socioeconomic and racial makeup and student outcomes in math, the social science evidence on the academic benefits of diverse schools is "consistent and unambiguous."[16] Furthermore, research shows that students in racially diverse schools have improved critical thinking skills and reduced prejudice, and they are more likely to live in integrated neighborhoods and hold jobs in integrated workplaces later in life. Students in racially segregated, high-poverty schools, however, face lower average academic achievement and miss out on these important civic benefits.

THE ROLE FOR SOCIOECONOMIC INTEGRATION STRATEGIES

The policy implication of the intertwined racial and economic segregation of public schools is that school integration strategies moving forward should address both racial and socioeconomic aspects of segregation. Historically, school integration efforts have focused on race, but for more than a decade, TCF has examined the role that socioeconomic considerations can play, not only in advancing integration but also in improving achievement.[18] This study of school districts and charter networks that use socioeconomic status as one of the levers for achieving school integration is TCF's most recent—and most ambitious—catalog of the progress being made in this area.

All of the districts and charters included in our study directly consider socioeconomic balance in at least some of their student assignment decisions. Some of the districts and charters studied also directly consider race. And many of the districts and charters have integration goals that include both racial and socioeconomic integration—even when socioeconomic status is the sole factor considered in student assignment.

Our reasons for focusing on socioeconomic integration strategies—whether used alone or in combination with racial integration approaches—are educational, legal, and practical. To begin with, socioeconomic integration is important in its own right for promoting educational achievement. In 1966, the federally commissioned Coleman Report found that the social composition of the student body was the most influential school factor for student achievement,[19] and dozens of studies since then have yielded similar findings.[20] As journalist Carl Chancellor and our colleague Richard Kahlenberg have noted, "African American children benefited from

desegregation . . . not because there was a benefit associated with being in classrooms with white students per se, but because white students, on average, came from more economically and educationally advantaged backgrounds."[21]

While the research on the important roles played by students' own socioeconomic status and by the socioeconomic mix in a school is clear, socioeconomically driven educational inequities continue to grow. In the fifty years since the Coleman Report, the economic achievement gap has grown, even as racial achievement gaps have narrowed. Today, the gap in average test scores between rich and poor students (those in the ninetieth and tenth percentiles by income, respectively) is nearly twice the size of the gap between white and black students.[22]

Efforts to address racial and socioeconomic segregation using income as a targeting metric also have the advantage of avoiding the recent legal threats to race-based integration plans. The U.S. Supreme Court's 2007 decision in *Parents Involved in Community Schools vs. Seattle School District No. 1* limited options for voluntarily considering race in K–12 school integration policies, absent legal desegregation orders. Based on joint guidance from the U.S. Department of Justice and the U.S. Department of Education in response to the ruling, school districts may voluntarily adopt race-based integration strategies, using either generalized or individual student data, under certain circumstances. However, school districts are required first to consider whether workable race-neutral approaches exist for achieving their integration goals.[23] In some cases, socioeconomic approaches will be sufficient to achieve racial integration benchmarks. Because of the intersections between race and class, socioeconomic integration at the K–12 level may also produce substantial racial integration, depending on the strength of the plan and the characteristics of the district.[24] Furthermore, if districts do turn to race-based strategies, they will typically be required to consider socioeconomic factors as well.[25]

Of course, desegregation battles continue to be fought in the courts, addressing racial segregation head-on. In 2015, for example, families in Minnesota's Twin Cities filed a new racial segregation suit against the state, twenty years after a similar suit was filed; a federal appeals court pushed for a stronger integration plan in a case dating back to 1965 to desegregate schools in Cleveland, Mississippi; and a new settlement was reached in Connecticut's major state desegregation case *Sheff v. O'Neill*, first filed in 1989.[26] But, as these recent examples show, the legal path to desegregation is a long one.

If we are to make meaningful strides toward increased school integration—by both race and social class—we need policymakers and communities to adopt voluntary integration plans alongside ongoing desegregation litigation. Thus, we believe that socioeconomic strategies will be important practical solutions for school districts or charter schools considering integration policies now or in the near future.

CREATING AN INVENTORY OF SOCIOECONOMIC INTEGRATION POLICIES

We identified ninety-one school districts and charter schools or networks that have implemented socioeconomic integration strategies. The school districts and charter schools employing these strategies educate roughly 4 million students in all. In this section, we begin by describing our methodology for collecting information on integration strategies used by districts and charters. We then offer an overall portrait of the number, size, location, and demographics of the different districts and charters on the list. Finally, we describe the major types of integration strategies

we identified and discuss the different measures of socioeconomic status being used.

Because there is no standard definition of what constitutes a socioeconomic integration policy, nor a centralized source for information on such policies, we describe in depth below our criteria for deciding which districts and charter schools to include, our sources for information on integration policies, and the legal limitations of our work.

Criteria for Inclusion

In constructing our list, we chose to focus on districts and charter networks that have established policies or practices accounting for some measure of socioeconomic status in student school assignment. While the intent behind these actions is to create demographically balanced school buildings, our research does not focus on whether balance was truly achieved. That question is an important topic for future research but beyond the scope of this report. Rather, this inventory acknowledges those districts who have taken meaningful steps, of whatever size, toward socioeconomic integration.

For the most part, the integration policies on our list are intradistrict in nature: controlled by a single school district or charter school network, and limited to the geographic and population boundaries of one district. Although intradistrict integration is the most popular mode of operation, many geographic regions find that the strongest barriers to integration by race and class are found between, rather than within, districts. Indeed, nationwide, more than 80 percent of racial segregation in public schools occurs between rather than within school districts.[27] In response to this challenge, some interdistrict integration plans do exist, in which students can cross district lines in order to balance school demography, and we have included these plans when they consider socioeconomic factors.[28] Although, by definition, interdistrict agreements involve several participating school districts, our list only includes the major urban district involved in an agreement, as a much smaller number of students in suburban districts are affected.

Furthermore, very few of the districts in our list apply socioeconomic integration methods to every school in the district. Efforts range in scope and size. We chose to include any districts that account for socioeconomic status in at least a portion of the school assignment and admissions procedures.

We also chose to include only districts or charters where integration strategies are currently affecting student assignment in some way—either through present policies or sufficiently recent rezoning efforts.[29] Districts or charters that have had socioeconomic integration plans in the past, but no longer adhere to these policies, are not included.

Sources and Verification of Information

As in previous TCF reports looking at districts that use socioeconomic class to integrate their schools—such as those released in 2007, 2009, and 2012[30]—we followed a similar process, constructing our lists from a combination of Internet and news searches, leads from integration advocates and other researchers, and past inquiries from districts seeking information to establish or sustain their own programs.

Other than the information TCF previously collected, there is very limited data on school districts that employ socioeconomic integration strategies—or racial integration strategies, for that matter. This gap is likely due to the difficulty in locating good sources. Information on court-ordered and voluntary integration plans—our list contains both—is not stored in a central location. Education journalists Rachel Cohen and Nikole Hannah-Jones both discuss the frustrating

process of determining which districts remain under federal desegregation orders. Hannah-Jones estimates that there are roughly 300 school districts with active desegregation orders, yet many school districts "do not know the status of their desegregation orders, have never read them, or erroneously believe that orders have ended." Hannah-Jones later explains that federal courts and regulatory agencies are sometimes as disorganized as the districts that they oversee, not always aware of the desegregation orders that remain on court dockets and not consistently monitoring or enforcing those districts that should legally remain under supervision.[31] Cohen attributes this not only to poor record keeping and "a lack of consistent court oversight," but to unclear legal understandings of what it means to be "unitary"—the designation currently given to districts once they meet certain desegregation criteria, which only arose in 1991, well after many districts had previously been released from federal desegregation orders without meeting that standard.[32]

Erica Frankenberg, an assistant professor of education policy at Pennsylvania State University, encountered similar challenges when attempting to construct a list of districts pursuing voluntary integration. Policies pertaining to integration efforts proved difficult to locate; many policies are not accessible online, and districts modify, augment, or rescind policies with some regularity.[33]

A large component of our own research process involved contacting each of the districts and charter networks for which we had evidence of socioeconomic integration. After asking for review of (and if necessary, corrections or additions to) our information, about 40 percent of the contacted districts responded to our inquiries; several were eager to speak with us in great detail about their policies and our research, while others were more conservative with the information they provided. The overwhelming majority of the school officials with whom we spoke were either superintendents, charter school directors, deputy superintendents, or enrollment managers. In cases where we did not receive a response from contacted officials, we included the districts or charters on the list if we were satisfied with evidence in the public record that they had implemented a socioeconomic integration strategy.

During the research process, our interactions with many district officials revealed that socioeconomic school integration is still often a fragile political issue, limiting administrators' desire to publicly discuss the existence and success of assignment plans or other programs that promote integration. The term *integration* itself—once a powerful call for social justice in our school system that was often met by an equally powerful backlash—continues to elicit strong emotions, ones that find their most powerful influence in school board politics. Because school board members are typically elected, they are understandably sensitive to the desires and concerns of voters who benefit from and promote segregated systems. This rather prevalent mindset likely explains why specific information about assignment plans that disrupt this pattern is often inaccessible online or in public record, and why many officials are hesitant about providing details of their plans. Furthermore, some district and charter leaders may believe it is in the best interest of their integration strategies to operate under the radar rather than attract attention that may subject them to renewed scrutiny. We believe, however, that we cannot make progress on integration as a nation without understanding the efforts currently underway and providing that information as a resource to others.

The determination of whether or not a district should be included on the list was made based on information gathered through direct contact with districts and publicly verifiable information. Because of this process

required such labor-intensive validation, it is possible that there are districts that consider class factors in student assignment that are not represented on our list. We welcome any new information from anyone reviewing this document.

SOCIOECONOMIC INTEGRATION POLICIES BY THE NUMBERS

When TCF first began supporting research on socioeconomic school integration in 1996, we found only two districts (La Crosse School District in Wisconsin and McKinney Independent School District in Texas) that employed a conscious plan using socioeconomic factors to pursue integration. In 2007, when TCF first began compiling a list of class conscious districts, researchers identified roughly 40 districts that used student socioeconomic status in assignment procedures. Nine years later, our research has identified a total of 91 districts and charter networks (see Figure 1) that employ such policies and procedures. The districts and charters range in size from recently founded Compass Charter School in Brooklyn, with just over 100 students, to Chicago Public Schools, with nearly 400,000 students. In total, 4,005,862 students currently attend school districts or charter schools that use socioeconomic status as an assignment factor—representing roughly 8 percent of total public school enrollment.[34] These students attend a total of 6,546 schools.

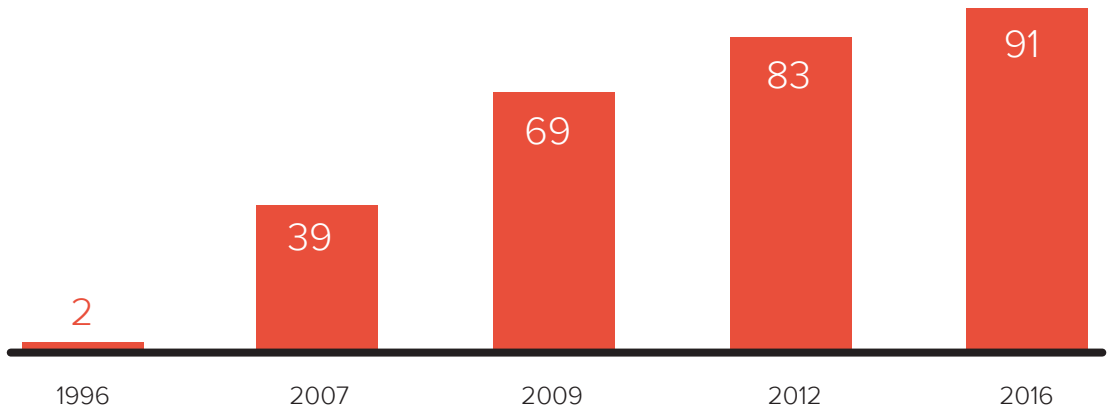
TCF's inventory of integration-seeking schools and districts has changed in a few notable ways since its inception. The most recent previous list, released in 2012, contained 80 districts and charters, which together enrolled 3,978,587 students. Our expanded list of 91 districts and charters enrolling over 4 million students demonstrates a steady rise in popularity in socioeconomic integration programs. Most of the school districts that adopted plans in 2013 or later were in larger, more metropolitan centers, such as Denver, Newark, Nashville, St. Paul, and the District of Columbia, among others. Notably, the large school district of Wake County, North Carolina returned to our list after progressives won a political fight and replaced an anti-integration school board with more sympathetic leadership; a new policy aimed at minimizing concentrations of poverty in Wake County schools was established in 2013.[35] At the same time, some districts, such as Seattle Public Schools, that formerly had socioeconomic integration plans dropped their efforts. After Seattle Public Schools' racial integration program was struck down by the U.S. Supreme Court in 2007, the district made some efforts to consider socioeconomic factors when drawing school assignment boundaries, but since abandoned those efforts in subsequent redistricting.[36] However, in general, the vector is pointing in the direction of progress, as we identified in our study more new districts and charters with socioeconomic integration plans than districts that have abandoned efforts.

Our list consists mostly of school districts; however, of the 91 entries in our list, 6 are individual charter schools or charter school networks. (Charter schools are public schools of choice operated by private entities rather than by traditional public school boards.) Because charters are allowed increased flexibility in curriculum and admissions procedures, and because charters typically accept students from multiple school zones or neighborhoods, they are well positioned—in theory—to facilitate student integration through weighted lottery systems and targeted outreach.

The school districts and charter networks employing socioeconomic integration that we identified are located in 32 different states (see Figure 2). The most represented states are located throughout the continental United States and maintain different political orientations. They are: California (12), Florida (10), Iowa (7), New York (6), Minnesota (6), and North Carolina (5).

FIGURE 1

NUMBER OF IDENTIFIED DISTRICTS AND CHARTERS WITH SOCIOECONOMIC INTEGRATION POLICIES, 1996–PRESENT



Source: Authors' research.

DEMOGRAPHICS OF DISTRICTS AND CHARTERS WITH SOCIOECONOMIC INTEGRATION PLANS

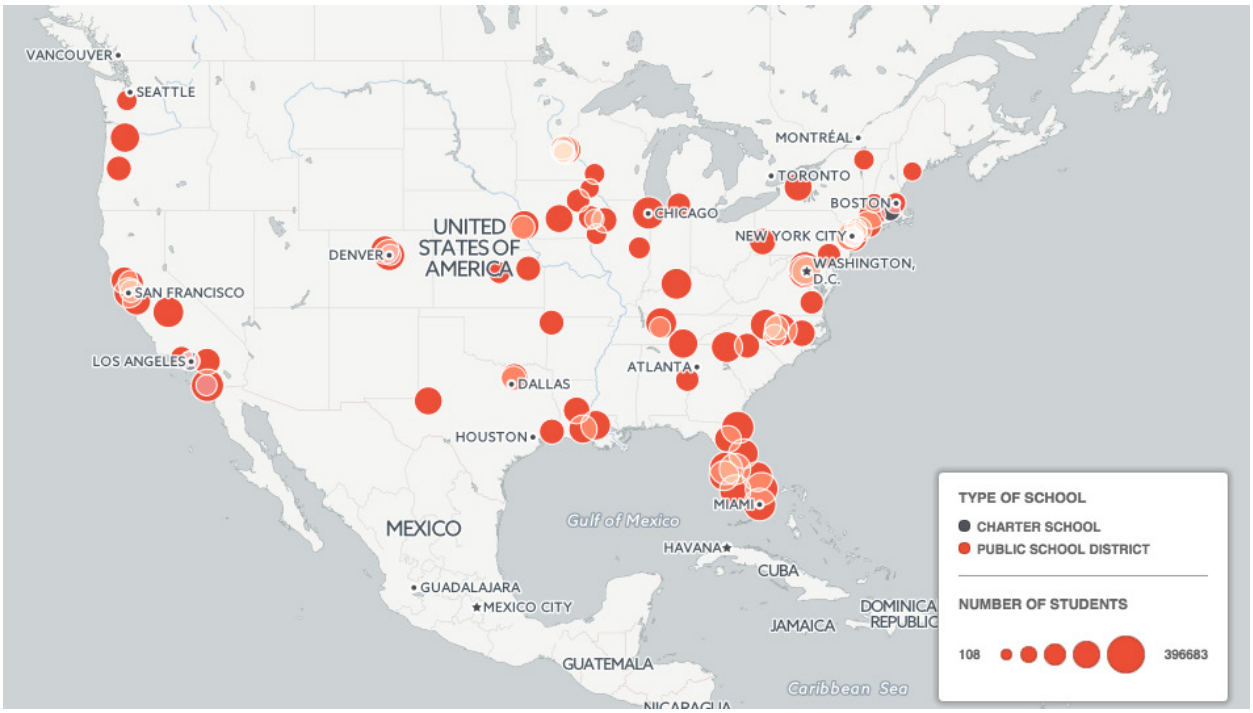
Our sample of students enrolled in districts and charters with integration programs is slightly more racially diverse than national averages. According to the National Center for Education Statistics, in the 2012–13 school year (the most recent year of data available), 51 percent of all students enrolled in public schools were non-Hispanic white, 16 percent black, 24 percent Hispanic, 5 percent Asian/Pacific Islander, 1 percent American Indian, and 3 percent two or more races or other.[37] Across the population of all students enrolled in districts and charters in our inventory, there was no clear racial majority: 32 percent of the students were white, 26 percent were black, 31 percent were Hispanic, 6 percent were Asian/Pacific Islander, less than 1 percent were American Indian, and about 5 percent were two or more races or other.

In most of the identified districts and charters, white students are the largest racial group in the school system. Thirty-three of the 91 districts and charters are majority white, and an additional 24 districts have student populations where whites are a plurality. Five districts are majority black, and black students comprise a plurality in another 8 districts. Hispanic children constitute a clear majority in 9 districts and a plurality in 10 others, while Asian students formed a plurality in an additional 2 school districts (see Figure 3).

Social scientists and education researchers sometimes use enrollment at or above 70 percent of a single racial or ethnic group as a threshold for measuring racial isolation. At this high level of racial homogeneity, research has shown that it becomes increasingly difficult for minority children to achieve a sense of belonging, and it is more challenging to encourage tolerance and cross-racial friendships among all students.[38] Based on this measure, 81 of the 91 districts and charter schools

FIGURE 2

LOCATIONS OF IDENTIFIED DISTRICTS AND CHARTERS WITH SOCIOECONOMIC INTEGRATION POLICIES



Source: Authors' research.
For an interactive version of this map visit http://apps.tcf.org/ how-diverse-schools-and-classrooms-benefit-all-students.

on our list are racially diverse, with no single racial or ethnic group comprising 70 percent or more of the student body. Of the 10 districts that have a racial supermajority of at least 70 percent enrollment, 8 are predominantly white, 1 is predominantly Hispanic, and 1 is predominantly black.

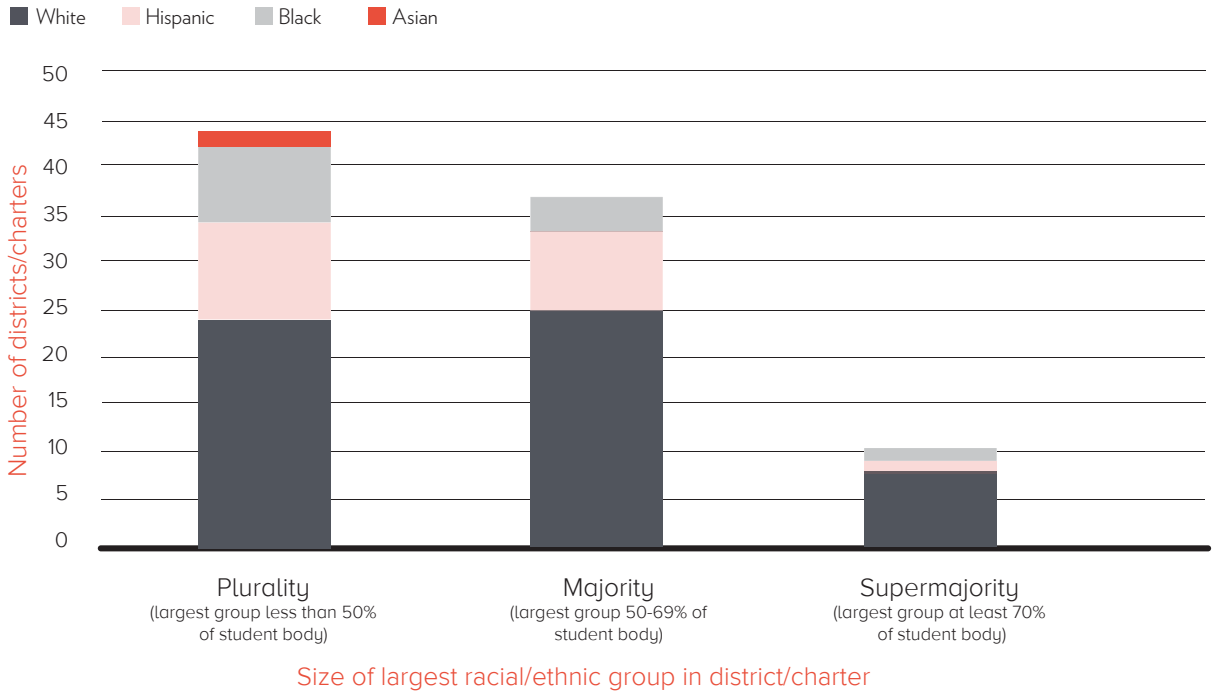
Poverty in schools remains a sizable problem, and the numbers of students eligible for the free or reduced price lunch program (the most commonly used indicator of low-income student status) continues to increase. Nationally, during the 2012–13 academic year, just over 50 percent of all public school students in the United States were eligible for the free or reduced price lunch program.[39] As a whole, the districts and charters on our list had slightly higher levels of economic disadvantage. Fifty-nine percent of all students enrolled in the districts and charter schools in our inventory were eligible for free or reduced price lunch. The median enrollment of eligible students was 54 percent, and two-thirds of the districts and charters fell within a range of 30–69 percent eligible. The rate of free or reduced price lunch eligibility is at least 70 percent in seventeen of the districts in our inventory (see Figure 4).

