Assessment for Learning:

Marion Anastasia

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ASSESSMENT FOR LEARNING:
TRANSFORMATION OF TEACHERS’ PRACTICES ENACTED IN CLASSROOMS
AND TEACHER LEARNING COMMUNITIES

A Dissertation
by
Marion Anastasia

to
The Faculty of the Graduate College
of
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for the Degree of Doctor of Education
Specializing in Educational Leadership and Policy Studies

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ABSTRACT

Although formative assessment is fundamental to educational theory and practices, it is a widely misunderstood term for most educators. This qualitative study defines formative assessment as short-cycle assessments in which teachers adapt their instruction to meet the learners’ immediate needs.

This study focused on the transformation of teachers’ practices and their perspectives of the critical pedagogical principles necessary to enact The Keeping Learning on Track Program® (KLT™) in their classrooms and in teacher learning communities.

The participants in this study included 21 formally trained KLT teachers at the St. Johnsbury School. Over a one year period, I observed in classrooms, attended all KLT teacher learning community (TLC) sessions, collected field notes, attended KLT trainings and presentations, and conducted individual and focus group interviews.

The primary area of transformation included: the regulation of learning, beliefs and attitudes, accountability, shared leadership, systemic supports, motivation, classroom culture, and teacher practices.
ACKNOWLEDGEMENTS

Professional acknowledgements go to: my advisor, Dr. Raymond Proulx; my mentor and critical friend, Beth Cobb; the KLT teachers at the St. Johnsbury School; my colleagues and friends at the Vermont Department of Education; and to Dr. Dylan Wiliam and The Educational Testing Service (ETS) Research and Development Staff.

Beth Cobb, Dr. Dylan Wiliam, and Marion Anastasia

at the Educational Testing Center, Princeton, NJ: October 9, 2008
DEDICATION

My Family

This work is dedicated to the unconditional patience and support of my husband, Scott, and our four children: Lindsay, Katherine, Celia, and Shaun. They have provided continuous encouragement without complaint and with an independence that enabled me to conduct my work. Also to my sisters, Vivian and Nancijo, who have taken on extended family responsibilities so that I could continue with my work.
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CHAPTER ONE: INTRODUCTION

Formative assessment has been fundamental to educational practices and theory since the late 1960’s. In addition, the extant literature and research on formative assessment has been an increasingly attractive trend to researchers over the past decade. Given this curiosity, the gradual expansion, evolution, clarity of practices, policies, and best practices are changing (Pryor & Crossouard, 2007; The Assessment Reform Group, 2002). This qualitative study is specific to the changes in teachers’ practices and pedagogical principles as they enact formative assessment in their classrooms and teacher learning communities (TLCs) at the St. Johnsbury School.

For the purposes of this research, pedagogy is defined as: “assisting students through interactions and activity in the ongoing academic and social events of the classroom” (Crede, 2008). Given this, pedagogical principles are profound concepts pertaining to the beliefs, culture, strategies, and behaviors that drive the interactions for students and adults as they interact in the classrooms and in TLCs.

Why a qualitative study about formative assessment? Solid evidence shows that formative assessment is an essential component of classroom work and that it can raise standards of achievement (Black & Wiliam, 1998). Furthermore, “There is increasing evidence that the quality of the teacher is one of the most important determinants of educational outcomes for students, if not the most” (Lee & Wiliam, 2003). Because research states that formative assessment raises student achievement when coupled with teacher professional development in content and process elements (Wilson & Berne, 1999), it is imperative that teachers have the systemic support and commitment from the school administration. Given this evidence for success, I address the theoretical
foundations for formative assessment, associated teacher development, student attainment, and the systems of support necessary to implement the program at the St. Johnsbury School.

What is Formative Assessment?

There is confusion among educators about the meaning of formative assessment. This uncertainty stems from multiple and conflicting understandings, varying views and definitions, and the variation of formative assessment practices in schools (Chappuis & Chappuis, 2008). Because there is so much interest given to formative assessment of lately, most educators have formed their own perceptions of what it is. Varying perceptions are not good enough when it comes to formative assessment. A partial or misunderstanding of formative assessment will not allow the full benefit of this process. It is important, at this moment in the introduction, that readers obtain clarity and a succinct understanding of formative assessment through the viewpoints of several theorists before they read on.

Since there is no single officially sanctified and universally accepted definition of formative assessment, I draw on the use of the terms from the chief researchers and theorists as the underpinnings of my study: Paul Black, Steven and Jan Chappuis, John Gardner, Wynne Harlen, Clare Lee, Bethan Marshall, W. James Popham, Richard Stiggins, and Dylan Wiliam.

There are three types of formative assessment: long, medium, and short cycle assessments (Wiliam, 2006, p. 285).
Table 1: Types of Formative Assessment

<table>
<thead>
<tr>
<th>Type</th>
<th>Focus</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-Cycle</td>
<td>Across marking periods, semesters, years</td>
<td>4 weeks to 1 year or more</td>
</tr>
<tr>
<td>Medium-Cycle</td>
<td>Within and between teaching units</td>
<td>1 to 4 weeks</td>
</tr>
<tr>
<td>Short-Cycle</td>
<td>Within and between lessons</td>
<td>5 seconds to 2 days</td>
</tr>
</tbody>
</table>

Figure 1: Photo of the assessment cycle.

Long-cycle assessments results are used to plan curriculum or workshops in the future; this cycle can be up to several years long. Medium cycle formative assessments
are commonly known as end-of-unit tests, benchmark assessments, and common assessments. Short-cycle assessments, however, can be seconds or minutes long; the results are used immediately to adapt the instruction. This short-cycle formative assessment, also known as ‘assessment for learning’ is the focus central to this study.

**Terminology: Formative Assessment and Assessment for Learning (AfL)**

*Black, Harris, Lee, Marshall, and Wiliam*

Black, Harris, Lee, Marshall, and Wiliam differentiate assessment for learning and formative assessment: “In the United States, the term ‘formative assessment’ is often used to describe assessments that are used to provide information on the likely performance of students on state-mandated tests, described as early-warning summative” (Wiliam, 2005, p. 4). Still, in other contexts, it is used to describe any feedback given to students, no matter how it is used. Wiliam refers to this as “knowledge of results.” Many writers use the terms “assessment for learning” and “formative assessment” interchangeably. Black, Harrison, Lee, Marshall, and Wiliam (2002) distinguish between the two:

> Assessment for learning is any assessment for which the first priority in its design and practice is to serve the purpose of promoting pupils’ learning. It thus differs from assessment designed primarily to serve the purposes of accountability, or of ranking, or of certifying competence. An assessment activity can help learning if it provides information to be used as feedback, by teachers, and by their pupils, in assessing themselves and each other, to modify the teaching and learning activities in which they are engaged.
Such assessment becomes ‘formative assessment’ when the evidence is actually used to adapt the teaching work to meet learning needs. (p. i)

*Chappuis and Chappuis*

Formative assessments cause a change in teaching that will lead to greater student learning. Foremost, formative assessment is not a product which is the main misunderstanding of most educational administrators. It is an ongoing, dynamic process that involves far more than frequent testing. “It delivers information during the instructional process, before summative assessment. Both the teacher and the student use formative assessment results to make decisions about what actions to take to promote further learning” (Chappuis & Chappuis, 2008, p. 15). The Chappuis team further explains that “the greatest value in formative assessment lies in teachers and students making use of results to improve real-time teaching and learning at every turn” (p. 17).

*Gardner*

Recently, through the work of the Assessment Reform Group (ARG), the terms formative assessment and assessment for learning were further defined. The ARG confirms that the term “formative assessment” remains a widely used concept in education. They caution, however, that it is used sometimes to describe a process in which “ad hoc” assessments are carried out over time to provide summative assessment of learning (Gardner, 2006). This type of assessment does not contribute to the students’ learning. So, according to Gardner, the phrase, “assessment for learning,” is to be considered the “newer” concept.

The definition according to the Assessment Reform Group (2002) is:

Assessment for learning is the process of seeking and interpreting evidence
for use by learners and their teachers, to identify where the learners are in their learning, where they need to go and how best to get there.

Assessment for learning has its roots in classroom practice, and is about striving to improve children’s learning through known research principles, with teachers acting as ‘action researchers’ continually re-defining practice for themselves according to those principles. These features of AfL are inter-related, with the active involvement of children in their own learning (e.g., being clear about learning objectives and success criteria, being involved in self-assessment and paired discussions about learning achievements) under-pinning all other elements.

(p. 3)

Harlen

Formative assessment has a singular clear purpose: that of helping learning and teaching. If it does not serve this purpose it is not, by definition, formative. What this means in practice is that evidence is gathered during learning activities and interpreted in terms of progress towards the lesson’s learning intentions or goals. Some notion of progression in relation to the goal is needed for this interpretation, so that where students are can be used to indicate what next step is appropriate. Helping students to take this next step is the way in which the evidence of current learning is fed back into teaching and learning. This feedback helps regulate teaching so that the pace of moving toward a learning goal is adjusted to ensure the active participation of the students. Students can participate in these processes if teachers communicate to them the lesson goals and the criteria by which they can judge their progress towards the goals (Harlen, 2007).
Popham

Popham (2008) concurs with the fact that formative assessment is extensively misunderstood in the educational realms. He has crafted the following definition for formative assessment: “Formative assessment is a planned process in which assessment-elicited evidence of students’ status is used by teachers to adjust their ongoing instructional procedures or by students to adjust their current learning tactics” (p. 6).

Stiggins

In this [assessment for learning] approach, students learn about achievement expectations from the beginning of the learning by studying models of strong and weak work. They do not merely learn about the standards. Rather, they come to see and understand the scaffolding they will be climbing as they approach those standards. Students partner with their teacher to continuously monitor their current level of attainment in relation to agreed-upon expectations so they can set goals for what to learn next and thus play a role in managing their own progress. Students play a special role in communicating evidence of learning to one another, to their teacher, and to their families, and they do so not just after the learning has been completed but all along the journey to success [of agreed upon learning expectations]. In short, during the learning students are inside the assessment process, watching themselves grow, feeling in control of their success, and believing that continued success is within reach if they keep trying. (Stiggins, 2005, p. 327)
For the purpose of this study, formative assessment, ‘aka’ assessment for learning, will refer to the function it serves to adapt instruction minute-to-minute and day-by-day.

*The Keeping Learning on Track (KLT) Program and Teacher Learning Communities (TLCs)*

Lee and Wiliam’s (2003) and Wilson and Berne’s (1999) research indicate that teacher quality resulting from professional development in content and process is necessary for formative assessment to have positive outcomes for students. “Research has shown that effective formative assessment has the potential to greatly increase student achievement.” In working with schools attempting to implement effective formative assessment, Wiliam (2008) and his colleagues have learned that the necessary changes in classroom practice, although often apparently quite modest, are actually difficult to achieve.

To enable teachers to improve their formative assessment practices, schools need to provide a new kind of professional development that focuses on changing teachers’ actions in the classroom rather than on giving teachers more information. Teacher learning communities – small groups of teachers who meet regularly to explore their practice – provide this kind of support. (Wiliam, p. 36)

Given this view of formative assessment, the KLT program is a result of a three-year research and design process led by Wiliam and the Educational Testing Service (ETS). It is a professional development program to support teacher change by joining assessment for learning and school embedded teacher learning communities (TLCs).
KLT is a term coined by ETS which refers to the sustained, interactive professional development program that helps teachers adopt minute-to-minute and day-by-day assessment-for-learning strategies that have been shown by research to powerfully increase student learning (ETS, 2006). The three chief components of KLT professional development are built on content (what), process (how), and theory (why). The content is the minute-to-minute and day-by-day assessment for learning strategies. The process is the sustained, school-based collaborative professional learning presented in two phases: (1) initial exposure and motivation; and (2) ongoing guided learning, practice, reflection and adjustment (Thompson & Wiliam, 2007). The why, or theory, is the theory of action of KLT.

The KLT professional development begins with a multi-day introductory workshop for teachers followed by sustained engagement in school-based teacher learning communities in which they learn about the following research base for KLT:

- How we know “assessment for learning” and teacher learning communities work to change teacher practices and improve student learning;
- The nature of teacher expertise; why one day workshops, or even sequences of workshops, cannot effectively change teacher practice;
- An introduction to the nuts and bolts of KLT teacher learning communities;
- The five “assessment for learning” key strategies and samples of the dozens of teaching techniques. (ETS, 2006)

*Five Key Formative Assessment Strategies*

ETS (2006) defines the five key formative assessment strategies:
1. Sharing Learning Expectations: Clarifying and sharing learning intentions and criteria for success.

2. Questioning: Engineering effective classroom discussions, questions and learning tasks that elicit evidence of learning.

3. Feedback: Providing feedback that moves learners forward.

4. Self Assessment: Activating students as the owners of their own learning.

5. Peer Assessment: Activating students as instructional resources for one another.

The diagram below was created by ETS (Lyon & Leusner, 2008) and illustrates the logic model of the KLT program.

---

**KLT Components**

- **Introductory professional development in AFL:**
  - The research basis;
  - The theoretical framework;
  - Practical strategies and techniques;
  - A process for planning changed to current practices

- **On-going monthly TLC meetings, focused on AFL, including time and structure to:**
  - Report on progress;
  - Troubleshoot with colleagues;
  - Plan for future changes

- **On-going support**

**Teacher Outcomes**

- Teachers elicit evidence of student learning minute to minute and day by day
- Teachers identify and share learning expectations with students
- Teachers structure opportunities for students to take ownership of their own learning
- Teachers structure opportunities to activate students as individual resources for one another

**Student Outcomes**

- Teachers adapt instruction to meet students’ immediate learning needs
- Students are more engaged
- Students support each other and take responsibility for their own learning
- Student act on feedback

---

Figure 2: Logic model of the KLT program.

(Research Rationale for the Keeping Learning on Track Program: Integrating Assessment with Instruction through Teacher Learning Communities. PEAr-08-01. Princeton, NJ: Educational Testing Service)
Terminology: The Commingling of Pedagogical Principles & Educational Objectives

The difference between educational objectives and pedagogical principles are not always clear in theory, and are often used interchangeably. Sosniak (1994, p. 1803) notes that statements of principles, as an alternative list of objectives, appears to be growing in popularity in educational programs. Given this, the clarity of the concepts needs to be clarified for the purposes of this study.

According to Sosniak (1994), objectives can be understood in two ways. The first is as pre-defined sets. The other, in a naturalistic approach, can be regarded as a “platform from which one moves forward” (Edelenbos, Johnstone, & Kubanek, 2006, p. 35). The most common use for stated objectives is to satisfy administrative or bureaucratic concerns.

Pedagogical principles, however, are value laden. They have a practical dimension as well as a normative dimension, which ensures quality. Within the philosophy of education, pedagogical principles are discussed as “norms and ideals for learners” (Edelenbos et al., 2006, p. 35).

It is important to point out that pedagogical principles are influenced by change; therefore, they are not static. They are refined and adapted based on experiences. They may be expressed at different levels, from very abstract to the micro context of individual teacher beliefs, which in turn, form the basis for classroom action (Kubabeck-German, 2003a).

As this study will unveil, the pedagogical principles are aligned with the personality of the learner (students and teachers). From there, the learner makes changes
on a day-to-day basis. “It should be kept in mind that it is never one isolated principle, but several principles together that have an impact” (Edelenbos et al., 2006, p. 37).

**Context in Vermont: Formative Assessment Pilot Project (FAPP)**

*Not Quite Home-Grown!*

During the summer of 2006, the Vermont Department of Education (VT DOE) along with ETS, hosted the initial immersion KLT professional development training. In Vermont, the project was known as the Formative Assessment Pilot Project (FAPP). Nine Vermont schools were chosen through an application process and identified as having a commitment to closing student achievement gaps. The St. Johnsbury School was fortunate to be selected and I was trained as the principal, along with six classroom teachers, as well as a St. Johnsbury School professional developer to be trained to take on the role of a FAPP “internal” coach (now referred to as KLT teacher leader). The purpose of the FAPP was to train teachers in the KLT program, which would result in creating sustainable teacher learning communities where participants learn the necessary knowledge and skills to implement, evaluate, and support effective, research-based formative assessment strategies in the classroom.

Resources, support, and structures for the FAPP schools were provided by the VT DOE Planning Team, ETS, and school-based coaches. Moreover, Vermont educators were fortunate to receive training directly from Dr. Dylan Wiliam. In addition to the initial summer training, FAPP participants attended two full-day school-team meetings hosted in December 2006 and April 2007 by ETS and the VT DOE.

There were intended FAPP outcomes based on the collaborative effort between the VT DOE, the school team coaches, and the research coaches. Research on the stages
of adult learning, the nature of classroom-based formative assessment, and the length of the FAPP were critical in determining realistic project outcomes. They were:

1. Teachers’ understanding and implementation of formative assessment.
2. Students’ understanding and use of formative assessment.
3. Teachers’ and coaches’ use of teacher learning communities (TLCs) to increase professional capacity as outlined in the Keeping Learning on Track program and the use of a coach as catalyst and use of support for the TLC and its focus on implementing formative assessment.
4. Effectiveness of coaches’ professional learning community.
5. School leadership investment in and support of the implementation and sustainability of formative assessment.

The findings from my study will help inform the VT DOE about the effectiveness of the formative assessment program and determine the elements needed for expansion and up scaling throughout Vermont school districts.

