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The Knowledge They Possess: Elementary Teachers' Expertise and Where It Becomes Usable Knowledge in the MA Education System

Helen-Ann Ireland

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THE KNOWLEDGE THEY POSSESS: ELEMENTARY TEACHERS' EXPERTISE AND WHERE IT BECOMES USABLE KNOWLEDGE IN THE MA EDUCATION SYSTEM

A Dissertation Presented

by

HELEN-ANN IRELAND

Submitted to the Graduate School of the University of Massachusetts in partial fulfillment of the requirements for the degree of

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College of Education
THE KNOWLEDGE THEY POSSESS: ELEMENTARY TEACHERS’ EXPERTISE AND WHERE IT BECOMES USABLE KNOWLEDGE IN THE MA EDUCATION SYSTEM

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DEDICATION

I owe a huge debt of gratitude to the teachers in this study who enthusiastically allowed me to come into their classrooms, answered my endless array of questions, and allowed me to analyze lesson plans and teaching strategies aligned with state standards and adapted to meet the needs of their students. Anne, Claire, Linda, Mary and Sophie – you know who you are! Your knowledge and expertise as professionals comes shining through this document. You are a credit to the teaching profession and I am proud to know you.

This study is also dedicated to the thousands of elementary educators everywhere who work tirelessly to love and to educate every child who enters their classrooms. This is a small token of gratitude for all the things they juggle every day to make learning possible for their students. Their work can never be totally and adequately measured!
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There are times in one’s life when you meet a person who changes your life in a profound and wonderful way. That person is my advisor, Dr. Sharon Rallis, who met me, took a chance on me and invited me into EPRA (Education Policy, Research and Administration). I was looking for a career change and she opened the doors.

Because of Dr. Rallis I have had the opportunity to meet and learn from a whole host of inspiring professors – Dr. Jeff Eiseman, Dr. Denise Ives, Dr. Sally Galman and Dr. Sangeeta Kamat did not end up on any of my committees but nevertheless taught me valuable lessons. Then there are those who agreed to join my committees – Dr. Maria Jose Botelho, Dr. Rebecca Woodland, Dr. Katie McDermott, and Dr. Jen Sandler. I thank you all for sharing your knowledge, wisdom, and expertise with me and challenged me in ways I had hoped to be challenged. A special thank you goes to my CTEP “boss,” Dr. Raymond Sharick, who hired me for the best TA position I could have imagined and was the position that inspired this dissertation research.

My tiny cohort of fellow graduate students in EPRA deserve some credit for staying the course with me. Thank you to Dr. Tara Brandt, Mike DeJesus, and Julie Spencer-Robinson. Not in my cohort but who has a very special place in my heart is Dr. Rachael Lawrence whose uncanny sense of timing led me to the TA position of my dreams.

And finally, my family and friends who have cheered me on through this seven-year journey deserve my thanks as well. My mother, Louise Hyland and my husband, David McInnis, supplied the financial and emotional support that kept me going. My daughter, Maeve McInnis and my sister, Mary-Lou, brothers, neighbors, and friends –
thank you all for your continued interest in what I was doing. Your curiosity buoyed me and continued to reinforce my decision to earn this degree. And last but not least, thank you to Randi Stein who provided a cozy home and warm bed as my crash pad while in Amherst. I could not have done it without you!
Elementary teachers are facing a dilemma. They are expected to uphold the Massachusetts (MA) state mandate and deliver Common Core State Standards (CCSS), use the programs their school has adopted aligned with CCSS and meet the various cognitive and behavioral needs of their students. Sometimes the teachers experience competing commitments between meeting standards, using programs, pacing, scripted curricula, and meeting the immediate needs of their students. How they navigate this dilemma when it occurs and where the classroom teacher’s knowledge become usable knowledge in the MA education system are the two foci of this study. Using Senge’s model of learning organizations and applying it to the MA education system will shed some light on how five elementary teachers use their professional knowledge and autonomy in their classrooms.
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CHAPTER 1

THE DILEMMA OF THE ELEMENTARY TEACHERS

Statement of the Problem

Elementary teachers in the Massachusetts (MA) schools in this study are facing a dilemma. They are expected to uphold the Massachusetts state mandate and deliver Common Core State Standards (CCSS), use the programs their school has adopted aligned with CCSS and, meet the various cognitive and behavioral needs of their students. Sometimes the teachers experience competing commitments between meeting standards, using programs which include pacing and scripted curricula and, meeting the immediate needs of their students. How do they navigate this dilemma when it occurs? The elementary teachers in this study have the professional knowledge to adapt and meet these competing demands but are there ways that these classroom teachers’ knowledge becomes usable knowledge in the MA education system to ensure that all students succeed?

Usable knowledge in this situation means the people in the MA education system value and respond to elementary teacher feedback for continual learning and improvement within the system. These teachers have practical, experiential evidence of what works and does not work in their classrooms but to what extent is their experience acknowledged and used to make the system better in service of student success? The mandate for CCSS came from the top of the MA education hierarchy down into the classroom. If we consider ‘whole-systems learning’ then one would expect the classroom teacher who delivers the content that meets standards also would be part of a feedback loop back up the education hierarchy (Argyris, 1992; Fulllan, 1993; Senge 2012). Teachers need to have a degree of professional autonomy to use their knowledge to adapt
within the bounds of the standards and meet student needs. If they cannot do this then students may not reach the level of success the policy makers hope to achieve. Without a way to communicate back to policy makers and content experts the education system does not benefit from teacher knowledge and expertise. This study will look through the lens of five elementary teachers to see what they experience in their day to day work and how they communicate within the system to ensure success for their students.

![Diagram of Possible MA Education System Communication Model](image)

**Figure 1-1. Possible MA Education System Communication Model**

Under current policy, teachers in Massachusetts must deliver curriculum aligned with Common Core State Standards and follow programs aligned with these standards. The theory of action of policy makers and standards creators at the national (and therefore the state level) is the following: by creating national standards for states to adopt there would be an equal course of study for all American public-school students. These experts were responding to unequal education nationwide and the achievement gaps documented in education research and wanted to rectify this situation in American
education (NAEP, 1999). Policy makers created mandates and with education experts created standards and textbook companies created written curriculum for classroom teachers. The federal policy provided incentives for states to adopt standards to equalize education across state lines. Individual states adopted the standards and curriculum programs (textbooks) for teachers to use to deliver curriculum aligned with the standards.

The CCSS have been in use in schools in MA for more than five years. It is time to hear how implementation is happening from the classroom educators who are working directly with students. The elementary teachers in this study are professionals in their field and have a body of knowledge they use to deliver curriculum and facilitate student learning. They are equipped with content, practical, pedagogical, and tacit knowledge about their students. According to the definition, a professional should “have autonomy bounded by responsibility” (Moore, 1942, p.6). This study looks at five elementary teachers in three schools in MA to see how CCSS are being met in their classrooms. Is there alignment in the education hierarchy to reach the common goal of an equal curriculum between standards, program and child development, for example? Where does the classroom teacher’s knowledge and experience become utilized?

Education professionals and policy makers created the standards and corollary curriculum programs and have a different expertise from classroom teachers. Those in the top of the hierarchy have expertise in content knowledge and pedagogical knowledge but little or no tacit knowledge in real-time of students in classrooms (Council of Chief State School Officers, 2009; Houghton-Mifflin, 2013; MA Board of Elementary and Secondary Education, 2010; National Science Foundation, 2013; Student Achievement Partners, 2009). These different forms of knowledge would need to be aligned, respected and
acknowledged to ensure the common goal of the MA Department of Education is met and all students can succeed in the classroom.

For the purposes of this study, I am categorizing two kinds of education experts in addition to classroom teachers. The categories are over-simplified to show a general pattern in kinds of knowledge in use and in the time sequence discussed below. The experts who created CCSS are one group and have an expert, theoretical knowledge in specific subject content such as mathematics or English Language Arts. For clarity in this study, I will call them the ‘content experts.’ The educators and/or research experts who created programs (textbooks) aligned with standards also have expert content knowledge. Additionally, this second group has, in the case of the textbooks used in the schools in this study, some knowledge of cognitive development. I will call them the ‘program creators.’ Both of what I call the ‘other educational experts’ have a separate kind of knowledge from elementary teachers and share their expertise on behalf of the broader education community – for schools and teachers to utilize. What these others do not have is direct, real-time pedagogical contact with multiple students in classrooms on a daily basis.

The first group, content experts, is responsible for creating CCSS. The second group, program creators, is responsible for creating the programs that align with the standards. Since CCSS are policy and curriculum programs (textbooks) are aligned with standards to implement policy, there is a de facto knowledge hierarchy in effect in the education system. This is also true for the State of MA whose Governor, Board of Education and Education Commissioner adopted the CCSS on behalf of the educators. The knowledge hierarchy exists for many reasons, one being the likelihood that policy makers needed a small group of content experts to create national standards that would
bound the creation process for efficiency purposes. They did not include thousands of classroom teachers in creating standards because it would have been an unwieldy process. Another reason is ‘timing’. The standards were created and adopted in a sequence of events. To state it simply - the standards were created, and then curriculum programs (textbooks) were developed by textbook companies. Districts then purchased programs for schools (teachers) to use. The elementary classroom teachers were the last in the adoption sequence to see the programs they would be implementing. (See Table 1.2 below).

In addition to the knowledge hierarchy, there was a ‘time’ hierarchy. The ‘time hierarchy’ sets up the condition for privileged knowledge. Privilege means higher value or superior (Merriam-Webster, 2017). Those at the beginning of the time sequence, creation and adoption of the CCSS, have an advantage over those at the end of the sequence, i.e. classroom teachers. Because CCSS are policy that the State of MA expects schools to implement, the knowledge involved in creating standards and curriculum

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**Figure 1-2. Creation-Adoption-Implementation Sequence of CCSS in MA** (Source: MA Board of Education, http://www.doe.mass.edu/boe/)

Common Core Launched 2009; Adopted in MA 2010

Programs Created to Align with CCSS 2010-2011

Schools Expected to Implement in 2012-2013

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In addition to the knowledge hierarchy, there was a ‘time’ hierarchy. The ‘time hierarchy’ sets up the condition for privileged knowledge. Privilege means higher value or superior (Merriam-Webster, 2017). Those at the beginning of the time sequence, creation and adoption of the CCSS, have an advantage over those at the end of the sequence, i.e. classroom teachers. Because CCSS are policy that the State of MA expects schools to implement, the knowledge involved in creating standards and curriculum
programs is privileged over the knowledge of the classroom teacher. Privileged in this situation means having the advantage of time and position in the hierarchy of the adoption process and therefore the knowledge has higher value in the state system (Foucault, 1973).

Position means ‘place in the sequence’ in the adoption hierarchy. Position is important because in all of the expert groups involved in creation of the standards and corollary programs, there were few representatives from elementary education. (It is beyond the scope of this study to examine the reasons for so few representatives from this sector of the education system.) It seems that knowledge of the content experts and programs creators was of greater importance in the creation and adoption process than that of classroom teachers – especially elementary educators. Therefore, the knowledge of content experts and program creators was regarded as more legitimate for creating of the standards and programs than elementary classroom teacher’s knowledge. This makes sense from one vantage point. The content experts need to be able to create the arc of the curriculum for the entire K-12 experience so that all students in the public-school system have the exposure to the same curriculum. Thus, the elementary teacher’s position in the knowledge hierarchy renders their knowledge less privileged in the creation-adoptions-implementation time sequence. But the elementary teacher is also committed to her students’ success with the same dedication as those at the top of the hierarchy with content expertise.

The education professionals who create policy (standards) and curriculum (programs /textbooks) and the classroom teachers delivering the programs are part of an education system committed to student success (doe.mass.edu, 2017). Alignment among the types of knowledge needed to support student success, however, is essential. If the
standards are not aligned with the child’s stage of cognitive development, for example, the teacher needs to adapt her teaching to meet the needs of the child. Elementary teachers are experts in their field and were under-represented in the other groups of experts at the creation of standards and subsequent textbooks. This could be creating a potential gap in knowledge in the adoption-implementation cycle (MA BESE, 2010; Council of Chief State School Officers, 2009; Student Achievement Partners, 2009).

Classroom teachers have content expertise in elementary curriculum content, pedagogical skills, and tacit knowledge of their students, which is also essential to the success of the goals of the MA educational system. (See Chapter 2 – Teacher Professionalism)

**Research Questions**

The relevant bodies of knowledge involved in the education system inspired me to learn more about the knowledge hierarchy in the system through the lived experience of the elementary teachers on the ground level. From the classroom teacher lens, I looked for examples of the kinds of knowledge they can describe and how they communicate with each other, their principals and other education professionals from the bottom up (Fullan, 1993). I conducted two interviews with five teachers in the MA education system and look at one lesson or unit as an example to determine what adjustments were made to accommodate a variety of learners in their classrooms. I asked what the teacher’s experience was between these competing commitments – ‘content expert’ knowledge and practical, pedagogical knowledge. Could they describe the kind of knowledge they use in their classroom on a daily basis? Do they find instances where their knowledge contradicts others’ knowledge? Do they have professional autonomy to adapt the curriculum if they find their knowledge in contradiction to the content (program) their school is using? If they use their professional knowledge to adapt curriculum, do they
communicate with colleagues in their building? Does their teacher’s knowledge become usable knowledge in the building? Do they feel they are in a system where their knowledge contributes to policy goals of student success (Argris, 1992; Foucault, 1973; Fullan, 1993; Senge, 2012)?

Research Questions

R.Q.1. What kinds of knowledge do teachers report using in their classroom instruction? How do they acquire this knowledge?
Sub questions: How do they use this knowledge to support student learning?

R.Q.2. What impediments and constraints do these elementary teachers encounter in using their professional knowledge?
Sub questions: When is their professional autonomy challenged? Do teachers believe that others in the hierarchy respect their knowledge?

R.Q. 3 How do teachers navigate the challenges to their professional knowledge in the classroom?
Sub question: How do they make sense of the challenges they face?

R.Q.4 In what ways do the teachers engage in communication within the education system and give feedback to colleagues above them in the hierarchy? Do they have the ability to get feedback to policy makers?
Sub questions: How does the individual teacher’s knowledge become usable knowledge at the building level? District level? State level?

By starting in the classroom and at the building level, I examined if and how the teachers’ professional knowledge was used to navigate the complexity involved in meeting standards and simultaneously meeting individual student’s needs. Individual teachers deliver curriculum but they teach in the context of a school building and work
with colleagues. I was curious about how their professional knowledge becomes usable knowledge in the building and in the district if demands for meeting the standards are not aligned with student needs. If this paradox does exist, how are schools navigating this dilemma (Argyris, 1992; Elmore, 2000; Senge, 2012)?

**Rationale**

In 2012, I became a supervisor in a teacher preparation program working with graduate students who were earning their Master’s Degrees in Elementary Education. The teachers who served as mentors in this program were veterans of fifteen or more years in their classrooms. In addition to years of experience several had Master’s degrees and everyone participated in ongoing professional development. Over time I developed relationships with these mentor teachers and they began to tell me stories about how the latest state and federal mandates like high stakes testing and implementation of Common Core State Standards were affecting them in their classrooms. They have a wealth of professional knowledge and experience in their classrooms and are implementing whatever is asked of them. Nevertheless, there were some striking examples where the teachers felt certain mandates and the programs aligned with the mandates were not in alignment with what they know about children’s cognitive development. Interactions with these teachers inspired me to inquire at a deeper level about what is really going on and whether teacher knowledge is being sought and used to improve student learning at the systems level. (See Example below.)

**Situational Context**

Elementary teachers are situated in schools, within districts, within their state and within the US Education system. The stated mission of the US Department of Education and is “to promote student achievement and preparation for global competitiveness by
fostering educational excellence and ensuring equal access” (ed.gov website; 2016). The State of Massachusetts states a similar mission: “To strengthen the Commonwealth's public education system so that every student is prepared to succeed in postsecondary education, compete in the global economy, and understand the rights and responsibilities of American citizens, and in so doing, to close all proficiency gaps” (doe.mass.edu, 2017). Therefore, policy makers and educational professionals at the top of the MA education hierarchy adopted CCSS to ensure equal curricula across schools to prepare all students for success after leaving the public-school system.

To effectively deliver the curricula however, so that all children can succeed and learn the same content, there is a hierarchy of knowledge that must align - from the policy makers to the teachers in their classrooms delivering the curriculum. If the MA system is to be effective in reaching its goals of delivering CCSS to all students, then the teachers in their classrooms must also share the same goals and ideals of the policy makers and content experts. When all members of the system have the common goal of providing an equitable curriculum to all children, they are aligned behind the ideal and can therefore work toward accomplishing the goal. Each group relies upon the expertise of the other in order for the goal of equitable curricula to be reached in every classroom (Senge, 2012).

From inception to implementation, different kinds of knowledge are needed at each stage of goal alignment. At the elementary level teachers have professional knowledge about content, pedagogy and child development. Classroom educators obtain their knowledge from their professional preparation and their practical experience working with children. They belong to the profession of educators, which has several
criteria for belonging, one of which is “autonomy bounded by responsibility” (Moore, 1942,p.6). When in the current system is teacher autonomy appropriate?

The State of Massachusetts, one of the leaders in creating statewide standards for curricula and on which Common Core State Standards were based, formally adopted the federally mandated Common Core State Standards (CCSS) in the fall of 2010. Then Governor,

Deval Patrick representing the National Governor’s Association (NGA), along with the MA member the Chief Council of State School Officers (CCSSO), Dr. Mitchell Chester, and the State Board of Elementary and Secondary Education (BESE) set the task for the educators in the state to implement the new CCSS. Superintendents and district specialists took up the challenge and brought CCSS into their schools where principals and teachers were expected to implement them in the year 2011-2012.

The policy makers at the state level whose knowledge is related to serving the public good know how to create mandates and in the case of education, try to discern what is best for public school classrooms (McDermott, 2011). The policy makers may be influenced by special interests but it is beyond the scope of this study to analyze this possibility. Policy makers may or may not have experience in the field of education but possess an overview of what the public considers its priorities in education.

The creators of CCSS had another kind of knowledge. Student Achievement Partners was largely responsible for creating CCSS. Their group had a mix of thirty-three professionals of whom eleven were educators in secondary and higher education and out of those eleven only one person had middle school math experience and one had elementary English Language Arts experience. No one on the panel had taught in the lower elementary grades (Student Achievement Partners, 2009). It is also beyond the
scope of this study to analyze why there were so few elementary educators represented in the creation of CCSS.

Those with cognitive research backgrounds who develop programs have extensive knowledge in their fields but cannot anticipate every situation a classroom teacher will encounter. Therefore, the teacher’s knowledge is also essential for successful implementation (Achieve, 2009; Houghton-Mifflin, 2013; Darling-Hammond, 1999; Student Achievement Partners, website 2017).

Elementary educators working in their classrooms have content, pedagogical, tacit and theoretical knowledge. They apply this knowledge to meet the standards through the curriculum goals established for them. The actual implementation of curriculum in the classroom, however, can vary based on a number of factors involving student abilities, economic challenges in the local community, demographics, and administrative challenges. Implementation can also be loosely or tightly coupled depending on the interpretation of the meaning of the standards and the experience of the professionals involved. (Darling-Hammond, 1999; Freidson, 2001; Spillane, 2004; Weick, 1976). This is the point in the system where the teacher’s knowledge is critical to student success. Particular to the realm of the elementary educator is the ability to effect a student’s life-long attitude toward learning and they need to have some “autonomy bounded by responsibility” (Moore, 1940) or as Weick (1976) would describe it – “loose coupling” with the curricular program aligned with CCSS.

Loose coupling is a concept coined by Karl Weick (1976) to explain how a school system utilizes information to create enough flex to adjust to individual differences and interpretations of, in this case, the programs and sometimes the standards. Tight coupling suggests a more rigid structure in the education system, for example, from CCSS into the
classroom. Tensions can arise for teachers between the need to adhere to standards and provide equal curricula across a diverse student population. If the professional knowledge of the elementary teacher dictates an adjustment to curriculum pacing, for example, that would indicate a loose coupling within the system to meet the direct needs of the students. If the teacher felt that she could not adjust her practice to meet the needs of her students because the textbook has a pre-determined pacing schedule, then adhered to the pacing schedule regardless of student needs, it would be considered a more tightly coupled situation where the teacher loses her authority to those who created the textbook. The teacher in this situation would defer her knowledge to that of the knowledge of the textbook creator.

Theoretical Framework

The system of education is complex and multi-dimensional. From policy to instruction there are multiple layers of interconnecting groups that inform the system and fill the space between policy and implementation. Policy adoption of standards, statewide implementation strategies, curricular programs aligned with standards, delivery of curriculum, and accountability measures are a few of the dimensions that are involved in getting instruction into the classroom. For this study, I will focus on the hierarchy and privilege of knowledge that Foucault describes and Fullan addresses in top-down-bottom up theory, which connects to Argyris’ double-loop learning theory for whole-systems learning as defined by Senge (2012).

Foucault’s (1973) theory of knowledge hierarchies can be applied to the system of education. I looked at the kinds of knowledge that elementary teachers use to deliver curriculum that meets the standards created by education experts who have a different kind of knowledge. How do these teachers use their knowledge to deliver content within
standards, develop tacit understanding, and possibly create new knowledge in standards-

based reform from their practical experience? Is the classroom practitioner’s knowledge

made useable in the education system and how does that happen?

Michael Fullan (1999) adds to the idea of knowledge hierarchies by including the

thought that communication from the top-down and the bottom-up is needed for a system
to be able to engage in whole systems learning and share knowledge across dimensions,
while respecting the different kinds of knowledge that people have in different functions
within a system. Chris Argyris (1992) describes the need for double loop learning in any
organization for continued ability to improve the organization. Peter Senge (2012), a
student of Argyris, has adapted Argyris’ theory directly to schools.

Knowledge Hierarchies exist according to Foucault. Foucault states that there are
hierarchies of knowledge within any profession where “some knowledge is privileged
over other knowledge by the members of the group” (Foucault, 1973, p.129). He uses the
example in the medical profession of the physicians working with the physical illnesses
as having their knowledge privileged within the profession, whereas those dealing with
mental health issues are considered to be less scientific and therefore have less esteem
within the profession (Foucault, 1973). Applying Foucault’s theory of knowledge
hierarchies to the education system can illustrate how some types of knowledge in
education may be privileged over others. If elementary educators are not making policy
decisions in tandem with policy makers or creators of standards, then there is, de-facto, a
hierarchy of knowledge. Those with practical or tacit knowledge may be over-looked by
those in the hierarchy with policy makers at the top and classroom educators at the
bottom. Connecting knowledge hierarchies within the complex education system with its
cultures, norms, and communities of membership – who belongs in the communities and
who does not – illustrates the kinds of complex dynamics that would be involved in assuring a learning system (Senge, 2012; Stone, 2002).

The structure of the current education system in MA is top-down. State officials adopt policy that those further down the chain of command must implement. The Governor, State Secretary of Education, Commissioner of Education and State Board of Education work in concert to decide education policy. They send their decision to the Department of Elementary and Secondary Education where the District and School Assistant Centers (DSAC) work with district superintendents who work with their school principals and they with their teaching staff. From the elementary teacher perspective, there is little opportunity to give input or feedback on mandates they are implementing in their classrooms. If this is true, then there is an opportunity for creating a learning system where classroom professionals can participate as equal partners in the highest levels of policy adoption in the state.

Michael Fullan’s (1994) theory about human interaction articulates the concept of top-down and bottom-up communication and identifies the need for communication in both directions because organizations are made up of human beings in close connection to one another. Knowledge sharing is part of what he describes as a “living system” and is key to successful organizations (Fullan, 1994, p.13). Fullan’s theory links with the organizational theory of Chris Argris’ (1992) double-loop learning. Double-loop learning naturally involves communication among and between groups to evaluate assumptions and mental models that lead to decision-making in organizations. This theory as it applies to the education situation will be discussed more fully below. Peter Senge has taken the work of Argyris and applied it directly to the education system. In his book, *Schools That Learn*, he proposes a system of learners within school buildings where learning is a
collaborative effort among members of the school community – principals, teachers, and support staff (Senge, 2012).

Double-loop learning is a theory originally developed by Chris Argyris (1992) for organizations to discern where the mental models of leadership and employees could impede progress of the company by continuing to repeat past actions based on certain assumptions that may or may not continue to be relevant to the current situation. A mental model as he describes it is a construct of reality that has become ingrained in the mind of the person so that it becomes habitual. In an organization, especially at the leadership level, Argyris posits that it is necessary to examine mental models so that the mental habits and behaviors that drive decisions can be examined. The double-loop learner reflects upon the entire system to see where original assumptions and beliefs could be adjusted to meet the current needs of the organization. The analogy that Argyris gives is that of the thermostat. The thermostat is programmed to ‘on-off’ depending on the temperature – known as a single-loop system. The double loop system might reprogram the on-off triggers because of varying outside temperatures. The double-loop system continually reflects on current situations to adapt to changing circumstances. In order for this to happen in organizations, the people involved would need to regularly reflect on current situations based on communication among and between groups responsible for optimum performance of the organization. Applying this concept to the education system one could potentially see where reflection-in-practice and communication needs to happen among and between levels in the education hierarchy where different knowledge and tacit learning are shared (Argyris and Schön, 1974).

Peter Senge took the concept of double-loop learning and applied it directly to schools. Using the five core ideas or learning principles – systems thinking, personal
mastery, working with mental models, building shared vision, and team learning – leads to a better organization. In these schools, Senge believes that “everyone in the system (is) expressing their aspirations, building their awareness, and developing their capabilities together.” (Senge, 2012, p.5)

*Personal Mastery* is one of the five disciplines that Senge (2012) suggests that lead to systems learning. He posits that organizational learning begins with individual learning – that each person within the organization takes personal responsibility for recognizing their own aspirations and goals for themselves in their profession. In the case of an elementary teacher that might mean becoming a master teacher using all the tools as her disposal to help students succeed in learning, articulating tacit knowledge that can be shared with colleagues, and sharing practical skill and content knowledge.

*Mental Models* are another of Senge’s five disciplines where each individual in the group is able to identify their assumptions, attitudes, and interpretations of a situation. He notes that the term ‘mental model’ comes from the work of Chris Argris and in this context Senge is applying the term directly to school personnel. Mental models are usually tacit and lie below the level of awareness because individuals observe different aspects of a situation. By examining the mental models within the group, hidden beliefs and assumptions can be brought to the surface of the conversation. This creates a space in which change can occur as individuals hear one another and begin to understand their viewpoint in context of a larger shared framework. This can happen in a faculty meeting where there is a shared space and common experiences. I am curious if this can happen between faculty in a school and district supervisors and the superintendent. (I use ‘faculty’ to include the principal as instructional leader and convener of aspirational dialogue, as well as any educational specialists in the building.)
Shared Vision involves the group creating the shared aspirations of the school members, which can include everyone who works in the building and parents. It is where the group comes to a shared vision that taps into a deeper purpose that they agree upon as the motivation for their work together. Building a shared vision assumes that all participants have equal input and “should help build the leadership capacities of everyone in the system” (Senge, 2012, p. 88).

Team Learning is about getting the “team thinking and learning together…The heart of team learning is regular willingness, as a recurring group of people, to think and act together as a living system” (Senge, 2102, p, 115). Techniques for successful team learning involve getting group alignment with the vision, ongoing dialogue where team members are willing to be inquisitive and open to one another’s suggestions and insight, and using associative conceptual diagrams (mind-mapping) to create mutual understanding. Through team learning, new insights can arise and new knowledge created.

Systems Thinking allows education professionals throughout the district to see how all the relationships of the system relate and interact with one another.

“A school district is a system with many different interrelated components: everything from the design of the buildings to the habits and attitudes of the people who work there to the policies and procedures imposed by the state and the community, as well as such implacable forces as available money and student population growth or decline” (Senge, 2012).

In the education system, that would mean that all levels and layers of administration, policy and educators have a shared appreciation for the complexity of the
system and acknowledge the variety of skills and different kinds of knowledge that are needed to make the system flourish. Creating a picture of the whole system allows new perspectives to arise and builds capacity for shared understandings among and between groups in the system. This study is concerned with implementation of curriculum and teaching practice as it relates to student success in the classroom. The Federal and State policies have been put in place and are intended to provide an equal education for all students. I am not questioning the integrity or intention of those decisions. Accountability is another topic that I am not addressing in this study except as it relates to a teacher’s intrinsic motivation to hold herself accountable for student learning.

**Defining Types of Knowledge in Use in the Elementary Classroom**

Defining what ‘knowledge’ is has been an epistemological conundrum for centuries and cannot be fully addressed here. For the purpose of this study, using a dictionary definition will bound the discussion to the uses of knowledge involved in the practical aspects of implementing standards in the classroom. The Google dictionary defines knowledge in two ways - as facts, information or skills acquired by a person through experience or education; and, the theoretical or practical understanding of a subject. In the definition, there is no hierarchical distinction between knowledge acquired through experience and that acquired through education and between the theoretical and the practical. According to the definition, types of knowledge are differentiated but not stratified. Further investigation into the meaning and types of knowledge in use in the education system can be found below. Particular focus will be on the types of knowledge in use in the teaching profession that is not needed by those in the higher levels of the education hierarchy, thus showing what elementary educators have to add to double-loop learning in the education system.
In the management and organizational learning, practical knowledge takes theoretical knowledge and makes it useful (Argyris and Schon, 1974; Guzman, 2009). It is the cognitive knowledge needed to perform a particular task or skill – or putting theory into action. According the Christoph Lumer (2010), practical knowledge involves a motivational factor. In other words, taking theoretical knowledge and making it useful involves a personal decision sometimes based on morality or epistemic rationalization (using new knowledge to inform a decision for new action). Practical knowledge can include theoretical, factual, and experiential knowledge as one applies these types of knowledge to a task. In this study educators have goals in applying the theoretical knowledge of the standards and implementing them. The classroom teachers need to actually align their instruction to the standards and have to use their factual and experiential knowledge in the classroom.

Tacit knowledge is the knowledge that one gets from personal experience, sometimes from years of working in a profession, trade or other kind of occupation. Tacit knowledge is embedded within the person and cannot be easily codified. This knowledge is context dependent and is deeply rooted in action and involvement in a task (Nonaka, 1994). In the field of knowledge management, tacit knowledge is considered a valuable resource because it often leads to the breakthroughs, innovations and advancements in a field (Gamble & Blackwell, 2001; Wellman, 2009). In the school building, the elementary educators have tacit knowledge about their students, curriculum and connection to standards, which could lead to new understandings about the relationship between students and standards.

On the other hand, tacit knowledge can be so deeply embedded in the school culture that without acknowledgment of this fact, could become a habit that
unintentionally reinforces the status quo of a school’s culture creating impediments to learning rather than creating new knowledge (Argyis, 1999). For example, if the school leadership does not respect teacher autonomy and professional knowledge, a teacher might be afraid to express concerns. Whether tacit knowledge is available for creating new knowledge or for identifying weaknesses in the school culture, it seems important that tacit knowledge is articulated.

Pedagogical knowledge is that knowledge that a teacher has that allows them to teach effectively (Shulman, 1986). At the elementary level, this includes content knowledge, knowledge of child development – cognitive, emotional, and physical – and knowledge of the child and community circumstances. Cognitive knowledge of child development includes knowing stages of cognitive development and learning styles and having the ability to adjust to practice to accommodate a variety of ability levels within the group (Piaget, 1983). Affective development includes knowing how children are developing emotionally and socially. In order for children to be able to learn they must feel safe in their environment. Teachers must be able to manage classroom behavior so that all children can learn. Teachers must be aware of physical development so that they understand attention spans, levels of engagement, and age appropriate learning activities (Lemov, 2010). All of this pedagogical knowledge is predicated on the teacher knowing the students’ zone of proximal development in all subject areas at any particular age (Vygotsky, 1978) and how to get them from one stage to another using scaffolding (Bruner, 1960).

The elementary teachers in this study used theoretical, pedagogical content and tacit knowledge to make it usable, practical knowledge for instructing their students. They took CCSS and programs (textbooks) and applied what they know about their
students to make the standards accessible to their students. This is not the realm of the
content experts or the program creators – only the teachers possess this particular set of
expertise.

Table 1-1. Who Has What Knowledge

<table>
<thead>
<tr>
<th>Groups</th>
<th>Theoretical</th>
<th>Content</th>
<th>Factual</th>
<th>Pedagogical</th>
<th>Practical</th>
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<tr>
<td>Elementary Educators</td>
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Overview of Methods

This is a study using qualitative methods of ethnography for gathering five
teacher’s experiences about their professional knowledge and how they use it in the
process of adopting the Common Core standards using curriculum programs (textbooks)
in their classrooms. In order to find out how these teachers are navigating the tension
between meeting standards and meeting the needs of their students when the two are not
aligned, I conducted two teacher interviews and one classroom observation with an
immediate de-brief with five teachers to hear their perspectives, determine their meaning-
perspectives in the context of their schools and classrooms, and try to find out if they
experience their schools as organizations where their input and expertise is valued and
becomes useable knowledge in the education system for the benefit of student learning.
Through the lens of the teachers, I learned how they interact with one another and their principal and how their experiences align with Weick’s theory of school coupling. Do they experience themselves as they loosely or tightly coupled with the CCSS? Where do they have autonomy? What values and beliefs are apparent in actions and interactions with their colleagues?

**Overview of Chapters**

This first chapter explains the situation and identifies the problem and the questions that have arisen in my work with twenty-seven public school teachers in thirteen different schools in MA in several districts over a five-year period. In my professional opinion rooted in experience as a veteran elementary teacher from the private sector, the teachers are reliable and trustworthy (Darling-Hammond, et al, 1999, Radin, 2008; Senge, 2012). They have been chosen by their principals to be mentors to new teacher candidates as they earn their teaching license in MA. They have between fifteen and thirty years of elementary education experience in MA classrooms. I have also chosen educators who teach in a variety of level designations as defined by the MA Department of Secondary and Elementary Education to if there are common constraints and impediments that these teachers face, regardless of school rating and how they deal with the constraints.