In summary, the majority of districts and charters on our list have racially and socioeconomically diverse enrollment (defined here as having less than 70 percent of students from a single racial or ethnic group and less than 70 percent of students who are low-income).

In the school districts with high levels of poverty or racial homogeneity, however, merely balancing enrollment will still leave schools with low levels of

FIGURE 3

LARGEST RACIAL/ETHNIC GROUP IN EACH IDENTIFIED DISTRICT AND CHARTER WITH A SOCIOECONOMIC INTEGRATION PLAN



Source: Authors' research.

racial diversity and high levels of poverty. Creating racially diverse, economically mixed schools in these districts typically requires using interdistrict enrollment strategies or focusing integration efforts on particular neighborhoods or schools with the greatest potential for reaching diversity goals. For example, Chicago Public Schools, where 86 percent of the students are eligible for free or reduced price lunch, limits its integration efforts to its selective high schools and magnet programs. Denver Public Schools, with 72 percent of students eligible for free or reduced-price lunch, targets its integration efforts on strategically placed geographic zones that include both low and high income neighborhoods. And Hartford Public Schools creates integrated school options for a student body that is 85 percent low-income through extensive interdistrict magnet school and transfer programs.

METHODS OF INTEGRATION

The districts that we identified as pursuing socioeconomic integration used a variety of different approaches, and some districts used a combination of methods. The majority of these strategies fell into five main categories: attendance zone boundaries, district-wide choice policies, magnet school admissions, charter school admissions, and transfer policies (see Figure 5). The first two categories—altering attendance zone boundaries or implementing district-wide choice policies—have the greatest potential to create integration in all or most schools across a district. However, the other three main approaches—factoring diversity into magnet school admissions, charter school admissions, or transfer policies—are also important steps in increasing integration and can be highly effective at the school level. Below we describe each of these socioeconomic integration methods.

FIGURE 4

PERCENTAGE OF STUDENTS ELIGIBLE FOR FREE AND REDUCED-PRICE LUNCH IN DISTRICTS AND CHARTERS WITH SOCIOECONOMIC INTEGRATION POLICIES

Source: Authors' research.

Attendance Zone Boundaries

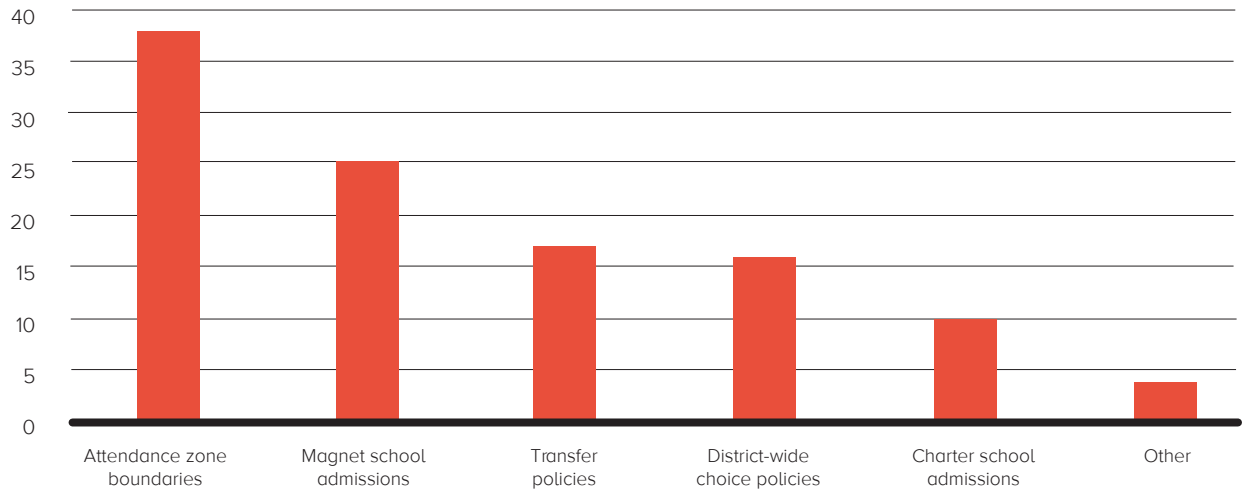
The most common strategy for promoting socioeconomic integration used by districts and charters on our list was redrawing school attendance boundaries. We identified thirty-eight school districts that have redrawn attendance boundaries with socioeconomic balance among schools as a factor. The oldest example that we found of a school district seeking socioeconomic integration is La Crosse School District in Wisconsin, which in 1979 moved the boundary line for its two high schools to increase socioeconomic balance.[40]

The reason that redrawing attendance zones is the most common method of socioeconomic integration on our list is likely because it most easily fits with existing enrollment protocols. School enrollment based on assigned zones is the reality in most school districts across the country. Nationwide, 82 percent of all children in public schools attend their assigned school (compared to just 18 percent attending a district, magnet, or charter schools as a result of choice).[41] In addition, one of the benefits of this approach to integration is that it has the potential to affect all schools in the district—particularly if a school board adopts a resolution to make socioeconomic balance a consideration in all redistricting decisions moving forward.

However, there are also limitations and challenges to a boundary-based integration strategy. School boundaries usually need to be readjusted regularly as populations and demographics shift in response to housing patterns. School boundary decisions are also almost always politically contentious. Families frequently buy or rent homes with particular schools in mind and may object to changes in school assignment that they view as forced. The rezoning process can be

FIGURE 5

NUMBER OF IDENTIFIED DISTRICTS AND CHARTERS USING SELECTED SOCIOECONOMIC INTEGRATION STRATEGIES



Source: Authors' research.

challenging even when integration is not a consideration. Bringing questions about socioeconomic and racial integration into the conversation can unleash a host of parent concerns and anxieties.

In Eden Prairie, Minnesota, for example, the decision to redraw elementary school boundaries in order to create more racially and socioeconomically integrated schools in 2010 led to community backlash that culminated with the ousting of the superintendent who had led those efforts.[42] But five years later, those boundaries remain in effect, and students are more evenly distributed by income.[43] In 2010, the district's neighborhood elementary schools ranged from 9.5 percent to 42.1 percent of students eligible for free and reduced-price lunch—a gap of 32.6 percentage points. As of 2015, this gap had shrunk by more than a third, with all neighborhood elementary schools falling between 20 percent and 40 percent of students eligible for free and reduced-price lunch.[44]

In other districts, encouraging socioeconomic integration through boundary reassignments has been a smoother process. The school board of McKinney Independent School District (MISD) outside Dallas, Texas, passed a policy back in 1995 that socioeconomic diversity should be a consideration in school zoning decisions, particularly at the middle and high school level. Twenty years and multiple rezoning processes later, the schools are relatively economically balanced at the middle and high school level. The rezoning process is never easy, but McKinney has kept its commitment to making socioeconomic integration part of these conversations. In a statement released in response to a recent high school rezoning process, the district admitted that not everyone would be satisfied with the outcome, but maintained a commitment to socioeconomic balance. "Changing schools is an emotional issue for all involved and is an inevitable issue to be addressed frequently in a growing school district

like MISD," the press release stated. "Our guiding principle is to provide the best and most equitable opportunities for all children."[45]

District-wide Choice Policies

The other main approach for pursuing integration across all or many schools in a district, rather than redrawing attendance boundaries, is to shift enrollment to a choice-based policy, with explicit consideration of diversity in the design of the program. We identified sixteen school districts that use some form of district-wide choice policies that consider diversity.

Considering diversity a goal when designing a controlled choice program is important, since research shows that choice alone is usually not enough to produce integration, and in fact can actually increase school segregation.[46] Districts with choice programs that effectively promote integration typically have clear diversity goals for student enrollment; devote resources to student recruitment and family engagement, particularly targeting low-income families and others who may have less access to information about schools through their social networks; monitor diversity during the school application phase and adjust recruitment strategies as needed; consider socioeconomic factors in the algorithm for assigning students to schools; and/or invest in new programming to attract students of different backgrounds to apply to schools that are currently less diverse.

In the most robust examples of these equitable choice programs, districts shift entirely away from student assignment based on geographic zones to a system in which all families rank their choices of schools from across the district (or within a certain geographic area, in larger districts). Schools implement magnet or themed programs, giving families a reason to select schools outside of their neighborhoods based on pedagogy or course offerings. Some families might still place the greatest priority on a school within walking distance, whereas others might be happy to travel for a STEM or Montessori program, for example. Students are then assigned to schools based on their preferences and an algorithm that ensures a relatively even distribution of students by socioeconomic status across all schools. Algorithms may weigh factors such as family income and parent educational attainment on an individual student basis or through geographic proxies based on a student's neighborhood or home address.

This enrollment model, often known as "controlled choice," was first implemented in Cambridge, Massachusetts, as a tool for racial integration in 1981, and has since been used to promote both racial and socioeconomic integration goals.[47] Districts with controlled choice policies that weigh socioeconomic factors include Cambridge Public School District in Massachusetts; Champaign Unit 4 Schools in Illinois; St. Lucie Public School District, Lee County Public Schools, and Manatee County School District in Florida; Berkeley Unified School District in California; Montclair Public Schools in New Jersey; Rochester City School District and White Plains Public Schools in New York; and Jefferson County Public Schools in Kentucky.

Controlled choice has the advantage of being able to promote integration in schools across a district, with an enrollment strategy that remains effective even as demographics in a district shift. And giving families choice can help to create support for the program. In Champaign Unit 4 Schools in Illinois, for example, 80–90 percent of families typically receive their first choice school during the kindergarten enrollment process.[48] Perhaps the biggest objection to a controlled choice approach to integration is that, under its purest form, families no longer have a guarantee that their child will be admitted to a specific school—and they cannot plan for that when choosing a home. But on the flipside,

controlled choice allows students to stay in their school even if families move elsewhere in the district. Sibling preferences can also enhance the predictability of the student assignment process for families with multiple children. And the loss of this predictability comes in exchange for an increase in choice. Parents may not know when their child is four years old what school she will attend the following year, but they will have the flexibility to rank schools that they think will be best for her learning style and their family preferences—whether that be an arts elementary school a bus ride away or a dual language school across the street.

We also identified district-wide choice plans that fell short of the clear diversity goals and algorithms of controlled choice but which nonetheless have notable provisions to promote integration. San José Unified School District in California; Newark Public Schools in New Jersey; Eugene School District in Oregon; San Francisco Unified School District in California; St. Paul Public School District in Minnesota; and Denver Public Schools in Colorado all have options for choice-based enrollment across the district, sometimes in combination with neighborhood assignment, which include provisions to promote diversity in at least some schools.

Magnet School Admissions

A number of school districts also contain magnet schools that specifically consider socioeconomic diversity in admissions. Today, the term *magnet school* is used to describe a wide variety of schools with particular themes and choice-based admissions, drawing students from across a geographic area. Some magnet schools have selective admissions based on academic criteria or auditions, with the mission of bringing together the best and brightest students and no clear goals around diversity. But many more magnet schools are part of a different tradition based on desegregation rather than selectivity.

Starting in the late 1960s, school districts began creating magnet schools as tools for choice-based desegregation.[49] Under this integrated magnet school model, new schools are created—or old schools are converted—to have distinct pedagogical or curricular themes designed to attract families to apply. These magnet schools strive to reach specific desegregation goals. And by picking themes that appeal to a broad range of families, enrolling students from across a district or multiple districts, and factoring diversity into the admissions lottery, magnet schools can enroll socioeconomically and racially integrated student bodies in school districts with high levels of segregation in neighborhood schools. Research on magnet schools with successful integration plans has shown strong academic outcomes for the students who win the chance in an admissions lottery to attend a socioeconomically and racially diverse magnet school.[50]

Because the term *magnet school* is now used to describe a wide variety of schools with particular themes and choice-based admissions, some of which may play no desegregating function, we have only considered those examples of magnet schools that explicitly consider socioeconomic diversity in admissions as examples of clear integration strategies to include in this list. We also did not include magnet schools that have diversity as part of their mission statement or that consider diversity in recruitment unless they also had clear admissions processes to support diverse enrollment. Research suggests that magnet models without admissions processes that prioritize diversity frequently do not create substantial increases in a school's socioeconomic diversity.[51]

We identified twenty-five districts with magnet schools that consider socioeconomic status in their admissions processes. Some of these districts, such as Boulder Valley School District in Colorado, have just one magnet school with an admissions policy that considers

socioeconomic status, whereas other districts, such as Duval County Public Schools in Florida, contain dozens of magnet schools with diversity-conscious admissions. In most cases, these magnet schools operate within a district, but some of the districts, such as Hartford Public Schools and New Haven Public Schools in Connecticut, operate interdistrict magnet schools enrolling students from urban and suburban districts.

Charter School Admissions

Charter schools—which are publicly funded but privately operated—typically have the freedom, like magnet schools, to adopt different educational approaches and enroll students from a geographic area larger than a typical neighborhood attendance zone. For these reasons, charter schools can also promote integration, if designed to do so. In *A Smarter Charter: Finding What Works for Charter Schools and Public Education*, Richard D. Kahlenberg and Halley Potter argue that the charter sector as a whole has had a segregating effect on public schools, but also highlight specific examples of charter schools that have successfully created integrated enrollment through clear diversity goals, recruitment strategies, and admissions processes.[52]

As with magnet schools, we cataloged only those charter schools that directly consider socioeconomic diversity in admissions. We identified six charter networks and two individual charter schools with lottery processes that consider socioeconomic status in order to promote diverse enrollment. We also identified two school districts—Santa Rosa City Schools in California and District of Columbia Public Schools in Washington, D.C.—that adopted centralized policies for charter school admissions to reserve seats for low-income or at-risk students in charter schools that otherwise had below-average enrollment of these groups.

It is worth noting that—again, as with magnet schools—some charter schools were left off the list because they do not directly consider diversity in admissions. These schools may still have integration as an intentional part of their mission, and may successfully enroll socioeconomically and racially diverse student bodies, using targeted recruitment, strategic location, and intentional program design to achieve integrated enrollment. In some cases, charter schools have to pursue these methods for the simple fact that they are not legally allowed to use a weighted lottery.[53] While these charter schools are not included in this list, examples are profiled in *A Smarter Charter*, and more than two dozen charter schools and networks are currently members of the National Coalition of Diverse Charter Schools, a grassroots group formed in 2014.[54]

Transfer Policies

School districts with transfer policies that consider socioeconomic diversity generally give preference to school transfer requests that would increase the socioeconomic diversity of affected schools, or give a priority to economically disadvantaged students when reviewing transfer requests. As with magnet- and charter-based strategies, an integration approach based on transfer policies is not likely to promote integration in all schools across a district. However, policies to encourage integration goals through school transfers can provide an important check on open enrollment policies.

As of 2007, nearly every state had passed an open enrollment law allowing students to apply for interdistrict transfer; that is, between school districts. As of 2011, thirty-two states also had passed intradistrict transfer laws, allowing families to transfer to other schools within a district. And since 2001, all districts nationwide have been required under the federal No Child Left Behind Act to provide intradistrict transfer options for Title I students in failing schools.
Research shows, however, that transfer programs that do not explicitly pursue socioeconomic diversity actually wind up making matters worse. The majority

of interdistrict transfers through open enrollment laws serve to increase school segregation, on average, because the students using this option tend to be relatively more advantaged students transferring out of low-performing districts.[55] Research on intradistrict transfers similarly finds that more-advantaged students are more likely to participate. [56]

We identified seventeen districts with transfer policies that consider socioeconomic status. Four of these districts have policies designed to increase socioeconomic integration in both inter- and intradistrict transfers, eight have policies applying to intradistrict transfers only, and five have policies addressing interdistrict transfers only.

MEASURES OF SOCIOECONOMIC STATUS

When seeking to manage enrollment, one of the most important questions schools face is how to measure socioeconomic status. Districts and charters striving to create greater socioeconomic integration have to decide whether to look at individual student information, or rely on neighborhood-level data. They then must figure out whether they can simply use data that is already collected and available to them, or how they can collect additional information, if needed.

The majority of the districts and charter schools we identified used data on eligibility for the federal free and reduced-price lunch program—whether at the student, school, or neighborhood level—as the only or main marker for socioeconomic status. This is not surprising, as free and reduced-price lunch eligibility is the main measure of socioeconomic status used throughout education policy and research. Although a small number of districts have faced legal questions about the use of free and reduced-price lunch information in recent years, considering students' eligibility for the federal school lunch program remains a tried and true method of factoring socioeconomic status into student assignment (see Box 1).

However, there are important and increasing limitations to using free and reduced-price lunch as a socioeconomic marker. Eligibility for the federal school lunch program is determined based solely on family income. Children from families earning up to 130 percent of the poverty line are eligible for free lunch, and those earning 130–185 percent of the federal poverty line are eligible for reduced-price lunch. Thus, free and reduced-price lunch eligibility is a blunt measure based on one factor only (family income), and it divides students into just two or three categories, depending on whether free versus reduced-price eligibility is disaggregated. In addition, the data is self-reported, and therefore not always accurate. One study found that 15 percent of school lunch applicants received benefits greater than their eligibility, while 7.5 percent received less than their actual eligibility. Research also shows that eligibility for high school students is typically underreported, due to the social stigma that develops around being perceived by peers as poor. Finally, individual students' free and reduced-price lunch eligibility is becoming less available as more schools use the "Community Eligibility Provision" for providing free meals. In 2010, Congress approved a new process to allow whole schools or entire districts to qualify for free meals for all students by meeting a certain number of other criteria based on the percentage of students participating in other public assistance programs. In schools or districts using this option, families no longer have to fill out forms for the federal lunch program, meaning that eligibility for the program is no longer an available marker of individual students' socioeconomic status or a useful measure of school poverty levels (since schools that might have before had 70 percent of students eligible will now show up as 100 percent eligible).

For these reasons, the other measures of socioeconomic status that districts and charters have used are worth paying close attention to. Some districts, such as Chicago Public Schools, look at census data for neighborhoods, measuring factors such as educational attainment, household income, percentage of owner-occupied homes, percentage of single-parent homes, and percentage of households where a language besides English is spoken. A student's neighborhood then serves as a proxy for measuring her socioeconomic status. Other districts and charters—such as District of Columbia Public Schools in Washington, D.C.; Guilford County Public School District in North Carolina; and Community Roots Charter School in New York—look at students' eligibility for other public assistance programs including homeless or migrant programs, foster care, TANF and SNAP, public housing, and Head Start. And several interdistrict transfer, magnet, and charter school programs in areas with high levels of segregation among school districts use a student's home district (suburban versus urban) as a proxy for socioeconomic status.

Some programs also look at student achievement when considering transfers, seeking to create a mix of student achievement levels within a school, or to give students in lower-achieving schools chances to move to higher-achieving schools. While not technically a measure of socioeconomic status, we have included these achievement-based measures in our inventory, since they target one of the key levers through which socioeconomic integration promotes student achievement—by encouraging positive peer effects when students from different socioeconomic backgrounds and different achievement levels learn side by side.

BOX 1

THE LEGAL STATUS OF CONSIDERING FREE AND REDUCED-PRICE LUNCH DATA IN STUDENT ASSIGNMENT

As our research shows, there is a long history of school districts using students' free and reduced-price lunch eligibility as a marker of socioeconomic status. Nevertheless, recent federal guidance from the U.S. Department of Agriculture regarding privacy of student data has been interpreted by some as an instruction to avoid use of individual free and reduced-price lunch eligibility in student assignment. Along with our colleague Richard Kahlenberg, we believe this is a misreading of federal law.* There are numerous examples of districts and charters that have been considering aggregate or individual eligibility for years, protecting students' privacy by ensuring that student data remains confidential. Furthermore, the U.S. Department of Education Office for Civil Rights has confirmed that it is acceptable to use free and reduced-price lunch data in student assignment as long as children cannot be identified.** We encourage any policymakers or education leaders with questions about this issue to contact us if they are interested in being put in touch with legal experts who have dealt with this issue.

*See Richard Kahlenberg, "Why Is Obama's Agriculture Department Blocking School Integration?" Answer Sheet Blog, Washington Post, February 7, 2013, https://www.washingtonpost.com/news/answer-sheet/wp/2013/02/07/why-is-obamas-agriculture-department-blocking-school-integration/.

** Alice B. Wender, U.S. Department of Education Office for Civil Rights, letter to Neal A. Ramee, attorney for Wake County School Board, May 21, 2013.