It is also my intention that this study will ultimately make a significant contribution to local comprehensive assessment systems (CLAS) both in St. Johnsbury and statewide. To communicate the State’s stance on using formative assessment as part of local assessment plans, a memo from the [former] Deputy Commissioner, Elaine Pinckney, and Director of Standards and Assessment, Gail Taylor, entitled, *Core Principles of High Quality Local Assessment Systems* (2006), was sent to Vermont principals, superintendents, and curriculum directors on March 1, 2006. The role of formative assessment was addressed and endorsed, highlighting that student responses point to an intervention that will move students to a higher level of skill or understanding.
Given Vermont’s work with formative assessment and the challenges identified at the national level, this study addresses the concern for the clarification and understanding of formative assessment at the classroom, school, district, and state levels.

_Nationally, What is the Level of Concern?_

A major concern, nationally, is that stakeholders do not have a clear and common understanding and distinction of assessment for learning short, medium, and long cycle formative assessment and summative assessment. “Confusion about assessment purposes is common, notably in the United States, where it is often unclear whether the aim of assessment innovation is to improve learning or to provide more valid summative assessment, or both” (Sutton, 1998, p. 6). According to Yorke (2003), who echoes Black and Wiliam’s (1998a) conclusion from an extensive literature review, formative assessment is lauded, but misunderstood.

In the United States, students will take an estimated 68 million standardized tests to meet the No Child Left Behind (NCLB) requirements. Testing is a reporting function and expectation that parents, policymakers, and teachers look at as definitive proof that students are learning (Scherer, 2005). The NCLB law evaluates a school’s success or failure on a cut score that officials have selected on a state accountability test to determine whether students’ performance is classified as proficient. If a percentage of the students in a school do not earn proficiency, the school is classified as not meeting adequate yearly progress (AYP). Such failure can occur despite the fact that the school has made substantial growth. The evaluation system does not take into account the growth and it encourages teachers to focus attention to students in the “nearly proficient” level because students above and far below will not affect the school’s AYP level.
Overall is it the purpose of assessment to improve performance relative to standards, as well as measure them? High-stake, summative tests cause teachers to take greater control of the learning experience of their students, denying student opportunities to direct their own learning (Sheldon & Biddle, 1998).

What about Student Achievement?

The overarching goal for students is improved learning. With high stakes testing dominating schools globally, is it possible to reclaim assessment as a way to adjust teaching and learning? Researchers and authors Burns (2005), Leahy, Lyon, Thompson, and Wiliam (2004), and McTighe and O’Connor (2005) explain how educators can focus on learning through formative assessment. Leahy and colleagues “blur” the line between assessment and instruction. Everything students do is a source of information about what students know and understand. When teachers learn to hone in on relevant assessment information, they improve their own practice as well as students’ work. Their research indicates that formative assessment boosts student achievement more than any other reform, including high stakes tests.

McTighe and O’Connor (2005) state students need authentic context for assessment and meaningful feedback. Feedback (early and often) that includes advice on how a student can improve his work, using rubrics, models, revising, and evaluating others’ work is part of daily practice.

Many researchers agree that formative assessment or assessment for learning is complicated and demanding. However, with the collaboration of other educators, it becomes more powerful. Wiliam (2004) refers to teachers changing their practice to create highly cognitive demands in the classroom and assessments that will give the
learner something to work with. “It’s about changing pedagogy and how we teach, not changing the curriculum. So, if we accept or value that learning is driven by what teachers and students do on a minute-by-minute, day-to-day basis, then the assessment system provides ongoing diagnostic information that will keep learning on track and guide teaching and learning” (p. 2).

The real issue, or problem, is that state, common, and some classroom assessments do not give teachers information that will inform or “drive” their instruction and/or raise student achievement. State assessments that determine the accountability of schools or rank students are driving teachers to treat classroom assessments like smaller versions of the large scale accountability tests (O’Brian, 2006). We need to rethink our goal of assessment at the classroom level to make it useful for students and an integral part of their instruction process. Ideally, common assessments (medium cycle formative assessments) are created in collaboration with alike grade-level teachers to be used as a “benchmark” to measure achievement in specific standards. Black and Wiliam’s (1999) research on assessment policy indicate that over the years (of their research) they are “convinced of the crucial link between assessment, as carried out in the classroom, and learning and teaching” (p. 1).

*How Do High Stakes Assessments Express Themselves?*

The issue manifests itself every year when the state announces the “failing schools” according to the high stakes assessment. In response to the negative checkmark, school officials sharpen their pencils to write action plans that address the levels and percentages of students that did not reach proficiency on this single assessment. Variables
such as individual student growth, teacher effectiveness and practices, as well as systemic practices, are not considered (Black & Wiliam, 1999).

The St. Johnsbury School District has been identified in the “corrective action” status as a result of four consecutive check marks of not meeting annual yearly progress (AYP) on high stake testing according to NCLB mandates. The VT DOE endorsed the project and has provided guidance and fiscal resources (as a direct result from NCLB mandates) to participate in the FAPP training. As part of the federal mandate, we are required to implement the ‘Commissioner’s Required Actions’ and document those steps in our Action and School Wide Improvement Plan. The Commissioner allowed the St. Johnsbury School District to use the FAPP as part of his required actions. Given this, the NCLB mandates are not all “bad”. Because of our identification, we were given the resources and support from the federal government and the VT DOE to implement and upscale the formative assessment program.
CHAPTER TWO: QUALITATIVE STUDY

Research Statement

The purpose of this study is to understand how the practices of teachers changed as they enacted assessment for learning in their classrooms and in teacher learning communities. In addition, what did teachers perceive to be the critical pedagogical principles enacted in classrooms and teacher learning communities in order to effectively implement the KLT program?

Guiding Research Questions

The following sub questions were developed to help focus and guide the research as well as the data collection plan:

1. What were the perceptions of the teachers concerning their role as they enact KLT in their classrooms and teacher learning communities (TLCs)?
2. How did the implementation of the KLT program influenced school structures and practices?
3. How did the implementation of KLT influence or change school culture?
4. What were the benefits of assessment for learning to student and teacher learning?
5. What were the indicators that assessment for learning reform is at “scale”?

I realize that capturing depth, beliefs, and conceptual change is challenging. However, it was important to me, as the instructional leader of the St. Johnsbury School, to embrace and investigate this challenge. Not only do I value the tenets of formative assessment, I wanted to understand and learn about the implementation’s impact on teachers’ practice, student attainment and the culture of the school.
As with any reform strategy, the challenge is to maintain the fidelity of formative assessment’s core principles while implementing within the local restraints of the St. Johnsbury School. A sharp eye on the impact of the interaction of initiatives already in place was observed as well.

Intentional attention was paid to the concept of ‘scale’ as the program is carried through year two of the study. The traditional definition of scale is restricted to the expansion of a reform strategy; however, when referring to formative assessment and “scale”, it must include change in classroom instruction, issues of sustainability, spread of norms, principles and beliefs (Coburn, 2003).

It is with hope that this study will also inform the VT DOE in its quest to scale up formative assessment, state wide.
CHAPTER THREE: REVIEW OF LITERATURE

I reviewed relevant topics and themes through the lenses of major educational researchers and theorists that provide a comprehensive historical, pedagogical, and political overview of formative assessment and its relevance to my study. These include the following wide-ranging topics and how they shape the implementation of formative assessment: (a) the historical perspectives of assessment and its relationship to formative assessment; (b) findings of formative assessment studies; (c) research and rationale of the formative assessment strategies and tactics for teachers and students, provided by Educational Testing Services (Lyon & Leusner, 2008); (d) teacher development and quality; (e) teacher learning communities; (f) shared leadership; and (g) concepts of scale.

Historical Review of Assessment

“From the moment of birth, assessment and measurement are part of our lives.” (Seltz, 2008, p. 92)

The Previous Assessment Era

In the late 1920’s, during the industrial era, the United States faced new compulsory school attendance laws. The students of the United States had to be educated with efficiency to meet the growing workforce requirements. Schools sorted students into those that would work in factories and those that would go to college (Stiggins, 1991). It was this movement that created assessments to detect individual differences in achievement among students. This was the birth of the paper and pencil test that met every need. It was affordable, produced comparable results, and seemed fair at the time because all students had the opportunity to perform. This era lasted nearly 60 years. Stiggins characterized the era by three significant patterns of behavior. First, teachers and
administrators took no responsibility for understanding or designing assessments. Second, the psychometric development of the assessments was complex, vast, and not understood by teachers. Third, policy makers moved toward increasing testing programs. Testing was layered by schools, districts, states, nations, and world-wide.

The 1930’s introduced testing to admit students into high schools, and in the 1940’s, colleges designed admissions testing. The 1950’s brought on published standardized tests that became the accountability system of the 1960’s and beyond. The 1970’s was the decade of state wide testing and the 80’s of national tests. It was during this time that there was a critical shift in the assessment model (Stiggins, 1991).

Figure 3: Time line of Previous Assessment Era.

Transitions into a New Era of Assessment

There were three fundamental changes that contributed to the fall of the previous era. First, accountability for attaining outcomes became a concern in the 1960’s and
continued through the 70’s and 80’s. Models such as the mastery learning model, behavioral objectives, competencies, and outcome driven models were educational priorities. Still, the outcomes of these models were measured through standardized testing.

Next, the reexamination of outcomes was launched during the 1980’s. Studies, according to Stiggins (1991), looked into the demands of the 21st century and began developing achievement targets. Here, higher order thinking and problem solving processes became part of the outcome measurement. At the close of the 1980’s, researchers realized the implications of the complex outcomes for the accountability movement.

Third, in the late 80’s and early 90’s, performance assessments were established. Practitioners began to notice alternatives to assessment design. The growing concern for outcomes had given the need for a broader array of assessment techniques. “It is as if an alarm clock has sounded and assessment; the sleeping giant, has awakened” (Stiggins, 1991, p. 268).

**The Awakening of the Modern Theory and Formative Practices**

Ralph Tyler is regarded as the father of modern evaluation theory (Ramsay & Clark, 1990). As early as 1942, he was credited with being the first theorist to use a wide range of measures to evaluate a program that included pupil performance, socio-program, pupil diaries, and case studies (p. 27). During the 1960’s and 70’s, the “Tylerian” concepts were viewed as summative or end-product evaluation.

The explosion of evaluation theory began with Scriven’s (1967) publication, *The Methodology of Evaluation*, and Stake’s (1967), *The Countenance of Educational*
Evaluation. Scriven distinguished between formative (on-going) and summative (end-product) evaluation and emphasized that goals should be evaluated and evaluation may have a role in the on-going improvement of the curriculum, while Stake argued in contrast that the outcome retained the emphasis. It was at that time that the term “formative assessment” was introduced. In 1969, Bloom suggested that there was another role for assessment. The crucial feature of Bloom’s and Scriven’s work at this time is that the information of the assessments is used to make changes; whether it be curriculum or student achievement (Wiliam, 2006).

In 1971, Bloom, Hastings, and Madaus took up the work of Scriven (1991) and applied the work in classrooms, involving formative assessment in the process of curriculum construction, teaching, and learning for the purpose of improving any of the three processes. Then, in 1984, Bloom provided a summary of research on the impact of mastery learning models comparing standard whole-class instruction (the control condition) with two experimental interventions – a mastery learning environment and one-on-one tutoring of individual students. One hallmark of both experimental conditions was extensive use of classroom assessment for learning as a key part of instruction. Bloom’s ideas included two important elements: feedback and instructional alignment. The analyses revealed differences ranging from one to two standard deviations in student achievement favoring the assessment for learning experimental conditions.

In a 1985 study, Stiggins and Bridgeford found that teachers were not following assessment procedures and were relying on mental record-keeping. Then, a few years later, Natriello (1987) and Crooks (1988) presented two review articles that provided clear evidence that classroom based assessments had a substantial impact on students’
learning. Natriello’s review discussed the assessment cycle: purpose, setting of tasks, criteria/standards, evaluating performance, then providing feedback. The most significant point he made is the need for clear attainable standards, and individual (not a comparison of students), focused feedback. Crooks’ review narrowed in on the impact of evaluation practices on students. Crooks concluded that summative assessment was too dominant and there needed to be more attention to classroom assessments. These assessments must include skills, attitudes, and knowledge. His recommendations for practice deal with deep learning, effective feedback, and peer and self assessment which are consistent to recent formative assessment research.

Formative Assessment Studies

To understand students’ perspectives and teachers’ roles, the section that follows discusses evidence in research along with the strategies and tactics involved in the years of studies (1988 to present).

Examples of Evidence – The Research

In 1998, Black and Wiliam of Kings College School of Education, conducted an extensive review of research literature, Assessment and Classroom Learning (1998a), surrounding formative assessment published up to 1988. They also studied issues of over 160 research journals and books for the years 1988 to 1997. This process yielded about 681 articles or chapters to examine and elicit findings. The 70-page review drew on material from 250 of these sources. “This review covered a very wide range of published research and provided further evidence that formative assessment raises standards and that current practices are weak” (Black, Harrison, Marshall, & Wiliam, 2003, p. 6). One of the priorities in evaluating the research was to identify and summarize studies that
produced evidence that formative assessment can lead to improved learning outcomes for students.

Black and Wiliam (1998) highlighted four key quantitative studies as evidence that formative assessment affects classroom pedagogy, feedback, reflective practices, and particularly low achieving student attainment.

First, Fernandes and Fontana (1994) conducted a project involving 25 Portuguese teachers of mathematics and their 246 students aged eight and nine years. The students of another 20 Portuguese teachers served as the control group with students between the ages of 10 and 14. Both the experimental and control groups of students were given the same pre- and post- tests of mathematics achievement and both spent the same amount of time in class on mathematics. While both groups demonstrated significant gains over the 20-week period, the experimental group’s mean gain was about twice that of the control group. This evidence alone gives weight to the argument concerning the use of formative assessment to inform practice and increase student achievement.

The focus of the assessment work was on regular, daily self-assessment by the students. This focus meant that the students had to be taught to understand both the learning objectives and the assessment criteria; they were also given the chance to choose learning tasks and to use these in assessing their own learning outcomes. Thus, the initiative involved far more than simply adding some assessment exercises to existing teaching. This purposeful application of formative assessment proved to increase student achievement. Further, this example helped to define a core to understanding formative assessment – student action and ownership in the learning process. Black and Wiliam (1998a) discuss how this particular research raised an essential question: “Whether it is
possible to introduce formative assessment without some radical change in classroom pedagogy because, of its nature, this type of assessment is an essential component of classroom learning” (p. 4).

The second example was a review of 21 different studies of children ranging from preschool to grade 12 (Fuchs & Fuchs, 1986). The main focus was on work for children with mild disabilities and on the use of the feedback to and by teachers. The studies were carefully selected – all involved comparison between experimental and control groups, and all involved assessment activities with frequencies of between two and five times per week.

Two features of the study are of particular interest for public policy, especially for struggling learners and those referred to special education. The first is that Black and Wiliam (1998a) compared the remarkable success of the formative approach with the unsatisfactory outcomes of projects which used diagnostic pre-tests only as a filter to assign children to pre-assigned individual learning programs. The second feature was that the main learning gains from the formative work were only achieved when teachers were controlled to use the data in systematic ways.

The third study involved 838 five-year-old children drawn mainly from disadvantaged backgrounds in six different regions in the US (Bergan, Sladeczek, Schwarz, & Smith, 1991). The teachers of the experimental group were trained to implement a system that required an initial assessment to inform teaching at the individual pupil level, consultation on progress after two weeks, new assessments to give a further diagnostic review, and new decisions about students’ needs after four weeks, with the whole course lasting eight weeks. Further, there was emphasis in their training
on observations of skills to assess progress, on a criterion-referenced model of the
development of understanding and on diagnostic assessments designed to help locate
each child at a point on this model. The results were astonishing; progress in reading,
mathematics, and science for the experimental group were far superior to the control
group. Furthermore, of the control group, on average one child in 3.7 was referred as
having particular learning needs and one in five was placed in special education. The
corresponding figures for the experimental group were one in 17 and were referred as
having a learning need and only one in 71 was placed in special education! This evidence
is compelling and strengthens the argument for embedding a rigorous formative
assessment routine in the classroom.

Fourth, White and Frederiksen (1998) studied an inquiry-based, middle school
science module involving 12 classes of 30 students in two schools. A control group used
some time for general discussion, while the experimental group spent the same time in
discussion, structured to promote reflective assessment. All the students were given the
same basic skills test on the onset and were scored “low, medium, and high”. The
experimental group showed significant overall gains; however, the low scoring group in
the experimental group showed a superiority of over three standard deviations from the
low scoring control group. The medium scoring experimental group scored two standard
deviations above the medium scoring control group, and the high group scored just over
one standard deviation higher than high scoring control group students.

In short, each of the four studies mentioned showed evidence that formative
assessment changed teaching and learning. The use of reflective assessment, the use of
several outcome measures all reflects the aims of teaching, and the fact that the intervention was most effective for the lowest attaining students all stand out.

The research compiled by Black and Wiliam (1998a) produced a quantitative body of evidence that included over 40 studies. All of these studies demonstrate that innovation, which includes strengthening the practice of formative assessment, produce significant and often substantial learning gains. Further, the studies ranged over ages (from five-year-olds to university undergraduates), across several school subjects, and over several countries.