Chapter 2 situates elementary teachers in a professional field and describes the criteria for a profession and how it applies to elementary education. It also defines different types of knowledge.

Chapter 3 describes in detail the methods used to conduct the short-term, small-scale ethnographic study and gives school, teacher and classroom profiles.
Chapter 4 presents five teacher vignettes and findings of the study with selected artifacts.

Chapter 5 contains the discussion of limitations and constraints in the study, draws some conclusions based on the five teachers’ perspectives, and considers possibilities for future study that would explore other levels (district and state) in the education system to see how they experience their ability to use and communicate the knowledge they possess and whether they perceive the importance of the elementary educator on the success of the system.
CHAPTER 2
TEACHING AS A PROFESSION

Introduction

This chapter begins to answer the research question, “How do these elementary teachers acquire knowledge?” and situates them in the larger context of educational professionals to help establish their credibility among professions. By defining what a profession is and mapping the teaching profession onto that we can begin to understand how much specialized education teachers have, what norms and standards are established and maintained for the profession and helps us to create a baseline of competencies in their area of expertise within the education hierarchy. This chapter also widens the lens from the types of knowledge in use described in chapter 1 and looks at professional motivation, autonomy, personal responsibility, remuneration, and ongoing professional development to situate elementary educators in the broader context of educational professionals.

Rationale

Every day thousands of teachers walk into American public elementary classrooms to educate students. They are the backbone of the education system and are the professionals who dedicate their service to the youth in our country. We, the polity, entrust them with our children and we assume that they are professionals and have expertise in their field. The question is, “What qualifies as a profession?”

Using the conceptual framework of ‘profession’ defined by social science theory this chapter looks at how it applies to public elementary educators. The literature shows that all professions have standards that need to be met before entering the field and norms within the field created by those in the field. This study specifically explores the definition of
'profession' and its application to elementary educators using six common criteria that I have identified using multiple theorists: (1.) the need for specific training and the expectation of mastery of a body of knowledge, (2.) being recognized by peers and upholding the standards of the profession through accountability measures dictated by peers, (3.) belonging to organizations related to the profession, (4.) having autonomy to use professional knowledge at one’s discretion thus engaging the trust of the recipients, (5.) altruistic motivation with the wish to serve the public good, and (6.) remuneration for services.

For clarity’s sake, throughout this paper when I use the word ‘teacher’ I am specifically referring to public elementary school teachers in grades one through eight. If I am speaking about secondary or higher educators, I will identify them as such. Most of this content pertains to all public-school teachers no matter what level they teach.

**Social Science Theory Defining ‘Profession’**

Using social scientific theory defining the concept of ‘profession’ from the early 1900’s to the present, much of the early conceptualizing prepared the basis for our understanding today. There are common threads that serve as the baseline for conceptualizing what defines a profession. Meanwhile theorists continue to evolve and differentiate nuances as new professions emerge in our post-industrial society. This chapter will examine the common threads across six dimensions that synthesize the various aspects that the theorists present.

Wilbert Moore (1940), instructor at Penn State and scholar at the Russell Sage Foundation, was one of the early theorists along with Flexner, using the medical profession as his model, who established the baseline others have used for describing the professions in a post-industrial society. Following Moore, various scholars such as Freidson, Shulman,
Cogan and Hansen have added nuanced variations on his themes. Most recently Evetts has deconstructed the types of professions using the model proposed by the Holmes Group in 1995 adding to our changing understanding of what a profession is.

Freidson (2001) explains there is the “ideal type” for the description of a profession – the perfect definition of a profession that does not exist in reality but gives one a basis on which to explore the topic. He makes the distinction between the ‘ideal’ we hold as a theoretical standard and the actual practice of the ideal, in which there are many subtle nuances and individual variations.

The scope of this paper can only focus on the ‘ideal type’ and one moment in time in order to examine patterns and discrepancies within the current use of the term ‘profession’ as it applies to public elementary educators. For the purpose of this paper, I am assuming that this discussion is fluid and teachers in the ideal want their students to learn. Also, each of the six criteria describing ‘profession’ could be fully discussed with in-depth analysis on its own, but for the purposes of this paper, essential elements of each of the criteria were chosen to make the argument.

The six common themes found in the literature that define the construct called a ‘profession’ are as follows: (1.) There is a common body of content knowledge that must be mastered or completion of a specialized training in order to enter the profession. (2.) There is recognition and evaluation by peers to uphold the standards of the profession. (3.) The motivation is altruism or willingness to perform a service. (4.) There is autonomy to use professional judgment in adapting to the client’s needs based on professional knowledge. (5.) There are organizations to join that are specific to the profession. (6.) There is remuneration for services (Moore, 1940; Holmes Group 1986; Shulman, 1999; Cogan, 1997; Hansen, 1995; Freidson, 2001; Evetts, 2013).
These six criteria are part of what social science theorists call the creation of the norms of the profession. These six criteria are the entry requirements for prospective professionals. Once established in the profession, according to the theorists, the professionals directly involved in the work create the cultural norms (Moore, 1940; Holmes Group, 1995; Cogan 1997, Hansen, 1995; Shulman, 1999; Freidson 2001). For example, a group of educators might identify the need for professional development as a result of regular reflective practice.

Evetts in her analysis pushes our thinking and highlights the distinction between organizational professions and occupational professions, which she differentiates in terms of where the norms for the profession arise – from within the profession or from outside the profession. This is an important distinction that has direct impact in the current climate on the teaching profession.

An essential factor that distinguishes a profession but is not one of the six criteria to be analyzed is ‘highly regarded’ service. This correlates to the perception of what determines a profession. The perception in the community where they render services is that the professionals have a ‘vital effect’ on the recipients (Moore, 1940). The community in this sense is the individuals who comprise the polity in an advanced industrialized, information-based, technological society. The high regard from the community in which the profession operates comes from the members of the community recognizing the specialized training and mastery of a body of knowledge that the professionals possess – knowledge that the general polity does not possess. Two examples of this are the medical and legal professions. Like teaching, they require mastery of a very specialized set of scholarly content that the general population in a community does not have. Therefore, the
community members give tacit consent and approval to practice their specialized services (Freidson, 2001; Shulman, 2005).

This diverges with the idea of an occupation. There is a distinction between professions and occupations. Occupations require special skills and training, but do not have a direct or ‘vital effect’ upon the client. A cabinetmaker, for example, is highly skilled in his field but making a cabinet does not involve the client in the same kind of relationship that a doctor or teacher has with the person(s) in their care (Moore, 1940, Cogan, 1997; Shulman, 2005).

The next section analyzes the six criteria as they relate to elementary school teachers in the current educational climate and point to where the criteria align with the understanding of a profession and where teaching departs from the commonly held understanding by the local community or polity.

Six Criteria for Identifying a Profession

In order for a profession to be regarded or recognized as such in the eyes of the polity or state in which it exists, there is a special training and body of knowledge that must be mastered. Freidson (2001) calls this a ‘closed social group’ out of necessity. Those who join this group are self-selected and want to join to enter a specific field of study or discipline. It becomes a closed social group in order to maintain high standards in the discipline. Freidson (2003) clarifies, “the logical core of professionalism is its claim to discretionary specialization.” Those who join the groups and particularly true for many teachers, sometimes refer to their motivation for entering as a ‘calling’ which I will discuss further under the subheading for Motivation for Entering a Profession.

Teaching has numerous selection points that one must matriculate before entering the profession. There are minimum requirements for elementary teachers to enter the
classroom to which teacher preparation colleges and universities adhere. Course
descriptions from the top ten rated teacher education institutions as rated by US News and
World Report (2015) point to whether or not there is a common body of knowledge that
teachers must master before entering the profession. Upon examining the courses listed,
these schools have similar basic course-work for pre-service teachers. Aspiring teachers
must have a bachelor’s degree in elementary education which includes: curriculum content
and delivery, classroom management, addressing diverse learners and cultures, child
development, and a year of interning with a master teacher in their public-school classroom.
Some aspiring teachers advance their studies and earn a Master’s Degree in Elementary
Education before entering the classroom. In recent years, though the actual coursework may
vary somewhat, much work has been done within the schools and colleges of education to
align theory with practice to create a coherent vision between teaching and learning
(Darling-Hammond, 2005; Holmes Group, 1995). (See Appendix A.)

Since the Reform movement in the late 1980’s, teacher preparation programs
(TPP’s) have worked to define what teachers need to know and be able to do both through
theory and practice in order to help students’ construct knowledge that is flexible and
acknowledges different learners’ ways of knowing. The aim of TPP’s is to prepare teachers
with content knowledge of subject matter, flexibility in thinking, a range of ways of
approaching a topic, practical application of information, classroom management, and
ability to collaborate with others. Leading scholars have posited that to be effective for their
students, teachers need both practical knowledge and skills along with the ability to use
pedagogical knowledge to investigate problems and analyze students’ learning trends in
their classrooms (Holmes Group, 1995; Lampert and Ball, 1999; Darling-Hammond,
Hammerness, Grossman, Rust & Shulman, 2005).
In looking at three schools of education in depth, there is a common body of content instruction for pre-service teachers. Some would argue that TPP’s don’t have a unified vision for what it means to prepare a teacher for the classroom, yet the schools examined below had common courses and expectations for completion of their programs. Three examples of teacher-preparation programs, Stanford, Teacher’s College at Columbia University, and UMass Amherst, illustrate the comprehensive course work and internships necessary for training new teachers. All three schools require Master’s degrees in education, which include, but not limited to, courses in literacy, math, science, child development, and classroom management. They also include a year of practice teaching under the guidance of qualified cooperating master teachers.

All of these criteria for pre-service teachers qualify as special training. When pre-service teachers have successfully completed their programs, they can apply for an initial teaching license. In addition to meeting course requirements, all fifty states require licensing or certification in order to teach. Though the states vary somewhat in requirements, they do expect the minimum of a bachelor’s degree, demonstration of content knowledge through an exam and have completed a specific teacher-training program (teach.org, 2014). These are very specific requirements for new teachers before they can enter the profession. When there is a teacher shortage however, teachers may get rushed into the classroom without proper training. While that may be true, it does not negate the fact that in the ‘ideal type’ most teachers need to have at least a bachelor’s if not a master’s degree in elementary education before entering the field.

One concern raised about teacher preparation is the intellectual quality of the candidates. There are those who question the intelligence of the teaching force. They claim that regardless of the requirements to enter the field, the level of rigor of the teacher
preparation programs and intelligence of the applicants is low. The quality of teacher preparation programs will be discussed under the Recognition and Evaluation by Peers section of this paper. The matter of the intelligence of teacher aspirants will be taken up below (Levine, 2006, Pianta, 2011).

Arthur Levine (2006), former Professor of Education at Columbia Teacher’s College in New York City, has written a review of the quality of teachers entering the field. In his policy report on the study of America’s education schools he asserts that there are two divergent schools of thought about teacher preparation – one being that teaching is a ‘craft’ and we see this manifesting in teachers being handed ‘scripted curricula’ and the other approach being that teaching is a profession where teachers deserve the authority and autonomy to apply professional knowledge in the classroom as recommended by leading scholars in the field of education (Darling-Hammond, et al, 2005; Holmes Group 1995; Engage NY, 2014). Teacher autonomy will be discussed in the Autonomy section of this paper.

Levine claims that education schools have low admission standards based on IQ levels and GPA of entrants. A recent study by Lankford, Loeb, McEachin, Miller & Wyckoff (2014) inquired into the question of teacher qualifications and found that in NY State “(S)ince about 1999, the academic ability of teachers has improved and in many cases improved dramatically” (Lankford, et al., 2015) They link their study to other national figures which points to a promising trend in the quality of entrants into the teaching profession. While IQ and GPA are measures of intellectual intelligence there is so much more that is required in teaching that is not as easily quantified and yet is essential to student success in a classroom. Qualities such as morality, altruism, compassion, emotional intelligence and the ability to ‘read’ the students are needed in the person who teaches.
These attributes of a teacher will be further discussed under the section on *Motivation for Teaching*.

Another development in teacher preparation occurred in 1989. Teach for America (TFA) entered the teacher preparation field as an alternative path to entering the profession in response to a national teacher shortage and to address the achievement gap in low performing schools. TFA is an attempt to attract bright young scholars into the teaching profession to teach for two years in low-income, under-performing districts. According to Wendy Kopp, founder of TFA, having bright young adults commit to teaching in low achieving schools would help raise the level of performance of the students in those schools. TFA applicants have bachelor’s degrees in a variety subjects and are given a crash course in the summer on classroom management before entering the classroom.

This approach to teacher preparation is very controversial among teaching colleges and universities where applicants must have a year of practicum experience in a classroom with a master teacher before stepping into the profession. The common wisdom prevailing about needing to intern in a classroom comes from the lived experience and professional knowledge of those in the profession who understand that classroom management and the art of teaching can be mastered best through actual practice (Darling-Hammond, 2005; Darling-Hammond, et al, 2005; Holmes Group 1995). The TFA approach also undermines the idea that teaching is a ‘calling’ or ‘vocation’ to which one commits their life or at least makes a long-term commitment. According to a study by Heineke, Mazza, and Tichnor-Wagner in 2013, TFA contributes to teacher attrition by making the initial commitment to teach only two years. According to Heinz, et al, the study of one urban school showed 50 % of teachers from this program have stayed with the profession while others leave after two or three years (Heineke, et,al. 2013). Compared to the national average of beginning
teachers remaining in the profession after the first three years (start date 2007), according to
the National Center for Education Statistics, which is 85%, this is a low teacher retention
rate. This does not help with the sustainability and longevity needed to insure an
experienced teaching force in the schools.

There are other aspects of TFA that are positive, though. Another study by Decker,
Mayer, and Glazerman (2004) shows that TFA trained teachers helped to improve math
scores in their students from the 14th to 17th percentile on the Iowa Test of Basic Skills from
fall to spring in 2002-2003. Recent developments with Johns-Hopkins University and TFA
may be changing this controversial approach to teacher preparation.

Elementary level teachers must meet a specific set of content knowledge before they
can enter the profession. Traditional pathways to teaching involve a bachelor’s degree or
higher to enter the profession and all fifty states require licensure in order to enter the
profession. There is some disagreement that there are common goals amongst TPP’s yet
course descriptions from the top ten education schools as rated by US News and World
Report (2015) reveal common themes – curriculum content, classroom management,
teaching to diverse needs, child development, and developing communities of practice (See
Appendix A). Alternatives to the traditional preparation of elementary educators have
emerged to address emergency situations when there are teacher shortages and to address
the achievement gap. Controversy about these programs still exists. Nevertheless, in the
‘ideal type’ there is an expectation within the polity that teachers are prepared in some way
and have command of a body of knowledge before they can step into a classroom. In the
‘ideal type’ most local school boards and districts expect some form of higher education and
specialized knowledge of their teaching force.

Recognition and Evaluation by Peers: Upholding the Standards of the Profession:
Professions are ‘closed social systems’ in the Freidson model and once the criteria to join the profession have been met, the profession monitors itself with its own set of criteria. The norms of the profession and professional standards of behavior are regulated by the individuals who accept the norms of the group upon joining the profession. Within the teaching profession there are a wide variety of groups who recognize and evaluate those in the profession in all levels of the profession from the schools of education to the individual teachers in their classrooms. One system for acknowledging classroom teachers as part of the profession is the required state licenses discussed in the previous section. The licensing of teachers by the states walks the boundary between being recognized on criteria from outside the profession and within the profession since the state governments confer the license and not a group from within the profession (Evetts, 2013). The following section will explore the recognition and evaluation of and by peers within the profession of education. There are several layers to this discussion including the schools of education themselves, the states, and the local level school boards dealing with towns, buildings and individual teachers. (See Appendix B.)

Different entities evaluate teacher preparation programs (TPP’s). The professionals in the education community form accrediting agencies to insure high quality standards are upheld in the institutions that prepare teachers to enter the field. The criteria are peer reviewed and reported to the group under review.

Recognizing the existence of and evaluating the schools of education are independent organizations like the National Council for Accreditation of Teacher Education (NCATE) now called the Council for Accreditation of Educator Preparation (CAEP). Founded in 1954, the purpose has always been to establish and uphold high standards in teacher preparation institutions including all stakeholders in the education field.
The stated mission of NCATE/CAEP provides the clear directive of evaluating TPP’s in order to insure high quality teachers for every child in public school. “NCATE is the teaching profession’s mechanism to help to establish high quality teacher, specialist, and administrator preparation. Through the process of professional accreditation of schools, colleges and departments of education, NCATE works to make a difference in the quality of teaching, teachers, school specialists and administrators. NCATE believes every student deserves a caring, competent and highly qualified teacher” (NCATE, 2015). Five groups were part of creating NCATE that represented the field of education at the time. These included the American Association of Colleges for Teacher Education, the National Association of State Directors of Teacher Education and Certification, the National Education Association, and Council of Chief State School Officers, and the National School Boards Association. “The US Department of Education and the Council for Higher Education Accreditation recognize NCATE as a professional accrediting body for teacher preparation” (NCATE website, 2015, US Department of Education website, 2015). The US Department of Education acknowledges that it does not accredit programs and places a disclaimer on the website stating that it does not endorse any of the accrediting agencies it lists on the website. It relies on the reporting of state agencies to supply accurate information about the programs they accredit.

The CAEP review process requires a self-study by the organization going under review in the areas of curriculum, faculty, admission and retention of students, resources and facilities, governance, and evaluation of programs, graduates, and strategic and long-range planning. CAEP formed a steering committee in April 2015 to look at the standards for Elementary Education Teacher Preparation. The first draft of suggestions will be delivered in the fall of 2015 and will be published for public comment until December 2015.
This steering committee has been formed with members from universities, practicing teachers, literacy experts, science professionals, and union members. This indicates collaboration across sectors from the education field. The formation of this task force confirms that professionals in the field are self-reflecting and committed to improving standards for teacher preparation. The education professionals are taking responsibility for upholding and improving standards in their field.

The National Academy of Educators (NAE) sponsored a study in 2013 evaluating teacher-training programs in the U.S. to foster innovation in teacher training by producing a report that would inspire thoughtful discussion. The group looked at the various purposes and consequences of evaluation systems that are currently being used and evaluated the strengths and weaknesses of the methods. In the report they acknowledge, “many aspects of the relationship between teacher preparation and instructional quality are not fully understood and existing approaches to TPP’s are complex, varied, and fragmented”. Yet their purpose in the study was to analyze the criteria used by TPP’s in accepting students to instructional quality of faculty and how they report and why to the federal government, national non-governmental bodies like accrediting agencies, and state governments. This study illustrates that though there are different criteria and things that are not known about the connection between TPP’s and teacher effectiveness in the classroom, evaluative bodies exist that hold these TPP’s to standards.

Criticizing the TPP’s is the National Council on Teacher Quality (NCTQ) This group publishes policy briefs that question the TPP’s on various points. NCTQ ranks schools of education across several dimensions: academic caliber, content preparation, professional skills, and outcomes all connected to Common Core State Standards. In 2013 this group identified only four schools of education out of 1,130 nationwide that they
considered exemplary in meeting their standards. This report seems to contradict in part what the Holmes Group reported in 1995 that 250 colleges and schools of education joined forces to improve teacher preparation using similar criteria. It also contradicts my findings using the US News and World Report from 2105 listing the top ten schools of education. It is interesting to note that Wendy Kopp, founder of TFA, is on the Board of the group who criticizes the traditional TPP’s as they prepare the teaching force.

In 1989, the Council of Governors met with the Federal Department of Education created in the Carter Administration to create state standards for entering the teaching profession. Massachusetts is one example of a state that has implemented rigorous standards for pre-service teachers. Teacher hopefuls must pass several curriculum content tests known as the Massachusetts Tests for Education Licensure (MTEL’s) before they can enter the master’s program (DESE, 2014). This insures that pre-service teachers have curriculum content knowledge before they can enter a master’s program. Once they enter a program, in addition to curriculum instruction and delivery, diversity and differentiation, and child development and family relationships, they must spend time in classrooms with experienced teachers to learn about classroom management and put into practice what they have learned in their course work. These skills need to be practiced before taking on one’s own classroom. Pre-service teachers know that one can read about techniques in a book, but need to apply them in a classroom before one can master them (UMass CTEP, 2015). When all these criteria have been met, then the pre-service teacher can receive initial licensure status for three years. After three years, the teacher can earn a professional license and is eligible to work with teacher preparation institutions to guide upcoming teachers into the profession (MA DESE website, 2015).
Most states in the US have similar procedures for entering the field of education. The criticism has been leveled that when there is a teacher shortage, then some of the steps to licensure are curtailed to get teachers into the classrooms more quickly. While this has happened in years past, and still happens in emergency situations, it is not the ‘ideal type’ that is held by the profession.

For experienced teachers who want to be nationally certified, there is the National Board for Professional Teaching Standards (NBPTS). The National Board was created directly in answer to the 1983 report “A Nation at Risk”. Teacher training colleges and universities incorporate the standards developed by this group to inform their ongoing professional development and to train new teachers. This is an independent organization created by teaching professionals and education academics.

NBPTS has five core propositions for teaching in all subjects and grade levels: (1.) Teachers are committed to students and their learning, (2.) Teachers know the subjects they teach and how to teach those subjects to students, (3.) Teachers are responsible for managing and monitoring student learning, (4.) Teachers think systemically about their practice and learn from experience, (5.) Teachers are members of learning communities. The National Board examines teacher proficiency across two dimensions, the developmental level of the students and the subject areas.

Linda Darling-Hammond describes the National Board for Professional Teaching Standards (NBPTS, 1987), which was comprised of highly respected classroom teachers as the first professional body to create benchmarks for how accomplished teachers’ practices can be emulated. The Board’s mission is to “establish high and rigorous standards for what accomplished teachers should know and be able to do, to develop and operate a voluntary national system to assess and certify teachers who meet those standards, and to advance
related education reforms – all with the purpose of improving student learning” (Darling-Hammond, 2013).

The group called the New Teacher Assessment and Support Consortium (InTASC) began in 1987 by national education organizations and state education agencies to reform licensing, preparation and development of teachers. Ten standards were created in keeping with the long-term view of advanced standards for the National Board for Professional Teaching Standards (NBPTS). The ten standards cover content pedagogy, student development, diverse learners, multiple instructional strategies, management and motivation, technology and communication, planning, assessment, reflective practice and professional development, and finally school and community involvement.

Since the Holmes Group published its report in 1995, two hundred fifty teaching colleges and universities have joined together to come to some agreements about what constitutes good teaching and how to prepare the teaching force for the 21st Century. Not all TPP’s have joined this effort and much work still needs to be accomplished. Some teacher training centers and curriculum requirements may vary in offerings and quality, it is beyond the scope of this argument to evaluate all these programs. The purpose here is to examine if there are ‘within the field’ organizations that monitor TPP’s to hold the profession to standards.

Mirroring higher education institutions and accrediting agencies, on the local level states and districts determine oversight procedures for individual schools and teachers within those schools. There are several accepted peer evaluation systems for teachers with much debate about which methods should be used for evaluating teaching. Typically, the principal in individual schools has been responsible for teacher evaluation with a wide variety of approaches, level of quality and reliability. Some experts argue for multiple
measures and portfolio type teacher evaluations as the most comprehensive and reliable way to evaluate a complex skill set needed for effective teaching (Darling-Hammond, 2013, Firestone, 2104; InTASC, 1987; Gates Foundation MET project, 2013; NBPTS, 2013, RTT, 2009).

Most recently the concept of value-added measures has been introduced, which connects student test scores to teacher evaluation. While the arguments about value-added or multiple measures continue, elementary schools conduct teacher evaluations on a regular basis with the intention to ensure teacher quality. While the system may not be perfect, there are some promising systems being developed to include multiple measures of teacher performance. Value Added Measures (VAM) and the possible effects of using these as an incentive will be discussed further under the Motivation section of this paper.

Linda Darling Hammond recommends performance assessments that include using rubrics that include the many layers involved in teaching. Teaching is not only about content delivery and test scores. Teachers create an atmosphere of trust and safety so that students can learn. Simultaneously they deliver curriculum content so that students can advance in their studies. Woodland and Mazur suggest embedded professional evaluation within buildings melding two evaluation systems (Woodland & Mazur, 2015). Another promising peer evaluation system that looks at the teaching and learning relationship is Richard Elmore’s “Instructional Rounds”. In this system, the principal and teachers visit classrooms in a school to look at the teaching, not the teacher. Getting this snapshot in a day helps the school look more broadly at what teachers are doing to deliver content and the discussions lend themselves to the improvement of teaching in a broader sense (Darling-Hammond, 2013; City, et al, 2011; Firestone, 2014, Holmes Group, 1989; InTASC, 1987; Woodland, 2015).
Teachers are also self-reflective practitioners. In order to transform ones’ practice, one must transform oneself. This is part of what might be called ‘ethical’ reflection. This idea appears in Argris’ work on examining mental models (beliefs and perceptions) as a way to become a reflexive practitioner. Peter Senge, building on the work of Argris and Schön, has taken their concepts and applied them directly to school situations. The teachers’ ability to be self-reflective of their mental models helps the profession create professional learning communities. This practice is also a moral and ethical responsibility to the students (Higgins, 2010). “(E)thics includes more than inquiry into right action in moments of decision and it deals with more that our duties to others. It goes much deeper than that. Teachers choose to be teachers because they want to affect the greater good and care for their students (Hedge & Mackenzie, 2012; Higgins, 2010). More discussion of ethics and moral action will be discussed in the ‘Motivation’ section.

The intention of teacher colleges and universities to analyze this huge and complex system underscores the self-directed nature of the profession. Schools of education are concerned about the quality of teaching and are working to improve their offerings and adapt to the demands of the 21st century. Independent national organizations are working with them to contribute to self-studies, reflection on practice, and implementation of necessary changes within the field.

The fact that there are institutions functioning as monitors of the teaching profession to ensure quality instruction in the classrooms of our elementary schools meets another of the dimensions of a profession. There are organizations that review college and university teacher education programs, states and districts have systems for evaluating their schools, and the local school districts have responsibility for evaluating their individual schools and
teachers. Recognition and evaluation of peers within the profession is another of the criteria meeting the definition of ‘profession’.

Motivated by Altruism. Human beings joining a profession are motivated by altruism. They wish to be of service and to do good deeds in the world and be of service to society (Moore, 1942; Shulman, 1999). This service implies an ethical and moral commitment to constituents. In the case of teachers there are multiple constituents that receive their services both directly and indirectly - students and their families, school boards, state and local education officials and ultimately the polity of the US in creating citizens that can contribute to a democracy. Altruistic attitude toward students is paramount concern in elementary school educators.

“...A central part of being a professional teacher is a commitment to help all students succeed” (Darling-Hammond). The mission of education in the US through state statutes is to provide and education for all children. Even though the constitution does not guarantee education for all children, the states have taken up this cause and provide education for their youth. Here again there is much debate over whether the purpose of an education is for social efficiency, social mobility or democratic equality (Labaree, 2010). What we do know is that it has become a norm for all children to attend school or to be educated in some way through public, private or home schooling. This impulse arises from the time of Thomas Jefferson to fulfill the need to have an educated citizenry in order to participate in a democratic republic.

To that end, teachers enter their classrooms every day to help children become the best they can be, to excite their imaginations, to engage them in learning and come to understanding. Teachers also are engaged in what researchers call the ‘hidden curriculum’ – those norms of behavior that we teach the children so they can participate in society in ways
that may or may not be consciously reinforcing negative stereotypes or other unexamined cultural habits (Dewey, 1938/1978; Giroux, 1988; Freire, 1970; Lea & Griggs, 2005). In this way, teachers ideally serve the communities in which they live and provide a public good. The ‘hidden curriculum’ brings awareness of the community’s expectations that teachers are moral and ethical role models for the children in addition to delivering content. This issue will be discussed further below.

Many teachers have reported that they feel a ‘calling’ to teach and this becomes one of their primary motivators. A calling includes several factors. In a study by Catherine Sinclair (2008), these factors include “a ‘love’ of or desire to work with and benefit students; altruism or aiming to make a difference in communities and society; …a ‘calling’ to teach…or a desire to impart knowledge; and, the nature of teaching work, especially the opportunities teaching provides for creativity and satisfying interpersonal interactions with others”. She goes on to say, “motivation to teach was multi-dimensional and hierarchical…six of which were internally referenced (intrinsic) motivations”. Much of what teachers do inside the classroom is intrinsically motivated because they want their students to be engaged in their learning (van Uden, Ritzen, & Pieters, 2013). To see their students succeed is a reward in itself.

“Professional communities are organizations bound by a code of conduct and a set of ethics that guide decision making in service of the needs of the clients” in this case – the students and their families” (Tschannen-Moran, 2009). Tschannen-Moran has found that “as teachers are socialized into the norms of their profession, their beliefs, attitudes, and actions are expected to evidence a strong sense of accountability to the shared mission of service to students and their families. This shared sense of purpose, which enlivens the professional
work of teachers, does not rely on a chain of command to enforce the investment of effort. Instead, the teaching profession itself monitors these norms” (Tschannen-Moran).

In the classroom, teachers are responsible for the welfare and learning of all the students. They must make decisions about curriculum delivery and behavioral standards in the classroom and constantly make decisions and adjust to situations in an ever-changing classroom dynamic. Linda Darling-Hammond describes it this way: “A central part of being a professional teacher is a commitment to help all children succeed” (Darling-Hammond, 2005). Teachers are expected to be good role models and to deliver the goods. Generally, this is accepted to mean (as part of a helping profession) that the internal goods of the teacher naturally translate into doing what is good for the child (Higgins, 2010).

Teachers engage in moral and ethical behavior as part of their job. This is supported by assertions made by MacIntyre (1984): “The primary sphere in which human beings encounter the good is in the range of activities (called) ‘practices’” and “ethics is rooted in the practical predicament of each individual who must decide what to do in concrete situations…” (Higgins on MacIntyre, 2010). He goes on to say that there is “no recipe to indicate the right course of action” which is the situation that teachers face in confronting individuals in their classrooms. Teachers rely on their sense for what would bring about the best outcome for this child on a case-by-case basis, while remaining cognizant of the communal good at the same time” (Higgins). A true practice is not entirely a world in itself but communicates with the rest of society” (Higgins). Embedded within this idea is that teachers are responsible to the larger community through their practice of teaching and are held responsible by their professional organization’s norms and in turn, the organization is held responsible by society’s expectations of excellence in education.
Higgins further adds a statement about higher learning that can also be applied to elementary schools and classrooms. “Many institutions of higher learning have become so caught up in the complex, competitive business of making ends meet that they lose touch with the real ends of teaching and learning. Students are not ‘instructional equivalents’ and teaching is not ‘a load’, and accumulating credits is not the same as becoming educated (Higgins) and “…the key feature of practices is that they generate their own criteria” (Higgins).

Teachers report their motivation as arising from altruism and the feeling that they have a calling to enter the education profession. Intertwined with these motivators are agency, self-efficacy and autonomy, which all contribute to teachers’ sense of moral and ethical obligation to the students in their classrooms. When teachers can adapt and respond to their students on a case-by-case basis, they are responding to the student as part of their moral and ethical obligation to help every child learn, and their sense of altruism and willingness to be of service to the greater good. Teachers choose to uphold these intrinsic obligations to the extrinsic expectations of the polity when they enter the field. The connection between teacher motivation and autonomy, self-efficacy, and agency will be further discussed in the next section.

Professional Autonomy. In the use of his exceptional knowledge, the professional proceeds by his own judgment and authority; he thus enjoys autonomy restrained by responsibility” (Moore). Moore continues to point out “autonomy is in effect an ultimate value for self-identified members of an occupational category…and builds upon his having passed previous selection points” (Moore). He makes the case that “as technical specialization steadily increases, so must the relative autonomy of specialists” (Moore).
This becomes important as one examines from Evetts’ (2013) point of view, where the group norms and control emerge. Are they emerging from within the profession or from without? Are the norms and practices being dictated from ‘above’ or are they self-initiated through the reflective practices of the professionals in their particular field? As Evetts suggests, “in contemporary societies we seem to be witnessing the development of two different (and in many ways contrasting) forms of professionalism in knowledge-based, service sector work: organizational and occupational professionalism…” (Evetts). She explains that ‘organizational professionalism’ relies on managerial control in “rational-legal forms of authority and hierarchical structures of responsibility and decision-making” while ‘occupational professionalism’ is based on collegial interactions using professional knowledge, judgment, and personal authority within the group (Evetts). The teaching profession in today’s climate has elements of both. The profession has evolved its norms and values over time through common understandings and practices yet also has more recently become accountable to authorities outside of the profession as policy makers and the hierarchy of local, state, and federal systems influence what happens in classrooms (Fullan, 1994; NBPTS, 1987; ESEA, 1965; Race to the Top, 2009). Evetts make the point that the “ideology of professionalism” appeals to occupational groups because of one’s ability to identify with the norms that allow colleagues to work together, have some autonomy in decision-making, and be able to self-regulate within the profession (Evetts).

When we consider teacher autonomy in the classroom, there are various interpretations of what should be upheld. In some cases, the curriculum is scripted so tightly that teachers of the same grade level must be on the same lesson on the same day (personal observations, 2013-2014). Or in other cases, teachers are asked to adopt a reading or math program with no prior consultation and are expected to use scripted lessons
In years prior to ‘No Child Left Behind’ teachers were trusted to deliver the curriculum they had been prepared to teach in their colleges and universities. The critique of teachers having autonomy has been that there was no consistency of curricula from state to state and no way to insure all students were receiving the same quality of education (NCLB, 2002). With the introduction of Common Core State Standards (CCSS) approximately 46 states have begun to align their curricula to meet these national standards. Common Core may help give states common standards for curriculum, and clearly states on their website that these standards should not dictate how subjects could be taught, however, states and school districts are buying text books that prescribe how a subject should be taught and tests are now aligning with the text book curricula. This brings up the question of teacher autonomy in the classroom (NY State Department of Education, 2015).