LIST OF SCHOOL DISTRICTS AND CHARTER SCHOOLS WITH INTEGRATION POLICIES THAT CONSIDER SOCIOECONOMIC STATUS IN STUDENT ASSIGNMENT

BASIC INFORMATION			METHODS OF INTEGRATION						STUDENT DEMOGRAPHICS		
Name	District or charter?	State	Attendance zone boundaries	District-wide choice policies	Magnet school admissions	Charter school admissions	Transfer policies	Other	Number of students	Percent eligible for free and re-duced-price lunch	Largest racial/ethnic group*
Alachua County Public Schools	D	FL	X						27,826	49%	plurality white
Allen Independent School District	D	TX	X						19,894	16%	majority white
Amherst-Pelham Regional Public Schools	D	MA	X						1,533	27%	majority white
Beaumont Independent School District	D	TX					X		19,850	74%	majority black
Berkeley Unified School District	D	CA		X					9,780	39%	plurality white
Blackstone Valley Prep Mayoral Academy	C	RI				X			767	64%	plurality Hispanic
Bloomington Public Schools	D	MN	X						10,501	40%	majority white
Boulder Valley School District	D	CO			X				30,041	19%	super-majority white
Brandywine Public School District	D	DE	X						10,851	44%	majority white
Brooklyn Prospect Charter School	C	NY				X			422	42%	plurality white
Brunswick School Department	D	ME	X						2,320	32%	super-majority white
Burlington Community School District	D	IA	X						4,827	56%	super-majority white
Burlington School District	D	VT	X		X				3,992	40%	majority white
Burnsville-Eagan-Savage Independent School District 191	D	MN			X				9,752	43%	majority white
Cambridge Public School District	D	MA		X					6,222	45%	plurality white
Champaign Community Unit School District Number 4	D	IL		X					9,656	57%	plurality white
Chapel Hill-Carrboro City Schools	D	NC	X						12,329	25%	majority white
Chicago Public Schools	D	IL			X			X	396,683	86%	plurality Hispanic
Citizens of the World Charter Schools	C	CA				X			737	31%	plurality white

BASIC INFORMATION			METHODS OF INTEGRATION						STUDENT DEMOGRAPHICS		
Name	District or charter?	State	Attendance zone boundaries	District-wide choice policies	Magnet school admissions	Charter school admissions	Transfer policies	Other	Number of students	Percent eligible for free and reduced-price	Largest racial/ ethnic group*
Community Roots Charter School	C	NY				X			352	29%	plurality black
Compass Charter School	C	NY				X			108	28%	plurality white
Davenport Community Schools	D	IA					X		16,766	55%	majority white
Denver Public Schools	D	CO		X				X	90,150	72%	majority Hispanic
Des Moines Public Schools	D	IA					X		34,092	69%	plurality white
District of Columbia Public Schools	D	DC			X	X	X	X	44,179	53%	majority black
DSST Public Schools	C	CO				X			3,366	66%	plurality Hispanic
Duval County Public School District	D	FL			X				125,686	49%	plurality black
East Baton Rouge Parish School System	D	LA			X				42,982	79%	super-majority black
Ector County Independent School District	D	TX	X				X		29,649	51%	super-majority Hispanic
Eden Prairie Schools	D	MN	X						8,921	20%	majority white
Eugene School District 4J	D	OR		X					17,029	36%	super-majority white
Fairfax County Public Schools	D	VA	X						180,616	26%	plurality white
Franklin Special School District	D	TN	X						3,867	39%	super-majority white
Fresno Unified School District	D	CA			X				73,789	89%	majority Hispanic
Greenville County Schools	D	SC	X						73,649	49%	majority white
Guilford County Public School District	D	NC	X						74,161	57%	plurality black
Hamilton County Public Schools	D	TN			X				43,707	58%	majority white
Hartford Public Schools	D	CT			X		X		21,545	85%	majority Hispanic
High Tech High	C	CA				X			4,698	40%	plurality Hispanic
Hillsborough County Public Schools	D	FL	X						200,466	57%	plurality white
Iowa City Community School District	D	IA	X						13,019	29%	majority white

BASIC INFORMATION			METHODS OF INTEGRATION						STUDENT DEMOGRAPHICS		
Name	District or charter?	State	Attendance zone boundaries	District-wide choice policies	Magnet school admissions	Charter school admissions	Transfer policies	Other	Number of students	Percent eligible for free and reduced-price	Largest racial/ ethnic group*
Jefferson County Public Schools	D	KY		X					100,316	59%	majority white
Kalamazoo Public Schools	D	MI	X						12,455	71%	plurality black
La Crosse School District	D	WI	X						6,737	47%	super-majority white
Lafayette Parish School System	D	LA					X		30,723	60%	plurality white
Larchmont Charter School	C	CA				X			1,362	39%	plurality white
Lee County Public Schools	D	FL		X					85,765	65%	plurality white
Lee County Schools	D	NC	X						9,994	65%	plurality white
Manatee County School District	D	FL		X					46,165	55%	majority white
McKinney Independent School District	D	TX	X						24,443	29%	majority white
Metropolitan Nashville Public Schools	D	TN	X					X	82,806	73%	plurality black
Miami-Dade Public School District	D	FL			X				354,262	73%	majority Hispanic
Minneapolis Public Schools	D	MN			X		X		35,842	64%	plurality white
Montclair Public Schools	D	NJ		X					6,674	16%	majority white
Montgomery County Public School District	D	MD	X						148,780	33%	plurality white
Moorpark Unified School District	D	CA	X						6,984	33%	plurality white
Napa Valley Unified School District	D	CA	X						18,326	43%	majority Hispanic
New Haven Public Schools	D	CT			X				21,150	78%	plurality black
New York City Community School Districts 1, 6, 13, 15, and 17	D	NY			X				112,848	70%	plurality Hispanic
Newark Public Schools	D	NJ		X					32,098	81%	plurality black
Omaha Public School District	D	NE			X		X		50,559	72%	plurality white
Palm Beach County School District	D	FL	X				X		179,514	54%	plurality white
Papillion-La Vista School District	D	NE	X						10,737	22%	super-majority white
Pitt County School District	D	NC	X						23,791	58%	plurality black

BASIC INFORMATION			METHODS OF INTEGRATION						STUDENT DEMOGRAPHICS		
Name	District or charter?	State	Attendance zone boundaries	District-wide choice policies	Magnet school admissions	Charter school admissions	Transfer policies	Other	Number of students	Percent eligible for free and reduced-price	Largest racial/ ethnic group*
Pittsburgh Public Schools	D	PA			X				26,292	68%	majority black
Polk County Public Schools	D	FL			X				96,937	67%	plurality white
Portland Public Schools	D	OR			X		X		46,748	41%	majority white
Postville Community Schools	D	IA					X		599	73%	plurality Hispanic
Rapides Parish Schools	D	LA			X				24,065	68%	majority white
Redlands Unified School District	D	CA	X						21,379	53%	plurality Hispanic
Robbinsdale Area Schools	D	MN			X				12,409	49%	plurality white
Rochester City School District	D	NY		X					30,145	80%	majority black
Rock Hill Public School District of York County	D	SC	X						17,524	55%	majority white
Salina Public Schools	D	KS	X						7,305	59%	majority white
San Diego Unified School District	D	CA			X		X		130,271	64%	plurality Hispanic
San Francisco Unified School District	D	CA		X					56,970	57%	plurality Asian
San José Unified School District	D	CA		X	X		X		33,184	44%	majority Hispanic
Santa Rosa City Schools	D	CA				X			25,878	40%	super-majority white
Seminole County Public Schools	D	FL	X				X		64,463	44%	majority white
Springdale Public School District	D	AR	X						20,741	67%	plurality Hispanic
St. Lucie County Public School District	D	FL		X					39,641	61%	plurality white
St. Paul Public School District	D	MN		X					38,419	72%	plurality Asian
Stamford Public Schools	D	CT	X		X				15,758	49%	plurality Hispanic
Topeka Public School District	D	KS			X				14,019	75%	plurality white
Troup County School District	D	GA	X						12,709	64%	majority white
University Place School District	D	WA	X						5,670	38%	majority white
Wake County Public School System	D	NC	X		X				150,956	34%	plurality white

BASIC INFORMATION			METHODS OF INTEGRATION						STUDENT DEMOGRAPHICS		
Name	District or charter?	State	Attendance zone boundaries	District-wide choice policies	Magnet school admissions	Charter school admissions	Transfer policies	Other	Number of students	Percent eligible for free and reduced-price	Largest racial/ ethnic group*
Waterloo Community Schools	D	IA					X		11,282	64%	majority white
West Liberty Community School District	D	IA					X		1,286	56%	majority Hispanic
White Plains Public Schools	D	NY		X					7,077	53%	majority Hispanic
Williamsburg-James County Public Schools	D	VA	X						11,024	30%	majority white
Total: 91 districts and charter schools									**4,005,862 students**		

*Plurality = largest group less than 50 percent of student body. Majority = largest group 50–69 percent of student body. Supermajority = largest group at least 70 percent of student body.
For additional data and information on sources, visit http://bit.ly/1QKLuWC.

CONCLUSION

Public education serves a dual purpose: to academically prepare our children with the knowledge and skills to contribute to the workforce, and to provide children with the opportunity to develop socially and emotionally in ways that contribute to social cohesion. Diversity of both income and race is essential in order for public education to fulfill either of these goals. Segregation impedes the ability of children to prepare for an increasingly diverse workforce; to function tolerantly and enthusiastically in a globalizing society; to lead, follow, and communicate with a wide variety of consumers, colleagues, and friends. The democratic principles of this nation are impossible to reach without universal access to a diverse, high quality, and engaging education. More concretely, we know that integrated schools boost individual student achievement, as well as attract and retain stronger teachers.[62] School integration—more than increased funding, leadership changes, and stringent teacher evaluations—is the most effective known educational innovation.

The list presented in this report represents districts and charters that maintain policies that have the potential to maximize academic achievement and social competency among their students. Far from a "one-size-fits-all" prescription, our research shows that the approaches schools take toward integration—and their results—can vary according to the strength of the program design, the rigor of socioeconomic measurements, and the preexisting demographics of the district.

As more researchers begin to recognize the necessity of school integration, we will likely discover more information about which types of integration methods pair best with districts that present different demographic profiles. And we still require more information before deciding which of the districts on our list should be considered success stories: in many cases, the districts' efforts are only the beginning of what is needed to foster integration. Many of the districts on our list are continuing to tweak their own plans in order to achieve their desired results, and thus their current levels of socioeconomic integration may not fit with their ideal goal.

Moving forward, we need more research to address remaining questions: Which districts are successful,

and in what ways do their sizes, population densities, and levels of homogeneity influence their methods of integration? Will the design of one plan have similarly positive results in a district with a different population? How have districts struggled to construct their plans, and what were the sources of their obstacles?

The data we have so far is hopeful. Some districts with longstanding programs, such as Cambridge Public School District with its controlled choice plan, have seen steadily rising scores on state and national tests, as well as elevated high school graduation rates.[63] Cambridge's schools also maintained their racial balance even after the district transitioned from a race-based to a class-based integration plan. These results align with the findings of numerous studies that decry policies that sustain concentrated poverty in schools and make a case for economically mixed spaces.[64]

At the same time, advocates and practitioners should be careful to shape the definition of "success" into one that encourages true equity, rather than one that simply accepts a single step of progress as the completion of a goal. We know, for example, that integrated schoolhouses do not guarantee diverse classrooms.[65] Districts taking important steps to ensure that their school population reflects the diversity of the community must also combat the problems of racialized tracking, inequity in school discipline rates and practices, and financial barriers to extracurricular participation. The degree to which socioeconomic school integration encourages the integration of classrooms and academic programs remains unclear, and represents an opportunity for further research.

Integration is a social justice imperative, carrying with it a long history of experimentation. Post *Brown v. Board of Education*, the legal landscape for school integration has transitioned from active judicial intervention and oversight to limitations on the use of race as an assignment factor. Politically, efforts to integrate schools—and thus maximize fairness—have triumphed over massive resistance, anti-busing protests, and school board battles. Socioeconomic school integration is the next step in a storied history of demanding justice for all children, of seeking to fulfill the American promise that education can be a great equalizer in a society that remains highly stratified. To this end, we hope that this report encourages districts to build on their current efforts to diversify their schools, and to continue to establish policies that maintain the levels of diversity once they reach the ideal balance. Now is the time to capitalize on the movement's momentum.

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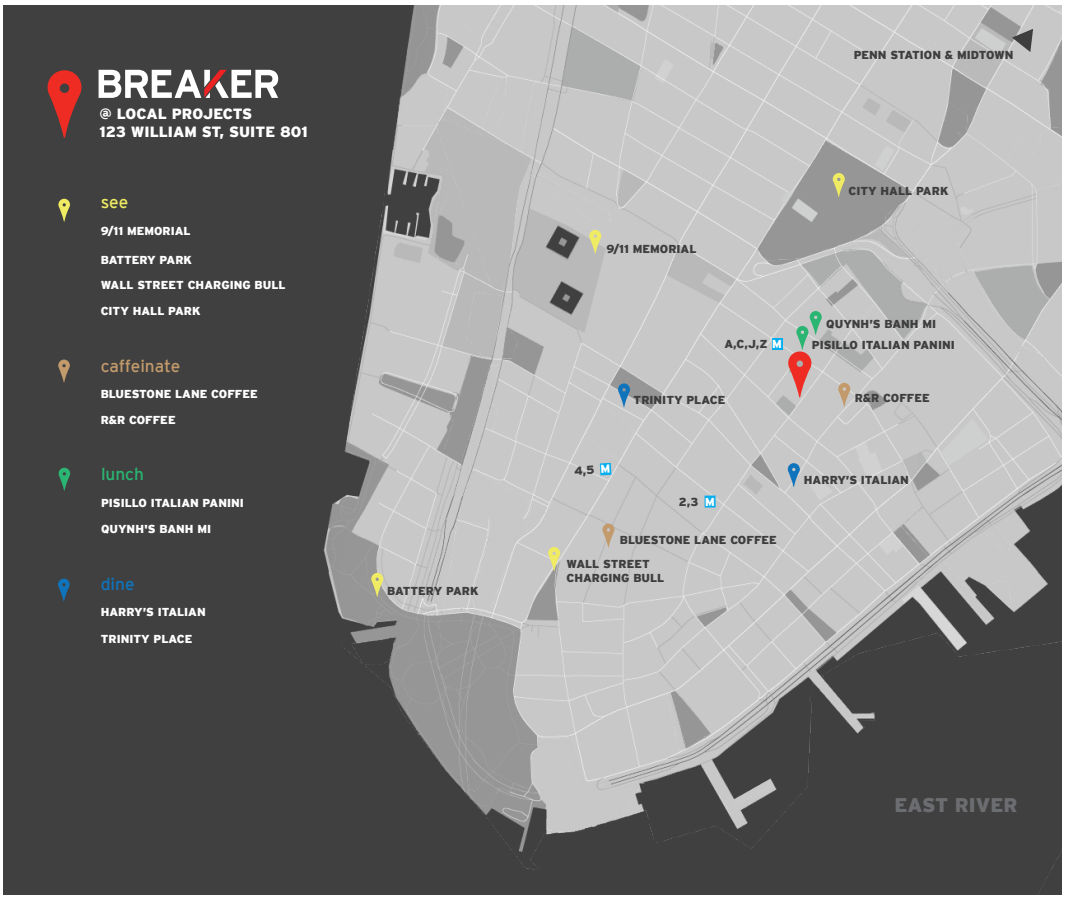
BREAKER

BREAKAWAY WORKSHOP JOURNAL

name

WELCOME



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Codes:

WOMEN 321

MEN 3154

BREAKER

AGENDA

1: Inspiration 6PM-8PM	2: Disequilibrium 9AM-5PM	3: Application 9AM-1PM
	Intro to Design Process	Take Home Challenge Problem = Opportunity
	Empathize	Ideate
	Define	Prototype
12pm	Lunch	My Action Canvas
	Ideate	Share
	Prototype	
	Test	
	Intro to Business Modeling	
	Take Home Challenge	
Welcome and Inspiration		5pm
Meet the Group		
Preview Weekend		

BREAKER

MINDSETS

VIA THE STANFORD D. SCHOOL

human centered

Empathy for the people you are designing for and feedback from these users is fundamental to good design

show don't tell

Communicate your vision in an impactful and meaningful way by creating experiences, using illustrative visuals, and telling good stories

bias towards action

Bias toward doing and making over thinking and meeting

culture of prototyping

Build to think and learn

mindful of process

Know where you are in the process, what methods to use at that stage, and what your goals are

create value

Is it desirable? Is it technically and organizationally feasible? Who will pay to keep it viable?

radical collaboration

Bring together people with varied backgrounds and viewpoints. Enable breakthrough insights and solutions to emerge from diversity

DESIGN CHALLENGE

HOW MIGHT WE REDESIGN THE BIKESHARE EXPERIENCE?

background

Bike Share programs are sweeping the nation. In May 2013, NYC introduced the largest bike share in the nation to date — CitiBike. Although the New York City Department of Transportation provides oversight for CitiBike, the program receives no public funding, differentiating it from bike shares in other cities. It is operated by the privately owned NYC Bike Share with title sponsorship coming from Citibank. CitiBike has increased access to one of the most sustainable and healthy forms of transportation and converted many subway riders and drivers into bike commuters.

scope

As of March of 2014, CitiBike had approximately 100,000 regular members at an annual fee of $95. However, most revenue is generated from non-members at a higher daily and weekly rate of $9.95 and $25 respectively.

Some of the challenges facing the growth and success of the bike share system in New York City are:

- Citibank's title sponsorship has discouraged additional sponsors who feel overshadowed by the brand.
- Financial sustainability; increasing non-member usage.
- Bike shortages and availability in far reaching neighborhoods
- Seasonal fluctuation

These are only some of the identified problems with the existing system. Your challenge is to consider them and discover more. Remember, problems are opportunities in disguise.

objective

To increase bike ridership in NYC by improving a bikeshare product, system, service, or experience in an environmentally friendly and cost effective fashion. You are not limited to improving the existing system; feel free to design a competing offer.

DESIGN CHALLENGE

CITIBIKE STATION MAP

BREAKER

EMPATHIZE

WALK A MILE IN SOMEONE'S SHOES

conversation guide

1. build rapport!
2. seek specific stories
3. ask about feelings
4. use "why...?"
5. talk 10% of the time
6. try open-ended questions

observation guide

1. what is the person doing (observable facts)?
2. how is the person doing that (emotions and techniques)?
3. remember non-verbal clues

my question list...

EMPATHIZE

COLLECT AND CAPTURE

collect

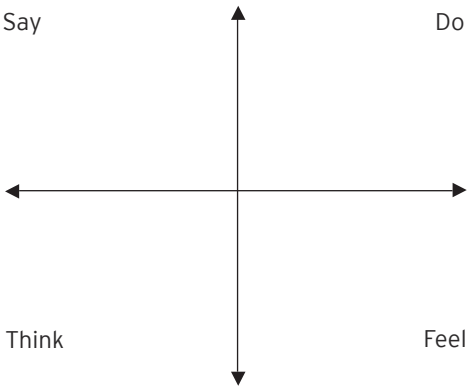
Collect pictures, videos, and artifacts of what you observe. Use **#breakerNYC** on any social media channel or email assets to info@breaker.org. Saturating your workspace with assets from the field is invaluable. We'll be standing by to receive yours.

capture observations & quotes

capture interpretation

DEFINE

MAKE MEANING



point of view statements

① I met _____.

I was suprised to learn _____

_____.

I wonder if this means_____.

It would be game-chanigng if _____

_____.

② _____ needs (a way) to

_____,

because _____.

Suprisingly, _____

_____.

notes:

how might we...

IDEATE

YES AND!

be visual

You can draw! Here's why you should:
Quick sketches are a great way to generate multiple ideas. And, sketching activates more parts of the brain.

brainstorming rules

1. defer judgement
2. encourage wild ideas
3. build on ideas of others
4. stay focused on the topic
5. one conversation at a time
6. go for volume and variety

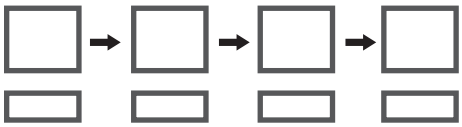
my notes...

PROTOTYPE

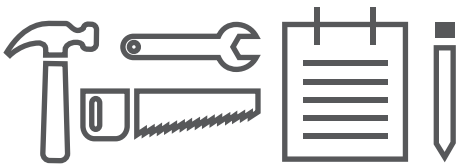
FAIL EARLY, OFTEN, AND CHEAPLY

types of prototypes

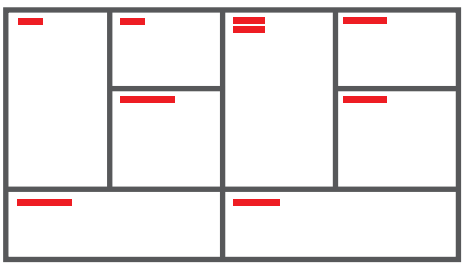
storyboard



look + feel



business model



notes:

TEST

PROTOTYPE LIKE YOU KNOW YOU'RE RIGHT.
TEST IT LIKE YOU KNOW YOU'RE WRONG.

ways to test

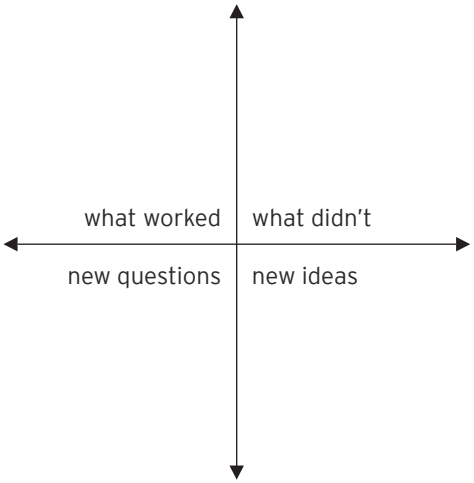
1. Create a survey for your users

2. Run a simulation with your users (walk them through your simulation)

3. Create A/B test
   Make two versions of one feature in your prototype and note how people react differently.

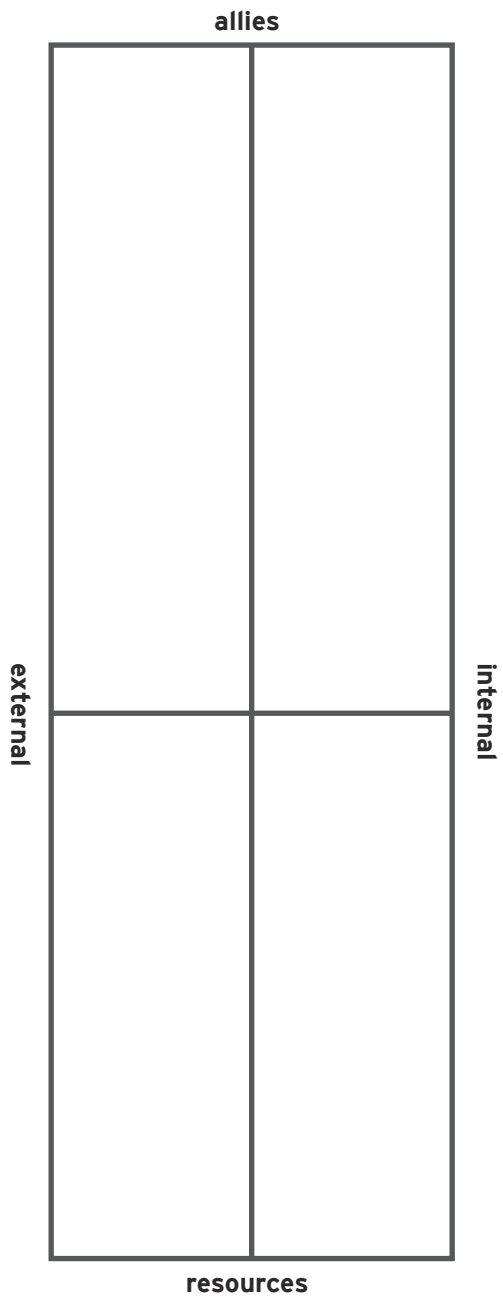
4. Role Play

what did you learn?



what can we refine? [v2.0]

MAPPING PAINPOINT



context

story

IMPACT CANVAS

problem

solution

customer segments

Who are the users? How are they grouped?

key resources

What is needed to create the product or service?

value proposition

Why would users buy the product or use the service?

key partners

Who is needed to create the product or service?

revenue streams

How much will users pay?

cost structure

What are the fixed costs? What are the variable costs?