While this review (Black & Wiliam, 1998a) was revealing, there was little to help teachers put the research findings into practice. Consequently, they followed with the booklet *Inside the Black Box* (Black & Wiliam, 1998b), which served four aims:

1. To give a brief review of the research evidence;
2. Make a case for more attention to be paid to helping practice inside the classroom;
3. Draw out implications for practical action;
4. Discuss policy and practice. (p. 9)

This study presents the benefits of formative assessment and particularly the principles of the KLT program. Given this, Black and Wiliam (1998) identify failed efforts to raise student achievement because they focused on accountability rather than what teachers and students do in the classroom. They include how to go about developing teacher skills to effectively implement formative assessment strategies.
Prospects for Theory and Practice

The lack of clarity about the formative/summative distinction and purpose is evident in literature. In the US, portfolios, performance assessment, authentic assessment, and so on are focused on the reliability of the teacher’s measure of assessment. Black and Wiliam’s (1998a) research indicate a missing component which is whether the purpose for the assessment is to improve learning, or is the long term purpose to rank as in summative assessment (or both).

Another prospect is the value-laden nature of the assessment process. A teacher’s beliefs about learning and about the students are essential components in any model. This emphasis on the ethical and moral aspects of assessment links to the importance of understanding a learner’s response in relation to that learner’s expectation about the classroom process and the empowerment of the learner (Aikenhead, 1997).

Absent from research are discussions of the “didactical contract”, or network expectations and agreements that may evolve between teachers and students (Tittle, 1994). Wiliam (2005) explains that within this contract, a teacher does not intervene in person, but puts into place a culture of metacognition. This is a distinction of a fit and match; the assumption that a students’ understanding matches the teachers’, which is rarely the case. It is believed that teachers are aware of the benefits of richer questioning styles, but the implementation is difficult in ‘real classrooms’ (Dassa, 1990).

Although the prospects for theory and practice for formative assessment are varied in how they are applied, there are clearly many ways to incorporate the practice into the classroom. As far as public policy is concerned, significant learning gains can be made; research has clearly proved that formative assessment does improve learning. The
gains are among the largest ever reported for educational interventions. An example of just how large the gains are, an effect size of 0.7, if achieved on a nationwide scale, would be equivalent to raising the mathematics attainment score of an average country like the US into the top five countries like Singapore, Korea, Japan and Hong Kong (Beaton, Mullis, Martin, Gonzalez, Kelly, & Smith, 1996).

The next move is for teachers to be motivated and supported in trying to establish these practices. There is extensive evidence that levels of resources devoted to this support are almost negligible (Daugherty, 1995). According to Black and Wiliam’s (1998a) review, there is not one optimum model on which to base policies and practices related to formative assessment. What emerged, however, is a set of guiding principles in which the changes in classroom practice are central rather than marginal and have to be incorporated by each teacher into his/her practice in his/her own way (Broadfoot, Osborn, Panel, & Pollard, 1996). Given this, reform related to the implementation of formative assessment will without doubt take a long time and will need continued support from researchers, practitioners, and systems.

Motivation and Formative Assessment

Nearly 40 years ago, Bloom (1969) suggested that:

Evaluation in relation to the process of learning and teaching can have strong positive effects on the actual learning of students as well as on their motivation for the learning and their self-concept in relation to school learning…evaluation which is directly related to the teaching-learning process as it unfolds can have highly beneficial effects on the learning of students, the
instructional process of teachers, and the use of instructional materials by teachers and learners. (p. 50)

Motivation has been described as “the conditions and processes that account for the arousal, direction, magnitude, and maintenance of effort” (Katzell & Thompson, 1990, p. 144), and motivation for learning as the “engine” that drives teaching and learning (Stiggins, 2001, p. 36). Gardner (2006) agrees that motivation is central to learning; an outcome of education if students are able to adapt changing conditions outside of school. Assessment is a key factor that affects motivation. According to Stiggins, teachers can enhance or destroy motivation for students through use of their assessments. Further learning in life can depend on how people view themselves as learners; whether they gain satisfaction from learning, a motivational factor for learning (Gardner). Teachers have an influence on motivational factors depending on how they mediate the impact of assessments on students, so teachers’ beliefs of assessment affect their pedagogy and practices and, therefore, students’ motivation about learning.

Strategies and Tactics for Teachers and Students

Strategies and tactics for teachers involved in implementing formative assessment require a pedagogical shift in teachers’ practices, procedures, and policies. This is an important aspect for my study because I am interested in understanding how formative assessment has changed teachers’ practices and how the system must change to support their change in practice. The research supporting the strategies and tactics for teachers and students are centered around the big idea: “Students and teachers using evidence of learning to adapt teaching and learning to meet immediate learning needs minute to minute and day by day” (Thompson & Wiliam, 2007). The five key strategies are:
1. Clarifying and Sharing Learning Intentions and Criteria for Success

2. Engineering Effective Classroom Discussions, Questions and Learning Tasks that Elicit Evidence of Learning

3. Providing Feedback that Moves Learners Forward

4. Activating Students as Owners of Their Own Learning

5. Activating Peers as Instructional Resources for One Another

Research Rationale for the KLT Program

ETS (Lyon & Leusner, 2008) investigates resources in designing KLT to improve student learning. They developed a document entitled: Research Rationale for The Keeping Learning on Track Program. Within the document, they cite specific research that supports the strategy and intended outcomes, challenges, and implications for classroom delivery. In the section that follows, the five key strategies are addressed, quoting the research provided by ETS.

*Clarifying and Sharing Learning Intentions and Criteria for Success*

When teachers identify and share learning expectations with their students, students better support each other and take responsibility for their own learning. According to ETS’ research rationale for the KLT program (2008):

Both quantitative and qualitative research supports the notion that students need to understand what they are learning and how they will be assessed in order to effectively support one another and develop a sense of autonomy. Specifically, White and Frederiksen (1998) investigated a science curriculum that provided scaffolded activities for inquiry, reflection, and generalization. Part of this curriculum involved a reflective process during which students were
introduced to a set of criteria for characterizing good scientific research. These criteria were used by the students to assess their own and each other’s work. Two middle-school teachers implemented the curriculum with a total of eight classes and were compared to a control teacher with four classes. The authors found that in order for students to engage in reflective self- and peer-assessment, they needed to first understand the assessment criteria, in this case the criteria for characterizing good scientific research. With this understanding, students in the experimental group were able to meaningfully assess their own work and their peers’ work.

Tell, Bodone and Addie (2000) reported similar results from the implementation of a standards-based instructional system. Forty-four secondary school teachers and college faculty were followed for a two year period. Qualitative data including teachers’ journal entries, classroom artifacts (e.g., assignments, assessments, and student work), survey responses, team meeting transcripts, and focus group transcripts were collected and analyzed. From the analysis and triangulation of this data, the authors found that teachers who shared learning expectations with students by using scoring rubrics, explaining standards, criteria and expectations, and working with the students to develop student-friendly learning goals reported that the process put their students at the center of the learning process, helped students continually monitor their own progress, and made the students more accountable for their own work.

In general, students must understand what they are expected to learn before they can take responsibility for their own learning. In many instances, students have
incorrect conceptions of what they are learning, why they are learning it, and what quality work looks like.

KLT provides teachers with practical classroom techniques to help them clearly identify and share the intended learning and criteria for success with students. This enables students to better understand what teachers expect them to know, understand or be able to do, as well as what constitutes a proficient performance. This allows students to support each other and take responsibility for their own learning by helping them accurately and appropriately evaluate learning against shared expectations and make any necessary adjustments to the learning. (p. 7)

*Engineering Effective Classroom Discussions, Questions, and Learning Tasks that Elicit Evidence of Learning*

Lyon and Leusner (2008) provide the following research that supports teachers engineering classroom environments to regularly elicit evidence of student understanding:

Research has found that multiple methods of eliciting evidence of student understanding (e.g., higher order questions, wait time, all student responses systems, etc.) are effective for increasing student engagement. For example, Tobin & Capie (1982) investigated the use of higher-order questions in conjunction with increased wait time and its effect on student engagement in 13 middle school classrooms. Teachers in the study were provided with guidance in the choice of higher-order questions, the enhancement of wait time, or both. Students in each of the classrooms were then observed for engagement (e.g., attending to a task, responding to questions, collecting data, explaining information,
etc.) and academic achievement. The researchers concluded that both the use of higher-order questions and increased wait time significantly contributed to increases in student engagement.

When investigating their data-based problem solving approach to instruction, Jones and Krouse (1988) found that students in the experimental classrooms showed lower rates of off-task behavior. Again, this approach encourages student teachers to collect data on student learning, develop hypotheses to explain obstacles, and make changes to instruction to address the obstacles and reexamine student progress.

In a research synthesis examining the relationship between classroom evaluation practices and student outcomes, Crooks (1988) reports similar findings for the use of higher-level questions and student interest. More specifically, Crooks (citing Rosenshine & Stevens, 1986) suggests that the use of questions to actively engage a high percentage of students may explain the positive relationship that is generally found between increased use of classroom questioning and student achievement. The author suggests that in order to obtain the full benefit, classroom questions should be directed to as many students as possible.

Many classroom discussions consist of lower-order questions that are answered by a few motivated students. These questions are not rich enough to provide detailed information about student learning and responses are not systematically collected from all students in the class.

KLT provides teachers with practical classroom techniques that more effectively elicit evidence of student learning by requiring all students in the class to deeply
engage with the content by encouraging teachers to develop higher-order thinking questions, requiring all students to think about each classroom question (even if only one or two students will respond), and collecting responses simultaneously from all students. These techniques increase the engagement of all students rather than just those that typically raise their hands. (p. 6)

*Providing Feedback that Moves Learners Forward*

Research (Lyon & Leusner, 2008) confirms when teachers provide students with feedback to promote thinking, identify specific areas for improvement, and provide time, students act on that feedback to improve their work:

The KLT model assumes that for feedback to effectively improve student learning, the student must act on such feedback. The view is supported throughout the literature. For feedback to be effective, two things must occur: 1) feedback must identify any gaps between a desired learning goal and the student’s present status towards that learning goal; and 2) students must take action to close that gap (Black & Wiliam, 1998a; Ramaprasad, 1983; Sadler, 1989).

Although there is limited empirical evidence that shows that students who are provided with quality feedback (e.g., feedback that promotes thinking and identifies specific areas of improvement) and time to respond, will act on that feedback, recent research on the process writing approach (Patthey-Chavez, Matsumara, & Valdes, 2004) found that middle school students were not likely to revise and further develop their writing unless provided with feedback from the teacher. Additionally, the authors found that as more feedback was provided by the teacher, more improvements were made between drafts indicating that
students did respond to the feedback they received. However, there is literature that supports a direct link between the provision of feedback and improved student learning.

Research by Elawar and Corno (1985) investigated the degree to which written constructive feedback provided by teachers affected student achievement. Eighteen sixth grade teachers were trained to provide constructive comments on math homework assignments, which included suggestions on how to improve and guidance toward corrections. Results show that when accompanied by specific comments on errors, written praise had a positive impact on student achievement. Students provided with specific comments had higher scores on achievement posttests than students in the control groups.

Bangert-Drowns, Kulik, and Morgan (1991) discuss the impact of feedback by examining 58 effect sizes from 40 reports. The authors focus on how feedback empowers active learners with strategically useful information, supports self-regulation, and the characteristics of feedback that seem especially effective in inducing adjustment strategies. These studies of feedback measured post treatment performance on achievement tests. On average, feedback made a positive contribution to achievement, raising scores by about one fourth of a standard deviation. However, the type of feedback provided impacted the effect sizes observed. Feedback that in some way informed the learner of the correct answer had a higher effect than feedback that only indicated when a response is incorrect.
Nyquist (2003) supports the fundamental idea that feedback that provides information regarding gaps in student knowledge and information on how to reduce those gaps produced the most substantial gains in student’s knowledge. In his review of 86 research articles on the effects of feedback on learning outcomes, the author examined 95 studies (which included a total of 12,920 research participants) and calculated 185 effect sizes. The results of a multiple regression show a pattern of progression. In other words, the more consistent the feedback with the definition above, the better the result. Effect sizes ranged from 0.16 for weaker feedback to 0.51 for stronger feedback.

The current climate of accountability has resulted in feedback that explicates student’s current level of achievement rather than providing the student with explicit guidance for improvement.

KLT provides teachers with practical classroom techniques that provide students with feedback to move learning forward and create structures for students to reflect on and formatively use feedback to further understanding. This allows students to take responsibility for their own learning by telling students not just what needs to be done to improve, but also providing specific details, time, and structure for students to use feedback to move their own learning forward. (pp. 10 & 11)

As you would expect, the discussion of feedback necessitates a definition of the term itself. As several studies have indicated, feedback is a relatively open-ended concept. Theoretically, feedback can be defined narrowly or broadly; for the purposes of this review, feedback should be considered any communication between the teacher and
the learner that provides information about the student’s performance. As with much of 
the literature in this area, Black and Wiliam (1998a) begin with a definition of formative 
assessment. For the purposes of their review, formative assessment includes any activities 
from which students receive feedback which in turn modifies subsequent activities. 
According to this definition, then, feedback does not merely “overlap” with formative 
assessment, it is an integral component. Based on several quantitative studies, Black and 
Wiliam make several generalizations regarding formative assessment and feedback:

- all formative assessment by definition involves feedback between student and 
  teacher;
- the success of this interaction directly affects the learning process;
- it is difficult to analyze the contribution of the feedback alone or, conversely, 
  the assessment technique without the impact of the feedback;
- feedback must be applied in order for the assessment to be truly formative;
- feedback is most effective when it is objective (i.e., relevant to the task) rather 
  than subjective (i.e., relevant to peer performance). (pp. 16-17)

Black’s and Wiliam’s (1998) review focuses on formative classroom assessment 
practices in general, although the authors make it clear that “the two concepts of 
formative assessment and of feedback overlap strongly” (p. 47). The fundamental role of 
feedback in the formative assessment process remains undisputed. Black and Wiliam 
identify four elements essential to effective feedback: a recognized, measurable standard;
a means of identifying student performance in relation to that standard; a means of 
comparing the two levels; and a way to apply this information to “alter the gap” (p. 48).
The most crucial inference to be drawn here is that feedback must be used by the student
to change the gap between student performance and stated objective. Some of the studies reviewed by Black and Wiliam, as seen in the previously-discussed findings of Bangert-Drowns et al. (1991) noted a negative effect of feedback, typically as a result of one of three misapplications of the provided feedback. The first of these is to reject the stated objective as too difficult; the second is to change the objective to meet performance; and the last is to deny any discrepancy between performance and objective (pp. 48-49). These studies suggest that feedback is most effective when it focuses on the task rather than the student; which, as Black and Wiliam point out, explains why research shows that praise frequently has a negative effect on performance. Comments that focus instead on the objectives, and the gap between performance and the standard, are more likely to produce learning gains. Furthermore, scaffolded responses, which provide as much or as little information as individual students need to accomplish the task, produce greater overall learning as well as better performance on individual tasks. Similar to Black and Wiliam, Hattie and Jaeger (1998) conclude that assessment must emphasize feedback and subsequent action, and that testing should be a learning tool rather than a learning measuring stick.

Activating Students as Owners of Their Own Learning and

Activating Peers as Instructional Resources for One Another

Research substantiates when students take responsibility for their own and each others’ learning within shared frameworks for quality, student learning improves (Lyon & Leusner, 2008):
Research has shown that engaging students in self- and peer-assessment significantly improves student learning. Additionally, when students are provided with assessment criteria, performance improves.

Fontana and Fernandes (1994) focused on self-assessment and found that students who used self-assessment techniques over a period of eight months, improved at a faster rate than comparable students taught by conventional methods. In another study, primary school students who were given concrete structures and explicit guidance for peer-assessment, specifically in communicating, working, and thinking with others, had significantly higher achievement and reasoning scores (Mercer, Wegerif, & Dawes, 1999). Furthermore, White and Frederiksen (1998) found that students engaged in an inquiry science curriculum scored significantly higher than their peers when a reflective assessment process combining peer- and self-assessment was introduced. The differences between the two groups were also found to be significantly greater for those students who scored low on a test of basic skills prior to the study.

Finally, Fuchs, Fuchs, Karns, Hamlett, Dutka, & Katzaroff (2000) found that sharing standards for quality with students increases their ability to demonstrate knowledge and competence. Students, who received training on performance assessments, including information about the structure of the task, strategies for approaching it, and training in the application of the scoring rubric, significantly outperformed those students who received no training on subsequent performance assessments. This training allowed students to internalize what was required for a
quality response and in turn incorporate more of those qualities into their own work.

Students in today’s classrooms are not given enough responsibility for their own learning. Often classrooms are organized around a lecture information is presented with little student involvement. To be successful, teachers need to find ways to not only share success criteria and to model quality work for their students, but also to help them take responsibility for moving toward those success criteria.