Where is teacher autonomy appropriate and necessary and when must a teacher collaborate and concede autonomy for the greater good? Teacher autonomy in the classroom is essential as long as it is ‘autonomy bounded by responsibility’ (Moore, 1970). Looking at teacher autonomy in the classroom, Helsby and McCulloch say this: “…issues of curriculum control refer to teachers’ rights and obligations to determine their own tasks in the classroom – that is the way in which teachers develop, negotiate, use and control their knowledge – and are therefore central to teacher professionalism” (Whitty and Wisby, 1996).

Millerson (1964) describes his criteria for expecting autonomy in professionalism: A code of conduct oriented toward the public good; the use of skills based on theoretical knowledge; education and training of those skills certified by examination; a powerful professional organization…” In other words, we can trust teachers are prepared to enter the
field, have adequate knowledge and can meet educational standards. They can use their creativity to engage the students in their classrooms while following a curriculum that is agreed upon by the professionals in education, namely the university professors and educators who have the knowledge base to define curricula on a national level (Holmes Group, 1995).

Common Core State Standards have been created by a mix of professionals, for example, while under-representing classroom teachers who must interpret and deliver the curriculum and meet the standards. With classroom teachers more fully integrated into the process of creating the standards, this could be avoided. CCSS are set up in such a way, however, that they do not define how the curriculum should be delivered, only that certain topics should be covered at each grade level.

Contrary to the idea of autonomy, we increasingly see that professions are being mandated and regulated by federal, state and local districts, not by the professional organizations themselves (NCLB, 2001; Race to the Top, 2009; MA DDM’s 2015). While some of this has been intrinsic to the teaching profession for over a century, more mandates and financial incentives are being implemented from top-down policy makers and not the professional teaching organizations (Firestone, 2014; Labaree, 2010). This can have the effect of undermining the teacher’s authority in the classroom when they are mandated to teach curriculum that they have had no input into adopting.

Questions arise here for the education community. Are teachers to be technicians or educators? Consider that with the shift from inquiry-based instruction to more direct instruction, the pendulum swings from one teaching theory to the other. Teachers know a combination of techniques are needed to engage students in their learning; that there are a variety of learning styles that need to be addressed in every classroom and that they need to approach the material from different perspectives in order for all students to understand. There
is no ‘one-size fits all’ in the classroom even though every child receives the same curriculum (Brooks & Brooks, 1999; Dewey, 1938/1978; Gardner, 2008; Vygotsky, 1978).

With scripted curricula, teachers do not have to think and are not supposed to deviate from the prescribed lesson. Scripted lessons are an attempt to reduce the variation between teachers, which some professionals think will help reduce the achievement gap. Education professionals know that variation among teachers is fine as long as teachers are in communication and are part of learning communities and share best practices on a regular basis as part of their ongoing professional work together. This is one aspect of job-embedded professional development (Wahlstrom & Louis, 2008; Woodland & Mazur, 2015). In ‘Schools that Learn’, Senge (2012) posits that teachers learning from each other to improve their teaching helps student learning. Teachers need to be trusted to adapt to the needs of their students and need to have the authority to do so based on their professional expertise and knowledge of their students’ needs.

Related to autonomy is self-efficacy. Teachers need to feel confident that they can adapt to circumstances that arise in their classrooms related to behaviors of the children. Albert Bandura defines self-efficacy as the ability to believe in one’s capabilities to organize and take the actions required to manage prospective situations (Bandura, 1994). In a typical day, there could be any number of ‘unexpected events’ in the classroom. In addition to delivering content, a teacher needs to be able to adapt to the needs of the children at any given moment. This is especially true in elementary classrooms because the children are so young. Teacher self-efficacy and autonomy are required so that they can manage the behaviors of students in the moment to keep the lesson moving. No extrinsic motivation is needed for teachers to want lessons to go smoothly. Firestone describes it like this,
“Autonomously motivated people find the activity itself so interesting that no additional incentive is needed”. Having a smooth-running classroom with students happily learning is reward in itself for most elementary school teachers.

In order for teachers to have self-efficacy, they need a certain level of autonomy in their classrooms. As described in the above section on Motivation – in the ‘ideal type’ teachers are intrinsically motivated to serve the good of their students. Deci and Ryan have shown in their studies on motivation that being interested, intrigued or enjoying a task are motivating factors for participants. They explain that extrinsic motivators like money are only short-term motivators (Deci and Ryan, 2000). Their findings bring into question the Value-Added Measures (VAM’s) that some are proposing as a way to motivate teachers, which the American Education Research Association addressed in the June 2015 issue of “Educational Researcher.”

Using the Hope Scale, a scale that measures ‘agency’ in self-reported adults, Snyder and colleagues in 1991 began looking at feelings of hopefulness and agency or the ability “to generate successful plans to meet goals” and therefore committed to their work (Bullough). Bullough, et al, made this connection to teachers and found that the work of Firestone and Pennell (1993) points to the idea that commitment is also influenced by autonomy and responsibility.

“Commitment comes when one experiences the responsibility for the outcomes of ones’ work. If what is done depends primarily on the boss’ orders, impersonal controls over work, or the efforts of others, results are not attributed to one’s own efforts. In these situations…accountability rests with others. Experiencing responsibility for success is highly motivating and conducive to continuing successful practices…Autonomy allows teachers to attribute success to themselves”
Another underlying aspect that influences the ability to be autonomous is having the authority to be so. There are several aspects to consider when thinking about what ‘authority’ means in an elementary classroom setting. The word ‘authority’ contains the word ‘author’. In one sense the teacher is the author of life in the classroom. The way the day is structured - the transition cues, lesson schedule, norms of behavior - are all part of the teacher’s authority within the classroom. Teachers also have the knowledge and expertise in content and therefore the authority on the content level. Sinclair found that the teachers in her study were also motivated by the idea that they would be their own boss in the classroom and were inclined to want to take leadership in their classes (Sinclair). This is another one of the areas that gives teachers a sense of purpose according to Morgan, Kitching, & O’Leary (Morgan, et al).

Within the school setting there are natural constraints in the day that limit the amount of authorship an individual teacher has with their class – scheduling special subjects, working with colleagues to create coherence in the daily and weekly schedule are a few of the constraints. There also needs to be curriculum that is appropriate for the grade level and agreement among the teachers about what is taught and when as they work with Common Core standards.

Closely relate to teacher autonomy and self-efficacy is teacher responsibility. Teachers are responsible for more than delivery of content for student learning. They are responsible for maintaining an orderly classroom, which includes the non-measurable and the hidden curriculum. The hidden curriculum includes, among other things, the attitudes and social practices or norms of the school, which has an effect in the classroom (Alsubaie, 2015). The InTASC standards are an example of the ‘other’ things that a teacher is responsible for in a school setting. Their criteria for teaching also includes student development, diverse learners, multiple instructional strategies, management and
motivation, technology and communication, planning, assessment, reflective practice and professional development, and finally school and community involvement. Thus, instruction is one part of the multiple layers involved in teaching. Teachers are responsible for many aspects of educating children, even if it is not explicitly stated as such.

Teachers are responsible for the social-emotional development in their students. This is especially important in the elementary years because the children are learning how to be in school, attend to lessons, respect the adults in authority and cooperate with classmates. As Morgan, Kitching, and O’Leary describe it, there are many ‘micro-events’ that teachers experience that can either “enhance or undermine their motivation” as teachers (2007). They have found that the more proximal success (within the classroom) is what affects the teacher’s motivation and sense of self-efficacy.

Teachers take responsibility in other areas without extrinsic gain and are often willing to go beyond the ‘call of duty’ to help a student succeed. Morgan, et al, have described this as part of the sociological concept of “organizational citizenship”. Most teachers have an altruistic desire to see their students succeed that is not necessarily connected to wanting to increase a student’s test score. With pressure to increase test scores, this motivation may be changing, however.

Professional development is another area where teachers take responsibility for their continued development as teachers. This paper does not claim to argue whether the effectiveness of some professional development strategies is helpful or not. There is some controversy about how effective some PD workshops are when teachers cannot take the learning and apply it to their classrooms. However, there are many opportunities available for PD and there are days built into the school year for teachers to take advantage of workshops. All of the professional organizations mentioned in Section II of this report offer
PD to teachers. Teachers are asking for more meaningful PD and, in some schools, PD is ongoing and constantly being refined. One example of the continued wish to improve teaching is discussed below.

A recent article by Woodland and Mazur (2015) points out how a melding between the educational evaluation approach and the professional learning communities could create a “tiered system of job-embedded professional development”. They argue that taking the best of the two systems creates a way to address sub-par teaching on a regular basis, improve upon acceptable teaching, and sustain and replicate outstanding teaching.

Others point to reasons why teachers take responsibility. In Bullough’s study of the Hope Scale, he quotes Firestone and Pennell’s 1993 study of teacher commitment. “Commitment comes when one experience’s responsibility for the outcomes of one’s work…. Experiencing responsibility for success is highly motivating and conducive to continuing successful practices…Autonomy allows teachers to attribute success to themselves” (Bullough, & Hall-Kenyon).

In fact, through the work of Bullough and Hall-Kenyon, it becomes clear that teachers often take personal responsibility for ways to improve their practice. “These teachers reported working long hours, always thinking about teaching and ‘never give up’, always seeking ways to improve their practice”. Additionally, they state “these teachers took personal responsibility for their own work and actions and were very serious about their work as teachers and about improving professionally, outcomes consistent with…being highly committed and called to teaching”.

Teaching meets Moore’s parameters for autonomy within the profession. He describes it as ‘autonomy restrained by responsibility’. Teachers are part of a system that is very complex and yet take responsibility for the children in their classrooms by creating learning
environments using their expertise in curriculum content, maintaining social norms, continuing
to work with colleagues to improve practice, and being intrinsically motivated to do so.
Teachers are autonomous in that they do these things out of altruism and free will in spite of
federal, district and state mandates with which they must work.

Professional Organizations. Educators can join any number of organizations that
pertain to their profession. There are groups directly involved with research, evaluation,
avocacy for policy, and providing professional development for teachers and
administrators. Associations like the American Evaluators Association, the American
Educational Research Association, or the Association for Supervision and Curriculum
Development and other organizations related to the art of teaching or evaluating (US Dept.
of Education, 2014). There are also teachers unions - American Federation of Teachers
(AFT) and the National Education Association (NEA) that work with administrators to
negotiate teaching hours and pay scales.

The American Educational Research Association was founded in 1916 as a national
research society to promote research and scholarly inquiry into all aspects of education
with the goal of improving education and serving the public good in US education. The
research is meant to be useable by educators and for policy makers. The membership
includes “faculty, researchers, graduate students, and other distinguished professionals with
rich and diverse expertise in education research” (AERA website, 2015). AERA is dedicated
to reflection and study of a wide variety of issues related to education.

The American Evaluation Association (AEA) is part of a wider association of
professionals who practice self-reflection and learning through evaluating systems. Many
educators belong to this group. AEA has been established to “improve evaluation practices
and methods…(to) support the contribution of evaluation to the generation of theory and
knowledge about effective human action” (AEA website, 2015). AEA “Values high quality, ethically defensible, culturally responsible evaluation practices” (AEA, 2015). This group includes educators who reflect on practice through rigorous evaluation techniques to reflect on aspects of teaching and learning in order to improve the quality of instruction for student learning in the classroom and beyond.

Founded in 1943, The Association for Supervision and Curriculum Development (ASCD) is an international organization that examines relevant issues related to education. The membership includes superintendents, principals, teachers, professors and advocates from over 138 countries including the US. Their primary goal is focused on excellence in teaching and looking at how the profession can meet the needs of the children of the twenty-first century. The mission of ASCD as stated on their website is that they are “a global community dedicated to excellence in learning, teaching, and leading” and they are committed to finding “innovative solutions (to) promote the success of each child (ASCD, 2015). They provide publications, conferences and workshops for professional development, have a current membership of 125,000, and advocates for policies that affect learning and teaching.

There are organizations that are specific to the educator’s area of expertise like the National Council of Teachers of Mathematics, for example. “Education Oasis” lists all the specialized interest groups that teachers can join for academic stimulation and professional reflection on practice on their website. All of these groups publish professional newsletters, journals, and magazines that teachers use to keep current with leading thoughts on education, practice and policy information.

The Association of American Educators (AAE) established in 1994 by educators to provide a forum for educators interested in joining a non-union professional organization
focused on student achievement in a non-partisan environment. It is the largest non-union professional educators organization in the country. This organization aims to foster professionalism in the classroom through professional services to teachers through publications and professional development so that the focus is on teaching and learning in the classroom setting. AAE also surveys teachers once a month to hear their views on current policies and reform issues in education. They also have publications to keep teachers informed of current trends and discussions on educational issues. AAE organizes conferences, provides scholarships, continuing teacher education, and funds innovative classroom projects. AAE literature states that they “believe in advancing the teaching profession and empowering our nation’s teachers as true professionals” (AAE website, 2015).

The National Education Association (NEA), established in 1857, has historically been an organization that stands for the rights of educators and children. It is an organized teacher’s union advocating for American public schools. The NEA, once known as the National Teacher’s Association, was the first in the US to become a national organization with a unified voice for teachers. NEA has pioneered many innovations and advance civil rights in the US as far back as the Civil War. The work of this organization includes improving working conditions for teachers and professional training as public schools emerged from one-room schools to neighborhood schools to giant inner-city schools. Today their mission states that they “advocate for education professionals and to unite our members and the nation to fulfill the promise of public education and to prepare every student to succeed in a diverse and interdependent world” (NEA website, 2015). NEA wants to insure the US has excellent public schools that serve our nation’s children.
The American Federation of Teachers (AFT) was founded in 1916 in Chicago to help increase teacher salaries and secure their positions in a fluctuating economy and address the social issues of the times. The AFT was at the forefront of the civil rights movement in the 1950’s and beyond. Since the 1970’s, AFT members under the leadership of Albert Shanker have been engaged in education reform, human rights and civil rights. More recently, the AFT has become involved in teacher professionalism, pedagogy and cutting-edge innovation in the classroom. One of the contributions of Randi Weingarten, current president of the AFT, is teacher accountability practices that go beyond reliance on single measures like standardized tests.

This is a brief sketch of the types of organizations available for teachers to join that are part of the profession. They provide ongoing professional development, research, and involvement in policy as well as intellectual stimulation and comradery among education professionals. All of these examples meet Moore’s condition that a profession has organizations that “recognized by peers and has formalized occupational organizations, …” (Moore, 1970). The teaching profession has ample organizations dedicated to various aspects of the teaching profession.

Remuneration for Services. In most professions, doctors or lawyers, for example, a fee is charged for services. These fees are based on industry standards within the profession but the remuneration in the teaching profession is arrived at differently. In the teaching profession, the salaries are tied to tax revenue. Because there are varying revenue-raising abilities among towns and in districts, salaries can vary. This creates problems with the ability of prospective and practicing teachers to make a living wage in some high poverty areas of the country. It also creates an interesting dynamic for teachers. They can only argue for their ‘fees’ through collective bargaining in all but five states. There are five states that
do not have individual autonomy in negotiating their wages. Their wages are also typically lower than their college-educated peers. Because teaching is publicly funded, it is also considered a public service.

Public service is normally thought of as service to the public often through government with the motivation being a wish to serve the public good. In the ‘ideal type’ teachers enter the classroom willing to teach all the children who enter their rooms and most have a “genuine conviction about its social importance” (Perry and Wise, 1990). Teaching meets Perry and Wise’s discussion of public service on the normative criteria: desire to serve the public good, loyalty to duty, promotion of social equity, commitment, and “patriotism of benevolence” as defined by Frederickson and Hart as the “extensive love of all people within our political boundaries…” (Frederickson and Hart as quoted in Perry and Wise). Nowhere in this motivation theory is money described as a factor for entering public service and unlike other professionals, teaching is both a profession and a public service due to its meeting the criteria for being a profession and reliance on public funding via taxes.

According to the US Census as reported by Lori Taylor, “teachers are more likely to be found in rural communities and low-wage metropolitan areas than are college educated workers in other occupations” (Taylor, 2008). In fact, the “average earnings of teachers tends to be lower than the average earnings of other college graduates”. Taylor goes on to point out that wages workers are willing to accept are based on the “characteristics of the workers themselves”. One of the characteristics that fits with the profession of teaching is the willingness to work for a lower wage because the job is fulfilling. In this report, 79% of the teachers in the sample were elementary teachers.

The average earnings of teachers in Taylor’s sample was $38,000 compared to the earnings of non-teachers $60,000, while teachers reported working slightly less annual
hours than their peers in other professions by about 15%. Teachers in this sample were disproportionately female. Another discrepancy is in the average hourly wage between other professionals like physicians, for example. The average doctor makes $35.06 per hour according to the study conducted by Taylor. Teachers make an average of $21.87 per hour (2006).

What Taylor did not do in her study was to examine the different source of revenue for the occupations. Most were fee-for-service except for teachers. This is one major difference from other professions. Because tax revenues vary according to wealth in the community, some school systems are able to pay higher salaries than others. This can affect teacher quality and can create teacher retention issues. To ameliorate this discrepancy, states like Massachusetts became involved in education-finance reform. As far back as 1971, Serrano v. Priest attempted to offset the tax revenue inequity by re-distributing revenue dollars to lower income areas – a system of fiscal neutrality. The schools would now have more equitable per-pupil spending, which translates to being able to hire extra teachers and more supplementary help since approximately 80% of school budgets are spent on salaries.

Because teachers do not negotiate individually for their salaries, there are other complexities involved in arriving at their pay scales. They are at the mercy of policy makers and other administrative officials in the education world who make decisions with the unions about how they will be paid. This is another area currently under debate regarding teachers. The economics-based theory promoted by Race to the Top involves value-added measures (VAM). The other model is a psychology-based theory involving intrinsic motivation via professional development and job design and peer assessments. This model regards autonomy and self-efficacy as viable characteristics for earning a salary (Firestone, 2014).
According to the definition of a profession, the individuals in the profession should work within their profession to arrive at reasonable remuneration for their services. The closest the teaching profession comes to that is with the teacher’s unions. According to the 2010 study by West and Mykerezi, unions have “an important role in determining the structure of teacher pay” including whether or not VAM would be used to determine salaries (p. 103). In ‘right to work’ states, the teachers do not have to pay union dues but still reap the benefits of union negotiations. The 2013 NEA reports that the average teacher salary in the US for 2012 was approximately $55,000. This is well below the average for other professionals. The median salary for general practitioners in the medical field is $143,000. This is the lowest in the cadre of physicians. The average salary for lawyers in the US is $76,000. That teachers are willing to work for such relatively low salaries again points to the motivation factor and it’s not about the money.

Teachers are remunerated for services at a lower rate than their college-educated peers and other professionals who have ‘vital effect’ on the clients (Moore, 1970). This is in part due to the way wages are paid to teachers via tax revenue. The teacher’s unions negotiate with towns and districts to come to teacher pay scales. We have seen that teachers are not motivated by money as their driving force for entering the profession.

Discussion

Teaching meets the definition of a profession in every way described by social science theorists. According to Cogan, Moore, Shulman and Evetts, people who enter a profession do so because they feel a calling. In the case of elementary teachers there is a wish to help children so that they will one day be able to succeed in society. There are numerous studies that support this claim. First, teachers are altruistically motivated. Bullough and Hall-Kenyon (2012) connect this altruistic impulse directly to the teaching
profession and document the studies making these connections through teachers’ self-reporting.

The second criteria for a profession is there must be a common body of knowledge that an aspiring person must master before they can gain entry into their chosen profession. The teaching profession has a common body of knowledge that must be mastered before entering the field. For elementary teachers an understanding of child development, knowledge of curriculum content, ability to deliver curriculum effectively, and skills in classroom management must be developed before entering the classroom. These educators must have a bachelor’s degree from a college or university or a Master’s Degree in Education before they can apply for licensure into the profession.

Third, there should be professional organizations that one can join to further professional knowledge, support the development of the profession, conduct research or receive services. There are ample professional organizations from which teachers can choose. There are peer organizations that hold the profession to standards created by the peer group of experienced educators at the university level in conjunction with the administrative professionals and other education specialists. There is ongoing practice and reflection on practice individually, within schools, and nationally. Professional organizations like NCATE, InTASK, and NBPTS exist to monitor the standards for entering and advancing in the profession. There are national research organizations like the American Educational Research Association (AERA), and the American Evaluation Association (AEA), American Federation of Teachers AFT), and the National Education Association (NEA) to name a few groups that work to research and evaluate educational practices. The topics range from teacher effectiveness, to social issues, to national trends in demographics and student performance.
Fourth is recognition by peers and evaluation. In this context this means graduation from teacher preparation institutions, entering the classroom, and becoming a master teacher. The first level of recognition by peers is the licensure process, which is required in all fifty states before entering the classroom. The next level of recognition is the school where recognition by colleagues, parents, and administrative leadership occurs throughout the career. The next level would be at the district or state level with teaching awards or other acknowledgments of professional development. The next level would be the national arena. Here the National Board for Professional Teaching Standards is where a teacher may choose to become recognized by national teaching standards. At the University level, being accredited by CAEP (formerly NCATE) or other national accrediting organizations is recognition by peers to insure quality standards for teacher preparation.

Within the education system there are national, state, and local levels of evaluation of programs and of the professionals within the programs. These groups are peer led and monitor the profession. There is some debate about whether the teaching profession can monitor its own and this is where the ideal and the actual practice either meet or do not. In public schools the intention to have evaluations there in several forms – either through top-down, principal evaluations, education evaluation programs, or through creation of professional learning communities. The effectiveness of these systems themselves is being evaluated in the schools to determine which systems help teachers to improve student learning. Districts and states have criteria for monitoring schools’ performance through standardized tests and other measures (District Determined Measures, DDM’s). On a national level, Every Child Succeeds Act (ESSA) is currently the federal education vehicle for setting mandate for our nation’s schools to be implemented through the States. Educators are capable of monitoring their own performance and have been doing this for themselves
since the inception of the public schooling system. The Federal systems are an attempt to
codify, unify, and equalize the quality of teaching across state lines to ensure that children in
all fifty states receive a high-quality education.

Fifth is the issue of autonomy. The social science theory maintains that if a
professional has expertise in their field, then they should be allowed a certain amount of
autonomy to practice their craft and make decisions as necessary bounded by the norms of
the profession and their area of responsibility. Elementary teachers have knowledge in child
development, curriculum content, and social expectations for the children in their care,
therefore they should be included in any policy discussions that affect what they do in the
classroom. Because they are civil servants and are accountable to society, they can have
autonomy in their rightful domain, which is in the classroom creating engaging lessons for
student learning.

The sixth criterion for a profession is remuneration. Professionals receive fees for
service provided. Teachers receive fees but not directly from the ‘client’. The client in the
case of teachers is the town who technically employs teachers. This is where the teaching
profession makes a deviation from other professions. Teacher salaries in public elementary
schools are tied to tax revenues. Teacher’s salaries are typically lower than those of other
professionals, which brings into the forefront the question again of teacher motivation.
Teachers do not join the profession for the high wages. The wage issue seems to underscore
the imperative that teachers are not necessarily or at least not primarily motivated by money.
Their motivation is altruistic and intrinsic. This begs the question being discussed on the
national level about VAM and whether they will affect teacher quality. As one teacher aptly
put it, “Pay has never been a big motivator for me, or why would I be in the profession? I
am motivated by connecting with students, having them experience the ‘aha’ of
understanding something, and seeing them develop the confidence to explore and apply new ideas” (Hulleman & Barron, 2010).

This does not mean that we should not pay teachers well, but it does mean that money is not the driving factor in their choice to become a teacher. We also know from studies by Deci and Ryan that motivation to complete task is not tied to money. (Deci & Ryan, 2000). The ‘carrot and stick’ model for pay incentive is outdated and this study suggests, if applied to teachers because they are not primarily motivated by money will have little effect on their performance in the classroom. The use of VAM’s seems to fall into the ‘carrot and stick’ mentality of using money as an incentive to do better or more work. Recently the work of Audrey Amrein-Beardsley points out the incongruencies involved in using VAM’s with the teaching profession (Amrein-Beardsley, 2014).

Public elementary school teachers enter the profession because they feel called to work with children. They are motivated by a sense of caring and service to youth. They are prepared to enter a profession with a college education and often a Master’s Degree and are serving the towns and cities in which they work. They are recognized by their peers and need to have a certain amount of autonomy within their classrooms and a paycheck that is a living wage. The national discussion has become narrowed in its focus on student learning and high-stakes standardized test scores when there is much more that happens in a classroom. In addition to delivering academic content, elementary teachers are also part of the moral structure of our society. They are also responsible for social-emotional issues that arise in the classroom and are expected to deliver an education to every child no matter what kind of life circumstances affect the child’s ability to learn or become part of the social group (Darling-Hammond, 2005; ESEA, 1965; IDEA, 1975). These are all part of a more comprehensive picture of the teaching profession.
The teaching profession has also changed dramatically in the last decades. With the dawn of the information age, new skills in delivering an education have emerged that involve teachers being able to teach to multiple intelligences, multi-ethnic groups, and a wide range of cognitive and behavioral abilities within a single classroom (Gardner, 1993; Eisner, 2002; Darling-Hammond, 2005; US Department of Education, 2014). “Not only do teachers need to be able to keep order and provide useful information to students, they also need to be increasingly effective in enabling a diverse group of students to learn ever more complex material and to develop a wider range of skills” (Darling-Hammond, 2005).

This can put increased stress on teachers on a daily level as the struggle to keep up with the demands being made of them. Daly agrees with this assessment of teacher expectations and states that while the new demands on teachers may have improved teaching practices, it has also created serious stress in those schools that do not meet adequate yearly progress (AYP) and are under intense scrutiny (Daly). This scrutiny can have the effect of putting the school (leaders and teachers) under extreme pressure to perform. This can lead to the people in the school feeling under a ‘threat’. Threat-rigid theory postulates that the long-term effects on individuals, as part of the whole organization (i.e., the school), who are experiencing a threat is that they will not be able to thrive and information flow shuts down (Daly).

Evetts also points out that there are two types of professionals – the organizational and occupational. Part of the confusion with the teaching profession is that it is being discussed at the national level as an organizational profession where managers and others (Federal and State government, Local School Boards) make decisions and have authority from ‘higher up’ or ‘without’. Meanwhile, the teaching profession also has its own norms and practices that have been established from ‘within’ the profession by peers and high-ranking professionals (university professors, educational researchers, child psychologists, and teachers). This has created a hidden polarity that makes it hard to see who has the actual authority to make changes in education and who has the autonomy to do what they have been prepared to do, i.e. the Federal government and policy makers or the education universities and teachers in their classrooms?

Despite all of this, much is being done within the profession to ensure that teachers in their classrooms can function and deliver instruction, facilitate student understanding and improve student learning. To ensure that teachers are able to cope with the changing demands put on them, the teaching profession has continued to develop its standards for teacher training and professional development in spite of a lack of common agreements among the professional organizations that train teachers (Darling-Hammond, 2005; Holmes Group, 1994; National Academy for Education, 2013; Teach for America, 1989). Several educational experiments have been implemented to see what works in the most vulnerable communities. Geoffrey Canada and the Harlem Children’s Zone is one example where there are ‘wrap-around’ services for the children, which includes medical and dental care, food, and after-school care for children living in poverty in New York City.

Despite Federal mandates like ‘Race to the Top’ that put pressure to perform on schools and classroom teachers based on the ‘carrot and stick’ incentive model, teachers still
walk into their classrooms every day to teach our nations’ children. They do it because they love teaching and want to serve the community. Money is not the primary motivator for teachers; they are motivated by their own inner satisfaction of doing a good job getting their students to engage and understand the curriculum. Much of what teachers do cannot be measured or quantified.

This brings up several questions about the perception of the teaching profession at the national level with the focus on high-stakes standardized tests and linking teacher performance to students’ test scores. The tests are designed to and measure very limited content knowledge. Should we be putting so much emphasis on these scores and therefore pressure on our teachers? Does this make sense in the more expanded definition of teaching (and learning) as presented in the paper? Does this honor the profession of teaching and give the autonomy that the professionals need in order to be successful? Or does it put unnecessary pressure on teachers like Daly suggests and has the effect of shutting down teacher’s creativity and inspiration?

**Conclusion**

Putting the teaching profession in the larger context of education in the U.S. is essential in order to understand the role of the teacher as a professional in their specific community. Given that teaching meets the definition of a profession, there is one pivotal question that could be addressed that would affect a paradigm shift in how teachers are involved in determining, adopting and implementing pedagogy in their classrooms. The pivotal question is teacher autonomy. Where in the current system are teachers asserting their autonomy and adopting policy and making decisions that affect them in their classrooms? How does the education system support teacher input in their area of expertise?
Evetts identified the distinction between organizational professionalism and occupational professionalism the norms and practices of the profession arise – from within the profession or from without. This is directly linked to the question of teacher autonomy in the classroom but also in relation to their ability to adopt and implement curricula that they know will meet the needs of their students based on their expertise in the area of pedagogy. Currently the Chief Council of State School Officers, governors, and school boards take direction from the Federal Department of Education in the form of mandates. Many of the people in these organizations have not had experience in the classroom yet they are making the decisions that affect teachers in their classrooms. This is top-down management of teachers without sufficient representation from them – from the bottom up. Elementary teachers have extensive knowledge in child development, curriculum content, and social expectations for the children in their care, therefore they should be included in any policy discussions that affect what they do in the classroom.

Teachers need to be involved at every level of policy making to influence the curriculum decisions that they must implement. This can happen if one looks to where labor and management are working in collaboration to determine how to educate students. This is a model currently being tried in one district in the northeast. Their theory is that the education system could use the organizations that already exist to implement pedagogical changes. These changes could come through national standards like common core but only after the proposal has been sufficiently vetted through the education professionals. Using labor management collaboration as a model for communication between the ‘top’ and the ‘bottom’ could open the possibility for teachers to work more closely with policy makers to design, adopt and implement curriculum that best facilitates student learning in public school classrooms.
CHAPTER 3

RESEARCH METHODS

Introduction

In the fall of 2017 I conducted a small-scale, short-term ethnographic study. Through interviews of five elementary educators in several MA school districts, the study was conducted as follows: two in-depth interviews of each person; one interview to establish professional history, one classroom observation (whenever possible) with an immediate follow-up interview/conversation to review the lessons and teacher’s use of professional knowledge. If the classroom observation was not possible within the time frame, we sat with the state standards, curricular programs and the teacher’s lesson plans to analyze how and where they adapted curriculum. A third follow-up interview deepened understandings of teacher’s meaning and sense-making, filled in any gaps in my documentation and member checked my interpretations. For example, as the study progressed, I realized that in addition to the school and teacher profiles, I needed to include the class profiles to demonstrate the wide variety of learners the teachers are working with in their classrooms. In addition to interviews, I collected artifacts from the teacher’s lesson plans, program and the Common Core standards addressed. As stated in the problem, there are potentially numerous kinds of knowledge needed in the teacher’s repertoire for effective delivery of curriculum in service of student learning. I asked the teachers to tell me about their classroom experience, how they navigated between curricular expectations and needs of students, and to speak about their position as professionals within the MA system of education. I was curious about their professional expertise and if they had a way of sharing what they know about their experiences so that
it becomes usable knowledge in the building, the district and the state. For the purpose of this study, I define usable knowledge as ‘making elementary classroom teacher’s knowledge applicable for implementing change, adapting or adjusting where needed to support student success.’ In this study, the knowledge could be made usable in the MA education system if teachers have a way to communicate what they know to district coordinators, superintendents and state policy makers (Argyris and Schön, 1974; Foucault, 1972; Fullan, 1994; Senge, 2012; Van Manen, 1990).

I chose ethnography as a method because I wanted to hear directly from the teachers and learn about their experiences and how they make sense of their position in the education hierarchy. Ethnography is situated in the topology of qualitative research and looks at “cultural groups through ethnographic observation” to identify the various truths and perceptions that groups hold – in this case, the education professionals who implement programs for the benefit of student learning (Rossman & Rallis, 2012). The research questions focus on the ‘how’ and ‘why’ of the situation with the researcher as the interpreter of “the relationship between action in a social setting and the culture or context of that setting” (Horvat). In this ethnographic study, I wanted to understand through the teacher’s lens, what kinds of knowledge they use in delivering content to their students and if there are competing commitments between delivering curricula aligned with CCSS, textbooks, and individual needs of students in the classroom (Kegan & Lahey, 2001). I have examples from math, English Language Arts, science and social studies curricula depending on the teacher’s interest and self-reported expertise.

The kinds of questions I had entering this study came from my work with mentor teachers in a graduate program. I began to wonder about teacher autonomy in an increasingly prescriptive education system with an increasingly ethnically, cognitively
and developmentally diverse student population. Can teachers describe their experiences with competing commitments between meeting standards, curricula and the immediate needs of their students? Do they have the autonomy in their classrooms to adapt program if their tacit knowledge about their students runs counter to predetermined expectations of the unit as defined in the program their school has adopted? How do they use their professional expertise in the school setting to address this situation? Are the schools in this study prepared to deal with the competing commitments between meeting program and student’s immediate needs should the situation arise? How does that happen?