BREAKER

Growth Public Schools

2017-2018 School Calendar

July 2017

Su	M	Tu	W	Th	F	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

August 2017

Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

September 2017

Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	PLP	23
24	25	26	27	28	29	30

October 2017

Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

November 2017

Su	M	Tu	W	Th	F	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

December 2017

Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
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24	25	26	27	28	29	30
31						

January 2018

Su	M	Tu	W	Th	F	Sa
	1	2	3	4	5	6
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21	22	23	24	25	26	27
28	29	30	31			

February 2018

Su	M	Tu	W	Th	F	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

March 2018

Su	M	Tu	W	Th	F	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

April 2018

Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

May 2018

Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

June 2018

Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

School Closed

PLP — Personalized Learning Plan Meetings for Parents, Student, Teacher-Facilitator

Last Day of the School Year

First and Last Day of Academic Semesters

GPS Expeditions

What Does a CGI Classroom Look Like?

An Introduction to Cognitively Guided Instruction

Cognitively Guided Instruction, often abbreviated as CGI, is an approach to teaching mathematics that builds on children's natural problem-solving strategies. Based on over 20 years of research, CGI identifies specific strategies students use to help teachers understand how students think so that they can guide them toward mathematical understanding. So, you may ask, what does a CGI classroom actually look like?

Differences on the Surface

Pretend for a moment that you are observing three teachers all of whom are teaching the first-grade concept of subtraction using CGI. The first thing you would likely notice is that each has her or his classroom arranged differently. One teacher has students sitting at tables of four so that students can talk as they work. Another teacher has students sitting first on the carpet in a circle, and then allows them to spread out all over the room to work on problems individually in their math notebooks. The third teacher sits with a small group of students at a problem-solving center who share their strategies with each other. Obviously, using a CGI approach does not involve a particular class configuration.

In these classrooms, teachers pose different types of story problems to introduce subtraction. One teacher has addition and subtraction problems mixed together. Another teacher is using subtraction problems only, while the third teacher is using what appear to be missing-addend problems as well as more traditional subtraction problems. So, CGI does not use a pre-specified set of problems in a given sequence to teach the curriculum. Teachers who use CGI are not limited to specific resources, either. One teacher might read a children's book to provide context for the story problems. Another could refer to a recent field trip to a city park. A third might use a textbook as a teaching resource.

Similarities Underneath

Despite these differences, you would notice several important similarities. As we saw, all of these teachers use story problems to introduce a topic. Further, these teachers would not show the children how to solve these problems. In fact, teachers who use CGI usually tell the children to solve the problems any way they can. They also encourage students to use any tools they want, in a way that makes sense to them and that they can explain or show

to another child, or to the teacher. When observing this for the first time, many teachers are mildly surprised that children have so much to say about math.

This may be surprising because so many of us rely on teacher's explanations and demonstrations to teach a concept or skill. This scenario reverses the usual order of instruction that many teachers follow. First, children solve problems and develop meaning for addition and subtraction.

Then, they learn to write number sentences to represent addition and subtraction.

The Teacher's Role in CGI

CGI teachers use their knowledge of problem types and solution strategies to make decisions about their curriculum. This knowledge helps them determine what each child understands and then decide how to help the child extend their understanding. These teachers know that children are able to solve story problems without direct instruction on strategies, because children naturally direct model story situations about which they have informal knowledge.

For example, consider the following problem, called a "Separate Result Unknown" problem.

> *Jennifer has 17 pieces of candy. She gave 8 of the pieces of candy to her brother. How many pieces of candy does Jennifer have left?*

Initially, most children use a tool such as cubes (or tallies or counters) to direct model this situation. They count out 17 cubes, remove 8 of them to show the candies that went to Jennifer's brother, and then count the number of cubes left. However, students may also apply more advanced strategies such as counting back from 17 to 8. They might even count up from 8 to 17 or derive 17 – 8 by figuring 17 – 7, which is 10, and then 10 – 1, which is 9.

CGI and the Benefit to Teachers

When you talk to the teachers about what they are going to do the next day, along with their mathematical goals, you hear them talking about the things they heard their students express and the strategies they saw their students use. They know what these strategies tell them about children's understanding of addition and subtraction.

Perhaps the most striking feature of CGI is that these teachers have a sense of ownership of this knowledge of children's thinking. It empowers them to make decisions, often on the spot. They know when to push, when to hold back, and how to make a problem easier or harder. They know how to support children to make sense of problems in their own ways. They know when to use a story problem and when not to. They know what problems to give next to support children's learning. They know how to listen. Most importantly, they say their curriculum is never quite the same from one year to the next, because the problems they pose depend on the children in their class.

Additional Reading:

Carpenter, T. P., Ansell, E., Franke, M. L., Fennema, E. & Weisbeck, L. (1993). Models of problem solving: A study of kindergarten children's problem-solving processes. *Journal for Research in Mathematics Education, 24*(5), 427-440.

Carpenter, T. P., Fennema, E., Franke, M., Levi, L. & Empson, S. B. (1999). *Children's Mathematics: Cognitively Guided Instruction*. Portsmouth, NH: Heinemann.

Carpenter, T. P., Fennema, E., Franke, M., Levi, L. & Empson, S. B. (2000). *Cognitively Guided Instruction: A Research-Based Teacher Professional Development Program for Elementary Mathematics*. Research Report 003. Madison, WI: National Center for Improving Student Learning and Achievement in Mathematics and Science.

Carpenter, T. P., Franke, M., & Levi, L. (2003). *Thinking mathematically: Integrating Arithmetic and Algebra in Elementary School.* Portsmouth, NH: Heinemann.

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NATIONAL CORE ARTS STANDARDS

Dance, Media Arts, Music, Theatre And Visual Arts

What Are The Standards?

A process that guides educators in providing a unified quality arts education for students in Pre-K through high school.

Read more →

Creating

- Anchor Standard #1. Generate and conceptualize artistic ideas and work.
- Anchor Standard #2. Organize and develop artistic ideas and work.
- Anchor Standard #3. Refine and complete artistic work.

Performing/ Presenting/ Producing

- Anchor Standard #4. Analyze, interpret, and select artistic work for presentation.
- Anchor Standard #5. Develop and refine artistic work for presentation.
- Anchor Standard #6. Convey meaning through the presentation of artistic work.

Responding

- Anchor Standard #7. Perceive and analyze artistic work.
- Anchor Standard #8. Interpret intent and meaning in artistic work.
- Anchor Standard #9. Apply criteria to evaluate artistic work.

Connecting

- Anchor Standard #10. Synthesize and relate knowledge and personal experiences to make art.
- Anchor Standard #11. Relate artistic ideas and works with societal, cultural and historical context to deepen understanding.

NCCAS

Young Audiences Arts for Learning

CHAPTER 10

Rethinking English Language Instruction: An Architectural Approach

Susana Dutro and Carrol Moran

In this chapter we will present an approach for rethinking English language instruction using an architectural metaphor. We will lay out a blueprint for infusing English language development (ELD) throughout the instructional program, and describe the design features and general instructional principles that underpin high-quality, rigorous second-language teaching. In other words, we will outline how to conceptualize an ELD program, how to design instruction, and how to teach English for academic purposes.

We join Fillmore and Snow (2000) in their call for including linguistic knowledge in the wide range of competencies required of teachers. We further suggest that all teachers need not only linguistic knowledge, but also knowledge of how to design a comprehensive approach to ELD. We will present an approach for academic language instruction that helps resolve the acquisition versus direct teaching tension in the second-language literature and provides a workable model for incorporating language teaching throughout the instructional day.

Given the increasingly multilingual populations in our schools, to effectively prepare students for success in academic subjects teachers need a focused approach to teaching language in every classroom, in every subject area, every day. It is clear that the need for second-language instruction is growing steadily. In 1980 over half the teachers in the United States either had English language learners or had taught them previously, whereas only one in seventeen had had any coursework in teaching English as a second language (Hamayan & Damico, 1990). The number of English language learners in the United States has increased dramatically in the past decade. The most recent

statistics indicate that there were nearly 3.5 million limited–English-proficient students in K–12 schools across the country in 1997–1998 (National Clearinghouse for Bilingual Education, 2000). These estimates are considered conservative. Clearly, the demand for teacher expertise in English language development is immediate and widespread. It is time for us to embrace this need and define the skill base needed by teachers if they are to successfully develop academic-language competence in all students.

The theoretical basis for our approach stems from the major issues in the second-language literature (Beebe, 1988; Bourhis, 1990). The research reveals a number of controversies related to language instruction (Hakuta & McLaughlin, 1996); the most influential of these lies in the debate regarding language acquisition versus language learning. (See also Freeman & Freeman, chapter 2, and Crawford, chapter 7, in this volume.)

The two theories—that second language is acquired in the same way as first language (Krashen & Terrel, 1983) or that it ought to be taught systematically and explicitly (McLaughlin, 1985)—have been discussed at length in the literature. Krashen's views on second-language acquisition in the classroom have greatly influenced practices in California over the past 20 years. Under the guise of "natural language acquisition," many teachers resisted direct teaching of language and instead provided cooperative learning environments in which students would learn from one another. There is significant evidence that, though more interaction occurred as a result, learning language in this way did not develop sufficient language skills for academic success (Schmida, 1996). We also have evidence that aspects of language can be developed in different sequences and can be learned more quickly through explicit formal teaching (McLaughlin, 1985). A comprehensive theory of classroom instruction should incorporate both informal and formal-language learning opportunities.

Another issue in language instruction is whether students should study language processes by looking at language as an object of study and analyzing the patterns and rules of the language, or *intuit* patterns and rules by engaging in purposeful language activity.

The blueprint we propose embraces these tensions and focuses on the development of academic language—the language of school, literacy, content, and higher learning. We advocate a rethinking of some common practices in ELD instruction and take the position that language instruction requires teaching English, not just teaching *in* English or simply providing opportunities for students to interact with each other in English. We believe ELD requires purposeful daily instruction both in a developmental program and as explicit preparation for content courses, with ample opportunities for both formal and

informal learning across the curriculum and throughout the instructional day. This includes everything from interactive practice—building scaffolds from contextualized experiences wherein meaning is carried through visual cues, props, and gestures—to decontextualized input, which requires students to function with minimal supports. In the application or practice of skills to develop fluency, this instruction also consciously provides for output of language as an important part of the language-learning process, not just as an outcome of language development or a means of assessment (Swain, 1986).

The blueprint includes three components of ELD taught throughout the day (see Figure 10.1). The first component is a vertical slice of the curriculum. This is systematic ELD: English instruction as its own discipline, which follows a developmental scope and sequence of language skills that builds from simple to complex structures within the context of a range of everyday and academic-language functions (see García & Beltrán, chapter 9 in this volume).

FIGURE 10.1 Blueprint for teaching English throughout the day

Systematic ELD *Purpose* *Develop a solid language foundation* *Content* *Follows scope and sequence of language skills in diverse functional contexts* *Organized by level of English proficiency*	Reading/ Language Arts	Mathematics	History/ Social Studies	Science/ Health	Physical Education	Art
	Front-loading language teaching *Purpose: Ensure access to content instruction taught in English by preteaching for upcoming language demands.* *Content: Determined by demands of upcoming subject matter. Teaches sentence structures and vocabulary needed to engage with content skills or concepts.*					
	Maximizing the teachable moment *Purpose: (1) Help ensure access to English language expression throughout the day and (2) Utilize odd moments for expanding and deepening language.* *Content: (1) Unanticipated language needs as they arise and (2) Developing language skills as appropriate.*					

We term the second component of ELD "front-loading language." This instruction occurs throughout the day as a horizontal slice of the curriculum, across all content areas. The term *front-loading* comes from the investment world: Front-loading of ELD refers to focusing on language prior to a content lesson. The linguistic demands of a content task are analyzed and taught in an up-front investment of time devoted to rendering the content understandable to the student—which takes in not only vocabulary, but also the forms or structures of language needed to discuss the content. The content instruction itself switches back and forth from a focus on language to a focus on content and back to language.

The third component of English-language instruction maximizes the "teachable moment" by utilizing opportunities as they present themselves to use precise language to fill a specific, unanticipated need for a word or a way to express a thought or idea. Fully utilizing the teachable moment means providing the next language skill needed to carry out a task or respond to an impromptu stimulus—like using a thunderstorm to stimulate a discussion about weather. Maximizing the teachable moment means exploiting unique situational contexts for spontaneous learning and taking advantage of odd moments throughout the day to expand and deepen language skills.

This blueprint helps resolve the tensions in the literature by promoting an approach that provides opportunities for gaining competence in academic language in both formal and informal settings.

We suggest that each of these three components of ELD is essential to student success. (These three components are discussed in greater detail later in the chapter.) Such a comprehensive approach is not required to develop everyday language—but it *is* necessary if students are to acquire academic-language proficiency at the level required for college admissions or job interviews. To continue the architectural metaphor, we must first have a clear vision of what we are building—in this case academic language competence—before we elaborate the design features and instructional principles necessary to support our blueprint.

Academic Language Versus Everyday Speech

Academic language is different from everyday speech and conversation: It is the language of texts, of academic discussion, and of formal writing. Academic-language proficiency requires students to use linguistic skills to interpret and infer meaning from oral and written language, discern precise

meaning and information from text, relate ideas and information, recognize the conventions of various genres, and enlist a variety of linguistic strategies on behalf of a wide range of communicative purposes. For both native English speakers and second-language learners, learning academic uses of language is a lifelong endeavor (see Cummins, chapter 1 in this volume).

Though much vocabulary and syntax may be acquired through informal interaction, the range of academic-language skills—which includes the linguistic structures used to summarize, analyze, evaluate, and combine sentences; compose and write text; interpret graphs, charts, and word problems; and extract information from texts (Fillmore & Snow, 2000; Scarcella, 1996)—must not be left to chance encounters; it must be developed continuously and taught explicitly across all subject areas. Achieving full proficiency in English includes far more than merely exhibiting fluency in conversation; it means English learners know English well enough to be academically competitive with their native English-speaking peers (Hakuta, Butler, & Witt, 2000).

Academic-language proficiency helps students achieve long-term success in school. Yet many students at intermediate and advanced levels of English proficiency receive no formal language instruction (California Department of Education, 2000), leaving them fluent in everyday language (or in what Cummins [1989] refers to as Basic Interpersonal Communication Skills or BICS), but with critical gaps in academic-language knowledge and vocabulary. Although immigrant students often gain oral fluency in English in about two years (Collier, 1987; Cummins, 1984), it takes them far longer to achieve the academic-language proficiency required for success in school. Furthermore, length of time in second-language environments does not by itself guarantee the development of academic competence: Despite years of meaningful input and opportunities for interaction in English, serious gaps in linguistic competence can remain (Scarcella, 1996). Even though there are many opportunities for language learning during the course of a day in a language-rich classroom environment, merely being exposed to, and even being engaged in, activity in English is not sufficient to assure the development of full academic proficiency (Doughty & Williams, 1998).

Developing Academic English: Functions, Forms, and Fluency

Teachers, like architects, must understand the design features necessary to construct successful blueprints—including the blueprint that we envision for

English language instruction throughout the day. Our formula for designing such instruction is "Functions, Forms, and Fluency." It consists of analyzing the concept and skill requirements of lessons in

- the language task (function);
- the necessary tools (forms of language) for carrying out that task; and
- ways of providing opportunities for practice and application (developing fluency).

This approach builds on Halliday's perspective, which treats meaning and use as the central features of language and approaches grammar from that stance (Bloor & Bloor, 1995; Halliday, 1973).

Here we attempt to draw parallels with Cummins's (1989) approach to academic language and the three design features essential to our approach. Figure 10.2 is helpful in operationalizing Cummins's definition of Cognitive Academic Language Proficiency (CALP) in a planning design of functions, forms, and fluency (see Cummins, chapter 1, and Crawford, chapter 7, in this volume).

Communicative competence depends on the integration of acquired language knowledge with proficient use of *forms* appropriate to *functions*:

> The acquisition of vocabulary, grammar rules, discourse rules, and other organizational competencies results in nothing if the learner cannot use those forms for the functional purpose of transmitting and receiving thoughts, ideas, and feelings between speaker and hearer or reader and writer. While forms are the outward manifestation of language, functions are the realization of those forms. (Brown, 1994, p. 231)

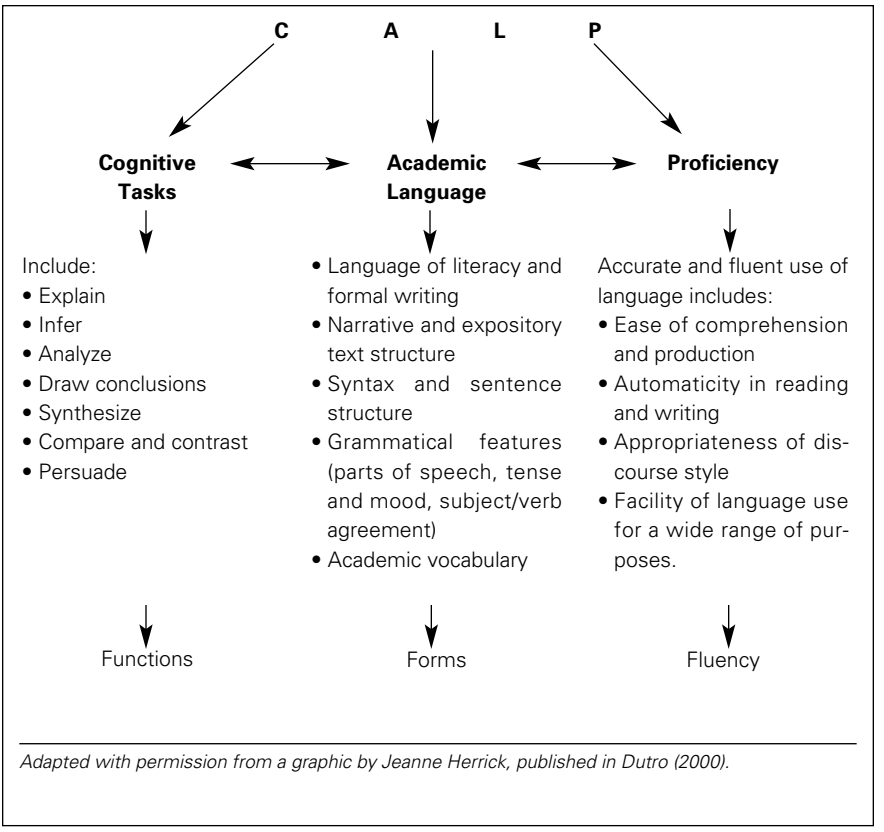
If teachers are to design effective ELD instruction in their classrooms, they must learn to analyze academic language in terms of its functions, forms, and fluency features and address these in their planning process. Like a master carpenter guiding an apprentice, teachers must anticipate the task to be learned, determine which tools are needed for the task, and provide opportunities for practice. Practice will increase students' competence and develop their skills—skills that can then be applied to other tasks.

Let us consider each of these three design features in greater depth.

Functions (Tasks)

Functions are the tasks or purposes and uses of language (Brown, 1994; Halliday, 1973). That is, we use language to accomplish something in formal

FIGURE 10.2 Conceptual model from CALP to functions, forms, and fluency



Adapted with permission from a graphic by Jeanne Herrick, published in Dutro (2000).

or informal settings, for social or academic purposes. Social purposes include expressing needs and wants, making jokes, exchanging greetings, indicating agreement or disagreement, and participating in personal conversations. Academic purposes include navigating written text, asking and answering informational and clarifying questions, relating information, comparing and contrasting, explaining cause and effect, drawing conclusions, summarizing, evaluating, justifying, persuading, and conducting research. Many language functions have both everyday and academic applications; some, such as writing a lab report, are specific to academics.

Functions are the cognitive tasks that drive us to connect thought and language. Taking Halliday's view that language is a "system of meanings" (Bloor & Bloor, 1995), we assert that teaching English language learners how to use

language for a variety of academic and nonacademic purposes is both efficient and rigorous.

We argue that well-planned instruction and early use of academic language accelerate the acquisition of academic language proficiency. Through instruction that makes explicit the tools needed for different academic language functions, students learn the vocabulary and sentence structures needed for a range of cognitive tasks and uses of language. The utterances students learn, practice, and generate move from simple to complex depending on their level of English proficiency, always building toward the goal of fully proficient use.

Below we explore several language functions with examples across five levels of proficiency, based on commonly agreed-on stages of ELD (California Department of Education, 1999). Let us first consider the specific function of *describing* people, places, or things. It requires the speaker or writer to know how to use parts of speech—particularly verbs, nouns, and adjectives. Figure 10.3 illustrates possible utterances used to describe brown bears.