KLT helps students to support one another and take responsibility for their own learning by providing teachers with tools and support for creating additional structures and opportunities for students to think reflectively and meta-cognitively about their own learning, to assess their own work and understanding, to consider multiple problem-solving approaches or perspectives, to receive additional feedback, by providing students with ownership of and a better understanding of where they are now, where they need to go, and how to get there. (p. 15)

*Formulation of Strategy*

The tactics above can be thought of as ‘parts’ to complete the whole strategy. One tactic alone will vary in effect. The process is holistic, where all components are necessary. Weston, McAlpine, and Bordinaro (1995) argue that if formative assessment is to inform instructional design, common language is needed. The components need to be identified as who participates, what roles are to be taken, what techniques are used, and in what situations can they occur.
Ames (1992) and Nichols (1994) attempted a more ambitious analysis of instructional design. Ames began on making a distinction between mastery and performance perspectives, but she continued to outline three prominent features: meaningful tasks; promotion of learners’ independence; and evaluation of individual improvement. The importance of changing the assumptions that teachers make about learning is endorsed in this review. Torrie (1989) discovered in his research that teachers have difficulty making assessments related to the learning criteria and changing their teaching from norm referenced assumptions. Nichols’ analysis went even deeper in what he called cognitive diagnostic assessments. He argued that a new relationship with cognitive science was needed if it were going to guide learning. Thus, the task selection, and type of feedback that a task generates, will require cognitive theory to help inform the link between learners’ understanding and their interactions with assessments. Here, Black and Wiliam (1998) indicate in their review of literature that there is a need for change if formative assessment is to realize its full potential. Changes in pedagogy, on a large scale, must be studied both strategically and systemically. This relates to my study as I discover what critical factors are necessary to fully implement the program to its full potential at the St. Johnsbury School.

Formative assessment presupposes a shift in equilibrium toward a more serious attitude toward learning. Given this, teachers who practice formative assessment must counteract the habits of their students and inform students that formative assessment is a signal to offer help and guidance. Also, some students are dealing with the self concept of being a poor student, whereas an extra personal commitment would be required to carry
with it a penalty for failure in terms of one’s self esteem and therefore may even create fear as a barrier to learning (Tunstall & Gipps, 1996a).

The Regulation of Learning

The key strategies outlined above appear different from each other; however, it is the coherence of these strategies that raise student achievement (Wiliam, 2005). The three crucial processes in learning that demonstrate this coherence are: where the learners are in their learning; where they are going; and how to get there. The process of the regulation of learning illustrated theoretically and as it relates to formative assessment is provided in Tables 2 and 3 below.

Table 2: The Regulation of Learning

<table>
<thead>
<tr>
<th>Regulation of Learning:</th>
<th>Where the learner is</th>
<th>Where they are going</th>
<th>How to get there</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher</td>
<td>Evoking information</td>
<td>Establishing goals</td>
<td>Feedback</td>
</tr>
<tr>
<td>Peer</td>
<td>Peer-assessment</td>
<td>Sharing Success criteria</td>
<td>Peer-tutoring</td>
</tr>
<tr>
<td>Student</td>
<td>Self-assessment</td>
<td>Sharing success criteria</td>
<td>Self-directed learning</td>
</tr>
</tbody>
</table>
Table 3: Aspects of Formative Assessment

<table>
<thead>
<tr>
<th>Aspects of formative assessment</th>
<th>Where the learner is</th>
<th>Where they are going</th>
<th>How to get there</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher</td>
<td>Clarifying learning intentions and criteria for success</td>
<td>Engineering effective classroom discussions and tasks that elicit evidence of learning</td>
<td>Providing feedback that moves learning forward</td>
</tr>
<tr>
<td>Peer</td>
<td>Understanding learning intentions and criteria for success</td>
<td>Activating students as instructional resources for one another</td>
<td></td>
</tr>
<tr>
<td>Student (Learner)</td>
<td>Understanding learning intentions and criteria for success</td>
<td>Activating students as the owners of their own learning</td>
<td></td>
</tr>
</tbody>
</table>

Wiliam (2005) suggests that [the regulation of learning] actions of the teachers, learners and the context of the classroom are evaluated with respect to how they each contribute to guiding the learning to the intended goals. The role of the teacher is to create situations where students learn. The focus is on student learning, not teaching. Wiliam implies that teachers are skilled at controlling the activities that students engage in, but do not have an idea of the learning that results (p. 31).

**Literature on Teachers’ Practices**

What has emerged from research is that teacher practices concerning formative assessment are weak. Teachers encouraged rote and superficial learning, even though teachers said they wanted to develop understanding. There is clear evidence that there is negative impact on students when teachers compare students to each other or emphasize competition rather than personal improvement (Gardner, 2006).
Assessment by teachers or the quality of teachers’ practices in formative assessment was reviewed in articles by Crooks (1988) and Black (1993b). Analyses of these studies identified the following key weaknesses in classrooms that lacked formative assessment practices:

- classroom evaluation practices encouraged rote learning;
- teachers do not review assessment questions, so there is little reflection on what is being assessed;
- grading is over-emphasized;
- competition between students is emphasized, rather than personal improvement.

*Low-Level Aims*

More recent research has confirmed the findings articulated by Crooks (1998) and Black (1998a). Additional key points discovered through this research found that formative assessment is:

- not well understood by teachers and therefore, weak in practice;
- national and local requirements for accountability have an influence on the practice;
- successful implementation of formative assessment requires changes in teachers’ roles and perceptions in relation to their students and classroom practice. (p. 8)

Key researchers Cizek, Fitzgerald, and Racher (1995) and Hall, Webber, Varley, Young, and Dorman (1997) found in their studies that teachers do not use or trust their
assessment results. Studies by Bol and Strage (1996), Pijl (1992), Schilling, Hargreaves, Harlen, and Russell (1990), Senk, Beckman, and Thompson (1997), Stiggins, Griswold, and Wiklund (1989) found that teachers’ assessments focus primarily on low-level skills, mainly those that require only recall. These findings, along with the work of Duschl and Gitomer (1997), discovered that teachers focus their students on getting through a task rather than engage in deep level cognitive demands. Lorsbach, Tobin, Briscoe, and Lamaster (1992) and Rudman (1987) concluded that teachers can predict the performance of their students on external tests (which reflect low level skills), but these predictions do not tell them what they need to know about their students’ learning.

Quantity vs. Quality

Reviews of primary school practices have reported that teachers emphasize the quantity of students’ work rather than the quality of deep understanding. Further research on this issue of quality student work, particularly in science practices, indicates that “formative and diagnostic assessment is seriously in need of development” (Russell, Qualter, & McGuigan, 1995, p. 489).

Social and Personal Dominance of Summative Testing

Johnston, Guice, Baker, Malone, and Michelson (1995) report another interesting finding: namely, that most teachers are caught in a conflict with belief systems, institutional structures, agendas, and values related to assessment (Black & Wiliam, 1998). Teachers in this study felt a sense of insecurity, guilt, anger, and frustration around keeping track of children’s development. Along with this, they felt pressure from summative accountability testing. There has been debate in situations where teachers are responsible for both formative and summative assessment. Some argue that it can be done
and must be done to escape the control of external testing (Black, 1993a; Wiliam & Black, 1996) while others draw attention only to the difficulties of combining the two roles (Simpson, 1990). This suggests that the difficulties are not only procedural, but personal.

These features have implications for further research into this area. Assessment by teachers, linked with a program of intervention implemented in the classroom, will ultimately change the roles and the ways of pedagogy (Black & Wiliam, 1998).

Teacher Quality

Research is solid about the societal and individual impact of increasing student achievement. The benefits to individuals bring higher lifetime earnings and, for society, increased economic growth and lower social costs (Hanushek, 2004). Research found that the total return on investments for education is well over $10 on every $1 invested. Given this, and the public skepticism about the impact of increasing taxes due to educational investments, there is a pressure to find more cost effective ways to improve student achievement (Wiliam & Leahy, 2006). Wiliam and Leahy argue:

The most cost effective way to improve student achievement is through developing the capabilities of teachers to use assessment to adapt their instruction to meet student learning needs in real time – sometimes called formative assessment or assessment for learning – and present a theoretical framework that identifies five key strategies. (p. 2)

The analysis of school effectiveness has been judged mainly by outputs. Recently better datasets have become available that measure how much progress students are making (Wiliam & Leahy, 2006). “There is increasing evidence that the classroom effect
is principally a teacher effect – the effect of having a good teacher is greater than that of being in a small school or even of being in a small class” (p. 2).

Hanushek’s (2004) research found that significant improvement in educational outcomes requires developing the capabilities of the existing “workforce” rather than replacing them.

During the 28th Vermont Outstanding Teachers Recognition Day, Angelo Dorta (2008), Vermont – NEA president, addressed the Vermont outstanding teachers with the following sentiment about teacher quality: “Despite conflicting assertions and numerous research citations, educators – and parents – know the truth: Together, we view the quality of teaching as the number one factor influencing a child’s education. This truth is revealed by our own direct experience and is certified by reliable polling data.”

Expert teachers who understand both the subjects they teach and the children they teach make the most important difference in what children learn. And, in order to master today’s higher academic standards, students from diverse backgrounds and with diverse needs will need teachers with even greater knowledge and skill than in the past.

Periodic reports in the past decade by the National Commission for Teaching and America’s Future call on educators, policy makers, and the public to not ignore the obvious: what teachers know and can do makes the most crucial difference in how well children learn. And the way schools organize their work makes a big difference in what teachers can accomplish.
Teacher Professional Development

“Nothing has promised so much and has been so frustratingly wasteful as the thousands of workshops and conferences that led to no significant change in practice when teachers returned to their classrooms.” (Stiggins, 1991, p. 315)

Recently, features of effective teacher professional development have emerged. The features that need attention are: process and content. “As for process, professional development is most effective when it is related to the local circumstances in which the teachers operate (Cobb, McClain, Lamberg, & Dean, 2003) and takes place over time rather than one day workshops (Cohen & Hill, 1998), and involves the teacher in active, collective participation (Garet, Birman, Porter, Desimone, & Herman, 1999, in Wiliam & Leahy, 2006, p. 3).

Wiliam and Leahy (2006) argue that the focus on the use of assessment promises the largest potential gains in student achievement and provides a model for teacher professional development that can be implemented effectively at scale (p. 4).

As explained earlier in the introduction of this paper, the KLT program is the professional development program designed by ETS to support teacher change by joining assessment for learning and school embedded teacher learning communities (TLCs). The chief components of KLT professional development is built on the content, process and theory of assessment for learning.

This section of the literature review will address the research and literature regarding embedded professional development known as professional learning communities (PLCs) and TLCs.
Terminology: Teacher Learning Communities and Professional Learning Communities

In an e-mail correspondence from Dylan Wiliam (personal communication, 2007), he distinguished the terms PLC and TLC and surmised the origin of the TLC terminology:

I’m not sure that we were the first to do so, so we don’t claim that it is original, but Marnie Thompson and I coined the term ‘Teacher Learning Communities’ to make it clear that our groups were intended to be only, or primarily formed of teachers (i.e., not administrators, and other support staff). As we say in the Tight but Loose (Thompson & Wiliam, 2007) paper, other staff can be peripheral participants in those groups, but they cannot be full members unless they are trying to change their own classroom practice.

What are Professional Learning Communities?

Since professional development TLCs is a mandated component of implementing formative assessment, the following literature review will give readers an in depth understanding of the stance researchers and theorist take concerning the value of PLCs, particularly with school reform initiatives. This will help inform my study about the impact of formative assessment on teacher quality and professional development.

There has been a growing popularity of the term professional learning community. It has become so commonplace; it has been used to describe any group of people that come together for the interest of education. Given this, there is an obstacle in the intent and meaning of a true PLC. The aim of the segment to follow is to clarify the meaning of the term(s), the purpose, and the intended outcomes of PLCs.
Summarizing a non-exhaustive review of the literature, McLaughlin and Talbert, (2006) recommend the following to define a professional learning community: “A professional learning community is made up of team members who regularly collaborate toward continued improvement in meeting learner needs through a shared curricular-focused vision” (p. 3). This is accomplished through supportive leadership and structural conditions, collective challenging, questioning, and reflecting on team-designed lessons and instructional practices/experiences, and team decisions on essential learning outcomes and intervention/enrichment activities based on results of common formative student assessments (Reichstetter, 2006).

DuFour, DuFour, Eaker, and Many (2006) narrow the definition as: Educators committed to working collaboratively in ongoing processes of collective inquiry and action research to achieve better results for the students they serve. Professional learning communities operate under the assumption that the key to improved learning for students is continuous job-embedded learning for educators. (p. 217)

The core meaning of a PLC is the focus, responsibility, and commitment to learning. The culture of schools with PLCs ensures that educators make a commitment to continually learn and structures are put in place so that job-embedded learning is the norm of the workplace.

Although there are various definitions, they all echo the meaning that educators work collaboratively on their practice and student outcomes. An effective PLC strongly adheres to a vision of student learning, a vision that acts as a guidepost in making decisions about teaching and learning (Hord, 1997). “The mission or purpose of a PLC
team is to ensure that all students learn through the collaborative, interdependent practice of teachers” (Reichstetter, 2006, p. 1).

*The Three Big Ideas:*

*Core Principles of Professional Learning Communities*

1. We accept learning as the fundamental purpose of our school and therefore are willing to examine all practices in light of their impact on learning.

2. We are committed to working together to achieve our collective purpose. We cultivate a collaborative culture through development of high performing teams.

3. We assess our effectiveness on the basis of results rather than intentions. Individuals, teams and schools seek relevant data and information and use that information to promote continuous improvement. (DuFour & DuFour, 2007, p. 4)

*Big Idea #1: Ensuring that Students Learn*

The big idea, ensuring that students learn, focuses on the shift from ensuring that students are taught to making certain that students learn. The adults in the system must also make a commitment to continually learn. This shift has theoretical implications for schools. All professionals in schools must ask three crucial questions that focus on learning: What do we want each student to learn? How will we know each student has learned it? And, how will we respond when a student experiences difficulty in learning (DuFour, 2004, p. 8)? Professionals can then make collective commitments to use results-oriented goals to mark progress and to clarify what each student must learn. DuFour,
DuFour, Eaker, and Many (2006) recommend that PLCs provide systemic interventions, timelines, and ensure all students receive additional time and support for learning.

In traditional schools, the response to struggling students has varied from referrals to special education or to a less rigorous learning track. Often, the solution is left to the teacher to deal with it in isolation. Some teachers offer struggling students help before and/or after school, or some allow them to fail.

To the contrary, when a school functions as a PLC, educators are aware of the inappropriateness of the lack of strategies to respond to students who are not learning. Strategies are designed to ensure additional time and support, systemically and school wide. The key elements of the response is timely, based on intervention (rather than remediation) and directive (required, not invited). “Schools that are truly committed to the concepts of learning for each student will stop subjecting struggling students to a haphazard educational lottery. These schools will guarantee that each student receives whatever additional support he or she needs” (Dufour, 2004, p. 9).

**Big Idea #2: A Culture of Collaboration**

Collaboration in the context of PLCs. The collaborative culture is one that creates and provides structures to allow educators to work together to achieve their shared purpose of learning for all students. The collaboration that characterizes a true PLC is a process where teachers work together to improve classroom practice. The DuFours (2007) define collaboration in the context of a PLC as “a systemic process in which we work together interdependently to analyze and impact professional practice in order to improve our individual and collective results” (p. 10).
Culture of collaborative colleagueship. Teams that are engaged in this ongoing cycle of continuous improvement (DuFour, 2003) are committed to, and continuously reaching toward, the organization’s ideal mission and vision (DuFour & Eaker, 1998). Such a commitment is placed within a context in which the collective synergy, spirit, imagination, inspiration, and continuous learning of teachers lean toward improving teaching skills (Calderon, as cited in Huffman, Hipp, Pankake, & Moller, 2001, p. 452), and as one where people constantly expand their competence to produce their desired outcomes (Senge, as cited in Bierema, 1999, p. 51).

“Building the collaborative culture of a professional learning community is a question of will. A group of staff members who are determined to work together will find a way.”

(DuFour, DuFour, & Eaker, 2005, p. 39)

Conversations that were once private in a traditional setting become collaborative to discuss goals, strategies, materials, pacing, questions, concerns, and results (DuFour et al., 2005). Teachers must have a sense of belonging on teams and there must be time built into the schedule to meet during the workday and consistently throughout the year. The focus is on crucial questions about learning, outcomes, assessments, analysis of achievement, and strategies for improving results.

The advantages of working in collaborative teams are: gains in student achievement; higher quality solutions to problems; increased confidence among all staff; teachers supporting one another’s strengths and accommodate weaknesses; ability to test new ideas; more support for new teachers; and shared materials and methods (DuFour & DuFour, 2007, p. 10).
Professional practice and collaboration. The analysis and critique of teacher practice and team learning ultimately leads to a higher level of student achievement. In order for collaboration to occur, the DuFours presented: “Addition by Subtraction” during their workshop at the 11th Annual Northeast ASCD Affiliate Conference on November 30-December 1, 2007. They promoted the discipline and permission to discontinue much of what educators are doing traditionally in order to become a PLC. This includes acknowledging the implemented (and attained) curriculum verses the intended curriculum; focusing on student outcomes instead of educational inputs (curriculum guides, textbooks, etc); stop leaving it up to each individual teacher to decide how to respond to struggling students; and stop allowing teachers to work in isolation.

Fullan (2007) endorses the ‘addition by subtraction’ concept and acknowledges that collaborative cultures are powerful, “but if they are not focusing on the right thing, they can be powerfully wrong” (DuFour & DuFour, 2007, p. 11).

The literature emphasizes and reiterates the message that embedded structural and collaborative culture among educators (Shellard, 2002) must be present with evidence focusing on learning for all. Such a culture involves a systematic, goal-directed learning process in which people work together in grade level, vertical, special topic, or subject matter teams to analyze and impact professional practice in order to improve individual and collective results for students (Peel, in Reichstetter, 2006).