Through the teacher’s lens how do the relationships of the people in the hierarchy of the system interact and communicate with one another in order to learn what strategies work best for creating student success. Michael Fullan (1999) posits that communication needs to go up and down the hierarchy so the system can make use of all levels of professional knowledge. I documented the teacher’s perspective on these questions as the ones who represent the ‘bottom’ of the hierarchy in Fullan’s model. Do they perceive that their professional insights and tacit knowledge are respected and become usable knowledge in the field?
Table 3-1. Hierarchy in Massachusetts Education System

Research Design and Rationale: The Ethnographic Study

An ethnographic study is a qualitative method used to “understand what is going on through intensive study” of a particular situation through several iterative interviews and observations (Rossman & Rallis, 2014). This is a small-scale ethnographic study with teachers who are experienced in their classrooms. I have created the following criteria for choosing teachers who are then identified by their school principals through the mentorship program. I looked for veteran teachers with 15 or more years of experience in the classroom who are known for their creativity and pedagogical innovations to meet students within the current landscape of meeting CCSS through programs with scripted curricula and pacing schedules. I conducted the first one-hour interview about the
professional history of the participants’ teaching experience and orient the participants to the topic of my study. Together we established a second day to analyze standards, curricular programs, observe teaching and immediately follow up with discussion of my field notes on the lesson and reasons for the kinds of pedagogical strategies used for instruction. In four of five cases, a classroom observation was not possible. Instead we looked at the standards, programs and artifacts that illustrated the kinds of differentiating that was happening through teachers supplementing the given programs for their students. The third interview, or in some cases a follow-up phone call or email, continued to probe my understanding of the teacher’s meanings and sense-making, fill in gaps and to member check my interpretations of their words.

After I transcribed the first set of interviews, from recordings and extensive field notes, I began a preliminary look for themes and patterns among the participants. I used the second round of interviews to follow up with classroom observations, to gather artifacts, to analyze specific curriculum topics with each teacher and to establish the teaching strategies and professional knowledge in use. The third interviews were dialogues to help clarify or add to the teacher’s meanings and sense-making. I also used the third interviews as member checks to see that I had captured the participants meaning accurately. I asked further questions based on what I found in the first two rounds of interviews that needed clarifying. The third round of questions were not pre-determined. Each one was different depending on the prior conversations and where there were gaps in my information. For example, in the second interview of one teacher, she had expressed her concern that the scripted language in the math program was not appropriate for first graders. In the follow-up conversation I asked her how she knew that the scripted language was inappropriate and what did she say instead to help her students? She
explained that the language was “way above their heads” and that she looked at the lesson objective and “created her own way of describing the concept on a first-grade level” (Interview, December 2017).

The data collected through interviews was transcribed and memos were written to develop the story of the study. By carefully transcribing interviews, collecting artifacts and analyzing curriculum with the teachers, I captured their stories. For this report I chose one example from each teacher to highlight though there were several other examples I could have added to the report. I decided to choose an example from each of the following disciplines: ELA, Math, science and social studies. Although I did not always directly observe lessons connected to the examples, I have been observing these teachers for five years and am in their classrooms every week during the University semester and have an adequate sense of how they run their classrooms and deliver lessons.

Through transcribing all three of the interviews for each person, I looked for themes among the participants. Then, through line-by-line coding field notes and interviews I created categories. Through coding and analysis, a story emerged that I, as the researcher, could tell to my audience. Once a clear story emerged, I situated it within the larger context of theory and practice in the field – in this case – the field of education.

This ethnographic study explored the lived experience of the teachers who agreed to participate. They described their experiences between meeting two competing needs – those of the school to meet curricula aligned with CCSS and those of the child. This study looks at how these teachers used their professional knowledge to adapt and whether their knowledge become usable knowledge within the school, district and state.
I was curious about whether the education system had ways of communicating between the teachers and those above them in the hierarchy to see if their experiences become usable knowledge in service of student success. If that were the case, communication among levels of the hierarchy would be critical. Communication is key to creating what organizational theorists like Chris Argyris (1973), Peter Senge (2012), and Michael Fullan (1999) describe as a living, learning systems of individuals with a common purpose. If the common purpose of education in the State is to improve student success, then elementary classroom teachers can participate in the conversation at levels that make sense – namely with their principals, superintendents, and district specialists – to give input when program is being adopted that they must implement and to give feedback on how it is affecting them and their students once implemented.

Elementary teachers have professional knowledge no one else in the education hierarchy possesses. I was curious about the larger implications of elementary classroom teacher input. By interviewing five teachers from different schools, in addition to identifying types of knowledge teacher’ possess, I asked about the communication structure from the teacher’s perspective to see if the communication went two ways (top-down, bottom-up), and if they felt systemic learning was occurring. That is, did they think their input was taken from anyone above them in the education hierarchy to put their knowledge, input or feedback to use in the education system (Argyris, 1973; Fullan, 1999; Senge, 2012).

**Setting and Participants**

The Educator Participants. The teachers I chose are veterans in elementary classrooms. Their elementary teaching experience ranges from 15-30 years for a total of 105 years of teaching among them. Three of the teachers have Master’s Degrees in
Education and all have participated yearly in professional development. They teach in a wide variety of schools at various levels of performance as designated by the State of Massachusetts accountability system. My criteria for choosing these teachers is that they are good at meeting student needs given the current landscape in which they teach.

1. Teacher Profile #1 Mary (A pseudonym)

Mary graduated from a state college and majored in science and education, later completing a master’s degree in elementary education science teaching from a prestigious university. She was unusual at the time, since most science teachers were preparing to teach high school. Her background in science has facilitated her ability to adapt science curriculum to meet the needs of the elementary student.

To date, Mary has been an elementary classroom teacher for approximately sixteen years with experience in grades one through four and most recently has focused on grades three and four. She has taught in rural schools with a majority Caucasian population, which is also economically diverse.

Mary’s commitment to teaching includes professional development (PD) outside the classroom and she initiates her PD choices herself. At times her principal recommends that she attend a particular training or workshop on behalf of her colleagues. This happens more often now that they no longer have a curriculum specialist in their district. She has had one PD opportunity offered by the state, which she felt did not meet the needs of her school.

Mary is also involved in other ways at her school. She is chair of the School Culture Committee, which is currently focused on social-emotional learning (SEL). She is responsible for bringing resources to her colleagues when they identify a need based on their experiences with their students. She is also the Union representative for her school.
and attends a monthly school committee meeting to “stay informed” for her own self-knowledge but also on behalf of her colleagues (Interview, June 2017).

Another important aspect of Mary’s teaching service is her willingness to work with a nearby university to prepare future teachers. She has been actively involved with student teachers in her classroom for 10 years providing them with pre-practicum and practicum experience as they earn their master’s degrees in elementary education. The university and her principal have chosen her to work with pre-service teachers because of her knowledge and skills in the classroom.

2. Teacher Profile #2. Claire (A pseudonym)

Claire has been a public elementary student for fifteen years in mostly small, rural schools. Her undergraduate degree is in sociology with a master’s degree in early childhood education. She continues to take courses in science and writing at the university close to where she lives. She is self-motivated to do so. As Claire describes it, “I always want to improve my skills.” (Interview, August 2017) She also participates in professional development on a regular basis to “keep current with the latest (teaching) strategies” (Interview, August 2017). She expressed regrets that due to budget cuts, there is no longer a curriculum specialist who researches curriculum programs and brings them to the faculty for review. In lieu of a curriculum specialist and because in her school there is only one grade per level, another way of creating a community of practice was developed through the district. Once a month faculty cohorts of all same-grade-level teachers gathered in the district to discuss programs and other pedagogical issues. Due to budget cuts, that is no longer happening.

Being a collaborating teacher in a university master’s degree program is another aspect of Claire’s service to education. She has been involved in teacher preparation for
11 years and has either a pre-practicum or practicum pre-service teacher in her classroom as they earn their degree in elementary education. The pre-service teachers report that they learn about curriculum, standards, and pedagogical techniques from her.

3. Teacher Profile #3 Linda (A pseudonym)

Linda has been teaching in elementary classrooms for thirty-one years in mostly small rural schools. She earned her degree in Early Childhood Education and has been teaching in the third grade for the last seven or eight years in a small rural school in the northeast United States. Linda as an interest in the neurology of learning, executive function and what is means to be “learning able.” (Interview, September 2017) She reports that her choice for professional development in these areas is self-motivated and she continues to study and attend conferences on a regular (yearly) basis.

She is a collaborator with other specialists in her building and uses what she learns from colleagues with the students in her classroom. This year she has 18 students in her room. Two students have Individual Education Plans, two have 504 Plans for disabilities, and five are English Language Learners. There are tutors, aids, and translators in and out of her classroom helping students.

Linda also participates in a teacher preparation program with her local university and regularly hosts pre-service teachers in her classroom. Her years of experience are a boon for new teachers and they report learning a vast array of techniques for managing a classroom and responding to diverse student needs.

4. Teacher Profile #4 Anne (A pseudonym)

Anne has been a first-grade teacher for fifteen years in a small, rural school near a major university in the middle of farmland. Her undergraduate degree is in Fine Arts and her master’s degree is in Early Childhood Education. She lists numerous years of
professional development in a variety of topics ranging from STEM, computers in the classroom, American History, Responsive Classroom, Dibbles, Math Investigations, and Executive Function in students. She has worked closely with the curriculum coordinator in her district and is enjoying having a grade-level colleague to work with in her building.

Anne’s commitment to education extends beyond the classroom. She is a building mentor to other teachers, the Union Representative for her building and a member of the School Council in her town. She has also partnered with her local university and regularly takes student teachers into her classroom. When asked why she does this she said, ”I love hearing the new ideas and it helps me be a better teacher” (Interview October 2017).

5. Teacher Profile #5 Sophie (A Pseudonym)

Sophie has been a third-grade teacher for thirty-two years. She has taught in two different states but has been teaching in a low income, post-industrial town for most of her teaching career. She graduated from a prestigious university with a degree in what was called ‘Integrated Day’ elementary education and has accumulated enough credits through course work and professional development to earn a Master’s degree in elementary education but has not pursued the degree. She is a teacher leader in her building and the Responsive Classroom coach for her building.

Over the years, Sophie has also allowed many perspective teachers into her classroom to help them learn to become elementary teachers. She has been chosen by a prestigious university to do this for over twenty years. From her years in the classroom, she has developed leading strategies for using responsive classroom techniques, literacy approaches, and math instruction for third graders in an inclusive classroom setting where she also differentiates instruction to meet the various needs of the students in her room.
Table 3-2. Teacher profiles

<table>
<thead>
<tr>
<th>Name</th>
<th>Undergraduate and Master’s degrees</th>
<th>PD Interests</th>
<th>No. Years</th>
<th>PD Interests</th>
<th>PD Interests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mary</td>
<td>Undergraduate - Science; Master’s Elementary Science Education</td>
<td>Master’s Science classes; Social/Emotional Learning; Ongoing; self selected</td>
<td>16</td>
<td>Focus 2-4</td>
<td>Union Rep; School Committee; School Culture Committee</td>
</tr>
<tr>
<td>Claire</td>
<td>Undergraduate – Sociology; Master’s in Early Childhood Education</td>
<td>Master’s courses Science, writing, cognitive development; Ongoing, Self selected</td>
<td>15</td>
<td>Focus 1-2</td>
<td>Motherhood</td>
</tr>
<tr>
<td>Linda</td>
<td>Undergraduate - Early Childhood; Master’s classes</td>
<td>Neurology of learning; executive function; Ongoing, Self selected</td>
<td>31</td>
<td>Focus 3</td>
<td>Teacher Leader and Professional Collaborator</td>
</tr>
<tr>
<td>Anne</td>
<td>Undergraduate – Fine Arts; Master’s in Early Childhood</td>
<td>STEM, History, Responsive Classroom, Dibbles, Ongoing, self selected</td>
<td>15</td>
<td>First Grade</td>
<td>Building Mentor, Union Rep, School Council</td>
</tr>
<tr>
<td>Sophie</td>
<td>Undergraduate – Integrated Day</td>
<td>Responsive Classroom Trainer; Literacy</td>
<td>32</td>
<td>Grade 3</td>
<td>Instructional Leader, Summer camps</td>
</tr>
</tbody>
</table>
Table 3-3. Class profiles

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Grade/#students</th>
<th>IEP</th>
<th>504</th>
<th>ELL</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anne</td>
<td>1/20</td>
<td>N/A</td>
<td>N/A</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Claire</td>
<td>1/19</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>Linda</td>
<td>3/20</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Mary</td>
<td>3/20</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Sophie</td>
<td>3/19</td>
<td>10</td>
<td>3</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

IEP= Individual Education Plan; 504=Physical needs; ELL=English Language learners

The School Setting. The schools chosen have varied Level designations in the State of MA to see whether there is a difference in autonomy for teachers to adapt programs if their school is considered ‘failing’ or ‘meeting targets’ set by the state. The schools range from rural to city and have either ethnic or economic diversity.

1. School Profile #1 Hydrangea School

This school is in a rural area with a mostly white population of students (91%) according to the latest state statistics (doe.mass.edu, 2016). There are currently 172 students in the school. In the student population, 32.6% are on Free and Reduced Lunch. It is rated a level one school, which is the indicator of a successful school with proficient performance on the Massachusetts Common Assessment System (MCAS). The school is now one of the 777 schools chosen to pilot the Partnership for Assessment of Readiness for College and Careers (PARCC) in 2015 (doe.mass.edu, 2016).

The school is nestled at the end of a short rural street. The grounds are immaculate and have a variety of play areas - open fields, playground equipment, hard-top for ball games, gardens and a covered entry. The building is clean, one-story with banks of windows in every classroom for natural light and air. There is a library and a
separate computer lab. Displays of children’s artwork line the hallways. There is a gym, computer lab, and music room as well as several tutoring spaces and a nurse’s office.

There is one grade per level in the building therefore teachers cannot have grade level meetings. This group has created committees for general curriculum studies and school culture. This school currently has three students in wheelchairs with one-on-one nursing and tutoring support for these children. The student-teacher ratio is 12:1.

2. School Profile #2 Rhododendron School

The second school is also in a rural setting with a population of 205 students of whom 63.7% are Caucasian, 11.2% Spanish, 10.2% Asian, and 2% Black. 42.2% are on Free and Reduced Lunch. Rhododendron School is rated as a Level I school, which is the indicator of a successful school with proficient performance on the Massachusetts Common Assessment System (doe.mass.edu, 2016).

The school is situated on acres of fields with sports equipment and playgrounds and now has a solar array on the edge of the campus. The building is one story, clean, bright, and full of light, with a library that includes computer stations. It is clean and in good repair. There are tutoring rooms, a gym, cafeteria, music room and a nurse’s office. Children’s classroom work is on display along the hallways. This school has two grades per level with support staff including classroom aides, one-on-one aides, one math and one reading specialist. There are also language support personnel to help with English Language Learners (ELL). The student-teacher ratio is 14:1 (startclass, 2017).

3. Profile School #3 Azalea School

The third school is a two-story brick building in a small, formerly industrial town on a river with 228 students. There are ample playing fields and a little league baseball field abuts the school yard. The interior of the school is in good repair, clean and the halls
are filled with children’s work on display. There are banks of windows in every classroom that open for fresh air. The school has a gym, library, tutoring rooms, art rooms and a computer lab.

The school is rated Level 4 by the State of Massachusetts based on MCAS test scores (doe.mass.edu, 2016). The passing rate for students in math is 32% and English Language Arts is 27%. The teacher-student ration is 10:1. It is a Title I school meaning there are reading tutors on site to help struggling readers and 21% of the students are identified as learning disabled. Sixty-four percent of students in this school receive free and reduced lunch. The majority of the student populations identify at Caucasian (77.2%). Hispanic, Black, American Indian and mixed-race children comprise the remainder of the population with 67% of these children have limited English proficiency. There is a higher percentage of new teachers (27%) at this school than most MA elementary schools. Teacher salaries are significantly lower than other MA schools. The student-teacher ratio is 10:1 (startclass, 2017).

Table 3-4. School profiles

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>No.</th>
<th>Grades/Level</th>
<th>Per Pupil Expenditure*</th>
<th>Demographics</th>
<th>Free/Reduced Lunch</th>
<th>MA Rating</th>
<th>Teacher-Student ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrangea</td>
<td>Small, rural, farm</td>
<td>172</td>
<td>1</td>
<td>$18K</td>
<td>91% Caucasian</td>
<td>32.6%</td>
<td>Level 1</td>
<td>12:1</td>
</tr>
<tr>
<td>Rhododendron</td>
<td>Small, rural, farm, university</td>
<td>205</td>
<td>2</td>
<td>$17K</td>
<td>63% Caucasian 11.2% Hispanic</td>
<td>42.2%</td>
<td>Level 1</td>
<td>14:1</td>
</tr>
</tbody>
</table>
Azalea  mid-rural industrial  228  2  $16K  72.2% Caucasian (67% Limited English proficiency)  64%  Level 3  10:1

*to nearest 10,000

Procedures

This ethnographic study was a short-term study of approximately three months looking at how these teachers explain the kinds of knowledge they have and use in delivering curricula aligned with CCSS and programs in their schools. As background, I researched the history behind adopting the CCSS in the State of MA. From 2010 up to 2016, I gathered data through the BESE and DESE websites, including meeting minutes and names of people who were involved in adopting the standards. I also researched the group who created CCSS for the nation to identify the kinds of knowledge in use for creating and then presenting standards to be adopted.

For the teachers in the study, I had permission for interviews and informed consent documents signed, transcribed the interviews and destroyed the recordings. I took notes in the field and wrote memos as I began to identify themes in the words of the teachers. This is not a grounded theory approach because I already had an idea about what I might find. I did use some techniques from grounded theory to analyze the teacher’s words from the interviews including line-by-line, micro-coding as described by Charmaz (2006). From the memos, I was able to create thick description in the tradition of Clifford Geertz (1973). My notes from websites and meeting minutes helped me to
prepare timelines and a simple systems-map to diagram the hierarchy of the education system in MA as I began to understand the communication structure of the system in which the teachers work. This helped give context to their experience and locate them in the hierarchy of knowledge within the MA education system.

I chose the teachers from these particular schools because their principals have identified them according to the criteria I presented to them. (I am looking for veteran teachers with 15 or more years of experience in the classroom who are known for their creativity and pedagogical innovations to meet students within the current landscape of meeting CCSS through programs with scripted curricula and pacing schedules.)

Data Analysis

Using description from the interviews in the style of Clifford Geertz and coding and analysis techniques from grounded theory uncovered the common understandings or perceptions the teachers have in their experiences in meeting CCSS and student needs (Charmaz, 2006; Glasser and Strauss, 1967, Geertz, 1973). However, remaining open to the phenomena revealed in the experience and understanding of the teachers was crucial to developing an accurate picture of what was happening. The method of analysis used in grounded theory was helpful in remaining as impartial as possible for the researcher who is the instrument in the process. Constructing codes in the grounded theory method was useful in this situation because it uses the words of the participants directly to derive their meaning and understandings of the topic. I was looking for misalignment between curricular programs and children’s cognitive development to see how the teachers navigated this conundrum if it showed up in their classrooms. If the teacher was able to use her professional knowledge and adapt the curriculum, how did she do that and to whom was she responsible to share her findings? If she did not adapt, was she too tightly
coupled with the program at the expense of student learning? Too tight coupling could indicate a lack of professional autonomy for the teacher and therefore indicate privileged knowledge of the textbook writer over the classroom teacher.

Table 3-5. Teacher autonomy

Teacher Autonomy to Use Professional Knowledge*

<table>
<thead>
<tr>
<th>Teacher 1</th>
<th>With policy makers and CCSS</th>
<th>With textbook selection</th>
<th>With district</th>
<th>In School Building</th>
<th>In classroom</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

Table 3-6 Teacher feedback ability

<table>
<thead>
<tr>
<th>Teacher 1</th>
<th>To policy makers and CCSS</th>
<th>To Textbook Selectors</th>
<th>To district</th>
<th>In school building</th>
<th>In Classroom</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

I used line-by-line, micro-coding to stay open to the nuances of the interview data. This helped me identify the thoughts and concerns of the participants and eventually identified the common understandings and gaps in understandings of the teachers in the study as they revealed their knowledge-in-use when they delivered curriculum content.
aligned with CCSS. This coding helped me find themes and patterns in the thoughts and ideas of those interviewees as well as spark new questions in me as the researcher. Line-by-line coding helped me find hidden assumptions and make the familiar unfamiliar (Charmaz, 2006; Glasser and Strauss, 1967; Rossman and Rallis, 2014). As I analyzed line-by-line, I was looking for ‘in vivo’ codes with these participants to find any ‘group specific’ terminology that might shed light on their experiences as educators – how their thinking and understanding of the policy and written curriculum were interpreted within the individuals in the school setting and the teacher’s perceptions of where their knowledge was valued in the hierarchy.

Through transcribing interviews, one can analyze themes, patterns, and perceptions of the people involved. The artifacts were also analyzed to triangulate the data to see how it related to the perceptions and words of the people interviewed (Lincoln & Guba, 1985). This helps the researcher see where themes converge or diverge, where there might be gaps in perceptions or understandings of the participants. For example, does the teacher misinterpret the intentions of policy makers or textbook creators?

I gathered documents from the DESE and BESE websites to create a timeline, graphic for the hierarchy of the system and list of names of policy makers and creators of the standards involved in the adoption of CCSS. The website gave access to meeting minutes, policies and people for further analysis, member checking and triangulation to create a context for a reliable and trustworthy study. (See Figure 3-1.)
**Trustworthiness of the Study**

Lincoln and Guba (1985) established a set of criteria for qualitative researchers to use that would establish trustworthiness of this genre of research. Trustworthiness makes the research viable and believable to the reader. Lincoln and Guba created corollaries to the standards used in quantitative research – consistency, applicability, neutrality, and truth-value (validity) because these do not apply to qualitative research. The four criteria Lincoln and Guba suggest in order for qualitative research to be trustworthy are:
credibility, transferability, confirmability, and dependability. These are the guidelines I used in establishing trustworthiness in this ethnographic study.

In order for findings and interpretations to have credibility, Lincoln and Guba suggest these techniques: prolonged engagement, persistent observation, triangulation, peer de-briefing, negative case analysis, referential adequacy, and member checking. As they are applicable to this study, I used these techniques.

Prolonged engagement involves a “sufficient amount of time” to learn about the culture of the group or individuals being studied; to be able to identify “misinformation introduced by distortions of self or of the respondents”; and to build trust with the participants that the outcomes of their participation will do no harm, identity will be protected, and that the study will be just and represent a fair picture of the situation as far as that is possible by the researcher (Lincoln & Guba, 1985).

For this study, I worked to establish a relationship of trust and good will with the teachers that participated in the study. I created ‘values neutral’ questions to create an atmosphere of honesty and trust. By ‘values neutral’ I mean that I created open-ended questions that allowed me to stay open to all possibilities of discovery when I interviewed the participants and kept any preconceived notions I may have had out of the process. I intended to look for exemplary situations that could be models for other schools, districts, and state education departments to implement while at the same time identify gaps or areas that need strengthening in the MA system.

Persistent observation is the ability to discern the essential influences and contextual factors from the inessential as they pertain to what I am trying to find out. This means that as I moved along with the interviews I remained open to unexpected nuances.
and adjusted my understanding in the data gathering and coding stages to let the story emerge as seen by the participants. I let the data tell the story.

The process of triangulation gives further credibility to the study by using more than one kind of source or many individual sources to discern the contextual validation of the data. I interviewed those directly implementing CCSS in their schools and classrooms. I gathered artifacts, observed one or more lessons and conducted interviews. In addition, I had already gathered data from websites (names, level of involvement, meeting minutes) to identify several of the technical aspects of adopting CCSS in MA. I found out through interviews how tightly or loosely coupled the teachers experience themselves in relation to the standards and whether they perceived they are double-loop learners within the system of education in MA.

Peer debriefing is the process of allowing an impartial, knowledgeable in the field colleague to review the data and conclusions as the study progresses to insure my ideas are fully explained for the reader and do not remain implicit in the reporting. I have a community of practice made up of former and current public-school educators and administrators who have agreed to read my proposal, methods, findings, and discussion. My literature review has already been approved.

Negative case analysis is the process of reflecting on the data as the study unfolds so that one is continually allowing the story to emerge. This may mean revising my original thoughts or ideas about this topic. As I interviewed the teachers, I let them tell their stories. This helped me determine when and where an elementary educational practitioner has input and autonomy in delivering a program (written curriculum) aligned with CCSS. Through these interviews I found out where there are examples of teacher success in reflecting, communicating, and using knowledge in their school for the benefit
of student learning. This study also identifies where there are areas in knowledge sharing or creating of new knowledge that could use more focus within the schools.

Referential adequacy is a process whereby some of the raw data is archived to be made available for reference in the future should the need arise for comparison to another study or for recall or review of the study. Often the archived material would include video recordings or field notes. In this study, no video recordings were made. With permission of the participants, voice recordings of interviews were transcribed and then destroyed. To protect anonymity of the participants, no raw data is available. My hand-written field notes remain in my possession in a locked file.

The member check is a “crucial technique for establishing credibility” by establishing accurate knowledge constructions (Lincoln and Guba, 1985, p. 314). This technique involves checking with the interviewees to make sure that the researcher’s interpretation of their meaning is adequately represented in the study. This happened on a regular basis throughout the interviews by asking clarifying questions and reflective listening questions such as, “If I understand you correctly, you mean…” to get a response to the interpretation. At other points during data collection, short summaries (memos) of the interviews were written and checked with the interviewee for their reaction in terms of accurate portrayal of their meaning. At this point in the second and third interviews, the teachers sometimes added information that was not included in the first interview for clarification or expansion of a thought and to confirm a data point. Because each interview was conducted alone, there was very little chance of knowingly corroborating common myths of the education system’s culture and no peer pressure to do so. The participants were not aware of who the other participants were.
Transferability is the degree to which the results of a research project can apply to other projects. Writing using “thick description” as popularized by Clifford Geertz (1973) is using writing to carefully and fully describe the culture one is observing. The writer attempts to present the most complete description of the matter being studied to let the reader get the fullest possible impression of the situation. With this impression, the reader can decide why this is an important topic and where it might apply to other situations. I used this technique in writing memos from the individual interviews, which became part of the findings.

The data can be confirmed through six categories: the inquiry proposal, the types of data collection instruments used, raw data, data reduction and analysis, synthesis, and process notes. Raw data are the interview recordings and transcripts. Data reduction and analysis are the coding processes that was used (described below). Synthesis was the memos created from coding each interview, then putting themes and categories together to create the findings.

Is the data collection technique dependable and reliable? This is the question to answer here. Once the data is presented in the findings, it will be up to the committee to give an audit of the findings to determine the acceptability of the study. Thus the dissertation committee becomes de facto the auditors of this case study and determines whether to accept it as trustworthy or not.

**Instruments and Data Sources**

The researcher in qualitative research is considered the instrument and must be aware of their position within the project. In this case study, I was both emic and etic. In the classroom, I had an emic perspective, that is, an insider to the routine of the school and the classrooms in the study. My position with data collection at the same time is emic
– an outsider - since I have not taught in this setting and do not know how teachers communicate their knowledge and findings with one another. One of my goals in this case study was to learn more about this to see what systems were in place for inclusion of and feedback from teachers in the classroom by using the schools as entry points into the system (Foster, 1994; Peshkin, 1988).

On the issue of ethical interviewing, I am aware that some of the questions could be considered sensitive to the person in the position they hold and they may not want to answer. I explained it was within their right to not answer questions that make them uncomfortable. For example, I could imagine that a teacher might feel she is betraying her principal if she is critical of the communication process in her building. Though I will protect confidentiality, there is no absolute guarantee that this information, if published could not be traced back to the individuals interviewed.

Limitations

This study is limited by the fact that it is one small-scale, short-term ethnographic study of three small schools in MA and I am the instrument in the study. The validity of this depends on my ability to capture the clearest possible story of these teachers in the MA education system through analyzing the data – the spoken words of the interviewees and the artifacts collected. The teacher’s perceptions and interpretations of their role in aligning the CCSS, how they communicate what they know about their students, how they communicate the ways in which the program affects their teacher knowledge, and how they communicate with their superiors illuminated structures that were working because of the people involved and not necessarily because there was a system for communication. Through the interviews and analysis of curricula I was able to capture through the teachers’ perspectives how communication is working in their schools. This
schools in the study may or may not be representative of other schools in MA. The schools were enclaves that are not necessarily representative of other populations in MA (doe.mass.edu, 2016). If we look at the communication system in these schools and the ability of classroom teachers to adapt the curriculum using their professional knowledge as a model, some aspects of this study could be useful for other schools within the MA education system.

The sample of people to be interviewed is limited and I was not able to get everyone on my list. I needed to adapt and change the number of participants. I had hoped for six teachers but in the end, only five were able to participate. I had hoped to include teachers that I did not know but was not able to locate any who met my criteria. When I reached out to principals in five schools where I was unknown, only two responded and recommended teachers that were not classroom teachers - one was a specials teacher - or the teacher they recommended did not have 15 or more years of experience. The teachers that I interviewed represent a small group who may not represent anyone else in their interpretation of events. They can only represent themselves. I can only be the interpreter of their meaning and did my best to represent them. Whatever my findings show, I would not like them to be misinterpreted in a post-factual world if there are important ideas to be considered for the benefit of student learning.

Summary

This short term ethnographic study is intended to illuminate the kinds of knowledge elementary teachers possess, the ways they communicate what they know, and the communication structure as they perceive it in their school system to see how CCSS are being implemented and if there are challenges between programs (written
curriculum aligned with standards) and teacher knowledge. I looked where the
primary elementary teachers in this study have input and where are they able to assert autonomy
within this either tightly or loosely coupled system if what they know about their students
runs counter to what they are supposed to teach. Through the interviews, it became
clearer, at least in these examples, of where there are places for elementary teachers to
share their professional knowledge within their school, and possibly within the education
hierarchy in the MA education system.
CHAPTER 4

FINDING OUT WHAT TEACHERS KNOW

Introduction

This chapter covers the findings from the interviews with the teachers beginning with short vignettes from each of the five teachers who participated in this small-scale ethnographic study. Included with the findings are selected artifacts that are evidence of the teachers’ descriptions of their experience and knowledge in answer to my research questions. There were two first grade teachers and three third grade teachers who I observed and who gave examples from English Language Arts (ELA), math, science and social studies. The Common Core and MA Curriculum Standards related to the examples are included in the Appendix.

The purpose of this study was to track the process involved from implementing the standards adopted at the state level through the district’s choice of curricular programs and into the classroom from the elementary teacher’s perspective. There are many experts who make decisions at various points in this process and this report is not meant to disparage the important work that happens at every stage of developing standards or developing textbooks to support the standards. What this report aspires to illustrate is the expertise of the educators who work directly with the children in their classrooms and how they navigate the process to meet the needs of their students in real time with real children using the materials adopted for their use and adapting pre-scripted programs when necessary to assure student success. Elementary teachers have another level of knowledge and expertise needed in the systemic process to complete the top-
down part of the organization – from state through district into buildings and into classrooms.

State of Massachusetts Education Hierarchy

Governor

MA Secretary of Education    Board of Elementary & Secondary Education

Education Commissioner

Department of Elementary and Secondary Education

District Superintendent & District Specialists (DSAC)

District Specialists (DSAC)

School Principal & Teacher

Figure 4-1. MA Education System Hierarchy and Top-Down Communication

This study is not in any way meant to be a critique on how the teacher should have or could have handled a lesson differently. The teachers in this study used their knowledge of curriculum and child development to meet the needs of their students in the
moment and adjusted their practice to differentiate for a specific child or group of children. This will become clear when we hear their words throughout this chapter. The vignettes are arranged by grade level with the two first grade teacher’s math examples first. The three third grade teacher’s examples are next and cover one ELA, one science and one social studies example. All examples contain artifacts, which follow the written description of the lessons, conversations and interviews. All teachers except Sophie were teaching in Level 1 schools. Sophie’s school, Azalea had a Level 4 designation at the time of this project.

Claire’s Example

Claire has been first grade teacher for fifteen years with a master’s degree in Early Childhood education. She currently teaches at the Hydrangea School profiled in chapter three. In this example, I had watched a math lesson where the topic was using number partners to ‘count on’ and practice using the inverse operation to subtract. The background to the lesson observed is explained below.

‘Counting on’ is an addition strategy the children have been using in kindergarten that continues into first grade. The children have been instructed to count objects on a page (worksheet) and then use their counting knowledge to add the number shown. The pages photographed here show examples. First the children are expected to find all the combinations (partners) of 6, for example. (See Figure 4-2 below) and then go on to learn to ‘switch the partners’ (See Figure 4-3 and 4-4 below). Then they also take the next step to subtract within the number partners. We these artifacts, one can see the logical progression and the visuals make sense with what is being asked of the children.

The lessons in this math unit correspond with two CCSS for first grade math: 1.) CCSS. Math.Content.1.OA.A.1 Use addition and subtraction within 20 to solve world
problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings, equations with a symbol for the unknown number to represent the problem. 2.) CCSS. Math. Content. 1. OA.C.5 Relate counting to addition and subtraction (e.g. by counting on 2 to add 2). (See Appendix for CCSS for first grade math.)

In the lesson observed, the children had been practicing their number partners, counting on, switching the partners, and subtracting with zero. This example is a few lessons later where they were shown in their mini lesson with the whole class how to subtract a variety of problems within 10. They were given some examples in the mini lesson to show the strategy and to practice together before being sent to their desks to work independently. They were also taught a new vocabulary word that they would find on their papers – equation (number sentence). This is the sketch I made in my field notes from the teacher’s example on the board as she explained how to approach the worksheet at their desks.

![Figure 4-2. Field notes; Claire’s classroom observation](image)

The children solved examples with the teacher using their white boards and when the mini lesson was finished, went to their tables to start their worksheets. Of the twenty-two first graders in the room, six children were very confused by the worksheet they were expected to complete. (See Figure 4-5 below.)
Claire noticed immediately that some children were having trouble and went to see if she could help them. She modeled counting the whole set of circles and then taking away by crossing out the number indicated and then writing the corresponding equation. After several attempts with one child near me, she ended up setting up the equations for the child so they could write the answers on the appropriate line.