At the beginning level of proficiency, students may describe by using single words and phrases and basic nouns and adjectives ("brown bear"). By the early intermediate level they have progressed to basic subject-verb-object sentences using simple vocabulary: "The bear is brown. It has claws." At the intermediate level of proficiency the sentence is expanded and adjective use is more sophisticated ("thick," "sharp"), and at advanced levels descriptive sentences feature more complex sentence structures and ideas and more precise vocabulary. The language *function* is the same across the levels of proficiency, but the use of language is more complex and the content information is expanded.

FIGURE 10.3 Function chart for describing people, places, and things

Beginning	Early Intermediate	Intermediate	Early Advanced	Advanced
Brown; *brown* bear	The bear is *brown*. It *has claws*.	The brown bear *has thick fur* and *sharp claws*.	The brown bear *isn't a predator* even though it *has sharp claws and teeth*.	During their winter *hibernation,* brown bears *give birth to cubs*.

From Dutro & Prestridge (2001)

Another specific language function that falls under the umbrella of relating information is *locating objects in space*. For examples by level of proficiency, see Figure 10.4. The function of describing location calls for different vocabulary and grammar, particularly prepositional words and phrases (*on*, *behind*, *in front of*, *beneath*, *around*, *above*). A third example is the function of *relating past events*—describing action—which requires verbs, adverbs, and words that sequence (see Figure 10.5).

FIGURE 10.4 Function chart for locating objects in space

Beginning	Early Intermediate	Intermediate	Early Advanced	Advanced
Respond to direction: Put your plants *on* the table.	The corn *is behind* the beans.	*In* the garden, we planted corn *behind* the beans. We planted squash *in front of* the beans.	We buried a fish *beneath* the corn, squash, and beans to fertilize them.	The plants in our garden benefit from their *location*. The beans *grow around* the squash, providing nitrogen. The corn *grows above* the squash, providing shade.

From Dutro & Prestridge (2001)

FIGURE 10.5 Function chart for describing action

Beginning	Early Intermediate	Intermediate	Early Advanced	Advanced
Volcano, smoke, lava	The volcano *was smoking*.	*Last week*, the volcano *started smoking*. *This week*, it *erupted*.	*Previously*, the volcano *began to smoke*, and *this week*, it *erupted* violently.	It *has been two years since* the volcano *erupted* violently.

From Dutro & Prestridge (2001)

As illustrated in these figures, there are specific language functions (describing actions, locations, or things) embedded within larger functions (relating information) that make distinct linguistic demands on the language user. Competence in different language functions requires competence in comprehending and generating different parts of speech within different sentence structures. Increasing competence in any language function, however, impels the speaker or writer to use increasingly complex sentence structures. Consider these examples in relation to the language function of *expressing and supporting opinions*:

- It's better to be a farmer because it is safe. Hunting is dangerous.
- In my opinion, it would be better to be a farmer because farming is safer than hunting.
- I would have preferred to be a farmer, because hunters face many dangers.

Teaching English language skills from the perspective of language functions focuses attention on the language demands of a specific academic task (describing location, relating past events) in the context of specific content (strategic planting of crops, the eruption of volcanoes). But the benefits of learning to use a language function such as comparing, for example, extend beyond a given task, because once English language learners know how to compare, they can apply that skill to a range of contexts across many content areas. Consider Figure 10.6, which presents examples of comparison statements across diverse content areas.

Reading the chart from left to right demonstrates a progression of increased proficiency. Reading it vertically demonstrates a variety of comparative statements at a given level of proficiency. With this approach, then, learning interesting content—and how to talk and write about it—is not delayed until more advanced levels of proficiency are achieved. Instead, academic language is developed from the beginning stages of second-language learning. Competence in a range of language functions equips students to participate in content instruction and supports the acquisition of academic-language proficiency. Language thus becomes a vehicle, rather than a barrier, to learning.

Forms (Tools)

Once the functions of language are delineated, the second feature of our design plan for language learning is *forms*—grammatical features and word usage.

FIGURE 10.6 Function chart for comparing/contrasting

Beginning	Early Intermediate	Intermediate	Early Advanced	Advanced
triangle square three four	Triangles have three sides. Squares have four sides.	A triangle has three sides, *but* a square has four sides. They *both* have straight lines.	Triangles and squares *are alike because* they both have straight lines. They *are different because* a triangle has three sides and a square has four sides.	*Though* squares and triangles are similar because *both have* straight lines, a triangle is three-sided and a square is four-sided.
big ocean small lake	An ocean is *big* A lake is *small*.	An ocean is *larger than* a lake.	An ocean is enormous *compared with* a lake.	An ocean is vast; Even the largest lake is small by *comparison*.
Eagles fly, Seagulls fly, Penguins swim.	Eagles *can* fly. Seagulls *can* fly. Penguins *can* swim.	Eagles and seagulls *can* fly, *however* penguins *cannot*.	Eagles fly *high* Seagulls tend to fly *lower*. Penguins *can't* fly *at all*.	*Both* eagles *and* seagulls *have* the ability to fly. *However*, penguins *do not*; *instead*, they *are* able to swim.
pig spider	Wilbur *is* a *big* pig. Charlotte is a *small* spider.	Wilbur *is* a *young* pig, *but* Charlotte *is a grown* spider.	Wilbur *acts* immaturely and panics a lot, *but* Charlotte *remains* calm and reassuring.	Wilbur *appears* immature and excitable, *whereas* Charlotte *is always a* voice of reason.

From Dutro & Prestridge (2001)

These are the tools necessary for discourse, for reading and writing, for using complex language, and for engaging in cognitive processes. Forms include parts of speech, verb tenses and subject/verb agreement, the use of pronouns and conjunctions, and sentence structure or syntax (complex and compound sentences and word order).

As students progress through the grades the demand for complex language use in speaking, reading, and writing increases dramatically, leaving many English language learners unable to grasp more than the gist of what they read or hear. Limitations in students' knowledge of English—including lack of vocabulary and difficulty comprehending complex sentence structures—preclude their inferring subtleties, discerning irony, and comprehending relationships between and among ideas, characters, or events. A solid knowledge of language forms supports students as they deconstruct long sentences to make sense of them. The accurate and fluent use of grammatical forms helps ensure perception of the student as a proficient speaker, enabling full participation in academics and a respected voice to advocate for his or her positions and interests (Delpit, 1995).

Just as an architect understands the electrical system of a well-functioning building, so a teacher must understand the way English works. This requires more advanced linguistic knowledge than is currently possessed by most teachers. For example, teachers must recognize when and why to use perfect tenses ("He has been driving me crazy") rather than simple ones and how phonemes (sound units), morphemes (meaning units), and basic syllable patterns (consonant-vowel-consonant) work (Fillmore & Snow, 2000; Moats, 2000). They must understand the Anglo-Saxon, Latin, and Greek roots of English and how these affect orthography, morpheme patterns, and word usage. If teachers understand language well, they can explicitly teach these forms. So knowledge of the scope of English grammar, morphology, and phonology supports the teaching of reading and academic language to all students. This is basic teacher knowledge that our current student population demands.

Teachers of English learners must also understand the general sequence of how language forms are learned in a second language. For instance, a possible continuum of verb forms, from simple to complex, follows:

- present and past progressive tense ("is walking," "was not walking")
- future tense ("going to walk")
- present perfect tense (*have/has* + past participle: "She has been walking a mile each day for the past year.")
- phrasal verbs ("Walk down the street." "Walk up the path.")
- past perfect tense (*had* + past participle: "We hadn't been walking long when…")
- conditional form ("*If* we walk to the store, we *will* not be able to carry many bags.")

- future and conditional perfect tenses ("has been walking," "will have been walking"; "*If* she *had* walked, she *would have* gotten some exercise.")
- passive voice ("This novel *was written* by Ernest Hemingway." "This picture *was taken* by my grandfather.")

Clearly, this continuum is not fixed. Through innumerable interactions in classroom, playground, home, and community settings, students are exposed to a range of language forms and may recognize and use an advanced form while lacking competence in more basic ones.

VOCABULARY. We define *forms* to include not only grammatical forms but vocabulary. Knowledge of word usage along with a rich and varied vocabulary are critically important aspects of language proficiency and essential to academic success (Beimiller, 1999; Kame'enui & Simmons, 1998; Moats, 2000; Stahl, 1999). An intervention study showed that the vocabulary knowledge and reading comprehension gap between English language learners and native English speakers can be significantly reduced through enriched vocabulary instruction (McLaughlin et al., 2000).

One way to think of vocabulary is as comprising "general-utility" and "content-specific" words. Continuing our architectural metaphor, we refer to these, respectively, as "brick" and "mortar" words. "Brick" words are the vocabulary specific to the content and concepts being taught in a given lesson and might include words (to pick a random sample) such as *government*, *revolt*, *revolution*, *polarized*, *habitat*, *climate*, *arid*, *predator*, *adaptations*, *germinate*, and *mitosis*. Traditionally, this is the vocabulary teachers preteach at the beginning of a content area lesson or unit. In the earlier grades, many of these words are nouns—*giraffe*, *hoof*, *stem*, *leaf*—and can be illustrated or labeled. In later grades these words tend to be conceptual.

"Mortar" words and phrases are the general-utility vocabulary required for constructing sentences—the words that determine the relation between and among words. They are the words that hold our language together, and understanding them is essential to comprehension. Some examples of mortar words are

- connecting words required to construct complex sentences: *because*, *then*, *but*, *sometimes*, *before*, *therefore*, *however*, *whereas*
- prepositions and prepositional phrases: *on*, *in*, *under*, *behind*, *next to*, *in front of*, *between*
- basic regular and irregular verbs: *leave*, *live*, *eat*, *use*, *saw*, *go*

- pronouns and pronominal phrases: *she*, *his*, *their*, *it*, *us*, *each other*, *themselves*
- general academic vocabulary: *notice*, *think*, *analyze*, *direct*, *plan*, *compare*, *proof*, *survive*, *characteristics*

Many mortar words and phrases are basic vocabulary that may be unfamiliar to students who are learning English. Such vocabulary is best taught explicitly in the context of language use, as these words do not generally stand alone, but function within the context of a sentence or phrase along with brick, or content, words. Without deliberate instruction in the use of these words, students may not discern the time/place relationships among the rest of the words in a sentence or passage.

LINKING FUNCTIONS AND FORMS. To illustrate the importance of addressing both brick and mortar vocabulary in language teaching that links function and form, let us consider again the language function of *comparison*. Students are called on to compare across content areas. Teachers might expect students, for example, to describe the similarities and differences among geometric shapes or between the values of numbers (*larger*/*smaller*, *less*/*more*), the relative nutritional value of different foods, the characteristics of bats and owls, or the personality traits of two characters in a novel.

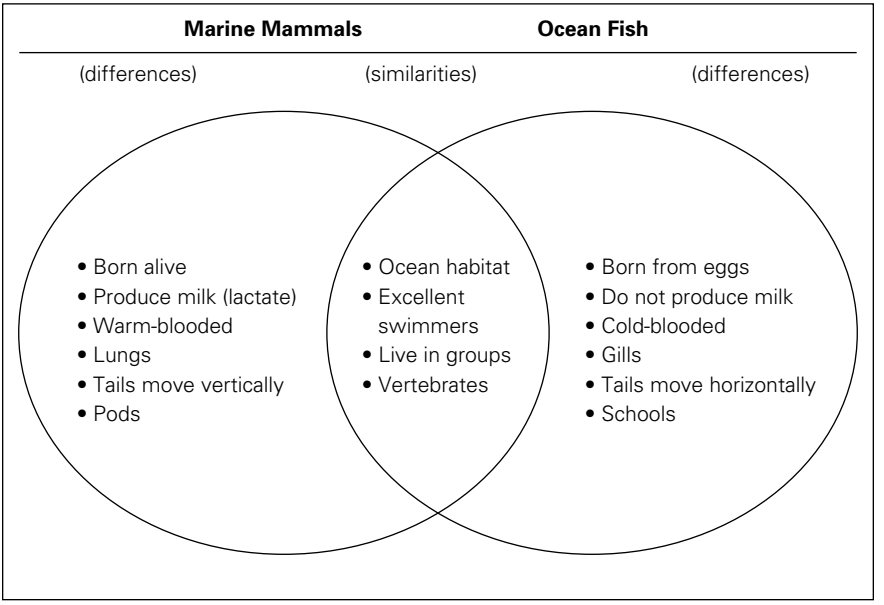
Some possible brick vocabulary useful in discussing the similarities and differences between marine mammals and ocean fish, for example, is shown on the Venn diagram in Figure 10.7. This vocabulary is essential to expressing the idea that there are physical and behavioral similarities and differences between these two types of animals. However, the brick (content-specific) words of the Venn diagram do not by themselves equip students to demonstrate their comprehension of that idea. They also need mortar words and phrases in order to generate the sentences that make it possible to make the comparison.

By removing the brick words that are specific to content, the mortar words and phrases used in sentences are revealed. For example,

> Marine mammals are warm-blooded, but fish are cold-blooded.
>
> _____ are _____, but _____are _____.

The basic subject/verb/predicate adjective structure of this comparison sentence can be adapted by varying the verbs (e.g., *have*, *are*, *can*, *do*, *use*) or conjunctions (*however*, *whereas*). The ability to manipulate these basic sentence structures using a variety of content is necessary for demonstrating conceptual understanding in a lesson calling for comparison.

FIGURE 10.7 Venn diagram of brick words for marine mammals and fish



As illustrated previously (see Figure 10.6), comparative sentences range from simple to complex. Thus, the level of difficulty in a comparison task can be modulated by teaching the mortar vocabulary and sentence structure at levels of complexity appropriate to students' language skills, allowing students to engage in the work regardless of their level of English proficiency.

Another essential point is that these sentence frames can be used for comparing *any* two things. Explicitly teaching mortar vocabulary and how to construct various sentence frames helps students learn not only to compare marine mammals and ocean fish, but how to use language *to compare*, generally. Students will then be more apt to transfer those skills to making comparisons of triangles in mathematics, or of cultures in social studies. Wall charts labeled "Words and Phrases for Comparing" and "Sentence Frames for Comparing" serve as ongoing, practical references and become resources for student writing—and in conjunction with the instruction we have described, they enable students to develop metalinguistic awareness.

Functions (such as comparison) and forms (the vocabulary, grammar, and syntax necessary to express that) are two of the three design features of our instructional blueprint for teaching English. The third is *fluency*.

Fluency

Accurate facility in a wide range of language functions and grammatical forms, along with a rich vocabulary, is required for academic success: Consider standardized testing, classroom participation, reading literature and informational text, writing essays, and presenting oral reports. *Fluency* refers to the ease of both oral and written comprehension and of the production of speech and writing. It is the facility with which a speaker, reader, and writer uses language. *Accuracy* is the precision and correctness with which students speak, write, and comprehend written and oral language. Students develop fluency through focused and deliberate engagement with a range of uses of language—both oral and written—together with many opportunities to practice newly learned structures in different contexts.

In cases in which students have studied a language but had few everyday interactions in it, they may not understand speech in that language as well as they can read and write it (Canale & Swain, 1980). Most English language learners, however, are exposed to English through the media and in everyday interactions; for these students, receptive language generally precedes (and often exceeds) expressive language. Teachers of such children must consciously model language forms and vocabulary above the students' current expressive level while maintaining comprehensibility.

Now that we have established our conceptual framework and presented its components and design features, the next section of this chapter will take a more practical approach.

General Principles for English Language Instruction

English language instruction should provide not only ample opportunities for meaningful and engaging uses of language for a wide range of social and academic purposes, but necessary instruction in how English works. It should be deliberate, strategic, and purposeful. This section will present six guiding principles of English language instruction, drawn from the literature in cognitive psychology, language acquisition, and instructional practice. To develop high levels of language proficiency, we contend that teachers must

1. build on students' prior knowledge of both language and content;
2. create meaningful contexts for functional use of language;
3. provide comprehensible input and model forms of language in a variety of ways connected to meaning;

4. provide a range of opportunities for practice and application so as to develop fluency;
5. establish a positive and supportive environment for practice, with clear goals and immediate corrective feedback; and
6. reflect on the forms of language and the process of learning.

Let us look more carefully at each of these principles.

Prior Knowledge

Building on students' prior knowledge is essential. The value of tapping into the prior schema that we use to organize information and ideas has been apparent for a number of years, owing to the work of cognitive psychologists (Palinscar & Brown, 1984; Rumelhart & McClelland, 1986) as well as socioculturalists (Au, 1980; Heath, 1983). This body of work recommends using such strategies as semantic mapping, graphic organizers, and story walking. It is essential that every lesson take into account what students bring to the lesson and build on that existing knowledge and on prior language skills. Native language used strategically can solve some specific problems in connecting new learning to prior concepts or language forms (Gersten & Baker, 2000).

Meaningful Contexts

We know that creating context is vital if students are to map new knowledge onto prior knowledge or new forms and labels onto existing concepts. That is why a functional approach that creates purposeful settings for language use is so important. Moving from the concrete to the abstract is another basic principle. The use of visuals, gestures, graphic organizers, and word banks to reinforce concepts and vocabulary is effective in this regard (Gersten & Baker, 2000). Using simulations, gestures, realia, and theater is valuable in the early levels of English proficiency; comparisons, metaphors, and analogies (Marzano, 1998) are more suitable at higher levels of language functioning.

Comprehensible Input Connected to Meaning

Language, whether it is one's first or second language, is learned through modeling within a communicative context (Long, 1991). This holds true with respect to tasks ranging from engaging in simple speech to writing a complex essay. Learning occurs when modeling is clear; information is presented in

small, comprehensible chunks; and frequent feedback is provided. Input, modeling, and output occur within clearly defined pedagogical tasks facing the learner, such as applying for a job, buying a house, planning a trip, or applying for college (Doughty & Williams, 1998).

Practice and Application

The goal for language learners is to move from the stage during which capacity is limited and language skills are new to automatic processing (Brown, 1994). Creating situations for focused interaction through debates, theater, interactive writing, and the like gives students opportunities to try their new language learning.

Cooperative group work around a situational task offers students the chance to use language purposefully. Cooperative learning is most beneficial when tasks are highly structured (Gersten & Baker, 2000); language output and practice are likewise maximized when tasks are structured—and when groups are small (preferably dyads or triads) and there are group incentives for appropriate language use (Moran, 1996). There is evidence that well-designed cooperative learning tasks afford students far more practice in speaking and listening than teacher-centered activities (Gersten & Baker, 2000). Though English language learners at similar levels of proficiency do not make more errors with one another than when speaking to fluent speakers, they cannot help one another discern how to correct these errors (Lightbrown & Spada, 1999) and do not provide one another the needed corrective feedback.

Safe Environment, Clear Goals, Corrective Feedback

For English learning to occur, students need a safe learning environment, clear output goals, and opportunities for practice and feedback. Krashen's (1985) "affective filter" described the importance of creating a safe, comfortable environment in which students can acquire a second language through engagement in natural situations. Scarcella (1996) concludes from her review of the literature of the 1980s that policies like those of the California Department of Education discouraged direct teaching of language and corrective feedback. She suggests a need to revisit these policies.

Scarcella found two main areas of weakness in her college students' English skills. The first is that limited knowledge of vocabulary and word usage results in misuse of words or word forms, mishandling of diction (using conversational words in academic writing), and use of acoustic approximations

(e.g., the novel *Catch Her in the Right*). The second linguistic weakness is a limited understanding of English morphology and sentence structure, resulting in misuse of articles, pronouns, and nouns, misuse of verb tenses, and the inability to handle causative and conditional structures (Scarcella, 1996).

Marzano observes that "the simple act of setting instructional goals produces significant gains in student learning"; coupled with feedback regarding progress toward these goals, this is "one of the most straightforward and powerful techniques a teacher can employ" (Marzano, 1998, p. 128).

Feedback must be perceived as such, that is, not simply conversational or even written "recasts" of student speech or writing. Reyes relates end-of-the-year interviews with sixth graders who were surprised when apprised of their continuing spelling and grammatical errors. "Why didn't she tell me?" they wondered, expressing the expectation that the teacher's role included providing explicit feedback (Reyes, 1992).

Particularly in settings with few native English speaking models, teachers must create many opportunities for English learners to learn, use, and receive corrective feedback on academic language for the purpose of building the linguistic competencies required to achieve grade-level content standards.

Though we agree it is important to create an environment in which mistakes are seen in a positive light, clear goals and corrective feedback must be a part of the equation to develop academic language skills to an advanced level. Teachers have the responsibility to provide feedback so students can improve their performance and internalize correct usage (Lightbrown & Spada, 1999; Marzano, 1998).

Reflection on Forms and Process

Modulating cognitive and language demands by lowering cognitive demands when the language demand is high and vice versa allow students to move back and forth from a focus on concept to a focus on language form. Sharing this process with students will help them learn how to move back and forth effectively when learning new language forms, thus avoiding cognitive overload. Preteaching critical vocabulary prior to student reading (Rousseau, Tam, & Ramnarain, 1993) allows students to focus on form before focusing on content.

Metalinguistic reflection is particularly effective with English language learners, who can reflect on their native language to give them insight into the new language forms they are learning (Moran & Calfee, 1993). Encourag-

ing students to reflect on the process by which they are learning language will help them to manage their own future learning situations.

Operationalizing the Blueprint: Three Components of English Language Development

Systematic English Language Development

Systematic ELD is designed to build a solid foundation in English language using an organized method that does not leave the development of forms or fluency to random experiences or chance encounters. It is the vertical slice of the blueprint; it is its own discipline. It is distinct from other disciplines in that the focus of instruction is on explicitly teaching English—functions, forms (including brick and mortar vocabulary), and fluency—for the purpose of increasing communicative competence in listening, speaking, reading, writing, and thinking, for both social and academic purposes.

Current ELD practices vary widely, and many English language learners receive limited or inconsistent assistance in learning English. The California Department of Education identified a number of problematic themes in the 1999 Language Census: (1) English learners of varying English proficiency levels are grouped together and are receiving the same ELD instruction regardless of ability; (2) ongoing assessment of students to determine progress in English proficiency is not conducted; (3) many English learners at advanced levels or in mainstream programs are not receiving ELD; and (4) ELD instruction is not tied to specific standards or expected outcomes.