Reflective dialogue and collective inquiry into best practices were found to be another major attribute of professional learning communities. This component is evident in team members’ dialogue on curriculum, common formative assessments, instruction, and needed job embedded professional development (Peel, in Reishstetter, 2006). Also,
inquiry on best practices focused on lesson study and effective instructional strategies (Langston, 2006) and encourages teachers to challenge and question each other’s practice in spirited but optimistic ways (Sparks, 2004). They collectively problem solve and learn through applying new ideas and information that address student needs (Hord, 1997). PLCs’ attributes led to the analysis of current practices and reality in relation to student results, experimenting with new practices, and assessing the relationship between practice and the effects of practice (Mitchell & Sackney, as cited in Huffman et al., 2001, p. 1). Working together to question, search, analyze, develop, test, and evaluate new skills, strategies, awareness, attitudes, and beliefs promotes higher levels of student learning (DuFour & Eaker, 1998).

*Collaboration and struggling students.* A major idea embedded in the PLC concept is that educators cannot help struggling students learn at high levels unless they work in collaboration. Shared responsibility for student learning (Haar, 2003) through regular teacher team meetings for learning, investigation, development, and implementation of research-based teacher practices (SERVE, n.d.) confirm the collaborative value embedded in PLCs.

In PLC schools, students are guaranteed to receive additional time and support for learning through the development and implementation of systematic interventions (DuFour et al., 2006).

**Big Idea #3: A Focus on Results**

Senge (1995) concludes that, “The rationale for any strategy for building a learning organization revolves around the premise that such organization will produce dramatically improved results” (p. 44). In a PLC, every educator participates to identify
levels of student achievement and seek out multiple indicators and use the information to promote improvement. In doing so, they develop result-oriented goals that can only be achieved through higher levels of student learning. Since PLCs’ effectiveness is judged on results, improving student achievement becomes the work of everyone in the school. Data becomes the catalyst for improved teacher practice. One of the most powerful tools in the PLC “toolbox” is using common formative assessments which are administered multiple times throughout the year to gather ongoing evidence of student learning. The results are analyzed to discover effectiveness and weaknesses in teaching as well as identifying students who need additional time and support for learning, and areas for enrichment.

**Challenges**

My study addresses the teachers’ perceptions of the values, beliefs, and professional development involved in participating in PLCs, identified as TLCs in the context of KLT. I investigated their perceptions of the critical need and purpose for the professional development as it pertains to the successful upscale of formative assessment. The following literature review discusses the challenges involved in making PLCs a norm in the school culture.

The National Staff Development Council (2004) has adopted standards to improve school effectiveness. The very first standard asserts: “Staff development that improves learning for all students organizes adults into learning communities whose goals are aligned with the school and district.” However, proponents of PLCs in the US identify three challenges in their efforts to make the concept and practices a norm in
schools. They are: Challenge 1 - Applying shared knowledge; Challenge 2 - Sustaining change; and Challenge 3 – Transforming school culture.

**Challenge #1: Applying Shared Knowledge**

Many schools claim that they are PLCs, but there is little evidence that they understand the core concepts or implement the practices of PLCs. In order to make PLCs a norm, educators must develop deep knowledge about the concepts, practices and goals of PLCs. Likewise, they must demonstrate the discipline to apply the conceptual understanding.

**Challenge #2: Sustaining Change**

Significant school reform requires hard work, mostly from the effort and energy to shift old habits into new learning. Subsequently, teachers report that the work is lightened by clarity, collaborative culture, and collective responsibility in the schools (DuFour et al., 2005). In a study by Collins (2001), he found that the success of an organization was never the result of a single defining action:

> Good to great comes by a cumulative process- step by step, action by action, decision by decision, turn upon turn of the flywheel –that adds up to sustained and spectacular results…It was a quiet, deliberate process of figuring out what needed to be done to create the best future results and then taking those steps one way or the other. By pushing in a constant direction over an extended period of time, they inevitably hit a point of breakthrough. (p. 169)

Given this, there are no shortcuts for creating PLCs; it requires coherent, consistent effort, over time.
Challenge # 3: Transforming School Culture

There is more involved than changing the structures (policies, programs, and procedures) of the school to implement PLCs. Because schools are human organizations, the cultural transformation includes beliefs, assumptions, and expectations regarding schools. Unless the people in the school gain competency and momentum in the PLC practices, they will revert to traditional practices and beliefs.

Researchers and school reform theorists have identified six major themes on cultural shifts as a result of implementing PLCs: A shift in - 1) fundamental purpose; 2) use of assessments; 3) the response when students don’t learn; 4) the work of teachers; 5) focus; and 6) professional development (DuFour, DuFour, & Eaker, 2006).

Learning for all versus teaching for all. DuFour et al. (2005) ground their proposals for substantive school reform on the premise that all students should acquire the skills, knowledge and dispositions essential for future success. Moreover, the moral purpose is for schools to make a positive difference in the lives of students. The opposing concepts of traditional teaching versus PLC learning is problematic when the traditional school concept prevails. Reeves states: “If the PLC model is to take root in schools, it must supplant the deeply entrenched traditional assumptions that have guided schools for over a century” (DuFour et al., 2005, p. 15).

Collaborative Cultures versus Teacher Isolation

It is the norm in US schools for teachers to work in isolation. As Sarason (1996) expressed almost 40 years ago, he described teaching as a lonely profession, and little has changed. Teachers assume responsibility for his/her own room and/or students according to a sociological study (Lortie, 1975) which still is true today. He adds that the PLC
culture in schools will not become a norm unless educators systemically embed collaborative systems as routine and provide structure and parameters for improvement for both teachers and students.

**Collective Capacity versus Individual Development**

Fullan (2005) wrote, “Capacity building is a daily habit of working together, and you can’t learn this from a workshop or course. You need to learn it by doing it and getting better at it on purpose” (p. 69). As echoed throughout this section, the best professional development happens in the workplace rather in a workshop. The context in the workplace professional development is purposefully designed to meet the goals of the school rather than on the individual in isolation.

**Focus on Results versus Activities**

In the era of NCLB, learning organizations are judged by their results. The assumption in traditional schools is if teachers are provided with the right curricula, textbooks and schedules, results will take care of themselves. Also, educators often confuse “neat” activities with results, and they pursue every new fad. Lastly, some educators are content with substituting good intentions for results. Collins (2001) urges all those who hope to build great institutions, become “frantically driven, infected with an incurable need to produce results” (p. 4). It will be my job, as the instructional leader, to resonate with that mantra and be “frantically driven” and lend support so that we are able to implement the formative assessment project in its full potential.

**Widespread Leadership**

My research statement addresses the critical factor which involves widespread leadership for the implementation of formative assessment. Developing the leadership of
all members of an organization is necessary when implementing the concepts of PLCs. Principals’ priorities are to broaden teacher leadership. In the research on PLCs, McLaughlin and Talbert (2001) reported: “We encountered no instances to support the ‘great leader theory’, charismatic people who create extraordinary contexts for teaching by virtue of their unique vision...[Effective] principals empower and support teacher leadership to improve teaching practice” (p. 118). In traditional schools, if inspiration and energy is dependent on the principal, the efforts will stop and go as leaders come and go. In order for a school to become an effective PLC, it must surpass its dependence on a single leader.

A strong PLC has leaders who facilitate the learning of all staff members (Pedler, Burgoyne, & Boydell, as cited in Bierema, 1999, p. 51). School leaders are also learners in professional development and are friendly and facilitative in sharing leadership, power, and authority through giving staff decision making input (Hord, 1997). Leadership is shared among both formal and informal leaders (Phillips, 2003). Trust, respect, and openness to improvement exists (Kruse, Louis, & Bryk, 1994) and many opportunities are present for staff members to influence the school’s activities and policies (King & Newmann, 2000).

Self Efficacy versus Dependency

Districts need to provide supports for systemic reform to implement PLCs. The literature states that consideration of the circumstances and environment of the school context is imperative (Phillips, 2003). A school-wide plan that provides extra time and support for student mastery and common planning time for teachers (Langston, 2006) may call for structural and cultural changes. To support this, Kruse et al. (as cited in
Roberts & Pruitt, 2003, p. 8) advocate the necessity of time for teams to meet and talk, physical proximity, and communication structures. Hord (1997) stipulates that required supportive conditions, especially time, include reduced staff isolation, increased staff capacity, provision of a caring, productive environment, and improved quality of student programs. Peel (2006) supports the necessity of having all these mechanisms in place for warehousing the knowledge that has been created (lessons learned) so it can be continuously used and improved.

Fullan (Dufour et al., 2005) emphasizes the need for all individuals to contribute to the reform a part of the “system”. Evidence from years of research proves that teachers’ practices and their influences can have a positive impact on student learning. Saphier (Dufour et al., 2005) makes a compelling case for the importance of teaching students to believe in “effort-based ability”. Educators have to believe that it is their job to help and influence students learn at a high level. If PLCs are to become a reality, educators must be willing to do things differently.

**TLCs/PLCs and the Broader Context: Stakeholders**

This section will briefly address and move outside the teachers’ community to consider how stakeholders affect TLCs. Stakeholders who have an interest in the school environment are usually uninformed about the most fundamental features of school reform. They depend on outside players to update them of the teachers’ learning goals and needs. In order to support classroom practices, these people need to “be in the loop”. My research involves the impact of formative assessment on major stakeholders as a possible critical factor in the upscale. When considering Bolman and Deal’s (2003) political frame, the resources that are necessary to scale this project are allocated from the
VT DOE, the Consolidated Federal Programs (CFP) grants, Title One Pass-Thru grants, and support from the St. Johnsbury School Board, the administrators, the VT-NEA, and the community.

System Administrators

The most important job for principals involves establishing the structure and practical conditions a PLC/TLC needs to thrive. Principals as instructional leaders will give teachers opportunities to collaborate, provide resources, and reinforce teachers’ professional growth. These principals are well versed in content and instructions to provide formative supervision and staff development.

Teacher Organizations

In many districts, teachers’ unions play a critical role in workplace conditions and the associated professional development. Teacher unions have the reputation to form roadblocks on professional development strategies. For example, the Boston Teacher Union’s six month job action threatened to cripple the district’s Collaborative, Coaching and Learning (CCL) professional development strategy when work to rule precluded teacher participation in demonstration lessons (McLaughlin & Talbert, 2006, pp. 83-84).

In contrast, unions can be essential allies, leaders and resources for reform. Literature confirms that once teachers value the professional development and feel valued as professionals (as part of building a culture), teacher organizations have championed the fundamental role and concepts of PLCs. Teachers’ organizations can provide political support, infrastructure, and human resources to support PLCs.
“I don’t think it’s anything new. It’s not rocket science. If you want teachers involved in professional development, you have to get their leaders involved; you have to have their support.” – SATC middle school principal. (McLaughlin & Talbert, 2006, p. 83)

Professional Developers

Professional developers are a critical component to sustaining and nurturing TLCs. The role of the professional developer is essential and challenging. Beyond instructional expertise, they must possess knowledge in content, assessment, curriculum, behavioral management, critical friends (and alike protocols), organizational and time management skills, to name a few.

Parents/Community Members

Teachers depend on the support of the larger community. The attitudes and expectations of parents and the community affect school reform goals such as PLCs/TLCs. Education can become a collaborative endeavor when the community understands and reinforces the goals leading to improving student achievement. The financial, emotional, and logistical support of the community motivates teachers to invest in learning and creates support for professional learning communities.

“Nowhere is the two-way street of learning in such disrepair and in need of social reconstruction than that concerning the relationship among parents, communities and their schools.” (Fullan, 2001, p. 198)

TLCs in Formative Assessment

Terminology: TLC, PLC, KLT

The terminology ought to be clarified in order to address teacher practices as it relates to formative assessment TLCs. Keeping Learning on Track® is a term coined by
ETS which refers to the specific professional development (implemented through a TLC) which trains teachers in assessment for learning (formative assessment). This sustained, interactive professional development program helps teachers adopt minute-to-minute and day-by-day assessment for learning strategies that have been shown by research to powerfully increase student learning (ETS, 2006). KLT supports two distinct phases of professional learning: 1) initial exposure and motivation; and 2) ongoing guided learning, practice, reflection, and adjustment. KLT is the result of a three year research and design process led by Dr. Dylan Wiliam and ETS with the purposes of supporting teacher change by joining two powerful ideas: assessment for learning and sustained, school-embedded teacher learning communities.

*TLC’s Impact on Pedagogy and Teacher Quality*

Teacher professional development is an essential lever for improving student learning as evidenced by research on the influences of student learning, which shows that teacher quality trumps all other influences on student achievement (Fullan, 2001; 2006; Lee & Wiliam, 2005).

*Teacher Quality*

If we want to raise student achievement in our schools, we must improve the quality of the teachers working in schools. An analysis of research (Reeves, DuFour, Gregg, Guskey, Marzano, O’Conner et al., 2007) reveals that helping teachers develop minute-to-minute and day-by-day formative assessment practices does improve teacher quality. But in order to do this, educators must form building-based learning communities in which teachers use a format of five strategies for formative assessment, hold each other accountable, and provide support for each other (Reeves et al.). Additional research
has confirmed the necessity of PLCs to improve teacher learning. Schmoker (2004) has cited a “broad, even remarkable concurrence” among educational researchers and organizational theorists who have concluded that developing the capacity of educators to function as members of PLCs is the “best known means by which we might achieve truly historic, wide scale improvements in teaching and learning” (p. 432).

Hanushek (2004) reveals startling data about teacher quality and the effect on student learning. Through a school effectiveness (value added) research study, he found that students in a classroom with an effective teacher learned in six months what students in an average classroom will take a year to learn. And, if a student is in an ineffective classroom, the same amount of learning will take two years. Students in the most effective classroom learned at four times the speed of those in the least effective classrooms. Through this study, the most important variable was what the teachers do, rather than what they know. Wiliam sums up the argument:

We need to raise student achievement, because it matters for individuals and for society. To raise student achievement, we need to improve teacher quality, and the only way to do this is to invest in the teachers we already have. In other words, if we are serious about improving student achievement, we have to invest in the right professional development for teachers: building-based learning communities. (Reeves et al., p. 187)

**Pedagogy**

The successful implementation of formative assessment necessitates a change in pedagogy and classroom practices. “Scaling up a classroom based intervention isn’t like gearing up factory machinery to produce more or better cars…the complexity of the
systems on which classrooms exist, the separateness of these classrooms, and the private nature of the activity of teaching means that each and every teacher has to ‘get it’ and ‘do it’ right…” (Thompson & Wiliam, 2007, p. 1). The TLCs provide the ongoing training in strategies and associated techniques in order to implement formative assessment.

Research has identified necessary implementation practices that have to go up against long established traditions. For example, grading student work with letter grades is so ingrained in teachers’ schema, they cannot envision grading in any other way, which is necessary when implementing formative assessment strategies. The implementation of formative assessment requires profound changes in the way teachers teach and it is much harder than it appears (Wiliam, in Reeves et al., 2007).

Wiliam and several colleagues (Wiliam, in Revees at al., 2007) identify five principles that are important approaches in adopting, establishing, and sustaining formative assessment TLCs which change teacher practice: 1) gradualism; 2) flexibility; 3) choice; 4) accountability; and 5) support.

The research is clear. “It shows that it is what teachers do in their classroom that matters. The only thing that impacts student achievement is teacher practice. So, if we are serious about raising student achievement, we must focus on helping teachers change what they do in the classroom” (Wiliam, in Reeves et al., 2007, p. 183). The changes that need to be made are the habits and rituals of teachers’ practices that have been ingrained over many years. This requires the pedagogical shift required through the TLCs.

Teacher Leadership

Some would argue that John Dewey (1859-1952) was one of the most influential thoughtful leaders on education in the 20th century. His ideas on experience, reflection,
democracy, community and environments for learning have made and will make their mark on education for past and future generations. For Dewey, “It was vitally important that education should not be the teaching of mere dead fact, but that the skills and knowledge which students learned be integrated fully into their lives as persons, citizens and human beings. This practical element, learning by doing, sprang from his subscription to the philosophical school of Pragmatism” (Wikipedia).

For over 50 years, Dewey was the voice for a liberal and progressive democracy that has shaped the destiny of America. He set the path for an emphasis on playing the strengths of teachers for leadership roles. He argued that public education should be organized so that “every teacher had some regular and representative way to register judgment upon matters of educational importance, with assurance that this judgment would somehow affect the school system” (Dewey, 1977, p. 231). Interestingly, Dewey was born in Burlington, Vermont and graduated from the University of Vermont!

For nearly a century, schools have functioned in an autocratic style. Now in the complex systems of schools, leadership cannot rest on a sole leader. Principals must be politicians, crisis managers, disciplinarians, statisticians, as well as instructional leaders. Hargreaves and Fink’s (2006) research highlights seven principles of sustainability in educational change and leadership. One principle that emphasizes teacher leadership is described as breadth. Sustainable school leadership and change is dependent on teacher leadership distributed and nurtured across the classroom, school and system.