In our de-brief of this lesson, Claire explained that she has been teaching this lesson for four years and “every year this trips the children up… I end up making up my own worksheets to supplement this lesson and I add math games and manipulatives to expand the lesson and also to help children who need hands-on to have the chance to experiment with physical objects… This math program does not provide the kind of manipulatives that I know work for some children. I also use examples they can relate to from real life like blueberries, apples, or bananas to give them an imagination they can hang on to.” (Interview, October 18, 2017).

When asked about the reason why this trips the children up every year, she explained the cognitive phase of object permanence as described by Piaget, and Vygotsky’s zone of proximal development, which is sometimes different for children in the same classroom. She said, “Many children at this age do not have object permanence and cannot work in the abstract with numbers. They need objects to count and real-life objects like apples or bananas to imagine what they are counting. It helps them to make the connection to why we are counting when they have real objects or manipulatives that represent objects to count” (Interview, September 2017).

Object permanence is Piaget’s theory that objects can be moved into different positions and the number of objects stays the same. Young children will typically think that if you take five marbles and spread them out, there are more marbles (Piaget, 1951).
Vygotsky developed the theory that once children have mastered a task, the next step in learning a new task is the zone of proximal development – where the child can go next in their learning or development (Vygotsky, 1978).

The child in first grade can still be in the pre-operational stage of cognitive development where they need to have physical objects to move as they learn about, in this case, numbers. The hands-on experience is needed for them to grasp the numerical concept before they can write a number sentence. The current math program her school is using does not have reliable manipulatives for the children so Claire used her professional knowledge of prior math programs to provide what the current program lacks and what her students need for success. The following figures are what Claire showed me when we de-briefed after this lesson. She wanted to let me know how the textbook the school is using is mostly visually appropriate for first graders. There are several pages shown here that she has seen most of her students over the last four years be able to follow and are able to perform the task being asked of them without a struggle. The final example shows how visually confusing the page is for young children.
Figure 4-3. Claire’s example of an effective worksheet making number patterns
4. Discuss patterns in the partners.

<p>| | | | | | |</p>
<table>
<thead>
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<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>1 + 1</td>
<td>2 + 1</td>
<td>3 + 1</td>
<td>4 + 1</td>
<td>5 + 1</td>
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<td>2 + 2</td>
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<td>3 + 3</td>
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</tr>
</tbody>
</table>

Use **doubles** to solve.

5. $3 + 3 = \underline{\phantom{000}}$  
   $1 + 1 = \underline{\phantom{000}}$  
   $2 + 2 = \underline{\phantom{000}}$

6. $6 - 3 = \underline{\phantom{000}}$  
   $2 - 1 = \underline{\phantom{000}}$  
   $4 - 2 = \underline{\phantom{000}}$

Use patterns to solve.

6. $6 + 0 = \underline{\phantom{000}}$  
   $0 + 4 = \underline{\phantom{000}}$  
   $1 + 0 = \underline{\phantom{000}}$

7. $0 + 3 = \underline{\phantom{000}}$  
   $2 + 0 = \underline{\phantom{000}}$  
   $0 + 5 = \underline{\phantom{000}}$

7. $4 - 0 = \underline{\phantom{000}}$  
   $2 - 0 = \underline{\phantom{000}}$  
   $6 - 0 = \underline{\phantom{000}}$

8. $5 - 0 = \underline{\phantom{000}}$  
   $1 - 0 = \underline{\phantom{000}}$  
   $3 - 0 = \underline{\phantom{000}}$

8. $3 - 3 = \underline{\phantom{000}}$  
   $5 - 5 = \underline{\phantom{000}}$  
   $1 - 1 = \underline{\phantom{000}}$

9. $4 - 4 = \underline{\phantom{000}}$  
   $2 - 2 = \underline{\phantom{000}}$  
   $6 - 6 = \underline{\phantom{000}}$

Figure 4-4. Claire’s example of an effective worksheet solving with doubles and subtraction with zero
Figure 4-5. Claire’s example of commutative property: addition
Figure 4-6 shows an example of a subtraction page that confused some children even after they had worked on examples like this in the mini-lesson with the teacher. The visual is confusing for children in the ‘object permanence stage’ of cognitive development because the space between the yellow dots makes it seem like there are two
different numbers to subtract from instead of the all the yellow dots being one whole set of objects from which to subtract.

**Anne’s Experience with First Grade Math**

Anne has been teaching first grade for 15 years in the Rhododendron School profiled in chapter three. She has been able to use a variety of math programs over the years and has a wealth of supplemental material to use whenever she notices that a skill is not covered in the current program her school has adopted. The program is aligned with CCSS and is scripted for the teacher with pacing guides. Anne has been using this program for three years and recalls that when it was introduced by the district coordinator in August prior to the start of the school year, there were no trainings provided for the teachers to implement this new program. She now finds that there are gaps in this program that she supplements with her knowledge of other programs and materials to help her children understand the concept and be able to use their problem-solving skills effectively. One gap is the ability to use manipulatives to help children develop their number sense. She explained to me that most children in first grade need objects to count as they are beginning to learn addition and subtraction facts and the current program does not provide these tools for the children. Anne worries that new teachers will not know what basic skills are missing if this is their only exposure to a math program.

Anne and the other first grade teacher in her building have discussed what is missing and have worked on finding solutions together that meet the needs of their students. “We have broken down the lesson into math stations so we can work with smaller groups of children and rotate them through a variety of approaches to the topic. That way we can see immediately who is getting the instruction and who is not and adjust the program to meet their needs. For example, in addition we are trying to teach the
children to ‘count on’ but some of them still need objects or fingers to count and they start at the beginning every time” (Interview, November 2017).

Anne shared that having math stations works because they can work more closely with fewer children - but it takes human resources. Her group of twenty children needs herself and 2 assistants in the room and one computer station set up for the children to rotate through in 10-12 minute sessions. She orchestrates the stations so that all the activities support learning the concept through different avenues. She has one station with worksheets, another with games, another with manipulatives, and the computer as personalized, independent skill reinforcement. The program the school has adopted would have the whole class hearing the instruction and working on the same task at the same time. Anne finds that this does not work for such young children and that the pacing suggested in the book makes the lesson frantic. (See Figure 4-10 below.)

One glaring missing component of this new program, according to Anne, is the lack of manipulatives for children to explore the concepts. Children “need manipulatives at this stage because they need to construct it (their knowledge). The child is still in the concrete operational stage of development and does not always have object permanence. A great example of this was watching my intern the other day. He had a set of ten cubes and when he spread them out, the child he was working with thought there were more cubes!” Anne then told me “this is exactly what Piaget describes in his observations of children – object permanence” (Interview, November 2107).

Anne described watching a child figure out adding within ten who had not been in their kindergarten and was still learning how to count objects. Jared was using unifix cubes for counting. “… I can see him constructing it (knowledge) now and he knows he needs to see and handle objects. He need to use those manipulatives” (Interview,
November 2017). Even when working with physical objects and counting, Anne was trying to teach him to ‘count on,’ which is a strategy early educators are using to help children take a number in the number sentence and count on from there. For example, in this number sentence $[7+3 = ?]$, the teacher would help the child start with 7 and count 3 more to get to ten. They can use their fingers if they need to. Even after repeated practice with this idea, Jared still needed to start at 1 and count to 7 and then 8,9,10. He was not able to lift this to the abstract yet. Anne says this is not unusual for this group of first graders, “…for a couple of kids that are at a little higher-level thinking, they can count on. Most of the kids go back to one” (Interview, November 2017).

When the script recommended introducing concepts that are in language inappropriate for first graders, Anne develops her own way of speaking about it. She explained that she needed to “bring it down to the first-grade level so the kids can understand it” (Interview, November 2017).

Anne also has experience with six-year-olds’ attention span. Education experts like Doug Lemov in *Teach Like a Champion*, recommend an ‘age plus two’ pacing guide for teachers to consider as they introduce concepts in their mini lessons as the amount of attention span one has to work with. This also applies to timing on tasks so that children can attend successfully and not lose their focus. In Anne’s classroom, the children are between six and seven years old which means she has their attention for 8-10 minutes at each task in the math lesson. Anne concurs with this from her experience and plans her math stations to rotate every 10 minutes. The pacing guide Anne currently has to use recommends a 60-minute lesson with the whole class (Figure 4-10).

Anne is also aware of the need to differentiate as described in the work of Tomlinson. She describes working with Jared and trying over and over to get him to
‘count on’ as the program suggests. “…He was not developmentally ready to be able to count on so I needed to help him count from ‘1’ every time until he was ready to move on. Sometimes it takes a while, but when the kids are cognitively ready, they will get it. You just can’t always predict when that will happen” (Interview, November 2017).

As shown in Figure 4-7, Anne finds her own way of introducing this concept by saying, “If I have 1 bead on the top, how many more will I need to make it to 10? Let’s count together and see if we can make ten beads all together. Now, what if I have 2 beads on the top – and then 3 beads, etc. the children need to go in order first to see the pattern first and then mix it up once they have got that so they don’t get stuck in only seeing it in order.” Figure 4-8 is a number bar (Arithmetic Rack) used to count 10 and then 20. Anne has found it works better for student understanding to break into small groups to work with these concepts for 10 minutes at a time, knowing that first graders do not have the attention span to focus for 60 minutes on a topic. She puts each category at a station – fluency (working with prior knowledge on computers), application and new concept development – with games and worksheets Anne supplements, then whole class debrief for 5 minutes once the children have visited each station. (See Figure 4-9). Also Anne uses a supplemental math sheet at one of her math stations to reinforce the understanding of adding numbers within 20. The children have the dice and use it to find number combinations. An example is provided as Figure 4-10.
Behind the Numbers: How the String was Crafted

The images shown in this string support the use of the commutative property of addition and extend it to help with near doubles. The string consists of three pairs. The problems in each pair have the same answer. As you proceed through the string, the pattern in the answers will become apparent no matter what strategies children are using, and the "switching" can be discussed.

Arithmetic Rack • B10

Using the Five- and Ten-Structures, Relating Addition and Subtraction

On the class-size arithmetic rack, show numbers only on the top row of the rack. For each image, ask, "How many beads on the top are missing to complete the ten?" Let the children discuss how they calculated the complement of ten. There is a nice opportunity here for children to notice and compare the situations in which it is easier to add on, and those in which it is easier to count back. If your students can't do this without looking at the rack, show the moving of the beads to reach a solution, but help them notice how the five-structure can be helpful.

3 on the top
7 on the top
2 on the top
8 on the top
6 on the top

Figure 4-7. Anne’s example of instructions to educators
Figure 4-8. Anne’s example of the Arithmetic Rack.
Lesson 9

Objective: Solve add to with result unknown and put together with result unknown math stories by drawing, writing equations, and making statements of the solution.

Suggested Lesson Structure

- Fluency Practice (20 minutes)
- Application Problem (5 minutes)
- Concept Development (25 minutes)
- Student Debrief (10 minutes)
- Total Time (60 minutes)

Fluency Practice (20 minutes)

- Sparkle: The Say Ten Way  1.NBT.2
- 5-Group Flash: Partners to 10  1.OA.6
- X-Ray Vision: Partners to 10  1.OA.6
- Number Bond Dash: 10  1.OA.6

Sparkle: The Say Ten Way (5 minutes)

Note: By providing students with ongoing practice with counting throughout the year, they build and maintain their counting skills, which are foundational for later first grade work on using the Level 3 strategies of making ten and taking from ten when adding and subtracting.

See instructions in Lesson 7.

5-Group Flash: Partners to 10 (5 minutes)

Materials: (T/S) 5-group cards (see G1-M1-L5)

Note: This activity addresses the core fluency objective for Grade 1 of adding and subtracting within 10. Teacher flashes 5-group cards for 2–3 seconds and instructs students to say the number when the teacher snaps. On the second snap, ask students to identify the partner to 10. Remind students when the teacher fingers to help. Flash higher numbers first to facilitate finding the partner to 10 so that all students can feel

Figure 4-9. Anne’s example of the educator’s instructions with pacing guides
Both of the first-grade teachers have used their knowledge of child development theory and their tacit knowledge from working directly with children to adapt their school’s math programs when they see their students struggling. Both teachers work in Level 1 schools in MA.

The next three lesson examples are from three different third-grade teachers who teach in 3 different schools. Mary and Linda teach in Level 1 schools (Hydrangea &
Rhododendron). Sophie teaches in a Level 4 school (Azalea, Chapter 2). All three teachers have a wide variety of student needs and abilities within their classrooms and are using the same ELA programs, following CCSS and MA curriculum standards, and supplementing where they find it necessary to meet students. I have highlighted one example from third-grade science, one from third-grade social studies and one from third-grade ELA as representative of what these teachers were doing in these subjects.

Mary’s Life Science Example

Mary has a Master’s Degree in Elementary Education Science Teaching and has been an elementary teacher for sixteen years. She currently teaches third grade at the Hydrangea School profiled in chapter three and we chose a science example from her teaching to illustrate how she adapts what she describes as curriculum frameworks that are largely high school focused to her third-grade classroom in order to meet the standards in an age-appropriate way. In this example, we were looking at Life Science 3: Heredity: Inheritance and Variation of Traits. (See Curriculum Frameworks in Appendix) Later in this vignette we will examine what she was doing with the English Language Arts (ELA) program that her school has adopted.

The state science framework asks the teacher to help the children understand, by using plants or animals, how inheritance and traits are derived. “Provide evidence, including through the analysis of data, that plants and animals have traits inherited from parents and that variation of these traits exist in a group of similar organisms.” In Mary’s experience, this topic is very complicated and she has tried to simplify the concept to make it accessible to a third-grade mind. She questions the appropriateness of this topic for third graders but is determined to meet the state’s curriculum frameworks to the best
of her ability - even though she also knows this subject is not on the state examination (as stated in the framework).

Mary decided to use a plant example to show inherited characteristics and used all the resources she could find to inform her unit. She made this decision based on her tacit knowledge from approximately ten years of teaching third and fourth graders. She understands the mindset of the third grader and the level of innocence they have about sexuality. She also has her master’s in teaching elementary science and she agrees with the standards that specifically recommend staying away from human examples to keep the children from asking questions about human sexuality at this age.

Despite being a science major and a qualified science teacher, she had trouble designing a unit that would get the basic idea across to eight and nine-year-olds that they could understand. She shared that “it was difficult even finding a lesson that someone else had done. I tried actually to develop my lesson and I had a tricky time seeing it. I had a really hard time…so then I decided to throw in something that someone else had done…but it was geared toward older students…so I modified that even further” (Interview, October 2017).

Eventually Mary found a lesson on the ‘Teachers Pay Teachers’ website and designed a simple demonstration using two different plants – one with orange petals, dark green leaves, and a 7cm stem, and one with purple petals, light green leaves and a 9cm stem. She made envelopes with ‘parent’ colors, leaves and stems and had the children pull out a card to see what traits the new flower would have if these two flowers were able to make a new flower. (See artifact below.) The class found it was a 50/50 chance that a trait would appear and made a chart showing their results. The second part of the framework advises the teacher to explore with the children how environmental factors
affect a species. Mary explained that she did this in a class discussion asking the children questions like, “If a dog ate the leaf of the new plant, was that because of something the parent plant had as a trait?”

Figure 4-11. Mary’s science example for grade 3 unit on genetics.

When I asked Mary if she has time to include all science standards in the course of a year, she said she does plan according to the frameworks as she creates her yearly plan. She explained that there is a big focus on Science, Technology, Engineering and Math (STEM) in schools now and she and her elementary educator colleagues are working on creating STEM challenges that are stand-alone lessons and creating STEM units based on a particular theme. An example of a STEM challenge happened at Halloween. The children were given small pumpkins and some building materials and asked to make a stand that would hold their pumpkins.
A STEM unit example is what Mary has developed under the Earth and Space Systems (3-ESS2.1), Earth and Human Activity (3-ESS3-1) and Engineering and Design (3.3-5-ETS1-1). By creating windmills from a kit where the children have to design the blade to discover what size and shape are most effective in catching the flow of air and making the windmill turn, Mary has developed a STEM unit that includes several of the standards from the categories listed above. This week-long unit incorporates math and engineering into the Earth Science framework thus incorporating several standards in one unit.

What Mary does continually throughout the year is adapt the program the school is using depending on time and resources available. We saw an example of how she did this in the science lesson and in the English Language Arts (ELA) curriculum next. Within the school’s writing program currently in use is a particular practice that suggests using sticky notes in the text to write down thoughts or questions. Mary has direct experience with this practice and has modified it to fit the third-grader’s cognitive development.
“The intention of this activity (using sticky notes to mark important places to discuss) is to help the children become critical readers and to have meaningful conversations with their reading buddies. The problem is that the third-grade child does not have the ability to distinguish between essential and non-essential yet and therefore can go through a whole package of sticky-notes in one twenty-minute reading period! We are also trying to help the children develop reading fluency at this time in their reading career and stopping to write a sticky note interrupts the flow of their reading. My colleagues have also had this experience and so, through our conversations, we have adapted the ‘sticky note’ idea for third grade. As teachers, we develop some informational questions about the ‘Big Idea’ of the story and have the children respond with a sticky note on the morning meeting chart. We do this every third week or so and have a whole-class discussion.” (Interview, 2017)

She explained,

Mary also explained that this reading and writing curriculum does not emphasize basic skills and she, like other teachers in this study, supplements with other materials from her previous years in the field. She knows the children need decoding practice, comprehension, and reading fluency from her work with the Fountas and Pinell reading programs from previous years as a reading skills instructor. She uses a rotating schedule using the current school’s program for several weeks, then she alternates with interactive ‘read-alouds’ and other skill-building work to bring what she knows the children will need as they move into fourth grade and beyond. She has the same concerns as Sophie,
Linda’s Third Grade Social Studies Example

Linda’s long history of teaching in third grade has led her to explore an interest in executive function in children by attending workshops with Sarah Ward, speech pathologist in the Oakland, CA school system. Sarah defines ‘executive function’ as “the skill set required for setting goals, carrying out organized steps, and modifying a plan to complete a task successfully, all of which are vital for academic and social success in elementary and middle school classrooms” (Ward, 2016). Linda finds children in her third-grade need explicit instruction in time management and organization skills so they can be successful in the classroom. As Linda explains, “A teacher cannot assume that children automatically have these skills at their disposal” (Interview, November 2017) and Linda takes the time to work with her students in this area of their development. Examples of her organization charts, scaffolding plans, rubrics for the project and timelines to help the children are below.

Linda’s interest in this area of child development has been prompted by her experience with the children in her classroom. She describes this year’s classroom as having very few neuro-typical children who have the ability to initiate the all the steps to complete a task. In her experience, a child at this age should be able to follow a set of three instructions. She finds that this is not always true anymore. In her class of twenty students, there are 2 Individual Education Plans (IEP’s), 2 504’s (physical disabilities), 2 English Language Learners (ELL), one child has Downs Syndrome, another has spina-bifida and has seizures throughout the day, another is on the autism spectrum, another is adopted from Ethiopia and has experienced extreme trauma. Depending on the needs of
the child, Linda differentiates the lesson requirements and the amount of scaffolding for individual third graders using her skills of observation and pedagogical knowledge.

Scaffolding is the term that educators are using to describe how they use the child’s “zone of proximal development” (ZPD) to lead the child from where they are in their understanding to where they need to go next (Bruner, 1978; Daniels, 1994; Vygotsky, 1978). Differentiated instruction is the term used by Carol Ann Tomlinson (1995/2017) to describe how teachers adjust their teaching to meet the needs of individual children or small groups at their ZPD. Linda has developed a variety of strategies for helping her students at their individual learning zones and uses the knowledge and strategies of other educational experts to help inform her decisions in the classroom.

Given the student profile and her pedagogical knowledge, Linda aligns her social studies unit with the state curriculum frameworks. A section from the frameworks states:

Drawing on information from local historic sites, historical societies, and museums, third graders learn about the history of Massachusetts from the time of the arrival of the Pilgrims. They also learn the history of their own cities and towns and about famous people and events in Massachusetts’ history.

In this example of the 3-4-week social studies unit on Early American History in MA her team has developed with the district using the Understanding by Design (UbD) process developed by Grant Wiggins and Jay McTighe (2006), Linda shared her strategies for meeting the state standards and the needs of individual children. She has developed a unit that involves her third-graders in project-based learning where the end goal of the unit is the same but the approach of individual students may be different depending on the child’s ability. “It depends on how they think… (This) is overwhelming for some of them but it’s broken down in a way they can deal with it” (Interview, November 2017).
In the beginning of the project, Linda introduces the project to the whole class and lets them know that the ultimate goal will be to visit Plimouth Plantation in the spring. (This unit happens in the first three weeks of school.) Linda created a rubric that explains what she expects a completed project to look like and a sample from previous years. (See artifacts below.) She introduces the project to the whole group, gives the overview of what is expected and the amount of time they will have to complete the project. The children are asked to pick an historical character, write a report on the person’s life and contributions made to our country, write a poem, draw a portrait, create a timeline of important events in the character’s life, create an historical figures card and give an oral report dressed as their character to create a living history museum. (The historical figures card is modeled after baseball cards. Parents are invited to the oral presentations.)

In the initial packet for this project there are two rubrics with scales that Linda explains to the class. One rubric is for the written work and is on a 1-5 Likert scale (1 being a low score in the category, 5 being exemplary) looking at organization, content, conventions, and appearance. The other rubric is specific to the oral report. It includes ideas and content, organization, language and delivery on a scale of 1-4 points for each category.

Once the children begin the project, Linda dialogues with children and gets information about their approach to the project. She speaks with each child to find out what they need to get started. “I break it down into simple steps so that the children who can’t manage their time wisely have a tool to use…I give them one step at a time or I have them start with the timeline. Some children are capable of going to original documents and I have those available for them to read, summarize, and report back. I
have books, videos, on-line encyclopedias, internet, graphic novels and graphic
organizers to help the children research their character and organize the project. If I notice that a child needs a very specific graphic organizer, I give it to them. Some children can take the organizer and run with it, others need me to go step-by-step with them. I send them to find out the date and place of birth, for example, and then have them read the same document for family information, then read it again for childhood stories again for adulthood accomplishments. I have several sets of child-centric biographies that contain all the information they need if they cannot manage more than one source for their research even though I require three sources in their bibliography” (Interviews, October &November 2017).

Linda levels the graphic organizers according to what the children need. Some have general topics where students fill in details in their own words: biography notes with date and place of birth and death, family and childhood information, education hobbies and interests, major accomplishments, impact on the lives of others, a famous quote, and any other interesting information. The children who are able to handle this level of independence can write their own sentences on the 5-page graphic organizer. Linda developed another set of graphic organizers for children who need very specific guidance. Theirs asks for the same information with lead-in sentences like: “My famous person was born in (location) on (birth date). I had ___ brothers and sisters. My father was ___. My mother’s name was __.” This allows those children who need more specific instruction to achieve success at their level of ability … and teaches them how to read something and find out what’s worth thinking about” (Interview, November 2017). Linda explained what she means by “what’s worth thinking about.” It is her way of
helping the children identify the essential information, the topic sentences and
differentiate between the supporting details and the main idea of their reading.

In this example, Linda is guiding a process and addressing different levels of
executive function in her students so they can all achieve success in the task she has set
for them. Her level of pedagogical knowledge spans the realms of cognitive and
executive function and social emotional learning so that she can support all of her
students in a learning experience that is stimulating and prepares them with the kinds of
skills they need to become researchers, historians, writers, mathematicians and artists in
an integrated web of activities. Linda’s commitment to helping every child succeed is
deeply embedded in her work ethic and is demonstrated in the myriad ways that she
prepares the materials and resources for this project using her extensive knowledge of
child development, content, curriculum standards and pedagogy.
Biography Project Directions
File Folder Report & Speech page 2

Written Report (Inside Right of Folder)
Your final copy will be written in your best printing or may be word-processed using a computer. Include information in a logical order to include:

- When and where was this person born?
- What was his/her childhood like?
- Where did he/she grow up?
- What does/did this person do for a living?
- Why is this person famous? How has this person made an impact on others’ lives?
- Include quotes and interesting information about the person.
- Fill out the bibliography information sheet showing the three sources used and attach it as the last page of your report.

Important Book Poem (Back Cover of Folder)
Margaret Wise Brown was the author of a book entitled The Important Book. Use this as a model and write a poem entitled “The Important Thing” using your famous person as the subject of the poem.

Example:
The important thing about ______ is that she/he ______________. (What the person is famous for)
She/he ______________. (List one thing the person did)
She/he ______________. (List another thing the person did)
She/he ______________. (List a third thing the person did)
But the important thing about is that she/he was ___________. (Another thing the person is famous for)

Here is an example poem:
The important thing about George Washington is that he was America’s first president.
He was nicknamed “The Father of His Country” and was a leader of great character.
He was said by Henry “Lightrouse Harry” Lee to be, “First in war, first in peace, and first in the hearts of his countrymen.”
He was a farmer, statesman, and commander-in-chief of the Continental Army during the American Revolutionary War.
But, the most important thing about George Washington is he is the only president in the history of the United States of America to be elected president unanimously.

Public Speaking Monologue
This activity will give you an opportunity to meet the standard in public speaking.
You will dress up (as much as you can) as your person and pretend you are the person. You will tell all about your contributions, and about your life. You will need to rehearse at home. You will have an assigned time to give your presentation.

Remember, you will be scored for:
C Content - important details included
O Organization - a clear beginning, middle, and end
L Language - appropriate and interesting words and language
D Delivery - good eye contact, volume, and body posture

Figure 4-12. Linda’s instructions for a biography project
**Speaking Scoring Guide**

<table>
<thead>
<tr>
<th>Content</th>
<th>Organization</th>
<th>Language</th>
<th>Delivery</th>
</tr>
</thead>
</table>

- **Exceeds**
- **Meets**
- **Does Not Meet**

**PROJECT DESCRIPTION – Biography Unit**

 Students read a novel about the life of a famous person. The student researched and wrote a report about the famous person including a poem and timeline of a famous person’s life. To meet the speaking standard, students were asked to dress up as the famous person and talk to the class about interesting details of his/her life and the major contributions to society.

**Scoring Guide** (Criteria needed to meet the standard = 4)

**Ideas & Content** *(Score 4)*

- The speaker’s message is clear and stick to the topic.
- The speaker:
  - Has clear main ideas and purpose
  - Has details that go with the topic, but they may not be consistent or strong
  - Makes adequate connections or conclusions but may consider only one viewpoint
  - Uses resources, when appropriate, to provide accurate support
  - Is successful in fitting ideas and details to the audience and purpose

**Organization** *(Score 4)*

- The speaker organizes the message in a clear but obvious or ordinary way.
- The speaker:
  - Has an effective introduction that leads to the main ideas.
  - Places ideas and details to make the message easy to follow.
  - Has transition that work but may be ordinary.
  - Has a planned conclusion that may be ordinary but still matches the message

**Language** *(Score 4)*

- The speaker uses language that helps make the message clear.
- The speaker:
  - Uses words that communicate the speaker’s message but may not paint a picture in the listener’s mind
  - Uses slang, when appropriate, and technical words in a way that does not take away from the message
  - Makes a few mistakes in the use of words and grammar which are not distracting

**Delivery** *(Score 4)*

- The speaker shows satisfactory skill in speaking to an audience.
- The speaker:
  - Makes eye contact with most of the audience
  - Speaks clearly and correctly; some mistakes are made
  - Uses a rate, volume and tone that are appropriate to the audience and message
  - Has a delivery that is usually smooth; some breaks or pauses, but not enough to hurt the message
  - Uses gestures and facial expressions to help explain the message

---

**Figure 4-13. Linda’s Rubric for an Oral Report (Using UbD)**

126
<table>
<thead>
<tr>
<th>REPORT ORGANIZATION</th>
<th>CONTENT</th>
<th>CONVENTIONS</th>
<th>APPEARANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your overall project:</td>
<td>Your overall project:</td>
<td>Your overall project:</td>
<td>Your overall project:</td>
</tr>
<tr>
<td>Information is presented in a creative way</td>
<td>Goes above and beyond the required information</td>
<td>Contains information beyond requirements</td>
<td>Is aesthetically pleasing</td>
</tr>
<tr>
<td>Takes others want to read</td>
<td>Provides new insight into topics</td>
<td>Is factually correct</td>
<td>Handwriting and fonts are easy to read</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spelling is correct throughout</td>
<td>Drawings and graphics enhance the overall project</td>
</tr>
<tr>
<td>Is organized</td>
<td>Punctuation is used correctly throughout (capitals, periods, commas)</td>
<td>Paragraphing is used correctly</td>
<td>Color and details used enhance the project</td>
</tr>
<tr>
<td>is presented clearly</td>
<td>Spelling is mostly correct</td>
<td>Spelling is mostly correct</td>
<td></td>
</tr>
<tr>
<td>is enjoyable to view</td>
<td>Punctuation is mostly correct</td>
<td>Paragraphs are used</td>
<td></td>
</tr>
<tr>
<td>Information may not be complete</td>
<td>Spelling has many errors</td>
<td>Handwriting and fonts used are not easy to read</td>
<td></td>
</tr>
<tr>
<td>May lack important details</td>
<td>Punctuation is incorrect in many places</td>
<td>Drawings and graphics are used</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Paragraphs may not be used correctly</td>
<td>Color used may detract from the project</td>
<td></td>
</tr>
<tr>
<td>is somewhat organized</td>
<td>Content contains non-factual information or opinions</td>
<td>Content contains non-factual information or opinions</td>
<td></td>
</tr>
<tr>
<td>is interesting</td>
<td>Major gaps in information may be present</td>
<td>Minimal information is given</td>
<td></td>
</tr>
<tr>
<td>is disorganized</td>
<td>Spelling has numerous errors</td>
<td>Spelling has numerous errors</td>
<td></td>
</tr>
<tr>
<td>is difficult to understand</td>
<td>Punctuation is incorrect</td>
<td>Punctuation is incorrect</td>
<td></td>
</tr>
<tr>
<td>is not organized</td>
<td>Paragraphs are not used</td>
<td>Paragraphs are not used</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use of color is very distracting</td>
<td></td>
</tr>
</tbody>
</table>

Figure 4-14. Linda’s Scoring Guide for the Written Report (Using UbD)
Figure 4-15. Linda’s Student dressed as her historical character.

Figure 4-16. Linda’s student displaying his Historical Figure Trading Card.
Sophie’s Knowledge and Experience

Sophie has been teaching third grade for approximately 30 years in the same building at Azalea school profiled in chapter 3 and has seen many reading and writing programs come and go over the years. In this interview, she discussed the merits of the current program her school has adopted, its relationship to the standards and how she supplements what is not in the program with skills and conventions that she knows her students will need in fourth grade and will also be on the state’s comprehensive tests in the second half of third grade. She works with her third-grade team and the school’s administration as an instructional leader. Recently, due to budget cuts, their district no longer has a curriculum coordinator and the district superintendent has asked the grade level teachers to lead the curriculum discussions. Sophie remarks that curriculum development is another whole job that needs time and energy beyond what the teaching staff is able to handle and do well. They accomplish what they can within the constraints
of the teaching day and year. “The superintendent wants us to work over the summer on this but I and others have summer jobs and run businesses like summer camps to make ends meet” (Interview, November 2107).

This year the school has adopted a program that encourages children to create a life as readers and writers by learning to read and analyze text critically and, to write in a variety of genres like personal narratives, persuasive and informational writing. This program does not cover all the standards for third grade in the state and does not include establishing basic skills needed for successful writing and reading. Sophie supplements materials for her students that she has accumulated over her thirty years in the classroom and creates graphic organizers that scaffold for different ability levels – or ‘differentiating.’ She sees the need to “work more directly with comprehension, and the conventions of storytelling - plot, characters, and setting so the children have a clear idea of the framework for creating a story, which then translates into their ability to write their own stories” (Interview, December 2017). (See Common Core Standards at the end of this chapter.)

According the Sophie, “the writing program lacks sufficient practice in discreet skills like spelling and grammar so I supplement from my knowledge of other programs I have used in the past… I know the children need some fundamentals as a base for future learning as fourth graders and because these skills will also be tested on the state comprehensive tests in the spring. Most children at this age also need help organizing their thoughts so I use graphic organizers to help them think through what they will be writing about. I create some of my own organizers for different levels of academic need in the classroom. Some children need more step-by-step scaffolded, explicit direction in order to be successful” (Interview, November 2017). (See Figure 4-18 below).
The other problem that Sophie has encountered this year with the writing program is that some of the topics are too hard for the third grader. Some of the
assignments are not developmentally appropriate and cause some children a great deal of stress. For example, Sophie described one way that informational writing was a challenge for her class. “The children are supposed to write about something they know a lot about but they are still very young and don’t often have enough real information about anything. The boys were writing about sports teams last year but you could see that they did not have much to say” (Interview, November 2017).

Another assignment in this program is about personal narratives. The problem with this according to Sophie is that many of her children have already experienced so much trauma in their lives that writing a personal story brings up too many emotions that they can’t handle and therefore turn off to writing. “I try to help them think of some very small moment that won’t be a trigger for them, like going out to dinner, the beach, a park – but many of them do not have these pleasant experiences to draw on for their writing and so they can’t do it” (Interview, November 2107).

In reading, Sophie has leveled groups and accommodates a variety of academic levels. Together with her third-grade team, they create their own goals, objectives and rubrics for the students that is given at the beginning of each reading assignment. The teachers follow the practice of Backwards Design as they develop the reading instruction for the year.
Figure 4-19. Sophie-generated differentiated Reader’s Notebook rubric

Figure 4-19 is an example of her teacher-created a rubric to help students in her third-grade reading groups know exactly what is expected of them. For students who need more direct instruction, there would be page numbers on the ‘details, evidence’ lines that Sophie would write in with the children at their reading group time as they work to find the details together. (Observation, November 2017)
Sophie administers the Dibbles reading test to find the ‘just right’ reading level for each child in her class and then creates her reading groups. Depending on the child’s ability, they are placed within a group and a specific text will be chosen for them with the same rubric used for all the children in their respective reading groups. From the reading, Sophie then uses graphic organizers, and 2-column worksheets to answer questions and provide evidence from the text, for example. (See example below.) Sophie creates these worksheets herself to help scaffold the questions by giving hints to those children who need the extra help. Below is an example of how she scaffolds the vocabulary list to help meet student needs (Interview, December 2017).