Although it is beneficial to modify speech so as to assure comprehension, it is not necessary to limit utterances or restrict exposure (Lightbrown & Spada, 1999). Explicit instruction in language structures at and just above the level of proficiency accelerates learning and ensures that students learn less common usage and specifically academic forms. It makes sense, then, to anticipate the next level of language learning by means of focused instruction. Effective ELD instruction is targeted to the limits of what students can already do with English and teaches the skills needed to move ahead.

A well-planned, systematic ELD component lays out a scope and sequence of language forms as expected outcomes. Students are grouped by level of proficiency for this part of the instructional day. Ongoing assessment with respect to mastery of forms and the ability to apply them in different contexts drives instructional planning in order to ensure that learning is on track.

The systematic ELD component, which draws from Long's "focus on forms" (1988), does not practice isolated grammatical features, as in traditional grammar translation programs, but rather focuses on form within a meaning-based context (Doughty & Williams, 1998), and on communicative functions (e.g., using the past tense to describe what happened in a movie) relevant to the life experiences of learners.

The "focus on forms" framework operationalizes forms to include grammatical structures, syntax, and vocabulary. Instruction includes comprehensible input of forms, starting with extensive modeling; practice, with opportunities for relevant output—and with variation, so that students can define when the form is appropriate to the context; and application to develop proficiency. Lessons can be based on literature, content, or activities but must focus on the forms of the language.

TEACHING TOOLS: LEVELS OF PROFICIENCY. Training for a novice construction worker includes a careful introduction to each of the tools of the trade, starting with a simple hammer and saw and proceeding later to power tools. By the same logic, a novice learner of a second language should be introduced to the forms or structures—the tools—of the language in a developmental sequence: from simple, commonly used forms to more complex and abstract ones. As with the construction worker, this should not occur in an isolated laboratory, but rather in a functional context that enables immediate practical applications. Let us now look at how this systematic approach works at different levels of development.

At a beginning level, the focus of ELD instruction is often on understanding commands, or giving simple one-word responses in survival situations like getting what you need or following directions. As understanding develops, students learn basic common everyday vocabulary and simple grammatical present, past, and future tenses. They practice extensively, receiving instructional feedback from more experienced speakers and the teacher. Reading and writing are introduced at the beginning levels through labeling; modeling of sentence frames and practice in completing them with words from banks, webs, and other resources; and the use of predictable, patterned texts featuring basic vocabulary and sentence structures. Lesson plans may revolve around a particular grammatical form and provide for extended practice with that form, or may address a content theme that encourages opportunities for connecting new learning to prior schema and applies that learning to situations relevant to the life of the student.

Intermediate-level students are engaged in more reading and writing, and in using a variety of verb tenses and grammatical structures. There is tremendous vocabulary growth as students learn synonyms (e.g., *large*/*giant*/*huge*), antonyms (e.g., *fast*/*slow*, *strong*/*weak*, *addition*/*subtraction*) and basic idioms ("cut it out," "raining cats and dogs"). Writing might focus on forms and conventions, such as pronoun usage or past-tense verb endings; oral language experiences might include reporting, dialogues, skits, or games.

Systematic ELD instruction is currently rare at advanced levels, depriving students of the opportunity to master the academic language necessary to compete in higher education academic contexts. Extending vocabulary, particularly general-utility academic words, and practicing complex verb tenses are essential for reading more complex narrative and expository text and for thinking about the abstract concepts students will encounter as they proceed through school. Advanced-level ELD should focus on addressing persistent problem areas in grammar, working to develop fluency and automaticity in reading comprehension; teaching idioms, along with metaphors and other figurative language; and deconstructing expository text (Kinsella, 1997; see also Hernández, chapter 6 in this volume).

Intense attention to vocabulary development, modeling and clear instruction in reading comprehension strategies and written composition, the use of graphic organizers, and providing many opportunities to practice new skills are essential for older learners. Emphasis on metalinguistic understanding and intentional focus on how language works also can accelerate learning.

At each level of proficiency, ELD instruction can occur in large-group instruction or in smaller groups within the class or pulled across classes into appropriate levels of proficiency. Systematic ELD that is thoughtful and thorough lays a solid foundation for English language learners as they develop proficiency at each level—but it is not sufficient. Rather, English language development instruction must be incorporated into all content areas.

Front-Loading Language Teaching

The second component of a comprehensive ELD program is the horizontal slice of the blueprint, crossing all content disciplines. Front-loading involves strategically preteaching the vocabulary and language forms needed to comprehend and generate the language appropriate to an upcoming lesson—making an investment of classroom time to help ensure that content lessons are comprehensible to English language learners. Front-loading a content

lesson anticipates the linguistic competence that the learning will require—as determined by the language requirements of the discipline in general and the lesson in particular—and intentionally teaches those skills.

A contractor needs specific tools for specific construction tasks, such as building a bookcase; if the task is to install a sink the tools are different, though they may overlap. So it is with respect to linguistic tasks. Students must have an array of linguistic skills in order to manage a range of language uses, purposes, and tasks; some of these, such as mastery of the regular and irregular forms of common verbs, overlap across disciplines and tasks, but using the conditional is particularly important to hypothesizing in science. So the teacher preparing students to hypothesize will consider how he or she wants students to make conditional statements and will teach students to use the appropriate language. Analysis of the linguistic demands of different cognitive tasks is at the heart of front-loading.

The ability to use many language tools is developed in a systematic ELD program, but this foundation alone will not provide English learners with the skills necessary to meet the range of language demands they will encounter across content areas. Front-loading in content area instruction is necessary to help students learn the specific language required to write a science lab report, frame an argument about the causes of a historical event, or summarize the plot of a novel—or to participate in a classroom discussion about current events or present an oral report on the need for recycling. Front-loading language teaches students the language of the content discipline.

CONTENT AREA INSTRUCTION. Content area instruction requires special attention directed at English language learners in every classroom that is not an ELD, ESL, or foreign language classroom. The primary approach to content area instruction for English language learners in U.S. schools is *sheltered instruction*. These classes are designed to simplify language demands and modify grade-level content instruction so as to make it accessible to students learning English; the adapted instruction is designed to provide an opportunity for English language learners to learn both content and academic language (Bunch, Abram, Lotan, & Váldes, 2001). Many mainstream content area teachers, however, receive little or no support regarding how to adapt their teaching methods to ensure that their English language learners have meaningful access to content.

The general principles of ELD hold true with respect to content area instruction (Moran, 1996). For one, content curriculum must be bridged to the knowledge and experience that students bring to the classroom (Díaz, Moll,

& Mehan, 1986; Heath, 1983). More generally, a positive and supportive environment for content instruction implies a sensitivity to the competing cognitive demands posed by challenging content and complex language. Organizational strategies—tools that fit a concept into a bigger picture as well as organize bits of information within a context or a topic (Calfee, 1981; Hernández, 1989)—are utilized at every level of the process. Meaningful contexts and practice through interaction with the language and concepts involved must be varied depending on the content and the function, but it is clear that interaction, whether in social studies, science, or mathematics, enhances learning (Hudelson, 1989; Reyes & Molner, 1991). Reporting or sharing is encouraged through a variety of modes of expression, both orally and in writing, and supported by the teacher's modeling and providing sentence frames and relevant vocabulary (Kinsella, 1997).

Research in the area of sheltered instruction has yielded some useful strategies. The Sheltered Instruction Observation Protocol (SIOP) model includes both content and language objectives, along with content concepts, in the preparation phase (Echevarria, Vogt, & Short, 2000). The Science-Language Integration rubric (Stoddart, Pinal, Latzke, & Canaday, 2002) defines five levels of teacher knowledge of content/language integration. The distinctions we define may help teachers progress through these levels in their understanding and in their ability to successfully integrate language and content.

SHELTERED INSTRUCTION VERSUS FRONT-LOADING FOR LANGUAGE. There are challenges involved in providing content instruction that is accessible and rigorous. As students progress through the grades, the linguistic and content demands made on them increase substantially, challenging even the best-intentioned and most knowledgeable teachers to bridge students' language proficiency in relation to the linguistic and content requirements of new subject matter. There is a risk of oversimplifying the content to accommodate the students' language level (Bunch et al., 2001); at the same time, because the primary goal of content instruction is to teach the knowledge and concepts of a discipline, the emphasis on content tends to dominate while language demands tend to be given short shrift. So sheltered content area instruction often leads to sacrifices in learning English, as teachers tend to emphasize content acquisition over building English language abilities and inadequate time is provided for English language learning (Gersten & Baker, 2000). Because of this lack of deliberate focus on the language required for accomplishing academic tasks, English language learners' linguistic skills cannot keep pace with the ever-

increasing demands of the curriculum, and the gap between what they know and what they need to know continues to grow (Stanovich, 1986).

We suggest that front-loading the language required for content and content-related tasks begins to address this difficulty in the sheltered instruction model. By regarding language and content demands as distinct but related and complementary, we can help ensure that students receive adequate time and attention with respect to developing the linguistic competencies needed to support complex content learning.

When familiar content is used to explicitly teach and practice the essential language skills an upcoming content lesson requires, the content demand is lowered so that students can attend to the language learning. As a master carpenter would teach a novice the skills of measuring and sawing using basic cuts first, so it is with respect to front-loading language for content instruction: The math teacher explains the language of lines and angles with familiar geometric shapes before asking students to apply those terms to complex figures. Without this instruction, the student may miss the concept being taught, because he or she is preoccupied with attempting to understand what is meant, say, by the phrase *is parallel to*. But now that some of the key language has been taught, attention is more likely to be focused on the content instruction. The purpose of front-loading, then, is to anticipate and remove linguistic barriers to subject matter comprehension.

During the content lesson, the teacher does not forget about language skills; indeed, they will be thoughtfully practiced, reinforced, and revisited throughout the content lesson, as the emphasis shifts from language to content and back, as needed. It should be noted here that the emphasis in a front-loading lesson is on the language requirements of function-related tasks, requiring what we have termed "mortar" vocabulary. The content-specific vocabulary—or "bricks"—is generally taught in the content lesson itself.

THINKING THROUGH A FRONT-LOADING LANGUAGE LESSON. Front-loading language instruction must be carefully thought through. A useful approach is to determine the language functions and identify the cognitive tasks that a given lesson targets. The teacher must first define those tasks by asking, What are the cognitive/linguistic demands of this assignment? Do I want the students to share information, tell a story, write an autobiographical essay, analyze a written math problem, or contrast animal behaviors? What is the linguistic load of the text? What are the demands of the readings in the discipline (textbooks, articles, websites), including chapter and section headings, charts, graphs, and maps?

Furthermore, what language forms will be needed to accomplish these tasks? What grammatical structures and vocabulary will be needed? Will the assignment require forming a question, or talking in the past tense? At this point it may be useful for the teacher to imagine the language he or she would like students to use, both orally and in writing. What kinds of sentences might students use to express the ideas being taught?

Next, what support is needed in order for students to learn to use these language structures? What are ways to engage students' interactions so as to further both the linguistic and conceptual goals of the lesson? And how can opportunities be structured for students to use these new forms appropriately and develop automaticity and comfort level (fluency)?

The purpose of both systematic ELD and front-loading is to develop competence in English. But whereas systematic ELD is organized by proficiency level based on competence with forms, front-loading language teaching is planned according to the demands of the content lesson and with a range of proficiency levels in mind.

By itself front-loading is not a comprehensive ELD program and may leave gaps in language knowledge; it is a complementary component to systematic ELD instruction. But we suggest that front-loading language enhances not only current sheltered instructional practices, but mainstream content instruction as well.

Maximizing the Teachable Moment

Finally, just as any good architect will take advantage of the natural terrain in designing a blueprint, we recognize the importance of contextual, incidental circumstances that create special learning opportunities.

Good teaching involves not only creating a language-rich classroom, but taking advantage of spontaneous opportunities to maximize learning—and make possible a more natural process of language acquisition. We call this informal, nonsystematic, yet potentially powerful aspect of English language development, which can occur at any moment during the school day, the "teachable moment."

How do serendipitous moments turn into learning opportunities? Teachable moments are captured when teachers assess the context and provide on-the-spot immediate input by briefly modeling, clarifying, or explaining a language need and providing an opportunity for practice. For example: Two students are in a conflict. The teacher insists students use "I" statements and models, "When you (do _____), I feel _____." This gives the students a

language frame—the mortar words to plug the bricks into. The teacher can also supply the bricks—by asking, "Do you feel sad, mad, hurt?" and then modeling these bricks within the mortar frame.

Or, Gabriela walks in and says, "Look, teacher, I got new red *choose*," in her best approximation of *shoes*. Appreciating the new shoes with correct modeling—"Look at Gabi's new shoes" (with an emphasis on the sound of *sh*)—provides Gabi with immediate comprehensible input. A brief minilesson on the *sh*/*ch* distinction provides the clear goal, safe context, and instructional feedback needed to call attention to the distinction between these phonemes. An explanation of how English has two different sounds whereas Spanish uses one sound for both graphemes provides the relevant metalinguistic understanding.

Another example: Kenji walks into class and announces, "I earn $10 yesterday and I earn $10 tomorrow too." A quick assessment by the teacher suggests the opportunity not only to present a mathematics minilesson but also to focus on language forms (past and future tense verb distinctions), by having Kenji and his classmates talk through several word problems revolving around his earnings.

Or, a student is writing an essay discussing the benefits of going to college and is stuck on how to get from one paragraph to the next. This difficulty allows the teacher to provide an on-the-spot lesson on the mortar words needed for *transitions* to help the student's paper *flow*. A quick brainstorming regarding college preparation requirements helps the student fill in the brick vocabulary in this essay as well.

Teachable moments occur every day—from a butterfly flying into the room to the latest news headline—and during almost every lesson. Whether corrective feedback turns into learning or not depends on how the teacher handles the moment, the safety of the environment, how comprehensible the input is for the student, and whether or not opportunities for output are supported. Even given the most artful teacher, however, these random moments do not make up, as some teachers suggest, an entire ELD program. They are, rather, a series of serendipitous opportunities to accelerate the learning of a new language form or expand vocabulary in a functional context. They do not take the place of systematic ELD instruction nor eliminate the need for front-loading language for content instruction.

It is important to set clear daily goals with respect to both language and content development, and it is also important to know when to seize an opportunity that presents itself to teach a language skill at a perfect moment of receptivity. There are no hard-and-fast rules, though, for when to stay focused on

goals and when to seize the moment. This is where teaching becomes an art, not a science. Just as an architect must balance the structural and aesthetic demands of his or her work, so must a teacher balance the science and the art of teaching.

Conclusions

Having presented the role of teacher as architect in implementing a well-designed approach to English language instruction, let us consider the knowledge base these architects will need. We return to Fillmore and Snow's (2000) discussion of what linguistic knowledge teachers must possess in light of the demographic and linguistic diversity in our world today. We agree that all teachers need to understand the linguistic features of English and have some ability to compare and contrast the most common languages of the students they serve. Furthermore, we believe that teachers need a fundamental understanding of the central role that academic language plays in learning and of the components of a comprehensive approach to ELD, including how to structure all three components—systematic ELD, front-loading language for content instruction, and maximizing the "teachable moment"—into their instructional day. They also need to be skilled in using the design features of functions, forms, and fluency to help plan their lessons. Finally, they need to be proficient enough with the above knowledge and skills to be able to create a rich language-learning environment. Perhaps future teacher preparation examinations will include tests of linguistic knowledge and of the underlying principles of English language development.

Studies by Haycock (1998) and others suggest that low teacher expectations with respect to language-minority students, as exhibited by assigning low-level tasks and providing minimal instruction, are widespread (see Coppola, chapter 8, and Chang, chapter 11, in this volume). English language learners face tremendous challenges in gaining both the linguistic and academic proficiencies required for academic success, and each student deserves thoughtful, rigorous, and well-designed instruction that is targeted to his or her level of language proficiency and provides for application of increasingly high levels of speaking, listening, reading, writing, and thinking skills. Our hope is that an architectural approach will help teachers, administrators, and policymakers rethink the structure and design of academic language instruction in

schools. Further study might usefully focus on how best to develop teacher ELD knowledge, and research is needed on the most effective use of the constellation of ELD components and design features presented here.

We believe that the architectural approach provides a powerful metaphor for English language instruction. For one thing, it gives proper prominence to the *design* aspect of language instruction. If teachers take seriously their role in planning for the teaching of language every day, English language learners will gain the tools to build durable foundations and strong academic language structures that will allow them to function comfortably in any academic or applied setting.

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FILED
Secretary of State
State of California
JUN 18 2015

ARTICLES OF INCORPORATION
OF
GROWTH PUBLIC SCHOOLS

I.

The name of the Corporation shall be Growth Public Schools.

II.

The Corporation is a nonprofit public benefit corporation and is not organized for the private gain of any person. It is organized under the Nonprofit Public Benefit Corporation Law for public and charitable purposes. The specific purposes for which this Corporation is organized are to manage, operate, guide, direct and promote one or more California public charter schools.

The Corporation is organized and operated exclusively for educational and charitable purposes pursuant to and within the meaning of Section 501(c)(3) of the Internal Revenue Code or the corresponding provision of any future United States Internal Revenue Law. Notwithstanding any other provision of these articles, the Corporation shall not, except to an insubstantial degree, engage in any other activities or exercise of power that do not further the purposes of the Corporation. The Corporation shall not carry on any other activities not permitted to be carried on by: (a) a corporation exempt from federal income tax under Section 501(c)(3) of the Internal Revenue Code, or the corresponding section of any future federal tax code; or (b) by a corporation, contributions to which are deductible under Section 170(c)(2) of the Internal Revenue Code, or the corresponding section of any future federal tax code.

III.

The name and address in the State of California of this Corporation's initial agent for service of process is:

David Kyle Richards
746 N. 3rd St.
San Jose, CA 95112

IV.

All corporate property is irrevocably dedicated to the purposes set forth in the second article above. No part of the net earnings of the Corporation shall inure to the benefit of, or be distributable to any of its directors, members, trustees, officers or other private persons except that the Corporation shall be authorized and empowered to pay reasonable compensation for services rendered, and to make payments and distributions in furtherance of the purposes set forth in Article II.

No substantial part of the activities of the Corporation shall consist of the carrying on of propaganda, or otherwise attempting to influence legislation, and the Corporation shall not

participate in, or intervene in (including the publishing or distribution of statements) any political campaign on behalf of or in opposition to any candidate for public office.

Subject to the provisions of the nonprofit public benefit provisions of the Nonprofit Corporation Law of the State of California, and any limitations in the articles or bylaws relating to action to be approved by the members or by a majority of all members, if any, the activities and affairs of this Corporation shall be conducted and all the powers shall be exercised by or under the direction of the board of directors.

The number of directors shall be as provided for in the bylaws. The bylaws shall prescribe the qualifications, mode of election, and term of office of directors.

V.

The authorized number and qualifications of members of the corporation, if any, the different classes of membership, the property, voting and other rights and privileges of members, and their liability for dues and assessments and the method of collection thereof, shall be set forth in the bylaws.

VI.

Upon the dissolution or winding up of the Corporation, its assets remaining after payment of all debts and liabilities of the Corporation, shall be distributed to a public school, or the State or a political subdivision thereof, for a public purpose. Any such assets not so disposed of shall be disposed of by a court of competent jurisdiction of the county in which the principal office of the Corporation is then located, exclusively for such purposes or to such organization or organizations, as said court shall determine which are organized and operated exclusively for such purposes.

VII.

The initial street address and initial mailing address of the Corporation is:

746 N. 3rd St.
San Jose, CA 95112

Dated: 6/17/15

Kimberly Rodriguez

Kimberly Rodriguez, Incorporator

I hereby certify that the foregoing transcript of 2 page(s) is a full, true and correct copy of the original record in the custody of the California Secretary of State's office.

JUN 25 2015

Date:

ALEX PADILLA, Secretary of State

BYLAWS
OF
GROWTH PUBLIC SCHOOLS
(A California Nonprofit Public Benefit Corporation)

ARTICLE I
NAME

Section 1. NAME. The name of this Corporation is Growth Public Schools.

ARTICLE II
PRINCIPAL OFFICE OF THE CORPORATION

Section 1. PRINCIPAL OFFICE OF THE CORPORATION. The principal office for the transaction of the activities and affairs of the Corporation is 4416 Arden Way, Sacramento, State of California. The Board of Directors may change the location of the principal office. Any such change of location must be noted by the Secretary on these bylaws opposite this Section; alternatively, this Section may be amended to state the new location.

Section 2. OTHER OFFICES OF THE CORPORATION. The Board of Directors may at any time establish branch or subordinate offices at any place or places where the Corporation is qualified to conduct its activities.

ARTICLE III
GENERAL AND SPECIFIC PURPOSES; LIMITATIONS

Section 1. GENERAL AND SPECIFIC PURPOSES. The purpose of the Corporation is to manage, operate, guide, direct and promote the one or more California public charter schools. Also in the context of these purposes, the Corporation shall not, except to an insubstantial degree, engage in any other activities or exercise of power that do not further the purposes of the Corporation.

The Corporation shall not carry on any other activities not permitted to be carried on by: (a) a corporation exempt from federal income tax under section 501(c)(3) of the Internal Revenue Code, or the corresponding section of any future federal tax code; or (b) a corporation, contributions to which are deductible under section 170(c)(2) of the Internal Revenue Code, or the corresponding section of any future federal tax code. No substantial part of the activities of the Corporation shall consist of the carrying on of propaganda, or otherwise attempting to influence legislation, and the Corporation shall not participate in, or intervene in (including the publishing or distributing of statements) any political campaign on behalf of or in opposition to any candidate for public office.

ARTICLE IV
CONSTRUCTION AND DEFINITIONS

Section 1. CONSTRUCTION AND DEFINITIONS. Unless the context indicates otherwise, the general provisions, rules of construction, and definitions in the California Nonprofit Corporation Law shall govern the construction of these bylaws. Without limiting the generality of

the preceding sentence, the masculine gender includes the feminine and neuter, the singular includes the plural, and the plural includes the singular, and the term "person" includes both a legal entity and a natural person.