“The litmus test of all leadership is whether it mobilizes people’s commitment to putting their energy into actions designed to improve things. It is individual commitment, but above all it is collective mobilization.” (Fullan, 2005, p. 9)
Roles of Teacher Leaders

Because the implementation of formative assessment requires coaches and trainers to take on the role of teacher leaders in the school, this review of literature is an important feature of my study that addresses not only systemic change, but the concepts of widespread, shared leadership.

Teacher leaders serve in two fundamental roles: formal and informal. Formal teacher leaders fill roles such as department chair, master teacher, or instructional coach. Informal teacher leaders usually emerge from the teacher ranks (Danielson, 2007). They usually take initiative either without being asked or with any positional authority.

Teacher leaders assume a wide range of roles to support school and student success. Whether these roles are assigned formally or shared informally, they build the entire school’s capacity to improve. Harris and Killion (2007) identify 10 roles that are just a “sampling” of the many ways that all teachers can contribute to their schools’ success.

(1) **Resource Provider.** Teachers help their colleagues by sharing instructional resources.

(2) **Instructional Specialist.** Instructional specialists help colleagues implement effective teaching strategies. This help might include ideas for differentiating instruction or planning lessons in partnership with fellow teachers. Instructional specialists might study research-based classroom strategies (Marzano, Pickering, & Pollock, 2001), explore which instructional methodologies are appropriate for the school, and share findings with colleagues.
(3) **Curriculum Specialist.** Understanding content standards and how to use the curriculum in planning instruction and assessment is essential to ensuring consistent implementation throughout a school. Curriculum specialists lead teachers to agree on standards, follow the adopted curriculum, use common pacing charts, and develop shared assessments.

(4) **Classroom Supporter.** Classroom supporters work inside classrooms to help teachers implement new ideas, often by demonstrating a lesson, coaching, or observing and giving feedback. Blase and Blase (2006) found that consultation with peers enhanced teachers’ self-efficacy (teachers’ belief in their own abilities and capacity to successfully solve teaching and learning problems) as they reflected on practice and grew together, and it also encouraged a bias for action (improvement through collaboration) on the part of teachers (p. 22).

(5) **Learning Facilitator.** Facilitating professional learning opportunities among staff members is another role for teacher leaders and teachers that may emerge as they have a particular strength in a specific area. When teachers learn with and from one another, they can focus on what most directly improves student learning. Their professional learning becomes more relevant, focused on teachers’ classroom work, and aligned to fill gaps in student learning. Such communities of learning can break the norms of isolation present in many schools.

(6) **Mentor.** Serving as a mentor for novice teachers is a common role for both formal teacher leaders and classroom teachers. Mentors serve as role models, acclimate new teachers to a new school, and advise new teachers about instruction, curriculum, procedure, practices, and politics.
(7) School Leader. Being a school leader means serving on a committee, such as a school improvement team, acting as a grade-level or department chair, supporting school initiatives, or representing the school on community or district task forces or committees.

(8) Data Coach. Although teachers have access to a great deal of data, they do not often use that data to drive classroom instruction. Teacher leaders can lead conversations that engage their peers in analyzing and using this information to strengthen instruction.

(9) Catalyst for Change. Teacher leaders can also be catalysts for change, visionaries who are “never content with the status quo but rather always looking for a better way” (Larner, 2004, p. 32). Teachers who take on the catalyst role feel secure in their own work and have a strong commitment to continual improvement. They pose questions to generate analysis of student learning.

(10) Learner. Among the most important roles teacher leaders assume is that of learner. Learners model continual improvement, demonstrate lifelong learning, and use what they learn to help all students achieve.

In addition to these 10 roles of teacher leaders, leadership roles within PLCs are shifting directly into the classroom, the critical point of the learning community. Teacher leaders are collaboratively working to lead from within the classrooms (Erkens, Jakicic, Jessie, King, Kramer, Many, Ranells, Rose, Sparks, & Twadell, 2008).
The Role of Teacher Leadership (Coaches) in the Context of Formative Assessment

Given that the roles of teacher leaders are widely defined and used as described above, this section refers to the teacher leadership roles and associated professional development provided by ETS and the VT DOE for teacher leaders in the 2006-2007 implementation of the FAPP. In the VT DOE FAPP Project Findings, researchers Cole and O’Brian (2007) define the outcome of the use of a coach as a catalyst and support for TLC and its focus on implementing formative assessment:

Teachers and principals have expressed favorable support for the coach model, whereas a TLC has a formal person assigned to facilitate TLC meetings, provide resources and support to the teachers as they acquire new knowledge, reflect on their learning and chart a course for continued growth. Evaluations of the TLC effectiveness were greatly enhanced by the use of external coaches in the pilot. Some case schools will continue with an external coach and in other case schools they feel they are ready to have an internal coach with the possibility of some involvement of an outside coach. Qualities attributed to the coaches include being knowledgeable, respectful, understanding, positive, constructive, flexible, focused, and organized. In addition, coaches should provide a catalyst for change and communication. (p. 12)

Additional research findings about the effectiveness of the coach’s PLC were:

The coaches have expressed favorable support for the tools used to provide a PLC, including Teachers’ Workplace (TWP) and the coaches meetings. Coaches reported that their meetings with other coaches were essential for
many reasons including a time to gain common knowledge and bond with one another. They recognized how they learned from each others’ collective intelligence, provided reassurance, suggestions for addressing challenges, and support one another. Some needs expressed were: more information from the literature about the practice of school coaching and more focus at the initial training on the coach’s role. The TWP was cited as being useful for preparation of and reflection on the TLC meetings, and a powerful reflective tool. In some cases there was a tension between the data collection part of the research project and the interactive and collaborative aspects of the TWP.

(Cole & O’Brien, 2007, p. 13)

Systems and Scaling: “Tight but Loose”

Rethinking Scale

The literature and research provided by Coburn (2003) and Thompson and Wiliam (2007) provide a framework for understanding scale through four dimensions, and how the implementation of a reform strategy can be flexible with local constraints, while maintaining the fidelity of its core principles. These concepts are directly related to my study in terms of up scaling the formative assessment project according to the critical factors identified by teachers and the reality of the constraints of the St. Johnsbury School system. Following is Coburn’s conceptual theory on scale that resonates with my study:

Definitions of scale have traditionally restricted its scope, focusing on the expanding number of schools reached by reform. Such definitions mask the complex challenges of reaching out broadly while simultaneously cultivating the depth of change necessary to support and sustain consequential change. (p. 3)
The definition of scale must include the change in classroom instruction, issues of sustainability, spread of norms, principles and beliefs. Given this, how researchers define scale matters; it influences how policymakers and reformers craft reform strategies and the way researchers study the problems of scale.

Thompson and Wiliam (2007) believe if systems are serious about improving educational outcomes of all students, we have to figure out how to do this at scale. They concur with Coburn (2003) that the definition of scale must draw attention to the nature of changing pedagogical principles, issues of sustainability, adoption of norms, and beliefs. To be “at scale”, reform efforts must effect deep and consequential change in classroom practice (Elmore, 1996; McLaughlin & Mitra, 2000). Coburn discusses four inter-related dimensions to scale: depth, sustainability, spread, and shift in reform ownership.

**Depth**

Depth is described by Coburn (2003) as “a change that goes beyond the surface structures or procedures (such as changes in materials, classroom organization, or addition of specific activities) to alter teachers’ beliefs, norms of social interactions, and pedagogical principles as enacted in the curriculum” (p. 4). Dimensions of teachers’ beliefs about how students learn, expectations for students, and what constitutes effective instruction must be reconstructed for the consequential change. Teachers’ and students’ roles are an important component of depth because most often classroom life is an explicit target in the reform strategy. Lastly and most importantly, a change in pedagogical principles in the enacted curriculum is a dimension of depth. Spillane and
Jennings (1977) agree with Coburn that measuring deep and consequential change in classroom practice requires attention to beliefs, norms, and pedagogical principles.

**Sustainability**

The dimension of sustainability refers to change sustained over time. In the form of sustained TLCs, there is no guarantee that the resources to support these will continue in any school. So, this dimension moves beyond the classroom level and becomes a systemic reform initiative. There is evidence that sustainability may be the central challenge of bringing reform to scale (Coburn, 2003). Some reasons for this are administrator and teacher change-over, changing demands and competing priorities (Thompson & Wiliam, 2007). This suggests the need for strategies and tools for the capacity to sustain the reform because there are mechanisms and system supports in place. In Coburn’s scale research, she identified several system support efforts: professional learning communities; supportive school leadership; connections with other schools engaged in the reform; and normative coherence or alignment between district policy and the reform.

**Spread**

The idea of spread encompasses both “outward” spread and spread “within”. The outward spread is from school and classrooms as conceptualized in traditional scale (more teachers and more schools). Whereas spread within is subtler; it is works within daily policies and practices of the school. This may show itself when a school’s grading policy is changed to comment only marking, or when the school changes its schedule to accommodate teachers to meet in learning communities during the workday. Spread within can include a shift in the districts’ standard enactment of operating decisions,
ongoing interaction with school leaders, roles for teacher leaders, and approaches to professional development.

Shift

The last dimension Coburn (2003) takes up is shift. This is when the ownership shifts from external reformers to internal players with “authority for the reform held by schools and teachers who have the capacity to sustain, spread, and deepen reform principles themselves” (p. 7). Stokes, Sato, McLaughlin, and Talbert (1997) concur and argue, “The reform must transition from an externally understood and supported theory to an internally understood and supported theory-based practice” (p. 21). With this shift in ownership, the reform becomes self-generative (McLaughlin & Mitra, 2001). In studies performed by McLaughlin and Mitra, they found that the shift in reform ownership requires transferring strategic decision making from the “external reform organization” to the school leaders.

“Tight but Loose” and Formative Assessment Reform

Following is Thompson and Wiliam’s (2007) practical theory on scale that also resonates with my study that takes place in a school setting with many local constraints. What will the teachers perceive to be “tight” and what will they perceive to be “loose”? Tight but Loose

Systemic thinking or using the “sweep in” approach requires consideration for the particularities of the interventions to be scaled. Reform will have little effect if the system is not flexible to take advantage of local opportunities while accommodating the “unmovable” local constraints (Thompson & Wiliam, 2007). However, the reform has to maintain fidelity to its core principles, or theory of action, if there is going to be desired
outcomes. This tension between flexibility and fidelity is where Thompson and Wiliam’s theoretical “Tight but Loose” framework comes in (p. 40). The “tight” refers to the central design principles and theory of design. While the accommodations, resources, constraints, and particularities (that do not conflict with the theory of intervention) that occur in any school is the “loose” part.

The Motivation for the Tight but Loose Framework in Formative Assessment

Thompson and Wiliam (2007) identify three inter-related factors that must be satisfied in order for the formative assessment reform to be both effective and scalable. The first is to be clear about what it is that is being enacted and if it is worthwhile. Second, the understanding of what it means to upscale the intervention across all contents, and lastly, the considerations for the particularities of the contents.

To achieve reasonable implementation fidelity, the clarity on the components of theory of action for reform is needed for effectiveness and scalability. A strong theory of action must be coupled with clarity of the intervention so that the surface features do not obscure the underlying mechanisms (Lewis, Perry, & Murata, 2006).

As Coburn (2003) points out that the traditional definition of scale has been restricted to scope, the notion of consequential change is what will make a difference in the success of reform. We have to think systemically, with comprehensive knowledge, to the specifics of interventions while considering the place-based particularities of the system. Thompson and Wiliam (2007) refer to this as: The “think globally, act locally” mantra.
Applied to KLT

In the context of KLT, not only do teachers (and systems around them) need to understand the theory of action of KLT to make it work, they have to understand the dynamics of what is tight and what is loose so they can make decisions about what pieces of intervention they must hold onto and what pieces they can be flexible about (Thompson & Wiliam, 2007).

We have to be “tight” about the essential elements of the professional learning portion of the intervention as developed by the Educational Testing Service (ETS). There is an explicit expectation that teachers attend the TLCs focused on assessment for learning. Teachers must have a regular time and place where they are required to attend these TLCs. Another “tight” example is never telling teachers what techniques they should implement in their classrooms; rather, they choose which ones to practice. However, a non-negotiable is that over time they must work on techniques that span over the five strategies.

The “loose” list includes things that are outside the realm of the classroom, such as funding sources, parent communications, report cards, and system policies.

Because the “one size fits all” interventions cannot succeed in schools, Thompson and Wiliam (2007) developed this tight but loose framework. It was built to respond to the diversities of schools and the varieties of problems schools face and the range of resources available to them. Through the findings of my study, I am able to articulate what the perceptions of critical factors warrant tight and/or loose elements.
Summary of Literature Review

To begin, I reviewed relevant historical assessment perspectives and its evolution from its inception in the 1920’s to the present. Then, summaries included findings from in depth studies specifically addressing worldwide formative assessment theory and practices.

An extensive research review by the ETS, authors of KLT, delineating the key strategies central to the implementation of KLT provided me with the critical research based theory and knowledge.

Because professional development, its structures and implications for teacher quality are paramount to this study, a review of literature, theory and research concerning teacher learning communities, professional learning communities, and related pedagogical principles was incorporated in the review.

To conclude the literature review, I included the research and literature on the concept of scale and Wiliam and Thompson’s (2007) “tight but loose” conceptual framework for scaling up school reform efforts as it relates to formative assessment.
CHAPTER FOUR: METHODS

Through qualitative methodology, I investigated the transformation of teachers’ practices and what teachers perceived to be the critical pedagogical principles enacted in classrooms and TLCs in order to implement KLT the St. Johnsbury School.

Site Selection/Setting

This study took place primarily within the St. Johnsbury School. The aim of this study is to understand how the St. Johnsbury School teachers have changed their practices and perspectives of pedagogical principles. The only logical and authentic setting is the St. Johnsbury School, where they are practicing.

Participants

The participants of this study included the teachers who received formal training in formative assessment, the formative assessment coaches, the ‘trainer of trainers’, and me. I am integrated into the study as an invited member of the TLCs and the instructional leader of the school. My participation in the study can be described as “balanced”, meaning that I maintained a balance between being an insider (principal) and being an outsider (researcher) (Key, 1997). My role as principal in the TLCs is considered a “legitimate peripheral participant” (Lave & Wenger, 1991). Since the aim of the participants is to make changes in their practices, my role is to share their goals by giving support and acting as an advocate for reform efforts.
Pilot Program Cohort: TLC #1

The trained teachers included six formative assessment “pilot” program teachers trained by Dylan Wiliam (summer 2006) through the support of the VT DOE and the ETS. Also, included in the pilot training was our internal coach, trained by Dr. Dylan Wiliam. This group comprised the initial teacher learning community (TLC #1). Teacher selection was intentionally offered by interest to support Black et al.’s (2003) research that participants should be selected based on interest and the support of the local education agency leadership.

Implementation Year Cohort: TLCs #2 & #3

The remaining 14 teachers were trained the following year (summer 2007) by the VT DOE with the support of ETS. This group of teachers was separated into two additional TLCs (TLC #2 and TLC #3). The second year of the project included additional training of internal coaches, who in turn coached TLCs #2 and #3. I was trained both summers as the instructional leader for the St. Johnsbury School.

In order to help the readers understand the connections among participants, I have provided a visual representation of the FAPP participants in year one (TLC #1; 2006-2007) and the FAP participants during year two (TLC #2 and TLC #3; 2007-2008) in Figure 4.

This study includes 21 participants. Seven participants have a two-year implementation perspective; whereas the remaining 14 participants have implemented KLT for one year.
Figure 4: Participants in study
The participants span grade levels between first and eighth, including special education, to give a vertical as well as a grade level perspective within each of the three TLCs for 2007-2008. Collectively, there were three TLCs comprised of 20 classroom teachers, one “trainer of trainers”, three coaches, and myself as participants of the study. The coaches’ roles and the “trainer of trainer” roles crossed between the training years (see figure 1), bringing the total number of research participants to 23.

Data Collection

I used a convergence of data from multiple sources in order to triangulate the data. The purpose of this corroboration was to clarify my understanding of the participants’ perceptions and increase the probability that the findings were credible. The primary techniques included: individual interviews, focus group interviews, document reviews, observations, and field notes. Each of these techniques are explained individually, within this chapter and illustrated in Figure 5.

- Two focus group interviews;
- All TLCs exit interview;
- 10 classroom observations;
- Monthly professional design team meeting minutes;
- Monthly TLC field notes;
- ETS Vermont Pilot Project Findings;
- VT DOE Pilot Project Findings;
- VT DOE CLAS presentation;
- Seven individual interviews.
The trustworthiness and validity of the study is substantiated through a reliance on the perspectives gained from the variety and experiences of the participants. The qualitative research methodology techniques helped me gain an understanding of the research questions framed to guide this study.

In order to maintain the validity of data, I digitally recorded interviews and the transcription was completed through the University of Vermont’s sociology department to ensure accuracy and an unbiased translation. I also wrote notes accurately and immediately, and sought feedback and external reflection from “critical friends” to ensure subjectivity concerning my work.

Trustworthiness of data was accomplished through my prolonged engagement of the formative assessment project. For example, I sacredly attended monthly TLCs for all
three groups and have earned the trust of the teachers to be included as a TLC member. Also, the triangulation of multiple sources of data confirms trustworthiness with the varied techniques described in this chapter. A comprehensive timeline is included in the closing of this chapter to illustrate the breadth of my engagement (Figure 6).