Figure 4-20. Sophie-generated differentiated spelling list.
Figure 4-21. Sophie’s example of differentiation

- **mysterious**: Hard to explain or understand
- **square**: A center green in a town
- **weakling**: One who is not strong
- **scurried**: To move lightly and quickly
- **bellow**: To shout in a loud deep voice
In order to understand the level of differentiating that Sophie must do within the program and still meet state standards, it is important to know the profile of her class. This year she has a group of twenty children with half of the children’s birthdays falling between April and June. This group with late birthdays were still eight years old while others in the class had turned nine. In a class of twenty students, there were ten Individual Education Plans (IEP’s), two English Language Learners (ELL’s), and two 504’s for physical disabilities needing therapeutic care. There are various helpers that ‘push-in’ the classroom and work with individuals during reading and math lessons. Sophie works closely with them to make sure that the children are meeting her expectations and the goals set up for them with IEP’s.

Sophie’s Teacher Knowledge

When asked how Sophie determines a child’s developmental stage she mentioned *Yardsticks* by Chip Wood. Chip Wood is a contributor to the Northeast Foundation for Children and bases his work on the work of Gesell, Piaget, Erikson and Steiner. In this book, Wood describes general trends in child development in physical, cognitive and social-emotional dimensions. In our conversations, Sophie has also mentioned differentiating, which comes from the work of Carol Ann Tomlinson and is defined as a teacher acting responsively to a student’s needs. (See chart below.) Sophie has been actively using Tomlinson’s theories in her classroom to what she sees as the advantage to her students. The third-grade team in Sophie’s school is using Backwards Design as described by Jay McTighe and Grant Wiggins to plan their reading and writing units. *Understanding by Design* is a way of curriculum planning created to help educators think...
about the overall design of the unit identifying the Big Ideas and Essential Questions that the students need to understand and apply. The teacher then plans by identifying her rationale, objectives and assessment of units (and individual lessons) so that there is a coherent plan with supporting activities and assessments.

Carol Ann Tomlinson’s model for differentiating lessons used by Sophie in her lesson planning.        A Concept Map for Differentiating Instruction
Figure 4-23: Sophie’s example of using experts for reference

Findings

From the interviews and observations of these five elementary teachers, I organized the categories according to my four research questions: (1.) what kinds of knowledge teachers report using in their classrooms and where they acquired the
knowledge, (2.) what impediments or constraints to they encounter in using their knowledge, (3.) how teachers navigate the challenges to their professional knowledge, and (4.) how teachers communicate within the education system and give feedback to colleagues above them in the education hierarchy.

I identified three major types of knowledge in the analysis of this data: Theoretical, Pedagogical, and Tacit. The teachers acquired theoretical and content knowledge through college and university course-work and through continued study via courses, workshops, reading, and personal research. They mentioned Piaget, Vygotsky and Bruner as their main learning theorists. The teachers took the theoretical and applied it to their teaching in the classroom with the help of other practitioner experts who developed pedagogical practices based on these theorists. The most common names mentioned were Carol Ann Tomlinson - differentiating, Carol Dweck – growth mindset, and Jerome Bruner – scaffolding. For more curriculum-specific knowledge they mentioned Ralph Fletcher – mentor texts in writing, Fountas and Pinell for determining reading levels, Wiggins and McTighe for Backwards Design, Sarah Ward for expertise on executive function, Bloom’s Taxonomy for the learning cycle, and Michelle Garcia Winner for working with children on the autism spectrum. The teachers expressed tacit knowledge in the conversations where they were able to describe gaps in programs and or mismatches between what standards were asking and the children’s cognitive stage of learning. Examples of these will be discussed in the Navigation section below.
Table 4-1. Types of Professional Knowledge Elementary Educators Possess

**Professional Knowledge Possessed by Elementary Educators**

<table>
<thead>
<tr>
<th>Theoretical Knowledge</th>
<th>Pedagogical Knowledge</th>
<th>Tacit Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gained through study of theorists, scientists, educational experts</td>
<td>Gained through study, education and other discipline experts</td>
<td>Gained through personal experience</td>
</tr>
<tr>
<td>Cognitive scientists: Piaget, Vygotsky, Bruner</td>
<td>Content: University dress, courses, PD, peer learning &amp; dialogic process.</td>
<td>Cumulative years of teaching: 15-30 x 20 students = 300-600 students each</td>
</tr>
<tr>
<td>Behavioral Development: Lora Hodges, Chip Woods--Responsive Classroom; Sarah Ward, Executive Function; Michele Garcia-Winner--autism</td>
<td>Practical: Vygotsky ZPD; Bruner scaffolding; Dwek growth mindset; Danielson differentiating; Fountas &amp; Pinell reading levels; Fletcher writer's notebook; Wiggins and McTighe Backwards Design</td>
<td>Daily observations of children learning: 180 days x 15 years = 2700 days of observation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>180 days x 30 years = 5400 days of observations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ongoing reflective practice, dialogic process</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ongoing reflective practice, dialogic process</td>
</tr>
</tbody>
</table>

**Theoretical Knowledge**

The teachers described where they acquired their knowledge from their education degrees of various types, participating on ongoing professional development and taking initiative to research and explore new ideas in pedagogy and their areas of interest. (See teacher profiles in chapter three for details of education background and degrees earned.)

The theoretical knowledge served as the foundation for the pedagogical tools they used for helping students succeed in their classrooms. It became clear in most instances their knowledge of the theoretical became usable knowledge through their understanding of pedagogy, through years of observing and working with children, and through reflecting on their observations and experiences as individuals and with colleagues.
The teachers reported the theoretical knowledge came largely from their education specialization at the college, university or graduate level. Through the interviews, it became clear that the teachers were familiar with Piaget and Vygotsky. They referenced Piaget’s stage of concrete operations and object permanence and Vygotsky’s theory of constructing knowledge, zone of proximal developments (ZPD), social learning and more knowledgeable other (MKO). All five teachers described their knowledge of child cognitive development using words like ‘object permanence’ or ‘concrete operational’ which comes directly from an understanding of Piaget’s work in children’s cognitive development (Piaget, 1954). Anne described her first grader working with her student teacher, “You could see it right there. When my student teacher, Ralph, moved the objects farther apart, the child thought there were more objects on the table!” (Interview, November 2017). Claire also described object permanence in her first graders who “were visually confused by the diagrams on the worksheets because the space in between the dots interrupted their ability to see the whole set of dots that represented the numbers” (Interview, October 2017). A picture of this worksheet can be found in Figure 4-5.

The two first grade teachers and one third grade teacher spoke about the need for manipulatives and visual aids in math lessons so the children could construct knowledge, which comes from Vygotsky’s theory of knowledge acquisition- constructing personal knowledge. They described Piaget’s stage of cognitive development known as ‘concrete operational,’ which is the stage between 7 and 11 years when a child is developing rational and organized thinking. The child at this stage can use logical thoughts and rules applied to physical objects (Piaget, 1954). Anne describes her first graders learning to add within 20 this way, “so many of them…have to go back to one and start counting, but
we are trying to get them to count on. Maybe a couple of kids can do that at this stage and
are at a higher-level thinking…but most kids go back to one” (Interview, November
2017). In third grade, Mary spoke about trying to teach five different ways to multiply
and familiarizing herself with the math program, identified one method that did not make
sense. “I just know that the kiddos will not remember the steps to this way of multiplying
because it is not logical to them and they will forget the steps. They must understand the
logic. I also checked in with a math specialist in our building to see if I was off base with
this and she agreed that this fourth way of multiplying was confusing for the age of my
class so I taught them three strategies instead of four. I told the fifth-grade teacher about
this and she said it would be fine. She would cover the fourth way when they got to her”
(Interview, June 2017).

The teachers who gave math examples, also spoke about helping the children to
‘construct knowledge’ which they identified as coming from the work of Vygotsky
(1934). There is a link to Piaget’s concrete operational here. Both theorists saw that
children needed to work with physical objects to arrive at understanding, though
Vygotsky put more emphasis on the social aspects of learning, which will be discussed
below. Both Claire and Anne, the two first grade teachers, had something to say about
children needing physical objects to help them construct knowledge. With this new math
program our school is using, “I add stations with hands-on components that is not in the
program because I know that most first graders need to work with physical objects to
create their sense of number. I also make my own worksheets when I observe that certain
visuals are confusing for the children year after year.” Anne has a similar observation
with her first graders in a different school and different district, “In our first grades, we
are going very slow because of the developmental level this group is at. They need a lot
of physical objects and game-type lessons to build up their number sense before they become fluent in their ability to calculate” (Interview, September 2017).

What these teachers are also describing is what Vygotsky describes as the zone of proximal development (ZPD). In our conversations, they described and identified his theory and how it influenced their teaching. Linda, one of the third-grade teachers, said this about her understanding of the ZPD, “I use class discussions to see how the children are grasping the content and then perhaps a worksheet in math or a writing assignment. This tells me where they are in their understanding and where I need to go next” (Interview, September, 2017). Sophie, another third-grade teacher, related her understanding of ZPD by discussing reading groups.

“The classic example of helping children at their zone of proximal development is when I administer the Dibels reading assessment at the beginning of the year. This helps me put the children in their zone so I can start where they feel strong as readers and move them along from there” (Interview, November 2017). Mary shared her experience with Reading Readiness that identifies potential ‘at-risk’ children, “I assessed kids’ readiness to read for years and by doing that could see exactly where they were in their pre-reading skills and then could plan the next steps to pull them along” (Interview, June 2017).

Vygotsky posited that children learn in a social setting from a person, in this case the teachers, who knows more than they do and can lead them to the understanding. All of the teachers in this study felt it was their responsibility to identify each child’s ZPD and provide instruction and materials tailored directly to their needs so that they could lead them from their present level of understanding to the next level. They addressed the social element in learning by placing children in small groups where a teacher led either
instruction or a discovery game where the children were constructing their knowledge together with the guidance of a teacher or paraprofessional (classroom aide).

Every teacher in this study utilized the social and interactive construction of knowledge with the children in their classrooms. The rooms were set up with desks in pods or clusters allowing for student interaction. The direct instruction happened in the form of mini-lessons and was given with children sitting on rugs as the teacher led a discussion or demonstration and asked questions to connect to prior knowledge of the children. Reading groups were a common practice among these teachers where small groups of children were taken with a teacher to read, learn phonics, and asked comprehension questions. Math stations for the first graders happened in both first-grade classrooms I observed and in third grade direct instruction happened with the whole class, while seating in pods allowed the children to help one another with their assignment and teachers circulated among the groups to check in and see how each group was progressing (Classroom observations, September-December 2017). The teachers in this study were applying Vygotsky’s theory of social development and understood the importance of the MKO for student learning. Anne’s phonics example is apropos here. She began her phonics lesson with the whole class on the rug to introduce the concept of ‘short a’ words where the whole class read a list of one-syllable and two syllable words together. By doing this, she used Vygotsky’s theory of MKO and social development. After the mini-lesson she had stations with different activities to reinforce the ‘short a’ sounds. “And that’s why we’re breaking off into the groups as much as we can to facilitate the social and to break down the learning because of their attention span and their activity level” (Interview and Observation, November 2017).
Curriculum Content Knowledge

The teachers in this study initially were exposed to curriculum content in their university or college courses and have continued to develop their professional knowledge through workshops and courses. Mary has a Master’s degree in Elementary Science teaching and has taken up learning about Responsive Classroom, Social Emotional Learning and is a team leader in her building on these topics. Linda has taken the initiative to learn about executive function and how to work with children on the spectrum since these are the children who are showing up in her classroom. She is also a team leader and works with the district specialist in social studies to help develop the curriculum for third grade. Her group uses Backwards Design to identify the essential questions and big ideas that they think the children should know and understand at the end of the unit. Sophie is the Responsive Classroom coach in her building and a team leader in developing the reading and writing curriculum for her building. Anne has taken numerous courses in computer science, reading instruction, STEM instruction, responsive classroom techniques, a workshop in understanding executive function and four years of courses for teaching American history. Claire has young children at home but also takes workshops whenever she can on teaching reading and writing to young children, math instruction and responsive classroom techniques. She reads education blogs and stays current with the latest trends in teaching through education journals and through other teachers.

Pedagogical Knowledge

Developing pedagogical knowledge is about developing the art and science of teaching. All the teachers shared their teaching techniques, which included developing their expertise in understanding child development in the cognitive, physical and social-
emotional areas. Depending on the constellation of the children in their classrooms, they were looking for the most proven methods while also keeping up-to-date with the latest research and practical applications for their classrooms.

Both teachers at Rhododendron School mentioned Sarah Ward as their expert to consult when looking at issues of executive function in children. Anne and Linda have found that understanding a child’s ability to organize a task, follow through and delay gratification helps them plan lessons with the tools the children will need to be successful in the classroom. They are both finding that children need explicit direction and cannot always figure out the steps on their own. Linda mentioned the ‘Marshmallow test’ conducted by Walter Mischel at Stanford in the 1960’s as one of the places where she finds usable ideas about self-control the children need to develop and how to facilitate that in her students. “I try to find what’s missing in children today that kids had a few years ago and it really comes down to self-control…Children today want everything to be done for them and find it difficult to use their will-power to work in the classroom” (Interview, October 2017). Linda also uses the work of Michelle Garcia-Winner to address issues of autism in the classroom since this year she has one child diagnosed on the spectrum and she wanted to know the best way to approach this child so he could be a successful student.

Common among the teachers at the three schools in this study is their ability to take initiative to develop their skills in several areas. All the teachers were using Backwards Design to plan their units and their lessons while following the math, ELA, and reading programs their schools were using. Even with scripted curricula they felt they needed to review lessons to find the big ideas and main objectives so they could adapt
with their own language when needed and to push-in materials when they knew something would help their students’ understanding of a concept.

All teachers in the study were aware of and using the attitude of having a ‘growth mindset’ as identified by Carol Dweck and her work with children and positivity. “I (students) will be able to…” was written on every whiteboard with specific skills that will be mastered in math or ELA. All the teachers spoke about scaffolding and knew that it made sense in terms of ZPD and how children learn. Jerome Bruner (1960) identified the term scaffolding. Though he was not directly mentioned as the person who took Vygotsky’s theory of ZPD and described the theory of scaffolding, the teachers all used the word ‘scaffolding’ to describe what they were doing in the classroom. Teachers also mentioned the term ‘differentiating’ from Carol Ann Tomlinson’s work with meeting individual children’s needs within the group. All of the teachers used differentiating techniques in their classrooms particularly with worksheets and graphic organizers to give more specific steps to those children who needed them. Linda is especially adept at planning for a range of learners using scaffolding and differentiating techniques. This example is from her social studies project documented above. “I break the project down so any child can accomplish it. Some need much more specific guidance than others. If I think the child is overwhelmed by the project, I have them start with the timeline to get oriented. Others can take the notebook pages with the prompts I have created and start their research on their own” (Interview, November 2017). Sophie also described how she differentiates and scaffolds for her students. “As I create the graphic organizers for the various reading levels, I provide a different level of prompts. Some groups can simply respond to something like ‘In the story of the Bones Brothers, state the problem and your solution’ while another group will need more specific prompts such as, ‘In the story of
the *Bones Brothers*, what is the new problem at the end of the story? What is your own solution?’ I would need to model an answer orally with the group and have them give me possible examples themselves before they can be set free to write on their own” (Observation, Interview and Artifact, December 2017).

**Tacit Knowledge**

Tacit knowledge is the knowledge acquired through experience. The teachers in this study have acquired theoretical, content and pedagogical knowledge through university courses, professional development workshops and personal research into classroom management techniques like responsive classroom, executive functioning in children and social-emotional learning. Together they represent ninety years of teaching experience and have taught between 300 and 600 children each, depending upon their years of experience. They have been involved in using curriculum frameworks and now CCSS for 15 to 30 years. These teachers have worked with a number of different curriculum programs and can identify gaps in instruction because they know the cognitive stage of the children they are teaching and how to scaffold the learning for their students.

Sophie and Linda have both taught for thirty or more years and are considered experts by their peers and their principals. They are both teacher leaders in their schools and work with district specialists (when they have one) to choose or design programs like the third-grade social studies curriculum in Linda’s case or to provide responsive classroom coaching to colleagues in Sophie’s case. Both take in student teachers on a regular basis to help prepare the next generation of teachers. They are considered role models by the local university who places student teachers in their classrooms.
Mary, Claire and Anne all have fifteen or more years of classroom teaching experience and are also considered leaders in their buildings by their colleagues and their principals. They have taken on leadership roles as mentors to new teachers, are considered role models for teacher candidates by the local university, and have specialties in specific curricular areas. Mary is highly trained in elementary science teaching, Claire and Anne have master’s degrees in early childhood education. Mary and Anne are also union reps for their schools and keep abreast of education policy for their colleagues.

All of these teachers have described places where there are gaps between what the standards ask for, what the programs provide and the stage of cognitive development of their students. Specific examples of these will be discussed in the following sections answering research questions two and three –What are the impediments or constraints that these teachers encounter in using their professional knowledge and, how do teachers navigate these challenges to their professional knowledge? Anne, Linda, Claire and Mary have one set of circumstances. Sophie is in a more challenging situation because her school is teetering on the edge of failure according to the state designation of her school based on MCAS scores.
Figure 4-24. Linda’s Use of Knowledge

Tracking Linda’s Use of the Three Types of Knowledge Through a Third Grade Social Studies Project

PRACTICAL: Linda conferences with students to help them get started; depending on ability level some students have explicit prompts, others can go to original source materials and take notes.

PEDAGOGICAL: Linda is working with MA Curriculum Frameworks for Third grade social studies - MA history; creates rubrics and scales for assessing expectations; incorporates entry points to engage the students.

THEORETICAL: Linda uses her knowledge of executive function as described by Sarah Ward to scaffold and differentiate the social studies unit.

Figure 4-25. Mary’s Use of Knowledge

Tracking Mary’s Use of the Three Types of Knowledge Through a Life Science Example

PRACTICAL: Mary develops a lesson to bring the concept in a way that the children can interact with materials that allow them to construct the knowledge by doing an activity with traits of plants that is adapted to meet the third grade brain needing to construct knowledge through these traits.

PEDAGOGICAL: Mary uses her master’s degree in science education to address the MA Curriculum Framework-Life Science: LS3: Heredity: Inheritance and Variation of Traits

THEORETICAL: Mary describes the “third grade brain” using Piaget: logical structures constructed through interaction with their environment.

Figure 4-25. Mary’s Use of Knowledge
Sophie's Third Grade Spelling Example

Figure 4-26. Creating differentiated spelling lists for two different reading groups

Tracking Claire's Use of the Three Types of Knowledge Through a First Grade Math Lesson

Figure 4-27. Claire’s Use of Knowledge
All the teachers in this study report that although they did not have direct input into CCSS, they are now using them as guidelines and are on board with the standards and MA curriculum frameworks. Claire and Mary had the most training and were given input in choosing curricular programs. Linda and Anne have a variety of experiences in relation to preparation for the new standards and in adopting programs. Sophie is in another category. She experiences very little autonomy in choosing programs at her school and had no training when the new standards were announced. “It was not a big deal though. We were already using standards and this was not a big change for us” (Interview, October 2017).

Claire and Mary were in a district that at the time of adopting CCSS, had a very active role in learning about the standards. The district provided training and workshops to look at the standards, which the teachers saw were updated versions of what they had already been using as the MA curriculum frameworks so they did not have a big
adjustment. Claire and Mary were also able to work with the district specialists to choose programs (textbooks) and were asked for their input. Both said they felt actively engaged in the process.” I was part of the team. We looked at samples from different publishers and gave her (the district curriculum coordinator) feedback and then she brought that feedback to the larger district to general teachers so they could comment…We did the research and we kind of looked at a lot of different options and tried to narrow it down and give our recommendations for the one that we thought was the best” (Mary Interview, June 2017). For several years now, however, they have not had a district curriculum coordinator and the math program, for example, has changed several times in ten years. Both teachers have knowledge of several approaches to teaching math and find that no single program has all that they need to help students understand the concepts they need to teach. How they navigate this conundrum will be discussed in the next section. Their school, Hydrangea, profiled in chapter three, is a Level 1 school according to the MA designation and the teachers feel confident in their ability to teach successfully. Where these two teachers do have difficulty is with the programs they use for math and ELA. They have identified some gaps between the cognitive level of the children in their classrooms and what is being asked of the children in the programs. This will be discussed further in the Navigation section later in this section when they describe how they deal with these discrepancies.

Anne and Linda are in a district that also had an easy transition to CCSS since their school, Rhododendron, is also Level 1 and they had been following the MA curriculum frameworks. When it came to choosing a new math program, three years ago for example, the district specialist asked them to try it. This happened in August just before school started and the teachers had no workshops or training of any kind for a
program that was radically different from what they had been using. They were just expected to ‘wing it’ with their students. Anne describes this whole transition, “I used to have a math coordinator in this building and we would meet every two weeks to look at curriculum and instruction and the MA curriculum frameworks, then this new program was adopted at the district level and we were all scrambling to figure out how to do this. It was awful…We were only one lesson ahead of the kids and that is a horrible way to have to teach” (Interview, September 2017). What Anne is describing is her trouble with how a program gets adopted and how a teacher is prepared to teach using the program. The way she deals with this will be discussed in the Navigation section later in this chapter.

Linda has great autonomy in creating her social studies curriculum with her colleagues in the district but none in the math or ELA. “I follow the programs pretty closely,” she says, “but I put my own spin on the lessons if I think there is a better way to describe a concept. The reading program does not cover all the bases so I supplement with things I have used successfully in the past. What I am more concerned about is the narrowing of the curriculum because of MCAS. Our school is Level 1, but we still feel enormous pressure to perform in order to keep our status. Even though I try to downplay the importance of these tests with my students, they feel anxious nevertheless. I wonder how we are really benefitting from this constant scrutiny. I used to be able to do more science and social studies now I have test prep in the spring” (Interview, December 2017).

Sophie is in the Azalea School, which is labelled Level 4 and considered failing. They have been teetering between Level 3 and 4 for seven years now and cannot seem to make it to Level 2. Sophie has a very different experience as the school continues to
struggle and has had five different principals in nine years, each who brings a different impulse to the school. Sophie describes this as having a yo-yo effect on the staff, who have been at the school longer than any of the principals and are not always respected for what they know about the students and pedagogy. In her experience, it takes three years with a program to become facile with it and to be able to see where the strengths and weaknesses are. “Right now, math is on the back burner because we are in a turn-around plan under the supervision of the superintendent. There is a big concentration on literacy because if you can’t read, you can’t do anything” (Interview, October 2017). Sophie describes the reading protocols changing rapidly and feels under pressure to have everything done “yesterday and it’s always a big change and I see strengths and weaknesses in every approach but we are not allowed to deviate from what the literacy specialists are telling us” (Interview, October 2017).

Sophie describes the changes in reading support in her classroom. “Last year I had reading specialists in my classroom for reading groups and the kids moved from station to station doing busy work but they weren’t actually reading…The kids went from table to table with intervention after intervention but never picked up an actual text to read… and they (the specialists) were wondering why the kids weren’t reading. We kept telling them the kids don’t have time to read, so now the new program has changed that. At least this year we have mentor texts and are allowed to read with the children and help them think about what they are reading” (Interview, October 2017).

When I asked Sophie how these constraints were affecting her ability to use her professional knowledge to teach she had plenty to say. “I have been teaching for 32 years and I keep current. I belong to the National Reader’s Association. I am a much better teacher now than I was when I was younger and I know stuff. But to have someone come
in who hasn’t taught as long as you and tell you that her way is the best way to teach is hard to take. I know that there are certain strategies that work and no one is asking me about that even though I am on the leadership team. I am being told what to do” (Interview, October 2017).

When I asked why she thinks her school is Level 4 and needs a turn-around plan she described the class constellation and the community profile. She told me that the community is economically depressed, crime is high, some children’s parents are in jail, some children are homeless. She described this year’s class constellation. “I have nineteen third graders. There are 10 IEP’s, 3 504’s and four children who are in therapeutic programs and one on the autism spectrum. I have adults coming and going in my classroom to help but the children who need a one-on-one aide have no one this year. It makes it very hard to teach with this group of children but I love them all. It is not their fault that so many of them are experiencing daily trauma in their lives. It makes it hard for them to learn though” (Interview, October 2017).

Sophie shared another concern. This year the children will not have the option to take the MCAS paper version. They will be required to take the computer version and this has her very worried.

“My students do not have keyboarding skills and even though I got a grant and have the computers in the building, they still are not in my classroom. I don’t know if you have ever seen a third-grader on a keyboard – but it is usually hunt and peck and they are very slow even with a lot of practice. Now my kids will have to take the MCAS in the spring on the computer and I feel they are getting set up to fail” (Interview, December 2017).
Navigating the Challenges

Claire and Mary had minimal challenges to their professional knowledge. They both expressed that their principal trusted them and that they did not have to submit lesson plans on a regular basis because he was in their classrooms observing enough to know what they were doing. Mary and Claire both have their lesson plans on their desk if he should want to see them. Mary invites him in to watch lessons that she is particularly excited about but he has also seen lessons that she considered flops. An example of the principal’s level of trust is when he asked Mary to attend a state workshop on literacy that would be three sessions. After the first session, Mary reflected, “This was absolutely terrible and not geared toward our grade levels so we would rather not continue this training and he agreed” (Interviews, June and September 2017).

Where these two teachers have the most difficulty is with the gaps in the programs that they are using. Luckily, they both have prior knowledge of pedagogical strategies to push-in to lessons as they deem appropriate. Mary gave an example of the popular reading and writing program that many schools are using. In one instance the program creator via the scripted text, directs the teacher to hand out post-it notes to third graders to mark passages in their reading that will lead to meaningful discussions of the text with their peer group. Mary’s experience is that the third-grade mind cannot distinguish between essential and non-essential in the story yet and when she tried this approach, the kids had used on pack of sticky notes within one chapter of the reading! Mary shared, “Some things (in this program) are really wonderful and other things just don’t make sense” (Interview, June 2017). What Mary did was modify the ‘post-it’ idea to make it work for third-graders (See Mary’s vignette above). She would put specific
questions on her flipchart by the morning meeting rug and asked the children to use their
post-it notes to find the answer to her question and post it on the flip chart. This way she
was teaching the children how to find the essential information about characters, plot and
setting and having the children use the post-it notes in an effective way.

Mary also sees that this particular program mentioned above does not cover all
the basic skills that children need in decoding, spelling and vocabulary work so she
supplements throughout the year with another program that helps identify children’s ZPD
and provides specific tools for the children to use to get them to the next level in reading
skills. She likes alternating read-alouds with the other reading program based on her
experience with successful interactive reading with her students.

Claire’s example was discussed in her vignette above. The math lesson had some
visuals that were extremely confusing for the children (Figure 4-4) and Claire had
experienced this same confusion for several years with different groups of children and
different ability levels. “I have done this lesson for four years now and every year the
kids get tripped up” (Interview, October, 2017). She simply helped the group of children
by writing the equation for them and added her own worksheet and manipulatives for her
students to construct their number sense. The children rotate through several activities in
the daily, 40-45-minute math block. Like Anne in the other first grade, she finds that the
children can attend for 8-10 minutes before they lose interest and so she also sets up math
pods with different activities- worksheets, hands-on with manipulatives, math games. “I
add activities for reinforcement of the skill and for extensions of the skill for more
advanced kids” (Interview, October 2017).

Anne had a hard time when a new math program was introduced because it was
announced in August just before school began three years ago and no workshops or any
other kind of training was given to the teachers. She was very frustrated because it was hard for her to grasp the trajectory of the new program and she felt the first lessons using this were chaotic even though she prepared as best she could. She and her other first grade colleague met every day with the building math specialist to prepare for the next lesson. They finally decided in year two that there was no way they could keep the whole class engaged in a sixty-minute math lesson every day and so they went back to using math stations where they took the lesson apart and put it into distinct station activities.

This way they were able to work with small groups of children and lead them from their ZPD to the next level of skill. “We have been using this program for three years now and it is so broad and takes so long to get through that it’s really hard for us to cover all that we need to cover in first grade…There are seven books and I’ve only ever done one and a half. At the end of year one, we (the building math specialist and other first grade teacher) reviewed the program and we consolidated and have made sense out of it in the way that we know how kids learn and how to create a solid foundation for them in number sense, patterning, and skills” (Interview, September 2017).

Linda has a third-grade class and finds the reading and writing program fine to use as long as you supplement it with the basics so that the kids get their decoding skills, spelling, and grammar lessons. “I am worried that new teachers will not know what the children need to know even with the CCSS as a guide. It can be overwhelming for new teachers and they need to get it right because their kids will take the MCAS and be scored on what they have learned. This reading program does not cover all the bases” (Interview, October 2017).

Sophie, despite all her knowledge, has the least autonomy of all the teachers in this study and finds herself complying with the new program even though she knows that
it is missing important aspects of a great reading and writing curriculum. In years past she has used a writing curriculum that models using mentor texts (Ralph Fletcher model) and finds it to be a much more integrated way to support reading and writing than the current system. She feels that in the current situation of her school she has no choice and must do what the literacy team suggests. “In the past three years we have had three different reading programs each with very strict protocols we were supposed to follow. Then they are changing the support and we never know what we will have from year to year for reading support in the classroom. One year we had pull-outs and all the kids went in different directions to different reading specialists. It was all over the place and there was nothing we (teachers) could do” (Interview, October 2017). Meanwhile Sophie added, “There is very little that is actually new when it comes to teaching reading. New programs are usually tweaking this or that from what we already know. If you want fluency, you have to let kids read. They need decoding strategies for new words. They need time to reflect on their reading to see what they comprehend.”

In math, it is a different situation. Sophie’s school is not prioritizing math at this time and she and her other third grade colleagues have full autonomy to change the order of teaching certain topics because they know what foundations to build upon in mathematics. “We’ve had to adjust this new program because it starts right off with multiplication and we know that the children need to have more work with number sense like skip counting, adding doubles, adding and subtracting with double digits to learn carrying, and borrowing before they can jump into multiplication” (Interview, October 2017).

Through these interviews it became clear that some teachers had a level of trust from their principals, their district coordinators and each other to work with curricular
programs. They had the autonomy to do so and were able to implement changes based on their knowledge of child development, curriculum content and pedagogy. One teacher in the group was hindered in her ability to use what she knows as successful reading strategies because of her schools’ rating of Level 4. She found this frustrating even though she is on the leadership team working with her principal and vice-principal to develop a successful reading program for her school.

**Systems Communication: Where It Happens and Where It Does Not**

From the teacher’s perspectives, it became clear in the interviews that the communication happened between grade-level and building-level colleagues (other grade’s teachers), principals and district coordinators. No one mentioned any communication higher than the district level in the education hierarchy even though I asked about it. (Figure 4-1) It did not seem to be an issue because all of the teachers in this study described some level of autonomy in their classrooms, even if one teacher was frustrated by the tightly pre-scripted reading program. The knowledge the teachers shared with each other became usable knowledge within their classrooms and in their buildings. Beyond that, it was not clear whether district coordinators gave program feedback to publishers about their programs or to superintendents or policy makers. The teachers were not concerned with communicating with policy makers on the adoption of CCSS or with giving feedback on how they were implementing the standards. They had already accepted the standards and were implementing them in their classrooms. In this study, it seemed to me that the teachers were very busy meeting the needs of a wide variety of learners in their classrooms and did not have the bandwidth to question policy. They were concerned with making sure that they were meeting student needs by adapting curriculum and using their pedagogical knowledge and skills to support student success.
Mary and Claire teach in the Hydrangea school and seemed to have had the most information and preparation for implementing CCSS and ability to give input in the decisions made in adopting curricular programs. Their district provided workshops when CCSS were adopted and they were already familiar with MA curriculum frameworks so it was not a big change for them. They also were asked by their district coordinator to review ELA and math programs, to give input, and help decide what they thought would work best for them. Even though the final decision was in the hands of the district coordinator and superintendent, they felt that their knowledge was taken seriously and their opinions were respected. “We felt that our input was taken seriously and were happy with our programs when we had a district coordinator” (Mary Interview, 2017).

Now that they have no district coordinator, they worry that they will not have the same level of input, nor the level of curriculum expertise to which they have been used to having access. Another downside of not having the district coordinator is not being able to meet with other teachers from other schools in the district. The district coordinator arranged for a district-wide meeting of teachers once a month on early-release Fridays so teachers could review programs and teach one another strategies (teachers teaching teachers). Hydrangea school has only one grade per level so the teachers in this study miss the opportunity of meeting with other teachers at their grade level to discuss pedagogy, content and teaching strategies. “I enjoyed being able to meet with other grade-level teachers when we had monthly district meetings. It was great to be able to compare notes about the programs and the children, share strategies and create friendships” (Mary Interview, June 2017).

Anne and Linda teach in the Rhododendron School and had little or no training for CCSS but stated that is was ‘no big deal’ because they already used the MA
curriculum frameworks and were familiar with the standards. In math and ELA they have worked with the district coordinator to choose programs, but there seems to have been a communication break-down with the latest math program that was adopted. At least according to Anne, they felt surprised by the introduction of this program three years ago and would have liked to have some input in adopting it. When I asked Anne if she was able to give feedback, she shared that she gave feedback to her principal and the district coordinator and “it was not appreciated.” Linda is happy with the math program and did not mention the same level of frustration that Anne had with it. In ELA, they both have questions about the writing program and feel free to add their own extensions and supplements. They communicate with their grade level colleagues. “I know certain strategies that have worked in the past for reading and writer’s workshops so when the new program does not have strategies for the skills I know the students will need, I push-in my own material” (Linda Interview, 2017).