ARTICLE V
DEDICATION OF ASSETS

Section 1. DEDICATION OF ASSETS. The Corporation's assets are irrevocably dedicated to public benefit purposes as set forth in the Charter School's Charter. No part of the net earnings, properties, or assets of the Corporation, on dissolution or otherwise, shall inure to the benefit of any private person or individual, or to any director or officer of the Corporation. On liquidation or dissolution, all properties and assets remaining after payment, or provision for payment, of all debts and liabilities of the Corporation shall be distributed to a public school, or the State or a political subdivision thereof, for a public purpose.

ARTICLE VI
CORPORATION WITHOUT MEMBERS

Section 1. CORPORATION WITHOUT MEMBERS. The Corporation shall have no voting members within the meaning of the Nonprofit Corporation Law. The Corporation's Board of Directors may, in its discretion, admit individuals to one or more classes of nonvoting members; the class or classes shall have such rights and obligations as the Board of Directors finds appropriate.

ARTICLE VII
BOARD OF DIRECTORS

Section 1. GENERAL POWERS. Subject to the provisions and limitations of the California Nonprofit Public Benefit Corporation Law and any other applicable laws, and subject to any limitations of the articles of incorporation or bylaws, the Corporation's activities and affairs shall be managed, and all corporate powers shall be exercised, by or under the direction of the Board of Directors ("Board").

Section 2. SPECIFIC POWERS. Without prejudice to the general powers set forth in Section 1 of this article, but subject to the same limitations, the Board of Directors shall have the power to:

a. Appoint and remove, at the pleasure of the Board of Directors, all corporate officers, agents, and employees; prescribe powers and duties for them as are consistent with the law, the articles of incorporation, and these bylaws; fix their compensation; and require from them security for faithful service.

b. Change the principal office or the principal business office in California from one location to another; cause the Corporation to be qualified to conduct its activities in any other state, territory, dependency, or country; conduct its activities in or outside California.

c. Borrow money and incur indebtedness on the Corporation's behalf and cause to be

executed and delivered for the Corporation's purposes, in the corporate name, promissory notes, bonds, debentures, deeds of trust, mortgages, pledges, hypothecations, and other evidences of debt and securities.

d. Adopt and use a corporate seal.

Section 3. DESIGNATED DIRECTORS AND TERMS. The number of directors shall be no less than __3___ and no more than ___15_, unless changed by amendments to these bylaws. All directors shall have full voting rights, including any representative appointed by the charter authorizer as consistent with Education Code Section 47604(b). If the charter authorizer appoints a representative to serve on the Board of Directors, the Corporation may appoint an additional director to ensure an odd number of Board members. All directors, except for the representative appointed by the charter authorizer, shall be designated by the existing Board of Directors.

Except for the initial Board of Directors, each director shall hold office unless otherwise removed from office in accordance with these bylaws for _3___ year(s) and until a successor director has been designated and qualified. Terms for the initial Board of Directors shall be _7__ seats for a term of __3_ year(s). The initial Board of Directors shall be as follows:

NAME	EXPIRATION OF TERM
Larisa Cespedes	July 2019
Matthew Taylor	July 2019
Kandace Forrester	July 2019
Justin Barra	July 2019
Geoff Sakala	July 2019

Section 4. RESTRICTION ON INTERESTED PERSONS AS DIRECTORS. No persons serving on the Board of Directors may be interested persons. An interested person is (a) any person currently compensated by the Corporation for services rendered to it within the previous 12 months, whether as a full-time or part-time employee, independent contractor, or otherwise, excluding any reasonable compensation paid to a director as director; and (b) any brother, sister, ancestor, descendant, spouse, brother-in-law, sister-in-law, son-in-law, daughter-in-law, mother-in-law, or father-in-law of such person. The Board may adopt other policies circumscribing potential conflicts of interest.

Section 5. DIRECTORS' TERMS. Each director shall hold office for _3_ years and until a successor director has been designated and qualified.

Section 6. NOMINATIONS BY COMMITTEE. The Chairman of the Board of Directors or, if none, the President will appoint a committee to designate qualified candidates for designation to the Board of Directors at least thirty (30) days before the date of any designation of directors. The nominating committee shall make its report at least seven (7) days before the date of such designation or at such other time as the Board of Directors may set and the Secretary shall forward to each Board member, with the notice of meeting required by these bylaws, a list of all candidates nominated by committee.

Section 7. USE OF CORPORATE FUNDS TO SUPPORT NOMINEE. If more

people have been nominated for director than can be designated, no corporation funds may be expended to support a nominee without the Board's authorization.

Section 8. EVENTS CAUSING VACANCIES ON BOARD. A vacancy or vacancies on the Board of Directors shall occur in the event of (a) the death, resignation, or removal of any director; (b) the declaration by resolution of the Board of Directors of a vacancy in the office of a director who has been convicted of a felony, declared of unsound mind by a court order, or found by final order or judgment of any court to have breached a duty under California Nonprofit Public Benefit Corporation Law, Chapter 2, Article 3; or (c) the increase of the authorized number of directors.

Section 9. RESIGNATION OF DIRECTORS. Except as provided below, any director may resign by giving written notice to the Chairman of the Board, if any, or to the President, or the Secretary, or to the Board. The resignation shall be effective when the notice is given unless the notice specifies a later time for the resignation to become effective. If a director's resignation is effective at a later time, the Board of Directors may designate a successor to take office as of the date when the resignation becomes effective.

Section 10. DIRECTOR MAY NOT RESIGN IF NO DIRECTOR REMAINS. Except on notice to the California Attorney General, no director may resign if the Corporation would be left without a duly designated director or directors.

Section 11. REMOVAL OF DIRECTORS. Any director, except for the representative appointed by the charter authorizer, may be removed, with or without cause, by the vote of the majority of the members of the entire Board of Directors at a special meeting called for that purpose, or at a regular meeting, provided that notice of that meeting and such removal are given in compliance with the provisions of the Ralph M. Brown Act. (Chapter 9 (commencing with Section 54950) of Division 2 of Title 5 of the Government Code), if applicable. Any vacancy caused by the removal of a Board designated director shall be filled as provided in Section 12. The representative appointed by the charter authorizer may be removed without cause by the charter authorizer or with the written consent of the charter authorizer.

Section 12. VACANCIES FILLED BY BOARD. Vacancies on the Board of Directors may be filled by approval of the Board of Directors or, if the number of directors then in office is less than a quorum, by (a) the affirmative vote of a majority of the directors then in office at a regular or special meeting of the Board, or (b) a sole remaining director.

Section 13. NO VACANCY ON REDUCTION OF NUMBER OF DIRECTORS. Any reduction of the authorized number of directors shall not result in any directors being removed before his or her term of office expires.

Section 14. NON-LIABILITY OF DIRECTORS. No director shall be personally liable for the debts, liabilities, or other obligations of the Corporation.

Section 15. COMPLIANCE WITH LAWS GOVERNING STUDENT RECORDS. The Charter School and the Board of Directors shall comply with all applicable provisions of the Family Education Rights Privacy Act ("FERPA") as set forth in Title 20 of the United States Code Section 1232g and attendant regulations as they may be amended from time to time.

ARTICLE VIII
BOARD MEETINGS PRIOR TO CHARTER APPROVAL

Section 1. PLACE OF BOARD OF DIRECTORS MEETINGS. Meetings shall be held at the principal office of the corporation. The Board of Directors may designate that a meeting be held at any place within California that has been designated by resolution of the Board of Directors or in the notice of the meeting.

Section 2. MEETINGS BY TELEPHONE OR OTHER TELECOMMUNICATIONS EQUIPMENT. Any Board of Directors meeting may be held by conference telephone, video screen communication, or other communications equipment. Participation in a meeting under this Section shall constitute presence in person at the meeting if all of the following apply:

(a) Each member participating in the meeting can communicate concurrently with all other members.

(b) Each member is provided the means of participating in all matters before the Board, including the capacity to propose, or to interpose an objection to, a specific action to be taken by the corporation.

(c) The Board of Directors has adopted and implemented a means of verifying both of the following:

(1) A person communicating by telephone, video screen, or other communications equipment is a director entitled to participate in the Board of Directors meeting.

(2) All statements, questions, actions or votes were made by that director and not by another person not permitted to participate as a director.

Section 3. ANNUAL AND REGULAR MEETINGS. Regular meetings of the Board of Directors shall be held on the first Wednesday ? of each month at 5 or 6 p.m., unless the first Tuesday of the month should fall on a legal holiday in which event the regular meeting shall be held at the same hour and place on the next business day following the legal holiday. The Board of Directors shall hold an annual meeting, regular, special, and emergency meetings for purposes of organization, election of officers, and transaction of other business. Notice of this meeting is not required if conducted pursuant to these bylaws.

Section 4. AUTHORITY TO CALL SPECIAL MEETINGS. Special and emergency meetings of the Board of Directors for any purpose may be called at any time by the Chairman of the Board, if any, the President or any Vice-President, the Secretary, or any two Directors but may only be conducted if two-thirds of the Board of Directors vote that a situation warranting a special or emergency meeting exists.

Section 5. NOTICE OF MEETINGS. Regular meetings of the Board may be held without notice if conducted pursuant to these Bylaws. Special meetings of the Board shall be held upon four (4) days written notice by first-class mail or forty-eight (48) hours notice

delivered personally or by telephone, facsimile, or telegraph. If sent by mail or telegraph, the notice shall be deemed to be delivered on its deposit in the mails or on its delivery to the telegraph company. Such notices shall be addressed to each director at his or her address as shown on the books of the Corporation. Notice of time and place of holding an adjourned meeting need not be given to absent directors if the time and place of the adjourned meeting are fixed at the meeting adjourned and if such adjourned meeting is held no more than twenty-four (24) hours from the time of the original meeting. Notice shall be given of any adjourned regular or special meeting to directors absent from the original meeting if the adjourned meeting is held more than twenty-four (24) hours from the time of the original meeting.

The notice shall state the time of the meeting and the place, if the place is other than the corporation's principal office and the business to be transacted at the meeting.

Section 6. WAIVER OF NOTICE AND CONSENT TO HOLD MEETINGS. The transactions of any meeting of the Board, however called and noticed or wherever held, are as valid as though the meeting had been duly held after proper call and notice, provided a quorum, as hereinafter defined, is present and provided that either before or after the meeting each director not present signs a waiver of notice, a consent to holding the meeting, or an approval of the minutes thereof. All such waivers, consents, or approvals shall be filed with corporate records or made a part of the minutes of the meeting.

Section 7. ACTION WITHOUT MEETING. Any action that the Board is required or permitted to take may be taken without a meeting if all Board members consent in writing to the action; provided, however, that the consent of any director who has a material financial interest in a transaction to which the Corporation is a party and who is an "interested director" as defined in Corporations Code section 5233 shall not be required for approval of that transaction. Such action by written consent shall have the same force and effect as any other validly approved action of the Board. All such consents shall be filed with the minutes of the proceedings of the Board.

Section 8. QUORUM. A majority of the directors then in office shall constitute a quorum for the transaction of any business except adjournment. Every action taken or decision made by a majority of the directors present at a duly held meeting at which a quorum is present shall be an act of the Board, subject to the more stringent provisions of the California Nonprofit Public Benefit Corporation Law, including, without limitation, those provisions relating to (a) approval of contracts or transactions in which a director has a direct or indirect material financial interest, (b) approval of certain transactions between corporations having common directorships, (c) creation of and appointments to committees of the Board, and (d) indemnification of directors.

Section 9. ADJOURNMENT. A majority of the directors present, whether or not a quorum is present, may adjourn any meeting to another time and place.

Section 10. COMPENSATION AND REIMBURSEMENT. Directors shall serve without compensation except that directors may receive such reimbursement of expenses, as the Board of Directors may establish by resolution to be just and reasonable as to the corporation at the time that the resolution is adopted. In addition, they shall be allowed reasonable advancement or reimbursement of expenses incurred in the performance of their regular duties as specified in

Section 2 of this Article. Directors may not be compensated for rendering services to the Corporation in any capacity other than director unless such compensation is reasonable and is allowable under the provisions of Section 4 of this Article.

Section 11. CREATION OF POWERS OF COMMITTEES. The Board, by resolution adopted by a majority of the directors then in office, may create one or more committees, each consisting of two or more directors and no one who is not a director, to serve at the pleasure of the Board. Appointments to committees of the Board of Directors shall be by majority vote of the authorized number of directors. The Board of Directors may appoint one or more directors as alternate members of any such committee, who may replace any absent member at any meeting. Any such committee shall have all the authority of the Board, to the extent provided in the Board of Directors resolution, except that no committee may:

(a) Take any final action on any matter that, under the California Nonprofit Public Benefit Corporation Law, also requires approval of the members or approval of a majority of all members;

(b) Fill vacancies on the Board of Directors or any committee of the Board;

(c) Fix compensation of the directors for serving on the Board of Directors or on any committee;

(d) Amend or repeal bylaws or adopt new bylaws;

(e) Amend or repeal any resolution of the Board of Directors that by its express terms is not so amendable or repealable;

(f) Create any other committees of the Board of Directors or appoint the members of committees of the Board;

(g) Expend corporate funds to support a nominee for director if more people have been nominated for director than can be elected;

(h) Approve any contract or transaction to which the corporation is a party and in which one or more of its directors has a material financial interest, except as special approval is provided for in Corporations Code section 5233(d)(3).

Section 12. MEETINGS AND ACTION OF COMMITTEES. Meetings and actions of committees of the Board of Directors shall be governed by, held, and taken under the provisions of these bylaws concerning meetings and other Board of Directors' actions, except that the time for general meetings of such committees and the calling of special meetings of such committees may be set either by Board of Directors resolution or, if none, by resolution of the committee. Minutes of each meeting shall be kept and shall be filed with the corporate records. The Board of Directors may adopt rules for the governance of any committee as long as the rules are consistent with these bylaws. If the Board of Directors has not adopted rules, the committee may do so.

ARTICLE IX
BOARD MEETINGS AFTER CHARTER APPROVAL

Section 1. PLACE OF BOARD OF DIRECTORS MEETINGS. Meetings shall be held at the principal office of the Corporation. The Board of Directors may also designate that a meeting be held at any place within the granting agency's boundaries designated in the notice of the meeting. All meetings of the Board of Directors shall be called, held and conducted in accordance with the terms and provisions of the Ralph M. Brown Act, California Government Code Sections 54950, et seq., as said chapter may be modified by subsequent legislation.

Section 2. MEETINGS; ANNUAL MEETINGS. All meetings of the Board of Directors and its committees shall be called, noticed, and held in compliance with the provisions of the Ralph M. Brown Act ("Brown Act"). (Chapter 9 (commencing with Section 54950) of Division 2 of Title 5 of the Government Code). The Board of Directors shall meet annually for the purpose of organization, appointment of officers, and the transaction of such other business as may properly be brought before the meeting. This meeting shall be held at a time, date, and place as noticed by the Board of Directors in accordance with the Brown Act.

Section 3. REGULAR MEETINGS. Regular meetings of the Board of Directors, including annual meetings, shall be held at such times and places as may from time to time be fixed by the Board of Directors. At least 72 hours before a regular meeting, the Board of Directors, or its designee shall post an agenda containing a brief general description of each item of business to be transacted or discussed at the meeting.

Section 4. SPECIAL MEETINGS. Special meetings of the Board of Directors for any purpose may be called at any time by the Chairman of the Board of Directors, if there is such an officer, or a majority of the Board of Directors. If a Chairman of the Board has not been elected then the President is authorized to call a special meeting in place of the Chairman of the Board. The party calling a special meeting shall determine the place, date, and time thereof.

Section 5. NOTICE OF SPECIAL MEETINGS. In accordance with the Brown Act, special meetings of the Board of Directors may be held only after twenty-four (24) hours notice is given to the public through the posting of an agenda. Directors shall also receive at least twenty-four (24) hours notice of the special meeting, in the following manner:

a. Any such notice shall be addressed or delivered to each director at the director's address as it is shown on the records of the Corporation, or as may have been given to the Corporation by the director for purposes of notice, or, if an address is not shown on the Corporation's records or is not readily ascertainable, at the place at which the meetings of the Board of Directors are regularly held.

b. Notice by mail shall be deemed received at the time a properly addressed written notice is deposited in the United States mail, postage prepaid. Any other written notice shall be deemed received at the time it is personally delivered to the recipient or is delivered to a common carrier for transmission, or is actually transmitted by the person giving the notice by electronic means to the recipient. Oral notice shall be deemed received at the time it is communicated, in person or by telephone or wireless, to the recipient or to a person at the office of the recipient whom the person giving the notice has reason to believe will promptly communicate it to the receiver.

c. The notice of special meeting shall state the time of the meeting, and the place if the place is other than the principal office of the Corporation, and the general nature of the business proposed to be transacted at the meeting. No business, other than the business the general nature of which was set forth in the notice of the meeting, may be transacted at a special meeting.

Section 6. QUORUM. A majority of the directors then in office shall constitute a quorum. All acts or decisions of the Board of Directors will be by majority vote of the directors in attendance, based upon the presence of a quorum. Should there be less than a majority of the directors present at the inception of any meeting, the meeting shall be adjourned. Directors may not vote by proxy. The vote or abstention of each board member present for each action taken shall be publicly reported.

Section 7. TELECONFERENCE MEETINGS. Members of the Board of Directors may participate in teleconference meetings so long as all of the following requirements in the Brown Act are complied with:

a. At a minimum, a quorum of the members of the Board of Directors shall participate in the teleconference meeting from locations within the boundaries of the school district in which the Charter School operates;

b. All votes taken during a teleconference meeting shall be by roll call;

c. If the Board of Directors elects to use teleconferencing, it shall post agendas at all teleconference locations with each teleconference location being identified in the notice and agenda of the meeting;

d. All locations where a member of the Board of Directors participates in a meeting via teleconference must be fully accessible to members of the public and shall be listed on the agenda;[1]

e. Members of the public must be able to hear what is said during the meeting and shall be provided with an opportunity to address the Board of Directors directly at each teleconference location; and

f. The agenda shall indicate that members of the public attending a meeting conducted via teleconference need not give their name when entering the conference call.[2]

Section 8. ADJOURNMENT. A majority of the directors present, whether or not a quorum is present, may adjourn any Board of Directors meeting to another time or place. Notice of such adjournment to another time or place shall be given, prior to the time scheduled for the continuation of the meeting, to the directors who were not present at the time of the adjournment, and to the public in the manner prescribed by the Brown Act.

[1] This means that members of the Board of Directors who choose to utilize their homes or offices as teleconference locations must open these locations to the public and accommodate any members of the public who wish to attend the meeting at that location.

[2] The Brown Act prohibits requiring members of the public to provide their names as a condition of attendance at the meeting.

Section 9. COMPENSATION AND REIMBURSEMENT. Directors may not receive compensation for their services as directors or officers, only such reimbursement of expenses as the Board of Directors may establish by resolution to be just and reasonable as to the Corporation at the time that the resolution is adopted.

Section 10. CREATION AND POWERS OF COMMITTEES. The Board, by resolution adopted by a majority of the directors then in office, may create one or more committees of the Board, each consisting of two or more directors and no one who is not a director, to serve at the pleasure of the Board. Appointments to committees of the Board of Directors shall be by majority vote of the directors then in office. The Board of Directors may appoint one or more directors as alternate members of any such committee, who may replace any absent member at any meeting. Any such committee shall have all the authority of the Board, to the extent provided in the Board of Directors' resolution, except that no committee may:

a. Take any final action on any matter that, under the California Nonprofit Public Benefit Corporation Law, also requires approval of the members or approval of a majority of all members;

b. Fill vacancies on the Board of Directors or any committee of the Board;

c. Fix compensation of the directors for serving on the Board of Directors or on any committee;

d. Amend or repeal bylaws or adopt new bylaws;

e. Amend or repeal any resolution of the Board of Directors that by its express terms is not so amendable or subject to repeal;

f. Create any other committees of the Board of Directors or appoint the members of committees of the Board;

g. Expend corporate funds to support a nominee for director if more people have been nominated for director than can be designated; or

h. Approve any contract or transaction to which the Corporation is a party and in which one or more of its directors has a material financial interest.

The Board may also create one or more advisory committees composed of directors and non-directors. It is the intent of the Board to encourage the participation and involvement of faculty, staff, parents, students and administrators through attending and participating in open committee meetings. The Board may establish, by resolution adopted by a majority of the directors then in office, advisory committees to serve at the pleasure of the Board.

Section 11. MEETINGS AND ACTION OF COMMITTEES. Meetings and actions of committees of the Board of Directors shall be governed by, held, and taken under the provisions of these bylaws concerning meetings, other Board of Directors' actions, and the Brown Act, if applicable, except that the time for general meetings of such committees and the calling of special meetings of such committees may be set either by Board of Directors' resolution or, if none, by

resolution of the committee. Minutes of each meeting shall be kept and shall be filed with the corporate records. The Board of Directors may adopt rules for the governance of any committee as long as the rules are consistent with these bylaws. If the Board of Directors has not adopted rules, the committee may do so.

ARTICLE X
OFFICERS OF THE CORPORATION

Section 1. OFFICES HELD. The officers of the Corporation shall be a President, who shall be known as the "Chief Executive Officer", a Secretary, and a Treasurer. The Corporation, at the Board's direction, may also designate from time to time, one or more Vice-Presidents, one or more Assistant Secretaries, one or more Assistant Treasurers, and such other officers as may be appointed under Article VIII, Section 8 of these bylaws. The Corporation, at the Board's direction, may also have a Chairperson of the Board and a Vice-Chair. The officers, in addition to the corporate duties set forth in this Article VIII, shall also have administrative duties as set forth in any applicable contract for employment or job specification. The President shall not also be a Board member.

Section 2. DUPLICATION OF OFFICE HOLDERS. Any number of offices may be held by the same person, except that neither the Secretary nor the Treasure may serve concurrently as the Chief Executive Officer or Chairperson of the Board.