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<tr>
<td>Classroom Observations</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Individual Interviews</td>
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<tr>
<td>Focus Group Interviews</td>
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</tr>
<tr>
<td>VT DOE CLAS Presentation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All TLC “Exit Interview”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional Design Team Meetings</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 6: Time of data collection

Interview questions were centered on the themes originated from the research questions to elicit responses of teachers’ perceptions as they implemented formative assessment. I conducted individual interviews with the six pilot program teachers (TLC #1) and their coach. The interviews lasted approximately 70 minutes each. All participants have recently completed year two (2007-2008) of implementation. In addition, I conducted two focus group interviews with the formative assessment teachers (TLC #2 and TLC #3) who were trained during the summer of 2007. There are seven teachers and one coach in each TLC. They have recently completed their first year of
implementation. These interviews took approximately three hours each. All the teachers volunteered to participate.

The interview questions that follow represent the themes of inquiry. To open the interview I asked each participant to comment on their current role at the St. Johnsbury School and their involvement in the formative assessment program.

**Individual Interview Questions**

1. Tell me about your classroom culture. Has it changed since implementing formative assessment? How so?

2. Has your perception of your role as a teacher changed since implementing formative assessment? How so?

3. What motivates or excites you about implementing formative assessment? Also, what are some of the problems and pitfalls of implementing formative assessment?

4. What are your ideas and beliefs about how students learn? How has your developing knowledge and skill of formative assessment informed your ideas and beliefs about how students learn?

5. Are there particular strategies and associated techniques that have made a major impact or shift in how you perceive student learning?

6. What is your involvement with TLCs? How does the work in TLCs shape and influence your practice?

7. How do you communicate student growth (to students, parents, and policy makers) through formative assessment? Have your beliefs and
practices about assessment changed since implementing formative assessment? How so?

8. What school policies or practices support or hinder your efforts to implement formative assessment?

9. What would the ultimate leadership model look like in our school as we continue to implement formative assessment?

10. In your opinion, has student accountability changed as a result of implementing formative assessment strategies?

11. How have you described your formative assessment practices to various stakeholders? What are their reactions?

12. If you were to write our mission statement in five years, what would it say?

   **Focus Group Interview Session(s) Questions**

1. Has your perception of your role as a teacher changed since implementing formative assessment?

2. What motivates or excites you about implementing formative assessment?

3. What are your ideas and beliefs about how students learn? Has this changed since implementing FAP?

4. Are there particular strategies and associated techniques that have made a major impact or shift in how you perceive student learning?

5. How does the work in TLCs shape and influence your practice?

6. How do you communicate student growth (to students, parents, and policy makers) through formative assessment? Have your beliefs and
practices about assessment changed since implementing formative assessment?

7. What school policies or practices support or hinder your efforts to implement formative assessment?

8. What would the ultimate leadership model look like in our school as we continue to implement formative assessment?

9. Tell me about your classroom culture. Has it changed since implementing formative assessment?

2007-2008 Documents as Data

During “Keeping Learning on Track” professional development sessions, I collected documents, artifacts and took field notes during the year. Also, school district documents and policies were collected and analyzed. Historical documents from the 2006-2007 pilot year were available for reflection and analysis. The documents included:

- VT DOE Formative Assessment Pilot Project Findings;
- Educational Testing Services Vermont Pilot Project Findings;
- 2007-2008 Professional Design Team meeting minutes.

Field Notes: Documenting Observations

In addition to interviews and document analysis, I have collected observational data in the field. It is important to note that the field notes were influenced by my time spent with the participants (over two years for the purpose of this study), the setting, social circumstances and personal involvement with the group, familiarity with language and a shared culture.
In order to get a holistic view of pedagogical principles, I used classroom observations as field notes. These were used to triangulate data reported in interviews and TLC field notes.

My field notes/logs/photographs/videos/artifacts included a collection of descriptions, symbols and reflections of activities, events, conversations, and people. These were used as the tool in which I developed hunches and ideas for emerging themes. The field notes included sentiment concerning formative assessment from the following structures:

- TLC sessions;
- Classroom observations;
- VT DOE presentation;
- “Exit” meeting comprised of all formative assessment teachers at the conclusion of the 2007-08 school year;

Data Analysis

*Managing, Analyzing, and Interpreting Data*

The nature of qualitative studies makes it difficult to distinguish the differences between interpreting and analyzing data. I discovered that the findings and ideas began to merge together; therefore, I found it important to clarify and differentiate the terms. Interpretation refers to the development of ideas about the findings and the relationship to the literature. Whereas analysis involves working with the data, breaking it down to manageable units by coding and searching for patterns and themes (Bogdan & Biklen, 2007).
My task was to establish methods to make sense of the collected data and how to analyze and face interpretation in a manageable and mechanically feasible manner.

**Coding Categories**

Similar to the themes identified in the literature, research questions and interview questions, I identified regularities and patterns and developed codes to represent those topics or patterns. Particular research questions drove my initial coding categories. Additional categories were identified as data were collected and new themes arose. Together, these voluminous coding categories were separated and mechanically sorted and/or pasted into the Ethnograph V6, a computer based software program for qualitative coding and memo writing.

**Making Connections**

After finding and organizing codes in the data, I stayed as close to the data as originally transcribed or observed. I added memos as I coded the data so that descriptive and detailed observations put the reader in context of the phenomenon. The data transformation moved from the acquired form (information) into a form that communicated the promise of the study’s findings (Glesne, 2006).

**Displaying Data**

I created graphic organizers, tables, charts, photos and graphs throughout the process to visualize the analysis, interpretation, and organization of the information.

**Consideration of Ethical Issues**

The main guidelines in research ethics are dominated by the protection of human subjects. Along with these guidelines, all the participants were involved in the
Institutional Review Board (IRB) process that informed them of the weighted risks/gains they might face.

I am cognizant that concerns have been raised in the literature related to the potential for power and perceived coercion to arise as barriers when principals serve as researchers and teachers are involved as study participants. This ethical dilemma was foremost in my planning, and I was (and still am) in no doubt that the teachers’ cooperation was genuine. My participation in the 2006-2007 pilot project and invitation to join their TLC was my first indication of a trusting relationship that has been formed in the overall formative assessment project. Given that my role in the pilot TLC was made clear through a formal agreement, and the prospect of a dissertation study around the project was discussed and endorsed well before this study began, added to my level of confidence.

With a 27-year tenure at the St. Johnsbury School, I have filled multiple roles over the years and have grown with and within the organization. The findings of this study have substantiated the confidence of trust and cooperation concerning my relationship with the participants. This is explicitly addressed in the findings chapter of this study.

Since the purpose of the study is to understand what teachers perceive to be the critical pedagogical principles enacted in classrooms as well as in TLCs (in order to implement KLT in the SJS), it was crucial that the study take place in the St. Johnsbury School setting. Given this, I am aware that qualitative researchers caution performing ‘research in your own backyard’. The constructivist nature and the overall aims of this study prohibited considering other settings.
This study makes no reference of judgment or application in teacher evaluation, inquiry, or findings about the participant’s individual performance; an intention that was purposeful in my planning. I made my intentions clear and fully explained the study to the participants well before the IRB process. Naturally, any participant had the opportunity to opt out of an interview, which no one did. Additionally, I included a statement as part of the IRB protocol (Figure 7) that indicated and ensured participants that the findings of this study would have no negative impact on their teacher evaluations.

What Are The Risks and Discomforts Of The Study?

The risks associated with being in this study are minimal. You may feel uncomfortable about answering questions included in the interview. However, you do not have to answer any questions that make you feel uncomfortable. The information you provide will be kept confidential and not shared with non research individuals. No identifiable information about you will ever be published or shared without your consent. As both the Principal of this school and the Principal Investigator of this study, you may feel pressure to participate in this research, or that your comments may have an impact on your performance evaluations. If you decide not to participate, this will have no impact on your standing as a teacher or you relationship with me as your school Principal. If you do participate, nothing that you say will be used in your performance evaluations, and will not influence my relationship with you as the school Principal. I invite you to discuss any concerns you have about this with me or my faculty advisor, Dr. Raymond Proulx.

Figure 7: IRB statement

Defining My Subjective I

My interest in this research began the summer of 2006, during the initial FAPP training with Dylan Wiliam, ETS, VT DOE, and the pilot group of teacher participants.
This interest “grew up” to be a dissertation proposal in 2007. My formal research was conducted during year two of formative assessment implementation (2007-2008).

During this research study I maintained dual roles: one as a researcher and one as the instructional leader, or principal, of the St. Johnsbury School. I monitored my subjectivity and was cognizant of how it might distort my findings, as well as the ways it can contribute to the study. I had insights and perspectives that could shape the research and its emphasis, so the subjectivity was a positive force, rather than a negative one. My passion and sense of meaningfulness for this work was and remains obvious to all stakeholders. I engaged in the practice of being a reflective researcher, which enhanced my ability to collect and analyze the data. I persistently reminded myself that the aim was to understand teachers’ perspectives, not mine!

I frequently reflected on the work of theorists Bolman and Deal as pioneers in the movement to “reconnect work and spirit” (Bolman & Deal, 2001). My personal values and identity were central to my subjectivity, so this study included the key components of the dimensions of leadership which include shared beliefs, creativity, energy, common purpose, relationships, passion, and values. As this study emerged, I felt a connection between these leadership dimensions and myself, as a leader, which is central to subjectivity. The purpose of Bolman and Deal’s reframing work is to give leaders the “ability to see things in new ways, the process of viewing situations from multiple perspectives to avoid biases and blindness to new ideas, and confront new challenges with tools of inquiry and expanded understanding. It gives leaders the wisdom to match the tools with the situation” (Proulx, 2005).
Since the participants were willing and eager volunteers for participation in FAPP/FAP, inter subjectivity applied as well. They helped me shape this research, most importantly; it was not shaped unilaterally. Since the work was crafted over time, all the players guided the research process and content. I believe in the work of Lipman-Blumen (1996) where leaders emphasize the modes of working with people instead of being an authoritarian. My behavior fostered the talents of others to achieve desirable goals. Given this, it was an appropriate time for me to move forward and “lead the leaders”. The leaders of our school, the teachers, had “clarity of intentions (why do we want to do this?), clarity in directions (how will we go about doing it?), and clarity in reflections (what worked well and what did not?)” (Jinkins & Jinkins, 1998, p. 146).

I resonated with Maxwell’s (1996) message in what he describes as qualitative researchers’ “subjective I’s” (p. 18), by suggesting the following question to keep in mind: “What personal and practical purposes, as well as research purposes, are involved in your research?” (p. 24). On both personal and practical levels, I wanted to understand and have a deeper meaning of what the teachers perceived as driving, critical principles of their formative assessment work. As the instructional leader, I must be informed by both research and by the practitioners of our school to effectively and efficiently share leadership roles and promote, endorse, and support the formative assessment program.

As a final point concerning the “subjective I”, I monitored my subjectivity as it affected my role as researcher. Strategies included reflecting on notes to “check” my role as principal versus researcher. Also, I elicited a mentor to be a “critical friend” during the research study to do “check and balances” around subjectivity. I was confident that I was
equipped, as a researcher, with the perspectives and insights to shape and strengthen the study.

Timeline of Research

2006-07

Although the year one pilot project work during the summer of 2006 and the subsequent school year was not “official” research, it sparked my interest and provided the prior knowledge and framework for the study and was the impetus for my dissertation proposal topic completed in May of 2007. I religiously attended the monthly TLCs for the FAPP group which helped me structure the research questions for this study. I have provided detailed schedules (Tables 4-7) to illustrate the depth of my engagement in the project.

2007-08

Table 4: TLCs. 2007-2008 TLC Schedule:

<table>
<thead>
<tr>
<th>TLC #</th>
<th>Dates: 2007-2008</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLC # 1</td>
<td>9/27, 10/26, 11/30, 1/25, 2/22, 3/28, 4/25, 5/23</td>
<td>8:00 – 11:30</td>
</tr>
<tr>
<td>TLC # 2</td>
<td>9/21, 11/16, 1/18, 2/15, 3/21, 4/11</td>
<td>11:30 – 3:00</td>
</tr>
<tr>
<td>TLC # 3</td>
<td>9/21, 11/16, 1/18, 2/15, 3/21, 4/11</td>
<td>8:00 – 11:30</td>
</tr>
</tbody>
</table>

Dates of 10 classroom observational field notes:

- December 10, 14 2007;
- January 14, 15, 31 2008;
- February 20, 2008;
- March 6, 17, 18, 19 2008
Table 5: Individual Interviews Schedule

<table>
<thead>
<tr>
<th>TLC #</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>4/30/2008</td>
<td>3:00- 5:15 PM</td>
</tr>
<tr>
<td>#2</td>
<td>5/1/2008</td>
<td>7:30 – 9:00 AM</td>
</tr>
<tr>
<td>#3</td>
<td>5/1/2008</td>
<td>3:00- 4:30 PM</td>
</tr>
<tr>
<td>#4</td>
<td>5/2/2008</td>
<td>3:00- 4:15 PM</td>
</tr>
<tr>
<td>#5</td>
<td>5/9/2008</td>
<td>3:00- 4:30 PM</td>
</tr>
<tr>
<td>#6</td>
<td>5/23/2008</td>
<td>3:00- 4:00 PM</td>
</tr>
<tr>
<td>#7</td>
<td>5/23/2008</td>
<td>4:15- 5:30 PM</td>
</tr>
</tbody>
</table>

Table 6: The Focus Group Interviews Schedule

<table>
<thead>
<tr>
<th>TLC</th>
<th>Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLC #2: 7 FAP teachers, coach and trainer</td>
<td>4/7/2008 8:00- 11:30 AM</td>
</tr>
<tr>
<td>TLC #3: 7 FAP teachers, coach and trainer</td>
<td>4/7/2008 12:00 – 3:00 PM</td>
</tr>
</tbody>
</table>

Table 7: The Vermont DOE Presentations/Workshops

<table>
<thead>
<tr>
<th>Date</th>
<th>Presentation/Workshop Title &amp; Purpose</th>
<th>Participants</th>
</tr>
</thead>
</table>
| 4/2/08 | VT DOE Spring Network Meeting: Comprehensive Local Assessment Systems – Rutland, VT | VT DOE & VT Educators

Presenters: Marion Anastasia, Principal & 6 Pilot Program Participants (FAPP teachers)
CHAPTER FIVE: DATA ANALYSIS

The nature of qualitative research makes it tricky to distinguish the differences between interpreting and analyzing data. Since there are multiple sources of data, it is important to clarify to the readers how I am going to present the data.

Data analysis involves working with the data, breaking it down to manageable units to search for codes, emerging themes, connections, and meaning; whereas interpretation addresses the findings and links the findings in relationship to the literature (Bogdan & Biklen, 2007). Given this, I will devote this chapter solely to the organization and analysis of the data. Chapter 6 will follow with the interpretations and findings of the data presented in this chapter. Additionally, Chapter 6 will connect the findings to the literature and research pertinent to my study. Finally, Chapter 7 will conclude with implication of the study.

Navigating the Data

*Interview Questions*

To help readers follow the process in which I present the interview question data, I have included the following description:

First, every digitally-recorded interview question was transcribed by Salli Griggs, administrative assistant of The University of Vermont’s Sociology Department. Next, the transcribed documents were imported into the Ethnographer™ V6 program for coding. It is important to note that the Ethnographer™ V6 program does not interpret data; it was used as an organizational tool to primarily code and sort the interview data. Next, I generated rudimentary codes which were further reduced to major, or ‘parent’, codes.
In order to present the interview question data, I first listed the major (parent) codes that were identified within each interview question. Then, I presented the codes in a pie chart format to illustrate the influence of the codes within each question.

After presenting the identified codes, I created headings, using each individual code, to document data and quotes obtained from participants. Because there are numerous codes and quotes within each interview question, I reiterated the interview questions, codes, and sections of the charts throughout the data to help readers navigate the data.

**Codes**

I conducted seven individual interviews with the 2006-2007 pilot program participants and two focus group interviews with the 2007-2008 participants. Through the coding process, I condensed 244 rudimentary codes into 26 ‘parent codes’, using the Ethnographer™ V6 qualitative coding program I have provided a brief description for each parent code in Table 8.