Sophie teaches at Azalea school and had little or no formal introduction to CCSS when they were adopted. She is a teacher leader in her school and communicates with her teacher colleagues, principal, and vice-principal. There are also literacy coaches the school has hired to work with teachers and Sophie has contact with them through the leadership team at Azalea School. Beyond that she has no connection to anyone in the district at the moment, nor does she have any direct communication with her superintendent. This frustrates her because she has heard through her principal the superintendent wants the teachers to work on developing curriculum during the summer, which used to be the job of the district coordinator. “I don’t think they understand that this (developing curriculum) is a full-time job and we can only do so much of this in the summer. Many of us already have summer jobs to make ends meet and now they want to
add this to our teaching load” (Interview, December 2017). In this case, Sophie felt like she could not challenge the superintendent’s directive. She did not know who would listen to her concerns. “Normally I would be able to work with the district coordinator if I had a concern. I am not sure if my principal takes me seriously or can even register why this is a problem. We are under so much pressure to perform and have had budget cuts so I think we are all under extreme pressure and just have to do the best we can” (Interview, December 2017).

Section Summary

The reports from these teachers was clear. They had three types of knowledge that they used in their classrooms and faced some impediments to their knowledge in programs their schools were working with. Depending on the level of trust they had with their principals, they had levels of “autonomy bounded by responsibility” to adapt programs using their pedagogical knowledge (Moore, 1970). They communicated with their peers in their schools, with educators in other schools, with principals, vice-principals and district coordinators and did not seem concerned with communication higher up the education hierarchy (Figure 4-1). They had accepted policy-makers’, content experts’ and program creators’ authority to create CCSS. Even when they found a standard questionable as in Mary’s science example, they did their best to meet the standard in their classroom and adapted it to meet the needs of their students.
CHAPTER 5
DISCUSSION, IMPLICATIONS, CONCLUSIONS

Introduction

This chapter includes the discussion, significance and conclusion of this short-term, small scale ethnographic study conducted from June through December 2017. The goal was to look at two related themes; one, from a ‘systems perspective’ to determine if there is a learning organization structure in the MA education system that includes communication from the bottom-up for the possibility of double-loop learning - as perceived from the elementary teacher’s perspective - and the other is to see what the five teachers in the study are actually experiencing in their daily lives in the classroom as they navigate the system to meet standards, implement programs and address student needs.

The study is based on the premise that to effectively support student success, the MA education system would need to be a learning organization where all levels of knowledge and groups working in the system would be in communication to reflect, examine assumptions and learn from one another.

To that point, the MA education system is complex and there are many layers and groups involved including policy makers, governor’s councils, education commissioners, content experts, program creators, superintendents, district coordinators, principals and finally thousands of elementary teachers in their classrooms. This study takes one very small sample of elementary educators and peeks into their lives as a way to see what they experience from the ‘bottom-up’; what kinds of knowledge they have, what impediments they face, how they navigate within this complex system and how they communicate what they know and are learning to each other and to their superiors using Senge’s model
of what constitutes a learning organization. For five months, I spent time in the classrooms of these five teachers observing and interviewing them, collecting artifacts and analyzing curricular programs with them to see if and how they used their professional knowledge and autonomy to adapt programs to meet their student’s needs and how they communicated with colleagues and others in the education hierarchy.

**Significant Findings**

The significant findings included identifying: 1.) the kinds of knowledge the teachers were using that no one else in the MA education system has, 2.) the kinds of impediments in autonomy they experienced, 3.) identifying how they are able to navigate the complexity and 4.) the ways they were able to communicate their learning and to whom. Who within the MA education system is interested in what they have to say - especially if the teachers experience something that policy makers have decided upon and expect teachers to implement but has an adverse effect on students? These teachers have aligned themselves with the state’s educational goals but what if something isn’t working for them or their students?

There are three general types of knowledge teachers use that has been identified in this study – theoretical, pedagogical and tacit. Theoretical knowledge includes understanding cognitive scientists like Piaget, Vygotsky, Bloom and Bruner and applying their theories to support student learning, thus theoretical knowledge becomes usable knowledge in the classroom setting. Pedagogical knowledge includes the practical mastery of subject content, classroom management, and effective lesson delivery for student understanding. This is very specific knowledge teachers develop that others in the education hierarchy do not have and is closely linked to tacit knowledge. Tacit knowledge comes from direct experience in the classroom observing students and
working with them on a daily basis. Tacit knowledge is the most important in the argument about who in the system has what knowledge. The teachers in this study had 15-30 years of experience in their elementary classrooms and know the kinds of learning styles, behavior challenges, health issues, parent concerns, and community issues in their surroundings. Sophie, for example, has taught in Azalea school for thirty years and knows the community well. She can tell you whose parents are in jail, who is homeless, and who is food insecure (Interview, 2017). Linda at Hydrangea school described her classroom constellation this year with a Downs syndrome child, another who suffers from extreme anxiety, one on the autism spectrum and one with spina bifida. To meet the physical needs of her students, she created a standing desk by inventing it herself because the school did not have the budget to buy one for her room. She also shared that on weekends she brings bags of groceries to certain families who are food insecure because she wants to make sure the children have food on the weekend (Interview, 2017).

I originally thought that the teachers would have some theoretical knowledge but was surprised that they all were actively using knowledge in their classrooms based on cognitive scientists like Piaget, Vygotsky, Bloom and Bruner. They considered these scientists as the experts they relied on for their understanding of child development and were utilizing the work of these scientists to identify cognitive states of the children, their zone of proximal development, and how to use scaffolding techniques to support student learning. The teachers referred to skilled practitioners like Danielson (differentiating), Ward (executive function), Garcia-Winner (autism), Fletcher (writer’s notebooks), Fountas & Pinell (reading levels), and Dwek (growth mindset) to take their theoretical knowledge and apply it effectively in their classrooms thus taking the theoretical, applying it and making it usable knowledge in the classroom. All of the teachers
mentioned using Backwards Design from Wiggins and McTighe as their way of planning units and individual lessons. Even with scripted curricula they felt it was important to know the lesson objectives themselves and to become comfortable enough with the lesson that they could adapt it to meet the needs of their students. They utilized the concept of the ‘Big Idea’ even when they were using these scripted programs so they could be sure they were conveying the essential information their students would need to get from the lesson. They took initiative and used their prior knowledge of curricula and child development to adapt and adjust programs that they felt were inappropriate for the cognitive stage of their students.

Four of the teachers had some autonomy within their sphere of expertise in the classroom and did not feel impediments in their ability to adjust lessons to meet the needs of their students. The difference for the fifth teacher, Sophie, was that her school was designated as ‘chronically underperforming’ (Level 4 in the MA system) and the turn-around plan limited her ability to use prior knowledge in teaching reading and writing because her school had adopted a strict reading and writing protocol that she was expected to follow. The three third grade teachers felt MCAS preparation interfered with the curriculum and created undo stress for their students – even when they tried to downplay the significance of the tests with their students to reduce their anxiety. Sophie was especially worried because this year the children were not given the option to use paper tests and she did not have enough computers for her class to practice word-processing and key-boarding skills. They would be expected to take the MCAS on computers even though they have little or no key-boarding experience. She was worried that this sets the children up for failure not based on their knowledge but on skills they do
not have. Linda has a student with high anxiety and wonders how she will cope with the tests in the spring (Interviews, 2017).

While the teachers had some autonomy in their classrooms in delivering lessons, this autonomy was increased if their school was Level 1 and decreased to some extent if their school was Level 4. Sophie in Azalea School (Level 4) felt constrained by this designation and the accompanying lack of autonomy she experienced in being able to use her professional knowledge to teach reading (Interview, 2017). This is particularly interesting because she is a 30-year veteran in the third grade in the same school, knows her community, keeps current with the latest reading programs, uses the same reading and writing techniques the other third grade teachers are using, yet her students do not perform at the same level as her colleagues in the other two schools. What are the other mitigating factors that Sophie is dealing with in her classroom that affects her students’ ability to perform on the MCAS?

The teachers in this study were able to navigate the complexity of the system by communicating with their colleagues, principals, and district specialists when they had them. They were able to learn about CCSS through the district and began to implement the standards when the state adopted them in 2010. Beyond that level in the system hierarchy – from the district to the buildings - there did not seem to be any communication from the teachers to higher authorities, not did this seem to be a big concern of the teachers in this study. I had the impression that the reason for this was they were so busy meeting student needs that except for Sophie, they felt they had enough autonomy in their classrooms to adapt curricular programs, the ability to communicate with their peers, principals, and district coordinators, and they were actively engaged in a dialogic learning process at this level of the system. They were trusted by their principals
and worked closely with district coordinators to develop programs in social studies or
give input into program adoption, for example.

Other reasons that these teachers were not concerned with educational policy
related to adopting CCSS are as follows: The teachers had been used to teaching to MA
curriculum standards and this was not a big change for them. Another is the fact that the
students in their classrooms present a wide variety of learning challenges where
individual needs are critical factors which with the teachers are dealing. If we remember
the classroom profiles, by third grade approximately one-third of the 18-20 students per
classroom are on IEP’s and/or 504’s which require special accommodations or
adjustments to the curriculum. The teachers have adapted to these needs by developing
their capacity to understand students’ needs through PD workshops and summer courses.
The teachers in this study are all experiencing an increase in students on the autism
spectrum and having diagnoses of ADHD. They keep their focus on the needs of the
students and do not have the band-width to dive deeply into policy issues. Two of the
teachers in the study were their building union representatives, however, and kept current
with state and local issues on behalf of their colleagues. Unions at this time do not
represent pedagogical issues.

The unresolved frustration with MCAS and its effects on the students and
curriculum is an area that could be used as an example of where teachers can go with
their concerns over policy decisions made in the MA education system. The third-grade
teachers were not able to identify a process for giving feedback nor did they know to
whom they should speak with their concerns that would have an effect. This appears to be
a gap in the system but without having the time or ability to interview others in the
education hierarchy, it was beyond the scope of this study to pursue this further.
Significance of Study

The study is important because it illustrates in real time and lived experience how knowledgeable the teachers in this study are and that we can trust them to have their students’ best interests at the core of their motivation as public servants. They are professionals and have expertise that others who are not working in the classroom do not and also “have a vital effect upon the recipients (students)” (Moore, 1942). They are continuing to develop as professionals by utilizing expert knowledge and that of other education professionals. They know how to adapt to their situation and know when to adapt a program (text book) when it is not meeting students’ needs. This aligns with one of Senge’s criteria for a learning organization – personal mastery. The art and science of teaching is not a ‘craft’ as Levine (2006) suggests. It takes extensive knowledge of child development, curriculum content and pedagogical knowledge combined to be able to deliver effective lessons. No amount of ‘scripting’ the curriculum can take the place of teacher knowledge, expertise, and concern for student welfare, though it can provide a framework for teachers to use.

This study points to several systemic gaps between policy and implementation. That these teachers are experts in their field underlines the importance of including them in policy conversations at some level. Two examples from this study come to mind: one is the example of the science lesson on ‘inheritance’ and the other are issues surrounding the MCAS. Mary has a Master’s Degree in Elementary Science Education and was questioning the appropriateness of the topic for the third grade. If a teacher questions the appropriateness of a standard - what is the process for reviewing a standard in the MA education system?
In the example of the MCAS, several questions arose in the study. Sophie’s school is a Level 4 and is not going to allow the children to take the test on paper this spring. She is worried that her children do not have the word-processing skills to take the test on the computer and that the scores will not reflect a true assessment of what her students know. Who made the decision to have all students take the tests on computers and can a teacher challenge the decision if she feels it is unfair to her students? In Linda’s school (Level 1), her students feel the pressure to perform well. She has students who exhibit high anxiety and she “feels the tests can be harmful to students. It puts them under so much pressure at a young age. Is it really necessary?” (Interview, 2017).

As seen from the examples above, the teachers in this study were involved in ‘ethical reflection’ – a term used by Chris Argris (1992) that describes a reflective process where, in this case, teachers reflect on their practice in their peer communities to examine mental models (beliefs and perceptions) they have about students, learning and curricular programs in order to “help all children succeed” (Darling-Hammond, 2005). Hydrangea school has early dismissal on Friday’s so teachers can work together. At one time when they had a district coordinator, they met with other grade level colleagues from other schools in the district. Azalea school has early dismissal once a month for in-school professional development. Grade-level teachers meet and discuss curricular and student matters. Rhododendron school has a daily schedule that allows grade level teachers to have the same planning periods so they can work together (Interviews, 2017).

Teachers were aligned with the state’s goals of helping all students be prepared for college and career in a unified vision for student success, which is another of Senge’s (2012) criteria for a learning organization – having a shared goal for which everyone in the system is striving. The teachers were willing to adopt the state’s goals even though
they were not part of creating them because they want to be part of a system where they contribute to students’ success. It appears the teachers were able to look up to the work provided by those above them and accepted their role in the hierarchy. The teachers were all aligned with CCSS and using text books for math and ELA lessons provided to help them deliver curriculum aligned with CCSS. Since we know the reason CCSS were initiated was out of an interest to provide an equitable curriculum for all students in the US by the National Governor’s Association and the Council of Chief State School Officers in the 1990’s, then it makes sense that a system for reflection and review of the policy be in place. The roll-out and implementation has been controversial but these teachers, being public servants in their communities, are following what their states have adopted. Should they have autonomy to do otherwise when the purpose of the standards is to ensure an equitable curriculum for all students? It seems there needs to be a process where policy makers and other educational leaders continue to dialogue with the classroom teachers.

Limitations

This study is limited by the fact that it is one small-scale, ethnographic study of three small schools in MA and I am the instrument in the study. The validity of this depended on my ability to capture the clearest possible story of these teachers in their schools through analyzing the data – the spoken words of the interviewees – observations and collecting artifacts. The goal was to document the teacher’s perceptions and interpretations of their role in aligning with CCSS, how they communicate what they know about their students, how they communicate the ways in which the program affects their teacher knowledge, and how they communicate with their superiors. Doing this study has illuminated structures that are working because of the people involved and
because there is a system for communication at the bottom of the education hierarchy. Through the interviews I was able to see that communication between peers, principals and district coordinators is happening on a regular basis as reported by the teachers.

Figure 5-1. Communication Channels from the Bottom-Up – Teacher Perspective

This study was small and I do not consider it to be representative of the greater elementary teacher experience in the state. Student demographics, zip code, the school’s designated level, principals and district leadership all factor into the elementary teachers’ experience in their schools. The time constraints limited my ability to ask another round of questions and go more into depth on the questions of peer communication, relationship to those above them in the state’s education hierarchy, and where they go with concerns about the MCAS or other things that adversely affect them in their classrooms.
I have known all of the teachers in the study through my work with graduate students and have been in their classrooms on a regular basis for five years. We have had many informal conversations and they agreed to participate in the study because they wanted to tell their stories. There is always a chance that because our relationship changed in this study from one as colleagues to being officially interviewed by me for research purposes that they were choosing their words more carefully than if we were chatting informally. I sensed that was the case several times over the period of the study.

Since I am the instrument in this study, I could imagine someone else might have analyzed the data differently or asked different questions. I can only interpret what I learned through my lens as a former elementary educator in the private sector. In some ways, I had an emic perspective when it came to knowing what kinds of knowledge a teacher needs to deliver a lesson - that all seemed very familiar to me. In other ways, I had an etic perspective because in my teaching career I did not have to align with CCSS, have a principal or district coordinator with whom to consult. In the Waldorf system of education, internal within-building communication was collaborative and equalized since we were a faculty-run school and our governing structure involved the College of Teachers as the pedagogical leaders of the school.

**Conclusion**

This study was designed to look at the teachers’ relationships in the hierarchy of the education system through their lived experience and simultaneously to see how they use their professional knowledge and “autonomy bounded by responsibility” in the classroom to support student learning (Moore, 1940). Using Foucault’s theory of privileged knowledge coupled with Fullan (1994) and Senge’s (2012) theories of learning organizations, Argris’ (1992) theory of double-loop learning and Weick’s (1976) idea
about loosely or tightly organizations was the backdrop for identifying these elements in the education system from the teacher perspective.

Foucault identified privileged knowledge in the medical field and it made me wonder if there was privileged knowledge in the education field by using the MA education system as an example. To establish whether or not there is privileged knowledge, I looked at the history of adopting CCSS in MA. What I found is there was a two-fold knowledge hierarchy in place – one was established at the Federal level with content experts who developed the CCSS. With only two elementary educators in the group of thirty-three experts, the experts representing the elementary years could be considered underrepresented. This is a problem because elementary educators are preparing the foundation for all future learning and have an expertise that no one else in the education community has. The other privileged knowledge was created through what I am calling the time hierarchy. In the state of MA, the teachers were the last to see the new standards. The teachers in this study were given an informational session through their district but did not have input into the creation of the standards, nor were they asked for their feedback. They were only marginally aware that there was a public comment period and like Linda, felt that it was overwhelming to read and critique the CCSS in the time-frame that was given to do so.

I understand the practical need to have a small group of experts create a curriculum to be used state-wide and then bring others into the process. Now that MA is five years into implementing the standards, who is checking in with teachers and getting their feedback? Particularly concerning to me is what is happening with MCAS. If the teachers in this study are an indication of a wider trend, the education community in MA should be interested in finding out. The teachers in this study were not able to articulate a
path to communicate concerns where their concerns would be taken seriously enough to implement change. Sophie felt her principal would not listen to her (Interview, 2017). If this is true it appears the teachers need better avenues for representation at the policy level. It is possible that a model like the Teacher’s Union Reform Network (TURN) where Unions also represent pedagogical concerns in addition to negotiating hours and wages, that teacher representatives could bring pedagogical concerns to superintendents and others who influence pedagogy at the policy level. (See Mini-study in the Appendix.)

Despite the lack of representation, however, the teachers in this study accepted their position in the timing of the roll-out of the standards as part of how they understand the education system works. Therefore, the privileged knowledge of the policy makers, content experts and the program creators did not bother the teachers in this study. They accepted the status quo and took the adoption of CCSS as de rigueur the way things happen in the state. They were more concerned with how to implement the standards given the increasing number of challenges they face with their student populations. They had already been using the curriculum frameworks and found the changes with CCSS to be minimal. They did express some frustration with the programs (textbooks/written curriculum) they were expected to follow since their professional and tacit knowledge did not always match what the textbook creators expected the teacher to be doing in her classroom. Even when they were involved in helping to select a math program, for example, they felt that they could adapt the program where necessary to meet the needs of the children in their rooms. This was true for all five teachers, except Sophie in ELA. She had more autonomy in math since it was not the focus of her school at the time of the interviews. Her school had established a strict reading and writing protocol from which teachers could not deviate to see if they could bring up the test scores at their school.
The discipline of team learning starts with ‘dialogue’, the capacity of members of the team to suspend assumptions and enter into a genuine ‘thinking together’... allowing the group to discover insights not attainable individually.”  
(Senge, 1990, p.10)
Using Senge’s model for learning organizations and applying it to the MA school system points to the need for more study in the area of bottom-up communication. In this study, I could only analyze the model through the lens of individual teachers and so this is not a full analysis of the MA education system but only a preliminary look at where the learning is happening from the teachers at the bottom of the hierarchy. Senge has five criteria for identifying learning organizations: systems thinking, shared goals, team learning, personal mastery, and examining mental models. ‘Systems thinking’ is the conceptual cornerstone of Senge’s idea. It is important in an organization to see how all the levels and layers intertwine and work together to be able to improve the entire system and involves a long-term view for dynamic change as opposed to short term gains or improvements. ‘Shared goals’ means that the groups share the vision of what they hope to see in the future and are all working toward that goal in their specific disciplines within the organization. ‘Personal mastery’ assumes each person in the organization is working at their full potential and is considered an integral part of the organization for the contributions they make. Each person is expected to be able to work in a team and examine their mental models. “Vision is vocation rather than simply a good idea. People with a high level of personal mastery live in a continual learning mode” (Senge, 1990). ‘Team learning’ is the art of aligning the goals of the group to “suspend assumptions and enter into a genuine ‘thinking together’…while allowing the group to discover insights not attainable individually” (Senge, 1990). ‘Mental models’ are the deeply ingrained assumptions that each of us has based on prior experiences and knowledge. We act from these assumptions about how the world works and are often unconscious of these beliefs and how they affect our behavior. Related to examining mental models is the idea of ‘reflecting in action’ from Argris and Schon’s (1996) work on being a reflective
practitioner – always taking the time to reflect on a situation and to try to have an honest and open mind to see if there are ways to improve a situation or belief.

This study was trying to find out whether, from the teachers’ perspective, they perceived the MA education system as a learning organization where there were shared goals and whole-systems thinking for on-going learning and examining assumptions and encouraging personal mastery at all levels of the organization. In Senge’s (1990) model, a learning organization is an organization “Where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together” (Senge, 1990).

The teachers in this study felt they were aligned in the education goals set out by the State of MA as stated on the DESE website, which would meet one of Senge’s criteria for a learning organization, even though they were not personally involved in creating the statement:

The challenges for the teachers came from the curricular programs designed to align with CCSS, the MCAS testing and subsequent labelling of, in this case, one school marked in popular terms as ‘failing’ to be discussed later in this section on Fullan’s theory of top-down and bottom-up communication in hierarchical organizations. Directly related to Senge’s idea of shared vision is whether the group is tightly coupled or not. If we think about Weick’s tight-coupling, the teachers were tightly coupled to the state’s education goals, CCSS and were aligned with the top-down communication. Where they needed more loose-coupling was in lesson planning and delivery. They had the tacit knowledge needed to take the goals from the top of the hierarchy, use the programs to the extent they made sense and then have the autonomy to adapt to the specific needs of their
“To strengthen the Commonwealth's public education system so that every student is prepared to succeed in postsecondary education, compete in the global economy, and understand the rights and responsibilities of American citizens, and in so doing, to close all proficiency gaps” (doe.mass.edu, 2017).

students in the classroom. The teachers felt trusted to use their knowledge in their classrooms to support student success and simultaneously support the state’s goals. To be able to be trusted to adapt and adjust curriculum assumes a level of personal mastery on the part of the administration in their schools and in the district.

Another criterion of Senge’s model for a learning organization is the concept of personal mastery. Personal mastery assumes that the individuals in the group are working to become experts in their field to unleash their full potential. In the case of the teachers in this study, it became clear with their years of classroom experience they had taken personal initiative and developed a level of personal mastery. They not only utilized theoretical and pedagogical knowledge but had extensive tacit knowledge accumulated over years of practical experience in their field. All five teachers spoke about continued personal development in their content and pedagogical knowledge and wanting to stay current with the latest trends in teaching and learning. They all took initiative to develop skills and knowledge in dealing with a variety of behavior and cognitive differences in their classrooms and like Linda, grew interested in particular areas of child development to better understand the children arriving in their classrooms. In their classrooms, they had some autonomy to adapt programs by adding materials and activities that would enhance student understanding of a concept when the program was lacking.

Teachers shared their professional knowledge with one another in the spirit of team learning - another aspect of Senge’s model of a learning organization. Team learning was evident in the building level of communication among peers and the
administration (principals). The teacher’s used their meeting times to communicate and learn with and from their colleagues. At the building-level the teachers were comfortable sharing learning experiences and challenges they were having in the classroom. By having this time to work together as colleagues, it became clear the teachers were also reflective practitioners and in the spirit of inquiry were able to examine their mental models – assumptions and beliefs about how children learn, about the programs, and about the standards. They were working as a team and learning from one another.

Looking at the next layer of the education hierarchy - from school building to district level- teachers also reported having direct communication with their principals and, when they had them, district coordinators. They experienced the relationships as helpful and collegial and they were treated with respect. Their opinions were regarded as trustworthy and were taken seriously as Mary, Linda, Anne and Claire have indicated. Sophie had mixed experience with trust from her administration over the course of her 30 years in the classroom, has been part of leadership teams in her school and is in communication with her administration at this time.

Communication with the district is where, from the teachers’ perspective in this study, the communication stops. They were not aware of or seemingly concerned about communication further up the education hierarchy. From this perspective, it would seem as if the communication is robust at the bottom of the education hierarchy but from these teachers’ perspective stops at the district level. From Fullan’s model, this would indicate the communication from the bottom-up the education hierarchy is not complete. Team learning seems to be happening at the building and in some cases, the district level when curriculum coordinators are available to the teachers. There would need to be another
study to look at the communication and team learning from the middle to the top of the MA education hierarchy.

Figure 5-3. MA Education Hierarchy

Figure 5-4. Teacher Perspective on Where Communication is Happening
Examining mental models is another of the markers for Senge’s model of a learning organization based on the work of Chris Argris. Examining mental models involves both the ability of the individual to think about their assumption and also involves the ability to communicate with colleagues. In Mary’s math example, she was using a program that wanted her to teach four strategies for multiplication and she worked with her colleague to determine whether her assumption about the children’s ability to use the fourth method effectively was correct. She did not want to assume that her way of thinking was adequate so she checked with the math specialist in her building. Through her ability to talk candidly with her colleague, she was able to check her thinking and received confirmation on her observation. Mary was examining her own mental model and checking her assumptions with a colleague. This was an example of in-building communication and examination of mental models.

Senge (1990) describes systems thinking as the ability to comprehend and address the whole by examining the interrelationships between the parts and to see the whole organization as a dynamic process focused on the long-term view. Having not interviewed anyone other than teachers, there was no way to check what happens after the district coordinator gets feedback from the teachers. It would be impossible to say whether there is ‘systems thinking’ taking place throughout the whole MA education system without interviewing the other people in the education hierarchy, nor is it possible to say whether there is ‘team learning’ taking place from the district and above. Take the MCAS example from the third-grade teachers. What happens if the teachers have a serious concern about how the tests are affecting their ability to teach a robust curriculum in the spring because they have to prep the students for the tests? Who hears their concerns and do they have any power to affect a change? This question leads to an
examination of Senge’s systems learning which includes double-loop learning and also touches upon Fullan’s bottom-up communication. Where in the MA education system do teacher’s concerns become topics of conversation for whole-systems learning? This is important if we take Fullan’s argument seriously that organizations are made up of human beings in close connection with one another and knowledge sharing is part of what he describes as a “living system,” which is key to a successful organization (Fullan, 1994). In the mini-study in chapter 2 an idea was revealed that could be helpful. One possible avenue for including teacher feedback in the system is to use the idea of the Teacher’s Union Reform Network where unions would also represent pedagogical concerns and take teacher concerns ‘up’ the system.

In Senge’s model of system’s thinking, the whole education system would be concerned with the teacher’s experience and solicit conversations and feedback from them. The hope would be that the entire education system is a learning organization utilizing knowledge at every level. In the MCAS example, teacher input would be taken seriously and a dialogic process would ensue to uncover hidden assumptions about the meaning of MCAS scores or their efficacy, for example. System’s thinking corresponds to Fullan’s idea that in order to have a fully functioning system, there needs to be communication from the bottom to the top of the hierarchy. Without interviewing the mid-level administrators, education leaders and policy makers at the top of the MA education hierarchy, it is impossible to tell if the system is set up for communication feedback loops throughout the system.

It would also be interesting to see where in the system there needs tight coupling to a shared vision like the teachers described in their alignment with and use of CCSS and where there needs to be loose-coupling and a trust of professional autonomy within
buildings and in classrooms. Karl Weick (1976) described the phenomenon in schools called ‘loose coupling’ where teachers’ authority and autonomy in the classroom were the notable factor influencing their lesson planning. The teachers in this study expressed a tight-coupling or philosophical alignment with the state’s mission for education even though none of them were involved in creating the vision. They felt they could align with the vision and goals of the state and the CCSS. The teachers were aligned in their belief that they were following CCSS and the programs aligned with CCSS. In their schools, all teachers had adopted common ELA and math programs with the help of their district coordinators and so they could be considered tightly coupled with CCSS and school-wide programs. They needed autonomy or ‘loose-coupling’ with the programs their school adopted, however, when they needed to use their professional knowledge in the classroom to meet the needs of their students while simultaneously meeting the CCSS and the goals of the state. This is where their creativity and autonomy is imperative to support student learning and student success.

**Three Big Questions for Further Research**

There were three big questions that arose from this study that intrigued me more than others as a way to track teacher autonomy and authority throughout the education hierarchy. My premise is that elementary teachers should be able to talk back to policy makers in service of student learning and whole-systems thinking. I will use the MCAS examples for this purpose. One question is about the effect the designation of a “consistently underperforming” school has on the teaching staff since they are the ones who get blamed for the failure. (www.doe.mass.edu, 2018). What are the underlying factors leading to this designation when children are not performing well on the tests? We know from the work of some scholars that poverty is a contributing factor (Amrein-
Another is the question that the third-grade teachers raised about the efficacy of the MCAS in general. If teachers in different schools are using the same ELA programs and strategies, the popular theory of action is that all children should perform at the same level on MCAS. In this study, that was not the case. The third is the question about systems thinking and team learning throughout the entire MA education system. If teachers have a major concern about a state-wide policy, where do they bring the concern for consideration?

The “chronically underperforming” example came from Sophie’s experience. She has thirty years of elementary education experience and keeps current with the latest trends in teaching and learning. In this case, she is concerned about the ELA curriculum because her school has adopted a strict reading and writing protocol that she is expected to follow. The protocol is new this year and is the third one the school is trying in three years. This is also the fifth year her school has been between level three and level four in the MA system. The odd thing is this: For the past five years, I have been in Sophie’s classroom and have witnessed her using the same ELA curricular programs the other teachers in this study have used. She uses the same strategies as her peers in the two other schools in this study including reading groups she determines using the Dibles assessment, writer’s workshops, reading pairs, read-alouds and individual silent reading times every day. Why is it that her students are not doing well on the MCAS? It would be interesting to explore this further in another study to see more precisely which factors are influencing student test scores. Sophie is worried about her students and feels vulnerable as a teacher to be under so much pressure to perform. It also would be interesting to see how the teacher’s anxiety affects her ability to teach. (See Amrein-Beardsley, 2014; Beardsley, 2014; Ravitch, 2010).
The next question I have is about the teachers’ concerns with the MCAS and what it is really telling us as educators. All three third grade teachers in this study were concerned about the effect of the MCAS on the years’ academic schedule. Two of the teachers were expected to use time designated for science or social studies lessons to prepare for MCAS in the spring. The third teacher did little preparation but felt that the tests interrupt the flow of the year and are disruptive to the children. This points to the narrowing of the curriculum which some authors have already written about (Hamilton, Stecher, Marsh, McCombs, Robyn & Russell, 2007). All three teachers reported that the children feel under pressure to perform even though they all tried to de-emphasize the importance of the MCAS so they children would relax. There is anecdotal evidence about test anxiety in children when taking the MCAS as stated by these teachers and in some mainstream examples. It would be interesting to see further studies on this phenomenon. Are the levels of anxiety higher in schools that are already labelled ‘failing’ and how does that effect the students and teachers? If the MA education system is a learning organization, who collects teacher feedback and what action is taken, if any, to examine the assumptions and beliefs held at various levels in the system about the tests?

The third question to explore in future studies is about whole systems learning. The MCAS example might be a good topic to trace through the MA education system and follow the process from the bottom-up. We know that the education leaders in the state have adopted this measure of student learning and it has been administered throughout the state since the era of NCLB. How much feedback from the elementary teachers has been gathered about the unintended effects of the tests in MA classrooms?
What communication systems would need to be in place for team learning to happen and for assumptions (mental models) to be examined about the reasons for testing children every year from grades 3-8? There are other educational models, one in Finland for example, where elementary schools are standardized test-free zones and their students have scored in the top of the PISA tests (given in high school) for several cycles (Sahlberg, 2014). What does that tell us about the efficacy of yearly tests in elementary school?

It seems that there are many aspects of Senge’s model for learning organizations in practice at the bottom of the MA education system as seen through the eyes of the teachers in the study. As stated above, it was beyond the scope of this study to interview those in mid-level (district) or at the state level of the MA system. I assume that all in the MA education system have good intentions about wanting to see that all children succeed in their education to become college and career ready as stated in the MA state’s education mission statement. I also assume that there is communication among different groups in the layers of the system, though it was beyond the scope of this study to interview them, since teachers did know about CCSS and were following the standards.

It is clear from the teachers in this study that they have communication systems in place in their buildings and in their district, depending on budget cuts and availability of staff. In two of the schools, the communication appeared to be effective from the teachers’ perspective. In one of the schools it seemed more challenging for the teacher to communicate her knowledge and have it taken seriously by the administration. From the bottom-up in the hierarchy the teachers in this study exhibited the qualifications for Senge’s criterion of personal mastery, had some autonomy within their classrooms to adapt curriculum to meet the needs of their students and had the trust of their
administration to do so with the exception of Sophie in ELA. Because they had communication systems in place, there was the possibility of team learning and the ability to examine mental models at the building and sometimes the district level. In classrooms is where loose-coupling with programs was possible and important for teachers to have some autonomy – to be able to flex and adapt programs based on their professional knowledge in order to meet the immediate needs of the students in their classrooms.