Section 3. CHIEF EXECUTIVE OFFICER. Subject to the control of the board the Chief Executive Officer shall be the general manager of the corporation and shall supervise, direct, and control the corporation's activities, affairs, and officers as fully described in any applicable employment contract, agreement, or job specification. If there is no Chairman of the Board, the President shall also preside at the Board of Directors' meetings. The Chief Executive Officer shall have such other powers and duties as the board of directors or the bylaws may require.

Without prejudice to the general powers and duties set forth in this Section, the duties of the Chief Executive Officer shall include the following:

a) The Chief Executive Officer shall carry out the policies of the Corporation and the decisions of the Board of Directors.
b) He or she shall propose policies for adoption by the Board and provide comments and recommendations regarding policies presented by others to the Board.
c) He or she shall be expected to anticipate the developing needs of the Corporations' Schools, and the community, both short- and long-term, and to interpret those needs and changes for the Board.
d) He or she shall be responsible for keeping the Board well informed on all matters pertaining to the Corporation at all times.
e) The Chief Executive Officer shall be an ex-officio member of all committees related to the School.
f) At each regular meeting of the Board of Directors, the Chief Executive Officer shall make a report of the Corporation, and shall present an annual report of the Corporation's activities at the annual meeting of the Board of Directors.

g) The Chief Executive Officer shall be responsible for coordinating the screening, interviewing and hiring of the full-time teaching faculty, part-time teachers, and all staff; setting salaries within the minimum and maximum limits established by the Board of Directors; and shall conduct or cause to be conducted annual reviews of all personnel. He or she shall recommend to the Board the promotion, discipline and dismissal of all employees.

h) The Chief Executive Officer shall be responsible for all required reporting to authorizing District(s) and the State of California Department of Education. Except as otherwise expressly provided by law, by the Articles of Incorporation, by these Bylaws, or by the School's Charter, the Chief Executive Officer shall, in the name of the corporation, execute such deeds, mortgages, bonds, contracts, checks, or other instruments which may from time to time be authorized by the Board of Directors.

i) The Chief Executive Officer shall carry out the duties of the position consistent with the mission and vision of the School, and shall lead by example in implementing the various principles enunciated in the Bylaws and the Charter.

Section 4. SECRETARY. The secretary shall keep or cause to be kept, at the corporation's principal office or such other place as the board of directors may direct, a book of minutes of all meetings, proceedings, and actions of the board, and of committees of the board. The minutes of meetings shall include the time and place that the meeting was held; whether the meeting was annual, regular, special, or emergency and, if special or emergency, how authorized; the notice given and the names of persons present at board of directors and committee meetings; and the vote or abstention of each board member present for each action taken.

The secretary shall keep or cause to be kept, at the principal California office, a copy of the articles of incorporation and bylaws, as amended to date.

The secretary shall give, or cause to be given, notice of all meetings of members, of the board, and of committees of the board of directors that these bylaws require to be given. The secretary shall keep the corporate seal, if any, in safe custody and shall have such other powers and perform such other duties as the board of directors or bylaws may require.

Section 5. TREASURER. The Treasurer, also known as the Chief Financial Officer, shall keep and maintain, or cause to be kept and maintained, adequate and correct books and accounts of the corporation's properties and transactions. The Treasure shall work with the Chief Executive Officer and send or cause to be given to the members and directors such financial statements and reports as are required to be given by law, by these bylaws, or by the board. The books of account shall be open to inspection by any director at all reasonable times.

The Treasure shall (i) deposit, or cause to be deposited, all money and other valuables in the name and to the credit of the corporation with such depositories as the board of directors may designate; (ii) disburse the corporation's funds as the board of directors may order; (iii) render to the president and the board, when requested, an account of all transactions as Treasurer and of the financial condition of the corporation; and (iv) have such other powers and perform such other duties as the board, contract, job specification, or the bylaws may require.

In general, perform all duties incident to the office of Treasurer and such other duties as may be required by law, by the Articles of Incorporation of the corporation, or by these Bylaws, or which may be assigned to him or her from time to time by the Board of directors.

Section 6. CHAIRMAN OF THE BOARD. The Corporation, at the Board's direction, may also have a Chairman of the Board and a Vice-Chair. If a Chairman of the Board of Directors is elected, he or she shall preside at the Board of Directors' meetings and shall exercise and perform such other powers and duties as the Board of Directors may assign from time to time. If a Chairman of the Board of Directors is elected, there shall also be a Vice-Chairman of the Board of Directors. In the absence of the Chairman, the Vice-Chairman shall preside at Board of Directors meetings and shall exercise and perform such other powers and duties as the Board of Directors may assign from time to time.

Section 7. ELECTION OF OFFICERS. The officers of this corporation, except any appointed under Article VIII, Section 8 of these bylaws, shall be chosen annually by the Board of Directors and shall serve at the pleasure of the Board.

Section 8. APPOINTMENT OF OTHER OFFICERS. The Board of Directors may appoint or authorize the Chief Executive Officer, or another officer to appoint any other officers that the corporation may require. Each appointed officer shall have the title and authority hold office for the specified period, and perform the duties specified in the bylaws or established by the Board.

Section 9. REMOVAL OF OFFICERS. The Board of Directors may remove any officer with cause, in accordance with the charter petition, and with Article VII Section 6 of these Bylaws. All voting processes shall comply with the Brown Act.

Section 10. RESIGNATION OF OFFICERS. Any officer may resign at any time by giving written notice to the board. The resignation shall take effect on the date the notice is received or at any later time specified in the notice. Unless otherwise specified in the notice, the resignation need not be accepted to be effective. Any resignation shall be without prejudice to any rights of the corporation under any contract to which the officer is a party.

Section 11. VACANCIES IN OFFICE. A vacancy in any office because of death, resignation, removal, disqualification, or any other cause shall be filled in the manner prescribed in these bylaws for normal appointment to that office, provided, however, that vacancies need not be filled on an annual basis.

ARTICLE XI
CONTRACTS WITH DIRECTORS

Section 1. CONTRACTS WITH DIRECTORS. The Corporation shall not enter into a contract or transaction in which a director directly or indirectly has a material financial interest (nor any other corporation, firm, association, or other entity in which one or more of the Corporation's directors are directors and have a material financial interest).

ARTICLE XII

CONTRACTS WITH NON-DIRECTOR DESIGNATED EMPLOYEES

Section 1. CONTRACTS WITH NON-DIRECTOR DESIGNATED EMPLOYEES. The Corporation shall not enter into a contract or transaction in which a non-director designated employee (e.g., officers and other key decision-making employees) directly or indirectly has a material financial interest unless all of the requirements in the Corporation's Conflict of Interest Code have been fulfilled.

ARTICLE XIII
LOANS TO DIRECTORS AND OFFICERS

Section 1. LOANS TO DIRECTORS AND OFFICERS. The Corporation shall not lend any money or property to or guarantee the obligation of any director or officer without the approval of the California Attorney General; provided, however, that the Corporation may advance money to a director or officer of the Corporation for expenses reasonably anticipated to be incurred in the performance of his or her duties if that director or officer would be entitled to reimbursement for such expenses of the Corporation.

ARTICLE XIV
INDEMNIFICATION

Section 1. INDEMNIFICATION. To the fullest extent permitted by law, the Corporation shall indemnify its directors, officers, employees, and other persons described in Corporations Code Section 5238(a), including persons formerly occupying any such positions, against all expenses, judgments, fines, settlements, and other amounts actually and reasonably incurred by them in connection with any "proceeding," as that term is used in that section, and including an action by or in the right of the Corporation by reason of the fact that the person is or was a person described in that section. "Expenses," as used in this bylaw, shall have the same meaning as in that section of the Corporations Code.

On written request to the Board of Directors by any person seeking indemnification under Corporations Code Section 5238 (b) or Section 5238 (c) the Board of Directors shall promptly decide under Corporations Code Section 5238 (e) whether the applicable standard of conduct set forth in Corporations Code Section 5238 (b) or Section 5238 (c) has been met and, if so, the Board of Directors shall authorize indemnification.

ARTICLE XV
INSURANCE

Section 1. INSURANCE. The Corporation shall have the right to purchase and maintain insurance to the full extent permitted by law on behalf of its directors, officers, employees, and other agents, to cover any liability asserted against or incurred by any director, officer, employee, or agent in such capacity or arising from the director's, officer's, employee's, or agent's status as such.

ARTICLE XVI
MAINTENANCE OF CORPORATE RECORDS

Section 1. MAINTENANCE OF CORPORATE RECORDS. The Corporation shall keep:

a. Adequate and correct books and records of account;
b. Written minutes of the proceedings of the Board and committees of the Board; and
c. Such reports and records as required by law.

ARTICLE XVII
INSPECTION RIGHTS

Section 1. DIRECTORS' RIGHT TO INSPECT. Every director shall have the right at any reasonable time to inspect the Corporation's books, records, documents of every kind, physical properties, and the records of each subsidiary, as permitted by California and federal law. This right to inspect may be circumscribed in instances where the right to inspect conflicts with California or federal law (e.g., restrictions on the release of educational records under FERPA) pertaining to access to books, records, and documents. The inspection may be made in person or by the director's agent or attorney. The right of inspection includes the right to copy and make extracts of documents as permitted by California and federal law.

Section 2. ACCOUNTING RECORDS AND MINUTES. On written demand on the Corporation, any director may inspect, copy, and make extracts of the accounting books and records and the minutes of the proceedings of the Board of Directors and committees of the Board of Directors at any reasonable time for a purpose reasonably related to the director's interest as a director. Any such inspection and copying may be made in person or by the director's agent or attorney. This right of inspection extends to the records of any subsidiary of the Corporation.

Section 3. MAINTENANCE AND INSPECTION OF ARTICLES AND BYLAWS. The Corporation shall keep at its principal California office the original or a copy of the articles of incorporation and bylaws, as amended to the current date, which shall be open to inspection by the directors at all reasonable times during office hours.

ARTICLE XVIII
REQUIRED REPORTS

Section 1. ANNUAL REPORTS. The Board of Directors shall cause an annual report to be sent to itself (the members of the Board of Directors) within 120 days after the end of the Corporation's fiscal year. That report shall contain the following information, in appropriate detail:

a. The assets and liabilities, including the trust funds, or the Corporation as of the end of the fiscal year;

b. The principal changes in assets and liabilities, including trust funds;

c. The Corporation's revenue or receipts, both unrestricted and restricted to particular purposes;

d. The Corporation's expenses or disbursement for both general and restricted purposes;

e. Any information required under these bylaws; and

f. An independent accountant's report or, if none, the certificate of an authorized officer of the Corporation that such statements were prepared without audit from the Corporation's books and records.

Section 2. ANNUAL STATEMENT OF CERTAIN TRANSACTIONS AND INDEMNIFICATIONS. As part of the annual report to all directors, or as a separate document if no annual report is issued, the Corporation shall, within 120 days after the end of the Corporation's fiscal year, annually prepare and mail or deliver to each director and furnish to each director a statement of any transaction or indemnification of the following kind:

(a) Any transaction (i) in which the Corporation, or its parent or subsidiary, was a party, (ii) in which an "interested person" had a direct or indirect material financial interest, and (iii) which involved more than $50,000 or was one of several transactions with the same interested person involving, in the aggregate, more than $50,000. For this purpose, an "interested person" is either:

(1) Any director or officer of the Corporation, its parent, or subsidiary (but mere common directorship shall not be considered such an interest); or

(2) Any holder of more than 10 percent of the voting power of the Corporation, its parent, or its subsidiary. The statement shall include a brief description of the transaction, the names of interested persons involved, their relationship to the Corporation, the nature of their interest, provided that if the transaction was with a partnership in which the interested person is a partner, only the interest of the partnership need be stated.

(b) The amount and circumstances of any indemnifications aggregating more than $10,000 paid during the fiscal year to any director or officer of the Corporation pursuant to Article XII of these Bylaws.

ARTICLE XIX
BYLAW AMENDMENTS

Section 1. BYLAW AMENDMENTS. The Board of Directors may adopt, amend or repeal any of these Bylaws by a majority of the directors present at a meeting duly held at which a quorum is present, except that no amendment shall change any provisions of the Charter of any charter school operated as or by the Corporation or make any provisions of these Bylaws inconsistent with the Charter or Charters, the Corporation's Articles of Incorporation, or any laws.

ARTICLE XX
FISCAL YEAR

Section 1. FISCAL YEAR OF THE CORPORATION. The fiscal year of the Corporation shall begin on July 1st and end on June 30th of each year.

CERTIFICATE OF SECRETARY

I certify that I am the duly elected and acting Secretary of Growth Public Schools, a California nonprofit public benefit corporation; that these bylaws, consisting of 17 pages, are the bylaws of the Corporation as adopted by the Board of Directors on April 14, 2016; and that these bylaws have not been amended or modified since that date.

Executed on _____ at _____, California.

_____

_____,Secretary

GROWTH PUBLIC SCHOOLS

CONFLICT OF INTEREST CODE

I. ADOPTION

In compliance with the Political Reform Act of 1974, California Government Code Section 87100, et seq., the Growth Public Schools hereby adopts this Conflict of Interest Code ("Code"), which shall apply to all governing board members, candidates for member of the governing board, and all other designated employees of Growth Public Schools ("Charter School"), as specifically required by California Government Code Section 87300.

II. DEFINITION OF TERMS

As applicable to a California public charter school, the definitions contained in the Political Reform Act of 1974, the regulations of the Fair Political Practices Commission, specifically California Code of Regulations Section 18730, and any amendments or modifications to the Act and regulations are incorporated by reference to this Code.

III. DESIGNATED EMPLOYEES

Employees of this Charter School, including governing board members and candidates for election and/or appointment to the governing board, who hold positions that involve the making or participation in the making, of decisions that may foreseeably have a material effect on any financial interest, shall be "designated employees." The designated positions are listed in "Exhibit A" attached to this policy and incorporated by reference herein.

IV. STATEMENT OF ECONOMIC INTERESTS: FILING

Each designated employee, including governing board members and candidates for election and/or appointment to the governing board, shall file a Statement of Economic Interest ("Statement") at the time and manner prescribed by California Code of Regulations, title 2, section 18730, disclosing reportable investments, interests in real property, business positions, and income required to be reported under the category or categories to which the employee's position is assigned in "Exhibit A."

An investment, interest in real property or income shall be reportable, if the business entity in which the investment is held, the interest in real property, the business position, or source of income may foreseeably be affected materially by a decision made or participated in by the designated employee by virtue of his or her position. The specific disclosure responsibilities assigned to each position are set forth in "Exhibit B."

Statements Filed With the Charter School. All Statements shall be supplied by the Charter School. All Statements shall be filed with the Charter School. The Charter School's filing officer shall make and retain a copy of the Statement and forward the original to the County Board of Supervisors.

V. DISQUALIFICATION

No designated employee shall make, participate in making, or try to use his/her official position to influence any Charter School decision which he/she knows or has reason to know will have a reasonably foreseeable material financial effect, distinguishable from its effect on the public generally, on the official or a member of his or her immediate family.

VI. MANNER OF DISQUALIFICATION

A. Non-Governing Board Member Designated Employees

When a non-Governing Board member designated employee determines that he/she should not make a decision because of a disqualifying interest, he/she should submit a written disclosure of the disqualifying interest to his/her immediate supervisor. The supervisor shall immediately reassign the matter to another employee and shall forward the disclosure notice to the Charter School Principal, who shall record the employee's disqualification. In the case of a designated employee who is head of an agency, this determination and disclosure shall be made in writing to his/her appointing authority.

B. Governing Board Member Designated Employees

The Corporation shall not enter into a contract or transaction in which a director directly or indirectly has a material financial interest (nor any other corporation, firm, association, or other entity in which one or more of the Corporation's directors are directors and have a material financial interest).

EXHIBIT A

Designated Positions

Designated Position	Assigned Disclosure Category
Members of the Governing Board	1, 2, 3
CEO/President	1, 2, 3
Chairman of the Board	1, 2, 3
CFO/Treasurer	1, 2, 3
Secretary	1, 2, 3
Executive Director of Charter School	1, 2, 3
Consultants	*

*Consultants are included in the list of designated positions and shall disclose pursuant to the broadest disclosure category in the code, subject to the following limitation:

The CEO may determine in writing that a particular consultant, although a "designated position," is hired to perform a range of duties that is limited in scope and thus is not required to fully comply with the disclosure requirements in this section. Such written determination shall include a description of the consultant's duties and, based upon that description, a statement of the extent of disclosure requirements. The CEO's determination is a public record and shall be retained for public inspection in the same manner and location as this conflict-of-interest code. (Gov. Code Section 81008.)

EXHIBIT B

Disclosure Categories

Category 1

Designated positions assigned to this category must report:

a. Interests in real property which are located in whole or in part within the boundaries (and a two mile radius) of the school district in which Growth Public Schools operates.

b. Investments in, income, including gifts, loans, and travel payments, from, and business positions in any business entity of the type which engages in the acquisition or disposal of real property or are engaged in building construction or design.

c. Investments in, income, including gifts, loans, and travel payments, from, and business positions in any business entity of the type which engages in, the manufacture, sale, repair, rental or distribution of school supplies, books, materials, school furnishings or equipment to be utilized by Growth Public Schools.

Category 2

Designated positions assigned to this category must report:

Investments in, income, including gifts, loans, and travel payments, from, and business positions in any business entity of the type which engages in the manufacture, sale, repair, rental or distribution of school supplies, books, materials, school furnishings or equipment to be utilized by Growth Public Schools, its parents, teachers and students for educational purposes. This includes, but is not limited to, educational supplies, textbooks and items used for extra curricular courses.

Category 3

Designated positions assigned to this category must report:

Investments in, income, including gifts, loans, and travel payments, from, sources which are engaged in the performance of work or services of the type to be utilized by Growth Public Schools, its parents, teachers and students for educational purposes. This includes, but is not limited to, student services commonly provided in public schools such as speech therapists and counselors.

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PUBLIC SCHOOLS

problem solvers. innovators. agents.

Innovative New K- 8 School in Sacramento

We are the next generation of creative problem solvers and innovative leaders.

We are everyday heroes.

- ★ We believe that each child is unique and has an amazing talent to offer
- ★ We believe the job of a school is to bring out each child's unique talents and guide them to greatness
- ★ We believe that our schools need to build student skills for the future as our world is rapidly changing
- ★ We are a diverse community
- ★ Opening Fall 2017 for students grades K-1st

To find out more, please contact:
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www.growthps.org
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Public, tuition-free, K-8 charter school

- ★ Safe and small school with a 14:1 student to teacher ratio
- ★ Creative and innovative approach
- ★ Personalized curriculum
- ★ Focus on the arts and the whole child
- ★ Real world project curriculum
- ★ Immersive electives in an Expedition experience
- ★ Based on nationally ranked Summit Public Schools

See back for upcoming events

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Innovadora Nueva Escuela K-8 en Sacramento

Somos la próxima generación de solucionadores de problemas creativos y líderes innovadores.

Somos los héros del día a día.

- ★ Creemos que cada niño es único y tiene un talento increíble que ofrecer
- ★ Creemos que el trabajo de una escuela es sacar a relucir los talentos únicos de cada niño y guiarlos hacia la grandeza
- ★ Creemos que nuestras escuelas necesitan construir las habilidades de los estudiantes para el futuro ya que nuestro mundo está cambiando rápidamente
- ★ Somos una comunidad diversa
- ★ Abrirá en el otoño 2017 para estudiantes de grados kínder al primero

Para descubrir más, por favor contacte:
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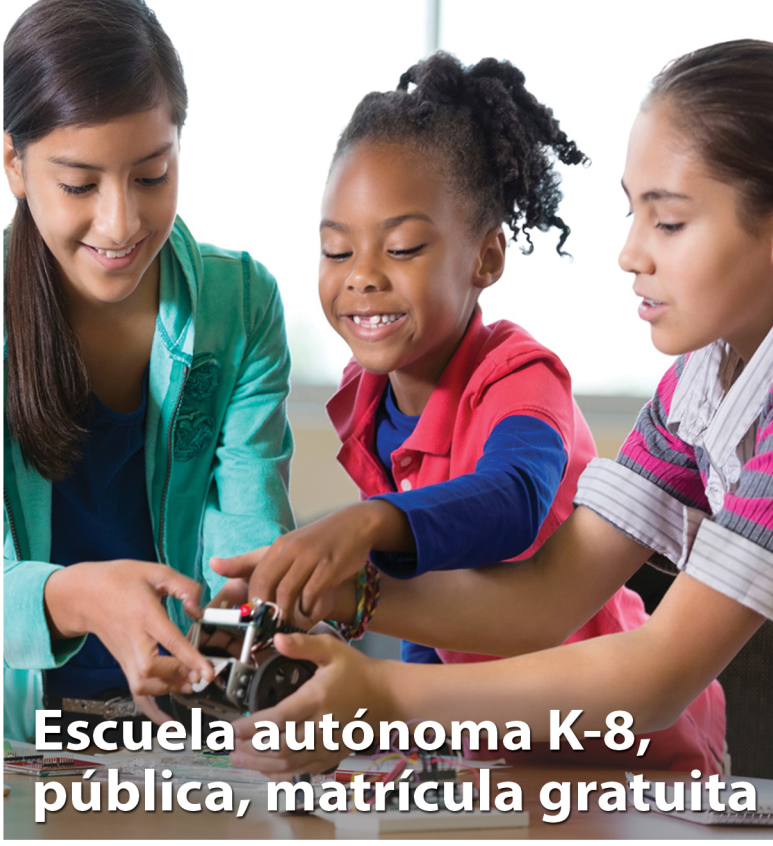

Escuela autónoma K-8, pública, matrícula gratuita

- ★ Escuela seguro y pequeña, con sólo 14 estudiantes a 1 maestro
- ★ Enfoque creativo e innovador
- ★ Plan de estudios personalizado
- ★ Centrarse en los actos y todo el niño
- ★ Plan de estudios de proyectos del mundo real
- ★ Optativas de inmersión en una experiencia Expedición
- ★ Sobre la base de ranking nacionalmente Summit Public Schools

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