At the state and federal levels the teachers had aligned themselves with the vision of the state and were tightly coupled with the state’s goals and CCSS even though they were not part of creating the standards. The teachers were using CCSS to plan their year of instruction. The area for question is when the teachers have questions that involve federal or state-wide decisions like the efficacy of the MCAS, for example. Where do they give feedback and does it get taken seriously or is there privileged knowledge at the state and federal level that usurps the elementary classroom teacher’s ability to contribute to whole-systems learning?
# APPENDIX A

## SCHOOLS OF EDUCATION AND COURSE REQUIREMENTS (2015)

<table>
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<th>Schools of Education</th>
<th>Curriculum Content and Instruction; Multiple Literacies</th>
<th>Classroom Management; Self-reflection; Classroom Ethics</th>
<th>Child Development; Social and Psychological</th>
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**Required Curricula for the Top Ten Teacher Preparation Universities as Reported By U.S. News and World Report 2015**

Accountability Chart: National to State to Districts to Classroom Teachers
APPENDIX B
MINI STUDY

Labor-Management Collaboration on a Local Scale: One Perspective

Teachers need to be involved at every level of policy making to influence the curriculum decisions that they must implement. They are the trained professionals who need to be accorded agency and autonomy as deemed appropriate within the bounds of their profession. This can and does happen in some pockets of the education system where communities have engaged in labor management collaboration putting the needs of the students in the foreground and valuing the contributions of a variety of stakeholders including administrators and teaching practitioners. This model is currently developing in several districts in MA. This mini study will look at one person’s perspective on how this is working on the local level in one MA school district to find out how teachers are able to partner with other stakeholders, i.e. principals, superintendents, and union representatives, in the local education system to determine, adopt and implement policy and pedagogy in their classrooms.

Introduction

Teachers are professionals and as part of their profession, autonomy is expected within the bounds of the profession. Autonomy is “the individual’s capacity for self-determination or self-governance” (Dryden, 2016). Currently in the American school system, policy makers make decisions that affect teachers in their classrooms. Labor-management collaboration has engaged multi-stakeholder groups associated with education in working together to create a unified vision for what constitutes successful learning and how individual teachers in their classrooms can best affect student
understanding. This study will attempt to find out how teacher input is being utilized using one local school district in the Northeast as an example.

Labor-management collaboration intends to include teachers in the decision-making process along with other stakeholders. This relationship would allow teachers to assert their authority in adopting policy that affects them in their classrooms. This study questions how much influence teachers presently have in a multi-stakeholder group and whether they are treated as equal partners for their expertise in education. I wonder if teachers are able to be active participants in the creation, adoption and implementation of programs or policies that affect them in their classrooms.

Research Questions

The research question explores teacher autonomy in public elementary classrooms. There is a model in use where teachers are active participants in the creation, adoption and implementation of programs and policies that affect them in their classrooms. What are the successes and what are the challenges in realizing teacher autonomy within this framework?

This mini research project studied the local implementation of labor-management collaboration to see how the system is able to access teacher expertise. By interviewing one former teacher, now union representative in a small town in the northeast, questions were asked to clarify the status of teacher practitioners within labor management collaboration.

Theoretical Framework

The literature aligns elementary teaching with the definition of a profession. One component of a profession was to have “autonomy bounded by responsibility” (Moore, 1970). It became clear in looking at the most recent education reforms, that practicing
teachers were not always fully represented except through their unions, which do not usually have pedagogy as their focus (US Department of Education, Labor Management Collaboration, 2011). On the other hand, elementary educators are trained professionals who, in Giroux’s terms, are ‘transformative intellectuals’ and are “dedicated to the values of the intellect and the enhancement of the critical powers of the young” (Giroux, p.125). This lack of input seemed to show a gap in how and when active practitioners with their expertise and training get involved in creation, adoption and implementation of programs or policies that affect them in their classrooms.

Research Design and Methods

Approach to Data Collection. I approached this mini-project as a dialogue with a colleague who has taught in the public-school system for twenty-three years and had in the past expressed frustration with education reform in that changes were happening so quickly that teachers adopted a ‘compliance’ attitude. The feeling of frustration is captured in the expression she used, “What now?” Karen (a pseudonym) explained that often a principal would explain a new approach or curriculum without teachers knowing in advance, received no training in how to implement it, and were expected to adopt this new strategy without question. As a result of this frustration, she decided to run for president of her local union. I wanted to find out how she thought the unions could help with this problem.

Population of Interest

In this mini project, the population is one person, Karen, who had the direct experience as a public elementary classroom teacher for twenty-three years with reforms coming into the school having been adopted by policy makers or administrators without teachers’ prior knowledge or input. Her experience with education reform is one
representation of practitioner experience that could echo the experience of others in elementary education. In her experience as an educator, her perception is that many of her colleagues share her experience of frustration.

Setting

Karen now has her own office in her town of residence and we met there for her interview. The office is in a public office building where other town officials work. The building is near the town hall, made of brick, and has granite steps and large windows facing the bustling downtown. The entry foyer has cathedral ceilings with very little light—perhaps because it is a dark, snowy day. There is a wide stairway as one enters the building with a sign that says “No public bathroom” at the base of the staircase. On either side of the main staircase are smaller staircases going down one level. There is a directory but Karen’s name is not on it, nor is her department name and I am not sure where to go. After pausing and trying to decide if I should go up or down the stairs, Karen appears at the top of the stairs. She is expecting me and came to see if I was there.

Data Gathering

Karen and I have spoken prior to this meeting to talk about elementary educators’ position in the field of education. We had already established a relationship through our common interest in what happens when policies are handed down to teachers without their prior involvement, knowledge or training yet they are expected to implement these curricula or policies in their classrooms.

Following the practice of qualitative interviewing, I positioned myself for this project within the frame of ethnographic, feminist inquiry in a conversational style (Rubin and Rubin, 1995). We are both elementary educators, but from very different backgrounds. This interview was also partly collaboration. I needed to understand more
about how the public school system works to put our conversation in context (Ulichny and Schoener, 1993, Heshusius, 1994). The interview/conversation took one hour.

Sampling Decisions

Karen is a team of one, who works to collaborate across hierarchical structures in the current education setting in her district. She is an educator who now represents her teacher colleagues in collaboration with superintendents and principals on the decision-making level. When she began this job, she noted there was already language in the teacher contract for labor-management collaboration, which she embraced as a core tenent of her work in this position. I was curious about how her prior experience led her to take up this role, how she is working across sectors and with the hierarchical structure of the system, what her hopes and dreams are for this position, and what are the challenges she faces.

Participant Collaboration

Karen agreed to be interviewed for this project to help me document a possible way to include teachers more pro-actively in decision-making within the existing educational system. She stated that she hopes her work will be successful so that teachers and administrators can become co-leaders who work more closely together to make decisions that affect student learning.

Data Analysis

I structured the interview/conversation to both get information about the public school system and to understand Karen’s role in the system now that she has left the elementary classroom and is the full time president of her local union working with the concept of labor-management collaboration. I had prepared a series of questions and others arose spontaneously as we spoke. I recorded and transcribed the interview, then
coded the transcription line by line using the grounded theory coding approach as described by Strauss and Corbin (2008). In pure grounded theory, one goes in without pre-conceived notions about what they will find. I used the coding techniques of grounded theory to analyze the information, but was aware that I had already formed some conceptions about this situation. I had some knowledge and prior experience before the interview and had an idea of what Karen might say. I used her words to analyze the content of our discussion. From the line-by-line coding, I determined categories that revealed the major themes as they emerged from the interview. Once I was immersed in the coding, it was easy to stay open to finding nuances and surprises. Her words spoke for themselves. After the initial interview, I had some gaps in my facts and through email asked three clarifying questions about names of organizations and composition of committees to be sure I had accurate information. Karen responded quickly with the answers. Karen also reviewed the findings to ensure accuracy of factual information.
Appendix Table 1-1. Categories of Teacher Frustration

<table>
<thead>
<tr>
<th>Lack of Communication</th>
<th>Lack of Decision Making Power</th>
<th>Lack of Representation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers did not understand education reform; no one could explain it</td>
<td>Teachers not included in decisions that affect them in the classroom; teacher expertise not valued</td>
<td>Weak union representation</td>
</tr>
<tr>
<td>No transparency on how decisions are made</td>
<td>Teachers take on an attitude of ‘grudging compliance’</td>
<td>No advocacy for pedagogical concerns</td>
</tr>
<tr>
<td>No broad discussion of issues that include a variety of viewpoints</td>
<td>Teachers are half-hearted in their work when not included in decisions that affect them</td>
<td>Unions and administrators are adversaries</td>
</tr>
<tr>
<td></td>
<td>Teachers are exasperated by the swift changes in the system</td>
<td>Unions need to remain relevant to teachers</td>
</tr>
</tbody>
</table>

Natural History of the Study

My work with public school teachers prompted me to begin asking the questions about teacher autonomy. For the past three and a half years, teachers I work with have shared frustration about programs and curricular decisions being made at the state or district level, which they are expected to implement in their classrooms without prior knowledge, training, or the ability to question the decision. The literature defines what constitutes a profession and elementary educators meet the qualifications that meet that definition. One of the gaps I discovered was in the application of the criterion ‘autonomy’. In the definition of a profession, “autonomy bounded by responsibility” (Moore, 1970) is one of the key components granted to a professional working in their
field of expertise. In speaking with twenty teachers in ten different schools, each of them at one time or another revealed their frustration with the ‘top down’ nature of the current education system and how they are expected to implement programs and curricula in their classrooms without any input. This made me wonder if there was a way this could change using the current structures within the system so that teachers had more input at the adoption stage of new programs and curricula.

Having known Karen for several years prior to this study, and having had many conversations with her, it was very fortuitous that she had the same question I had about teacher input and she saw a way to make it happen. She wanted to find a way to get teachers involved in the decisions that affect them in their classrooms by putting them at the table with administrators and her, as the union representative for her district. She believes that the unions already exist to represent teachers on wage and workload issues, why not have them also represent teachers’ perspectives on pedagogical issues? Because of our ongoing discussion about teacher issues, this seemed like a natural next step in my exploration of teacher autonomy – to begin to consider one possible scenario for more teacher input at the local level.

Findings

This is one woman’s story about her frustration in an elementary education setting in the northeast. Karen (a pseudonym) describes the genesis of her exasperation as a veteran teacher of twenty-three years and content expert and what led her to change her position so that she could implement the changes she would like to see in her local district. As she describes it, there is a top-down mentality that ignores the knowledge and expertise of those who work closest to the students and who are the ones ultimately responsible for affecting student learning. Moreover, she describes the level of grudging
compliance for policy and programming that develops in teachers when they are told to implement changes for which they had no input or training. She described the rapid changes coming through education reform. “We were exasperated and did not understand how we were supposed to deal with all these changes. No one talked us through it. No one, not even the principal really understood it” (Interview, February 2016). She describes the wish for more autonomy – or perhaps agency - adopting policy and programming that affects the teachers’ autonomy in the classroom. “I was never informed about how decisions were made as a teacher and I wanted to know. There was no transparency” (Interview, February 2016).

Karen explained the weak representation of the union representative in their district, superintendent churn, cronyism and lack of vertical and horizontal alignment as major parts of the problem in the most recent iterations of the education reform movement. Further she explained that the position of the unions has typically been one of a power struggle with the superintendents meanwhile most administrators are out of touch with the teachers’ needs. Karen further described her personal wish as a teacher for more transparency, communication and inclusion in decisions that affected her in her classroom. She wished for more teacher autonomy within the system. As Karen explained, “I consider myself a content expert having taught every grade from 6-12 in both social studies and English language arts for a total of twenty-three years. No one ever asked for my input, opinion, or expert knowledge” (Interview, February 2016).

In analyzing the data from Karen’s interview, three major themes evolved from the coding: Inclusion, Alignment and Initiatives. Teachers are seeking more meaningful inclusion in decision-making that affects them in their classrooms. Teachers would appreciate alignment all the way through the system with more nuanced top-down and
bottom-up communication. Teachers are requesting new *initiatives* in relationships based on mutual respect between administrators, unions and practitioners.

Because of her dissatisfaction with the way the education system worked in her district, Karen made the choice to run for president of her local union running on the platform of transparency, communication, and advocacy for teachers. She won by a landslide and has since bargained for full-time release to be able to more fully represent teachers in all aspects of their jobs, including making pedagogical decisions. She has been in this position for slightly over a year, and has received full-time release since November 2015. She has already made changes in the way the system works in the areas of inclusion, alignment and initiative. Her first act as a full-time president was to go on a listening tour to hear the concerns of all the teachers in her district. She found that they did share her concerns about workload and implementation of programs and policies when they were neither asked for their input nor trained to implement the programs.

**Inclusion**

Karen has been working toward having teachers included in the decision-making process in her district. She believes in using teacher knowledge and expertise to help facilitate change. She believes in transparency and open communication and has prepared a weekly newsletter to the teachers to inform them of the issues she is dealing with on their behalf. Her ultimate goal is getting teacher autonomy in the workplace. “We need to listen to and respect what teachers have to say” (Interview, 2/2016). To that end she has created opportunities for teachers to work as equal partners with principals, administrators, and the superintendent on issues by placing student learning as the primary focus in a labor-management committee. She and the superintendent have created joint labor-management committees. Karen and the superintendent work on the
agenda together and half of the committee is administrators and Karen brings the other half - teachers – to the table.

In addition to including teachers on decision-making committees, the labor-management committee is partnering with outside groups like the Rennie Center in Boston that is linked to the Massachusetts Teacher Union (MTA), the American Federation of Teachers (AFT), Massachusetts Association of School Superintendents (MASS), and the Massachusetts Association of School Committees (MASC) in order to know what each of these groups is concerned with and to bring alignment between the goals of these groups.

On example of having teachers work on the problem in tandem with district leaders, Karen shares as follows: In one school the pre-school teachers were having compliance issues and the district special education director was not really helping them. Karen was asked to come to a meeting to help sort out the problem. She had the teachers notify the SPED director in advance with a written agenda. The teachers were “very clear on the issues, very articulate. I was so proud of them. They were so smart. We put the problem at the center and found solutions together. I was able to help them all see what needed to be done” The result was that the “teachers were ecstatic and the SPED director called to thank me after the meeting” (Interview, 2/2016).

Alignment

Often the teachers argue that there is very little alignment from the top-down with what is actually happening or needs to happen in classrooms. Karen is working to change that. Joining with the Rennie Center is one of the efforts being made to align the goals of diverse stakeholders from the state to the districts. Karen is working to help align the state mandates with local districts by attending meetings and bringing the information
back to her district. She is working with the labor-management committee in her district to tackle issues together. To align the district in common goals helps to eliminate fragmentation between schools. One result of this work together is the members of the labor management committee have developed a five-year district improvement plan to improve student learning. Because the stakeholders are working more closely together, there is a level of trust that is being built. Karen firmly believes “If we all put the children first, then education will shift” (Interview, 2/2016).

Conversely, the committee identified that while they are working toward common goals in the district, each school is also unique and has specific needs that building level input makes crucial. One of the problems they solved was getting more targeted professional development (PD) in their buildings. Individual schools, with teacher input, now local source their PD using their own experts – teachers teaching teachers.

A situation arose where teacher’s input was critical to developing data systems for their schools. The Collaborative (another partner in the collaboration) came to do a presentation on Dashboard data use. Normally the superintendent would decide what data was needed. Instead, with teachers present, they were able to clearly describe what data would be useful to them and so the system was designed to fit their needs exactly. With teachers included in the information gathering stage, the system was specifically aligned to fit their needs.

Initiative

Karen wants to see the unions remain relevant and to do that requires taking initiative and using the system’s structures in new ways. Karen sees part of her role as having the power to facilitate collaboration among a variety of stakeholders. “I am on the same level as the school committee and have a different kind of power now…power in
the sense of facilitation and ability to make changes or represent the teachers in the contracts” (Interview, February 2016). Upon a close reading of the contracts she realized the teacher contracts already had language to use labor-management collaboration and now Karen is committed to bringing that into reality. She is using the techniques in “Getting to Yes” written by Harvard Law professors. Whatever issue the committee tackles, they come to consensus and move forward together. Superintendents, principals and teachers make presentations together, bring the decisions back to the schools and stand together in unity before their faculties. This show of unity also helps build teacher confidence in the decision-making process.

Conclusions

Commenting on her position in the labor management collaboration movement, Karen connects her work to the Teacher’s Union Reform Network (TURN). She realizes that TURN is not new it just has not been utilized except in small pockets like Greece, NY and the ABC Unified School District in California. Karen thinks it is re-emerging with the potential to improve the education system. “Working this way is new. It has not been done before. Now we are learning how to work together. We need to cultivate this way of collaborating more and more. This is a new mindset” (Interview, 2/2016).

Karen sees that there are big learning curves to be mastered. The teachers are learning new skills and being involved at this level requires extra time. So far teachers are excited to participate in this way and get a stipend for their extra work. Karen also sees threats to the unions as they are currently formed. In her opinion the Friedrich’s case in CA is a test case for how relevant unions will remain in the future and she is working hard to make her work pertinent to the teachers in her district. She sees big tasks ahead with her work and tries not to get overwhelmed by the enormity of what labor
management collaboration could possibly lead to in her state– how the work in her
district could be used as an example for other districts if it is successful in bringing
teacher practitioners to the decision-making table.

This example of labor-management collaboration could serve as a model for other
school districts. It seems promising and addresses the concerns of teachers in elementary
classrooms. It is clear from the data that teachers are frustrated with the lack of input to
policies and programs that they must implement in their classrooms. It is also clear from
the data that there is a way to utilize the current unions in a way that could transform the
current disconnect between administrators, unions, and teachers.

Labor-management collaboration is in its incubation stage and would need further inquiry
to see if it could be scaled up to transform the way the American education system
currently works. One would have to interview the other stakeholders in the model studied
to see if they share Karen’s enthusiasm and optimism. Is this group symbolic and could
they be pointing to a new way forward? Labor management collaboration provides a
structure for working together, which could be copied by other districts if it is successful.
The structure is one piece of the re-organization of the system but would also need the
people involved to take initiative. Karen and her cohort – the superintendent, other
administrators and teachers – have taken the steps to work together. Other groups would
need to be willing to work in this collaborative style, which is not necessarily a given at
this moment in time. Superintendents, policy makers and other stakeholders would have
to share their decision-making power with a new group – the teachers. In order for labor-
management collaboration to take hold and transform the education system as Karen
hopes, it will take the commitment and idealism of many people at different ranks in the
system willing to make the changes.
APPENDIX C

ACCOUNTABILITY AND RECOGNITION BY PEERS

States/Districts

National Board of Professional Teacher Standards (NBPTS)

InTASC

Schools of Education

Teachers

CAEP (NCATE) Evaluates in collaboration with NASDTE, CCSO, NEA, NSBA, AACTE

NAE Evaluates
APPENDIX D

COMMON CORE & MA CURRICULUM STANDARDS USED
BY TEACHERS IN THE STUDY

First Grade Common Core Math Standards - for Anne’s and Claire’s math examples

Represent and solve problems involving addition and subtraction.

CCSS.Math.Content.1.OA.A.1
Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.¹

CCSS.Math.Content.1.OA.A.2
Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Understand and apply properties of operations and the relationship between addition and subtraction.

CCSS.Math.Content.1.OA.B.3
Apply properties of operations as strategies to add and subtract.² Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)

CCSS.Math.Content.1.OA.B.4
Understand subtraction as an unknown-addend problem. For example, subtract 10 - 8 by finding the number that makes 10 when added to 8.

Add and subtract within 20.

CCSS.Math.Content.1.OA.C.5
Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).

CCSS.Math.Content.1.OA.C.6
Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 - 4 = 13 - 3 - 1 = 10 - 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 - 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).

Work with addition and subtraction equations.

CCSS.Math.Content.1.OA.D.7
Understand the meaning of the equal sign, and determine if equations involving addition
and subtraction are true or false. For example, which of the following equations are true and which are false? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.

CCSS.Math.Content.1.OA.D.8

Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $5 = _ - 3$, $6 + 6 = _$.

MA State Curriculum Framework –Third Grade Life Science for Mary’s example.

Grade 3 Science Curriculum Frameworks

Human Interactions

In grade 3, students develop and sharpen their skills at obtaining, recording and charting, and analyzing data in order to study their environment. They use these practices to study the interactions between humans and earth systems, humans and the environment, and humans and the designed world. They learn that these entities not only interact but influence behaviors, reactions, and traits of organisms. Grade 3 students analyze weather patterns and consider humans’ influence and opportunity to impact weather-related events. In life-science they study the interactions between and influence of the environment and human traits and characteristics. They use the engineering design process to identify a problem and design solutions that enhance humans’ interactions with their surroundings and to meet their needs. Students consider the interactions and consequent reactions between objects and forces, including forces that are balanced or not. Students reason and provide evidence to support arguments for the influence of humans on nature and nature on human experience.

LS3. Heredity: Inheritance and Variation of Traits

3-1. Provide evidence, including through the analysis of data, that plants and animals have traits inherited from parents and that variation of these traits exist in a group of similar organisms.

Clarification Statements:

- Examples of inherited traits that vary can include the color of fur, shape of leaves, length of legs, and size of flowers.
- Focus should be on non-human examples.

State Assessment Boundary:

- Genetic mechanisms of inheritance or prediction of traits are not expected in state assessment.

3- LS3-2. Distinguish between inherited characteristics and those characteristics that result from a direct interaction with the environment. Give examples of characteristics of living organisms that are influenced by both inheritance and the environment.

Clarification Statements:
Examples of the environment affecting a characteristic could include normally tall plants stunted because they were grown with insufficient water or light, a lizard missing a tail due to a predator, and a pet dog becoming overweight because it is given too much food and little exercise.

Focus should be on non-human examples.

**Third Grade Common Core Literacy Standards for Sophie’s and Mary’s example.**

CCSS.ELA-Literacy.RL.3.1
Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

CCSS.ELA-Literacy.RL.3.2
Recount stories, including fables, folktales, and myths from diverse cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in the text.

CCSS.ELA-Literacy.RL.3.3
Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events

**Craft and Structure:**

CCSS.ELA-Literacy.RL.3.4
Determine the meaning of words and phrases as they are used in a text, distinguishing literal from nonliteral language.

CCSS.ELA-Literacy.RL.3.5
Refer to parts of stories, dramas, and poems when writing or speaking about a text, using terms such as chapter, scene, and stanza; describe how each successive part builds on earlier sections.

CCSS.ELA-Literacy.RL.3.6
Distinguish their own point of view from that of the narrator or those of the characters.

**Integration of Knowledge and Ideas:**

CCSS.ELA-Literacy.RL.3.7
Explain how specific aspects of a text's illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of a character or setting)

CCSS.ELA-Literacy.RL.3.8
(RL.3.8 not applicable to literature)

CCSS.ELA-Literacy.RL.3.9
Compare and contrast the themes, settings, and plots of stories written by the same author about the same or similar characters (e.g., in books from a series)

**Range of Reading and Level of Text Complexity:**

CCSS.ELA-Literacy.RL.3.10
By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 2-3 text complexity band independently and proficiently.

Kindergarten-Grade 12

Text Types and Purposes: Writing
CCSS.ELA-Literacy.W.3.1
Write opinion pieces on topics or texts, supporting a point of view with reasons.
CCSS.ELA-Literacy.W.3.1.a
Introduce the topic or text they are writing about, state an opinion, and create an organizational structure that lists reasons.
CCSS.ELA-Literacy.W.3.1.b
Provide reasons that support the opinion.
CCSS.ELA-Literacy.W.3.1.c
Use linking words and phrases (e.g., because, therefore, since, for example) to connect opinion and reasons.
CCSS.ELA-Literacy.W.3.1.d
Provide a concluding statement or section.
CCSS.ELA-Literacy.W.3.2
Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
CCSS.ELA-Literacy.W.3.2.a
Introduce a topic and group related information together; include illustrations when useful to aiding comprehension.
CCSS.ELA-Literacy.W.3.2.b
Develop the topic with facts, definitions, and details.
CCSS.ELA-Literacy.W.3.2.c
Use linking words and phrases (e.g., also, another, and, more, but) to connect ideas within categories of information.
CCSS.ELA-Literacy.W.3.2.d
Provide a concluding statement or section.
CCSS.ELA-Literacy.W.3.3
Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.
CCSS.ELA-Literacy.W.3.3.a
Establish a situation and introduce a narrator and/or characters; organize an event sequence that unfolds naturally.
CCSS.ELA-Literacy.W.3.3.b
Use dialogue and descriptions of actions, thoughts, and feelings to develop experiences and events or show the response of characters to situations.
CCSS.ELA-Literacy.W.3.3.c
Use temporal words and phrases to signal event order.
CCSS.ELA-Literacy.W.3.3.d
Provide a sense of closure.

Production and Distribution of Writing:
CCSS.ELA-Literacy.W.3.4
With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose. (Grade-specific expectations for writing types are defined in standards 1-3 above.)
CCSS.ELA-Literacy.W.3.5
With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing. (Editing for conventions should demonstrate command of Language standards 1-3 up to and including grade 3 here.)
CCSS.ELA-Literacy.W.3.6
With guidance and support from adults, use technology to produce and publish writing (using keyboarding skills) as well as to interact and collaborate with others.

Research to Build and Present Knowledge:
CCSS.ELA-Literacy.W.3.7
Conduct short research projects that build knowledge about a topic.
CCSS.ELA-Literacy.W.3.8
Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.
CCSS.ELA-Literacy.W.3.9
(W.3.9 begins in grade 4)

Range of Writing:
CCSS.ELA-Literacy.W.3.10
Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

Conventions of Standard English: English Language Arts
CCSS.ELA-Literacy.L.3.1
Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
CCSS.ELA-Literacy.L.3.1.a
Explain the function of nouns, pronouns, verbs, adjectives, and adverbs in general and their functions in particular sentences.
CCSS.ELA-Literacy.L.3.1.b
Form and use regular and irregular plural nouns.
CCSS.ELA-Literacy.L.3.1.c
Use abstract nouns (e.g., childhood).
CCSS.ELA-Literacy.L.3.1.d
Form and use regular and irregular verbs.
CCSS.ELA-Literacy.L.3.1.e
Form and use the simple (e.g., I walked; I walk; I will walk) verb tenses.
CCSS.ELA-Literacy.L.3.1.f
Ensure subject-verb and pronoun-antecedent agreement.*
CCSS.ELA-Literacy.L.3.1.g
Form and use comparative and superlative adjectives and adverbs, and choose between them depending on what is to be modified.
CCSS.ELA-Literacy.L.3.1.h
Use coordinating and subordinating conjunctions.
CCSS.ELA-Literacy.L.3.1.i
Produce simple, compound, and complex sentences.
CCSS.ELA-Literacy.L.3.2
Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
CCSS.ELA-Literacy.L.3.2.a
Capitalize appropriate words in titles.
CCSS.ELA-Literacy.L.3.2.b
Use commas in addresses.
CCSS.ELA-Literacy.L.3.2.c
Use commas and quotation marks in dialogue.

CCSS.ELA-Literacy.L.3.2.d
Form and use possessives.

CCSS.ELA-Literacy.L.3.2.e
Use conventional spelling for high-frequency and other studied words and for adding suffixes to base words (e.g., sitting, smiled, cries, happiness).

CCSS.ELA-Literacy.L.3.2.f
Use spelling patterns and generalizations (e.g., word families, position-based spellings, syllable patterns, ending rules, meaningful word parts) in writing words.

CCSS.ELA-Literacy.L.3.2.g
Consult reference materials, including beginning dictionaries, as needed to check and correct spellings.

Knowledge of Language:

CCSS.ELA-Literacy.L.3.3
Use knowledge of language and its conventions when writing, speaking, reading, or listening.

CCSS.ELA-Literacy.L.3.3.a
Choose words and phrases for effect.*

CCSS.ELA-Literacy.L.3.3.b
Recognize and observe differences between the conventions of spoken and written standard English.

Vocabulary Acquisition and Use:

CCSS.ELA-Literacy.L.3.4
Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies.

CCSS.ELA-Literacy.L.3.4.a
Use sentence-level context as a clue to the meaning of a word or phrase.

CCSS.ELA-Literacy.L.3.4.b
Determine the meaning of the new word formed when a known affix is added to a known word (e.g., agreeable/disagreeable, comfortable/uncomfortable, care/careless, heat/preheat).

CCSS.ELA-Literacy.L.3.4.c
Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., company, companion).

CCSS.ELA-Literacy.L.3.4.d
Use glossaries or beginning dictionaries, both print and digital, to determine or clarify the precise meaning of key words and phrases.

CCSS.ELA-Literacy.L.3.5
Demonstrate understanding of figurative language, word relationships and nuances in word meanings.

CCSS.ELA-Literacy.L.3.5.a
Distinguish the literal and nonliteral meanings of words and phrases in context (e.g., take steps).

CCSS.ELA-Literacy.L.3.5.b
Identify real-life connections between words and their use (e.g., describe people who are friendly or helpful).
CCSS.ELA-Literacy.L.3.5.c
Distinguish shades of meaning among related words that describe states of mind or degrees of certainty (e.g., knew, believed, suspected, heard, wondered).

CCSS.ELA-Literacy.L.3.6
Acquire and use accurately grade-appropriate conversational, general academic, and domain-specific words and phrases, including those that signal spatial and temporal relationships (e.g., After dinner that night we went looking for them).

Third Grade Social Studies Frameworks
MA Curriculum Frameworks for Third Grade Social Studies – Linda’s example.

Grade 3 Concepts and Skills
Students should be able to:
Apply concepts and skills learned in previous grades.

HISTORY AND GEOGRAPHY

1. Explain the meaning of time periods or dates in historical narratives (decade, century, 1600s, 1776) and use them correctly in speaking and writing. (H)

2. Observe visual sources such as historic paintings, photographs, or illustrations that accompany historical narratives, and describe details such as clothing, setting, or action. (H)

3. Observe and describe local or regional historic artifacts and sites and generate questions about their function, construction, and significance. (H)

4. Use cardinal directions, map scales, legends, and titles to locate places on contemporary maps of New England, Massachusetts, and the local community. (G)

5. Describe the difference between a contemporary map of their city or town and the map of their city or town in the 18th, 19th, or early 20th century. (H, G)

CIVICS AND GOVERNMENT

6. Give examples of why it is necessary for communities to have governments (e.g., governments provide order and protect rights). (C)

7. Give examples of the different ways people in a community can influence their local government (e.g., by voting, running for office, or participating in meetings). (C)

ECONOMICS

8. Define what a tax is and the purposes for taxes, and with the help of their teachers and parents, give examples of different kinds of taxes (e.g., property, sales, or income taxes). (E)

Massachusetts History and Social Science Curriculum Framework
August 2003
Grade 3 Concepts and Skills (continued)

9. Define specialization in jobs and businesses and give examples of specialized businesses in the community. (E)

10. Define barter, give examples of bartering (e.g., trading baseball cards with each other), and explain how money makes it easier for people to get things they want. (E)
   Barter is the direct exchange of goods and services between people without using money. Trade is the exchange of goods and services between people.

Grade 3 Learning Standards

Building on knowledge from previous years, students should be able to:

NEW ENGLAND AND MASSACHUSETTS
3.1 On a map of the United States, locate the New England states (Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, Maine) and the Atlantic Ocean. On a map of Massachusetts, locate major cities and towns, Cape Ann, Cape Cod, the Connecticut River, the Merrimack River, the Charles River, and the Berkshire Hills. (G)

3.2 Identify the Wampanoags and their leaders at the time the Pilgrims arrived, and describe their way of life. (H, G)

3.3 Identify who the Pilgrims were and explain why they left Europe to seek religious freedom; describe their journey and their early years in the Plymouth Colony. (H, G, C, E)
   A. the purpose of the Mayflower Compact and its principles of self-government
   B. challenges in settling in America
   C. events leading to the first Thanksgiving

3.4 Explain how the Puritans and Pilgrims differed and identify early leaders in Massachusetts, such as John Winthrop; describe the daily life, education, and work of the Puritans in the Massachusetts Bay Colony. (H, E, C)

3.5 Explain important political, economic, and military developments leading to and during the American Revolution. (H, C)
   A. the growth of towns and cities in Massachusetts before the Revolution
   B. the Boston Tea Party
   C. the beginning of the Revolution at Lexington and Concord
   D. the Battle of Bunker Hill
   E. Revolutionary leaders such as John Adams, Samuel Adams, John Hancock, and Paul Revere

Grade 3 Learning Standards (continued)
3.6 Identify the Declaration of Independence, the Constitution, and the Bill of Rights as key American documents. (C)

3.7 After reading a biography of a person from Massachusetts in one of the following categories, summarize the person’s life and achievements. (H, C)

A. science and technology (e.g., Alexander Graham Bell, Nathaniel Bowditch, Robert Goddard, John Hayes Hammond, Edwin Land, Samuel Morse)

B. the arts (e.g., Henry Adams, Louisa May Alcott, John Singleton Copley, Emily Dickinson, Ralph Waldo Emerson, Theodore Geisel, Nathaniel Hawthorne, Oliver Wendell Holmes, Frederick Law Olmsted, Norman Rockwell, Henry David Thoreau, Phyllis Wheatley)

C. business (e.g., William Filene, Amos Lawrence, Francis Cabot Lowell, An Wang);

D. education, journalism, and health (e.g., Clara Barton, Horace Mann, William Monroe Trotter)

E. political leadership (e.g., John Adams, John Quincy Adams, Susan B. Anthony, Edward Brooke, Benjamin Franklin, John F. Kennedy, Paul Revere)

CITIES AND TOWNS OF MASSACHUSETTS

3.8 On a map of Massachusetts, locate the class’s home town or city and its local geographic features and landmarks. (G)

3.9 Identify historic buildings, monuments, or sites in the area and explain their purpose and significance. (H, C)

3.10 Explain the meaning of the stars and stripes in the American flag, and describe official procedures for the care and display of the flag. (C)

3.11 Identify when the students’ own town or city was founded, and describe the different groups of people who have settled in the community since its founding. (H, G)

3.12 Explain how objects or artifacts of everyday life in the past tell us how ordinary people lived and how everyday life has changed. Draw on the services of the local historical society and local museums as needed. (H, G, E)

3.13 Give examples of goods and services provided by their local businesses and industries. (E)

3.14 Give examples of tax-supported facilities and services provided by their local government, such as public schools, parks, recreational facilities, police and fire departments, and libraries. (E)
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