Table 8: Table of Code Descriptions

<table>
<thead>
<tr>
<th>Parent Code</th>
<th>Short Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Accountability</td>
<td>Accountability for student and teacher learning</td>
</tr>
<tr>
<td>2) Adult Learning</td>
<td>Professional development, research, shift from teaching to learning</td>
</tr>
<tr>
<td>3) Assessment</td>
<td>Data, standards based reporting, local, common and state assessments</td>
</tr>
<tr>
<td>4) Challenges</td>
<td>Behavioral, concerns, time constraints, reporting student growth, peers</td>
</tr>
<tr>
<td>5) Communication</td>
<td>Community, stakeholders</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>6) <strong>Culture</strong></td>
<td>Culture of collaboration, learning, curiosity, energy, engagement, independence, motivation, shift in culture</td>
</tr>
<tr>
<td>7) <strong>Data Collection</strong></td>
<td>Reporting to parents, to drive systemic change</td>
</tr>
<tr>
<td>8) <strong>Deep Thinking</strong></td>
<td>Discussions, depth of conversations</td>
</tr>
<tr>
<td>9) <strong>Implementation</strong></td>
<td>As in formative assessment practices</td>
</tr>
<tr>
<td>10) <strong>Interaction of Initiatives</strong></td>
<td>Balance of initiatives and the connection with formative assessment</td>
</tr>
<tr>
<td>11) <strong>Mission</strong></td>
<td>Adult and student learning and accountability, collaborative, community, celebrations</td>
</tr>
<tr>
<td>12) <strong>Misunderstood</strong></td>
<td>Terminology, don’t know you don’t know, formative assessment</td>
</tr>
<tr>
<td>13) <strong>Motivation</strong></td>
<td>Motivation</td>
</tr>
<tr>
<td>14) <strong>Parent Communication</strong></td>
<td>Student to parents, teachers to parents, parents to teachers, parents to students, administration to parents</td>
</tr>
<tr>
<td>15) <strong>Relational</strong></td>
<td>Caring, culture of community, energy, excitement, valued, helping, professional, safe, teacher interactions, supportive, relationships</td>
</tr>
<tr>
<td>16) <strong>Reporting Systems</strong></td>
<td>Standards based</td>
</tr>
<tr>
<td>17) <strong>Role of Teacher</strong></td>
<td>Coach, trainer, mentor, guide, facilitator, scaffold, supporter, teacher for students, teacher for teachers</td>
</tr>
<tr>
<td>18) <strong>Stakeholders</strong></td>
<td>Communicate best practice, policy, participation, encouragement, impact on children</td>
</tr>
<tr>
<td>19) <strong>Shared Leadership</strong></td>
<td>Collaborative structures, grow within, principal, teachers, up scaling, shift in role of teachers</td>
</tr>
<tr>
<td>20) <strong>Student Learning</strong></td>
<td>Research into action, active involvement in their own learning, focused, invested, peer to peer, self assessment, shift in practice and roles, shift in learning culture, motivation, activating own learning</td>
</tr>
<tr>
<td>21) <strong>Systemic Structures</strong></td>
<td>Resources, early release days, TLCs, policy, practices, technology, sustainability, school board communication, scheduling, research-based, state support, instructional leaders, professional development team, school-wide support</td>
</tr>
<tr>
<td>22) <strong>Teacher Behaviors</strong></td>
<td>Autonomy, habit, approach, focus on learning vs. teaching, process, shift to learning, teachers know where kids are, learning intentions are clear</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>23) <strong>Teaching Practices</strong></td>
<td>Clear expectations, learning criteria, explicit, purposeful, teaming, value formative assessment, strategic, know where every student is, everyday</td>
</tr>
<tr>
<td>24) <strong>Techniques vs. Strategies</strong></td>
<td>Using techniques to support strategies</td>
</tr>
<tr>
<td>25) <strong>Teacher Learning</strong></td>
<td>Structure and systemic supports</td>
</tr>
<tr>
<td>Communities</td>
<td></td>
</tr>
<tr>
<td>26) <strong>Up Scaling</strong></td>
<td>Vertical teaming, TLCs, Systemic issues and impact, professional development, stakeholder support</td>
</tr>
</tbody>
</table>

**Individual Interviews**

**Individual Interview Question One:** *Tell me about your classroom culture. Has it changed since implementing formative assessment? How so?*

The codes identified in this individual interview question concerning the shift in classroom culture included: 1) Accountability, 2) Adult Learning, 3) Assessment, 4) Culture, 5) Relational, 6) Role of Teacher, 7) Student Learning, 8) Systemic Structures, 9) Teacher Behaviors, 10) Teaching Practices, 11) Interaction of Initiatives, and 12) Deep Thinking. To illustrate the weight of each code within this interview question, I designed a pie graph that illustrates the weight of the codes as illustrated in Figure 8.
1. Tell me about your classroom culture. Has it changed since implementing formative assessment? Accountability

When searching the data, the themes concerning accountability focused on both student and teacher accountability. I created a web graphic organizer that illustrates the teachers’ responses concerning student and teacher accountability in Figure 9.
Teachers reported that the implementation of formative assessment techniques and strategies fostered student accountability, and by doing so, it has caused a shift in the classroom culture.
The techniques that we used has forced that accountability piece on those kids that you need to be responsible for what we are doing and that you need to be thinking about what we are working on as a class right now and you need to be focusing on what we are doing right now and you need to be talking about what we are doing and that it’s not okay to be sitting and not thinking about what we are learning. If you get called on you need to be prepared with an answer because the expectation is that you need to have some sort of response.

Teachers resonate with the shift in putting the responsibility on the students, rather than on the teachers. They report that students know they will be and are held accountable and responsible for their learning. They now ask peers for help, and they encourage each other to take care of themselves. “…part of that also is formative assessment; you know kind of encouraging kids to take care of themselves in a way both academically and socially, too.”

With a culture of tight teaching, teachers report that students are not only accountable for their academics, but also for their behavior.

Those [teachers] that are clearly using techniques and strategies [feel a shift in culture] because it’s tighter teaching. There is not much down time. Kids are held accountable and they know they are. They know they will have to show some sort of evidence at the end of the lesson of their learning.

The emerging theme regarding the shift in culture, according to the individual interview participants, is that the accountability of teachers and students is influenced by implementing formative assessment techniques and strategies.
2. Tell me about your classroom culture. Has it changed since implementing formative assessment? Adult Learning

There were two segments in the transcriptions that occurred under the code of adult learning. They were: ‘teacher has purpose’ and ‘shift from teaching to learning’. One teacher expressed an overall goal of increasing independence in her students, pulling away and letting them make choices and decisions on their own. Another teacher echoed the sentiments of this by saying: “I definitely find myself thinking a lot more about students, their understanding; not just making assumptions about the data they understand. It’s a shift from teaching to learning.”

3. Tell me about your classroom culture. Has it changed since implementing formative assessment? Assessment

As in adult learning, there were two segments identified as an assessment code. Teachers spoke about the shift in using Vermont grade level expectations and aligning students’ needs along the continuum, and giving clear learning intentions. It is important to the teachers that kids know where they are and where they need to be, so standards based reporting is valued. “…make the learning intentions clear to the students so they know where they are working along the continuum, or not, to receive a certain score.”
participant referenced Vygotsky’s theory on the ‘zone of proximal development’ and scaffolding learning when speaking about a shift on assessment culture on her classroom.

4. Tell me about your classroom culture. Has it changed since implementing formative assessment? Culture

![Classroom Culture: Culture]

I identified three segments coded as culture. The responses centered on increased motivation, involvement, and in-depth conversations. As a result of the motivation, students are feeling safe to say they do not understand a concept. Teachers are making an effort to increase the independence of their students. “As for teaching and classroom culture, I think they both go together, in that case, so the change for me as far as formative assessment is the way we are doing things around here. I’m trying to increase the independence of the kids…”

5. Tell me about your classroom culture. Has it changed since implementing formative assessment? Relational

![Classroom Culture: Relational]

The relational code uncovered data that there is an attitude of caring for and with one another. The responses of participants are illustrated in Figure 10. “Well, I think first of all, the culture is child centered and we operate as a community of learners where
everyone is respectful of one another and everyone has a part in building that community. We function together.”

Figure 10: Responses from teachers as it relates to relational change in classroom culture.

Motivation and safety to learn and make mistakes is embedded throughout the data of this parent code as well as others. “…so that’s the good thing about the culture, the helping part…”
6. Tell me about your classroom culture. Has it changed since implementing formative assessment? Role of Teacher

Concerning a shift in culture as it pertains to the role of the teacher, participants said that they are less controlling, and they encourage students to take care of themselves academically and behaviorally.

7. Tell me about your classroom culture. Has it changed since implementing formative assessment? Student Learning

The most noticeable shift about student learning is that students are referred to as ‘learners’. Teachers report that they know where every student is in their learning and the culture is about learning. Figure 11 provides evidence about teachers’ responses. Students are thinking about learning, and teachers are thinking about strategies to move learning forward for every learner. “I get it now. Before it was never that way. It was how do I teach this lesson? Now it’s what do I do with learners to move forward. It’s a whole different approach.”
Figure 11: Student learning as it relates to classroom culture.

8. Tell me about your classroom culture. Has it changed since implementing formative assessment? Systemic Structures

Classroom Culture:
System Structures
Past team-teaching practices took on a different look due to the implementation of formative assessment as well as the Responsive Classroom® structure.

9. and 10. Tell me about your classroom culture. Has it changed since implementing formative assessment? Teacher Behaviors and Teaching Practices

Teacher behavior and practices are central to learning as illustrated in Figure 12.

Figure 12: Responses of classroom cultural shifts.
The teaching has a different approach. It’s more on learning than teaching.

They’re [teachers] always looking at their student’s evidence and wondering what to do and how to move students forward.

11. Tell me about your classroom culture. Has it changed since implementing formative assessment? Interactions of Initiatives

Participants said that the connections with the Responsive Classroom® Program and Reading Recovery® contribute to the shift in classroom culture as they implement formative assessment. The interaction is fluid, supporting the pedagogy of the formative assessment practices. “I remember from Reading Recovery, sitting on my hands. Let them try. Let the students be accountable for their learning and understand that it is okay to make mistakes and not understand something, but how can we work that through.”

12. Tell me about your classroom culture. Has it changed since implementing formative assessment? Deep Thinking

The consequence of the conversations during TLCs has impacted the classroom culture, overall. “I know that in my TLC when I have conversations with the teachers that
are practitioners, the conversations are more in-depth and it’s very much on student learning.”

Given the data provided by the participants concerning the shift in classroom culture, Figure 13 summarizes the participants’ responses and emerging themes pertaining to the shift in classroom culture.

![Diagram of Classroom Culture Codes and Emerging Themes]

Figure 13: Summary of classroom culture codes and emerging themes.

**Individual Interview Question # Two:** *Has your perception of your role as teacher changed since implementing formative assessment? How so?*

The codes that emerged from the interview question about teachers’ perception of their role of teacher included: 1) Accountability, 2) Assessment, 3) Culture, 4) Relational 5) Role of Teacher, and 6) Teacher Behavior. To illustrate the weight of each code within
this interview question, I designed a pie graph that illustrates the weight of the codes as illustrated in Figure 14.

Figure 14: Codes identified as an influence on participants’ perceptions of their role of teacher.

1. Has your perception of your role of teacher changed since implementing formative assessment? Accountability

The responses for accountability pertaining to the role of teachers is their responsibility of reporting evidence of learning using a standards based method or tool. Just as important is the shift of students’ responsibility for providing evidence for day to day learning.
2. Has your perception of your role of teacher changed since implementing formative assessment? Assessment

Simply stated, the shift in the role of teachers is to ‘know what students know’ and provide evidence of learning. “You really have to assess their learning.” The sentiments from the participants indicated that the assessment of learning is so important that it significantly impacts their perception about their role as teacher, or assessor. “Now it’s looking for assessments, pre-assessments, and post-assessments. What can I do to the lesson to help so I know what students know?”

3. Has your perception of your role of teacher changed since implementing formative assessment? Culture

The culture has impacted teachers’ perceptions of their role in that they are more comfortable in teaching in a community of learners and in a school that is allowing them to teach the way they think they should. There is a sense of individuality and autonomy for students and learners. “So, my perception is teaching has changed in that I feel more comfortable in teaching the way I felt that I should always teach and that the culture of the community here at school is allowing me to do that.”
4. Has your perception of your role of teacher changed since implementing formative assessment? Relational

“I’m not an expert and I’m comfortable saying I’m not the expert ...but you know what...together, we can find the answer; and that’s the same technique I use in the classroom and XXX graders were really receptive to that because I think they tend to get into what the adult always knows the answer, and I don’t.” Teachers are transparent with the students about their learning. They model strategies to help students help themselves.

Given the responses from the participants, Figure 15 recaps the codes and emerging themes about the shift in teachers’ perceptions of their roles as teachers.

5. Has your perception of your role of teacher changed since implementing formative assessment? Role of Teacher

“I’m a member of the community, just like the students, but I know that I’m a facilitator of learning, not a dictator.” All the participants reported that their role is that of a coach. It was qualified by using terms such as: guide, facilitator of learning, assessor, and community member.
Role of Teacher
Assessment = “sit beside”  
Mentor
Give to them, they give back – it’s a relationship
COACH
Mentor
Guide
Scaffolder of learning
Member of the community
Assessment = “sit beside”
Formative Assessment has given me permission to go ahead and do it the way I feel it should be done.

Figure 15: Change in perception of role of teacher.

6. Has your perception of your role of teacher changed since implementing formative assessment? Teacher Behavior

Teachers reported changes in their behavior; therefore, their perception of their role has been influenced by these behaviors.

So, my role as a teacher, I try to, as I might have indicated already, is try to get the kids to do more and for me to back up and be just more of a coach, more of a
guide, put the stuff in and give direction, very specific, particular directions when needed in certain areas. But in areas that don’t need to be guided quite as much, back off.

Figure 16: Teacher behaviors as it impacts the changing role of teachers.

Figure 17: Perceptions about the roles of teacher codes and emerging themes.
Individual Interview Question # Three: What motivates or excites you about implementing formative assessment? Also, what are some of the problems and pitfalls of implementing formative assessment?

The codes that came forward from the motivation interview question are: 1) Systemic Structures, 2) Teacher Behaviors, 3) Accountability, 4) Assessment, 5) Adult Learning, 6) Relational, 7) Deep Thinking, 8) Role of Teacher, 9) Student Learning, and 10) Teacher Practices. To illustrate the weight of each code within this interview question, I designed a pie graph that illustrates the weight of the codes as illustrated in Figure 18.

![Pie chart](image)

Figure 18: Codes identified concerning motivation about implementing formative assessment
1. What motivates or excites you about implementing formative assessment? Systemic Structures

The support of early release days and time built into the school day for TLCs is a motivating factor according to the participants. In addition, the resources provided by the Vermont DOE through the Commissioner’s Required Actions (Title One Pass-Through Grant) enabling the project to continue into year 2 was another motivating factor identified by the participants.

2. What motivates or excites you about implementing formative assessment? Teacher Behaviors

The following are quotes about teacher behaviors that are motivating:

- Being able to tell where a kid is at any given time is really, really good for me.
- So, formative assessment excites me in that I can get more out of kids, I again go back to the last question, I feel like I have been given permission to do that and that I don’t have to spend so much of my energy, both psychologically or otherwise dealing with trying to make marks on papers which are so archaic in a way.
Figure 19: Motivational data relating to teachers’ behaviors.

3. What motivates or excites you about implementing formative assessment?

Accountability

“I think what excites me most, especially last year, was just the student trying to turn that ownership to them.” Motivating factors expressed themselves as students taking on the ownership of their learning as well as being accountable. The partnership between students and teachers has become an expectation for both the students as well as the teachers. Interestingly, the participants’ responses centered on students’ accountability. The question was posed open-ended with no particular audience in mind.
Accountability and Motivation

Students take ownership

I know what I need to do to move forward

Pressure off my shoulders and adding responsibility to kids

More of a facilitator and less telling kids

Have kids involved in their own education

Figure 20: Motivation concerning the accountability of students.

4. What motivates or excites you about implementing formative assessment? Assessment

The data was overwhelmingly supportive of the following assessment strategies that motivated teachers as a result of formative assessment implementation:

- Standards Based Reporting
- Common Assessments
- Scoring on a 1-3 Scale
- Benchmarks
It is important to note that a pitfall was reported as a result of implementing the above assessment strategies. There is a lack of an organizational system to keep track of and manage the evidence of student learning.

5. *What motivates or excites you about implementing formative assessment? Adult Learning*

The theme central to research emerged within this question. Teachers were motivated to know that formative assessment is research-based and they could see the connection to their practices. “I think we have deeper conversations in its research and why and how can we make it spread and make a shift.” There is a shift in teachers’ attitude toward teaching as a result of the professional development and implementation of formative assessment. “The excitement is, well, it’s the best professional development that I’ve been involved in….. I could see that it was very hands-on for teachers.”

6. *What motivates or excites you about implementing formative assessment? Relational*

One teacher noted:

I should also say about formative assessment, it isn’t just classroom- based. I mean I’m talking a lot about the classroom and sometimes I step away from the systemic part. But it’s also in implementing formative assessment. I think school
wide, it is important that we think of ourselves all as learners; we need to work with other teachers, parents, and the community and think of our school as a community.

The spirit of teacher-to-teacher relationships was riddled throughout the interview question responses. Examples of classroom and professional development teacher-to-teacher interactions support the notion of teachers learning and working together.

Figure 21: Motivation as it relates to relational factors.

7. What motivates or excites you about implementing formative assessment? Deep Thinking

The participants reported deeper thinking for both adults and students:
• It is a deeper level. It has become (and Dylan Wiliam said it would happen) a habit now.

• One motivation is the knowledge that I can encourage my students to think a little deeper, which is a big part of formative assessment.

TLCs are the catalyst in which the deeper thinking is fostered:

• They really don’t get the meaning behind it until they’re really in TLCs and discussing it and talking about the use of them and then they want to know more. Year two people, I think have deeper conversations in its research and why and how they can make it spread.

8. What motivates or excites you about implementing formative assessment? Role of Teacher

The motivation around the changing perception of their roles as teachers is motivating because the responsibility is shifted to the students and to the teachers to be responsible to know where students are in their learning every day. “I know that what I am providing them for support or what I am asking them to do is more appropriate that was maybe before. I think that by knowing them more I am better able to support them in what they need.”
9. What motivates or excites you about implementing formative assessment? Student Learning

I went back into my rudimentary codes to understand what teachers were reporting about the motivational factors concerning student learning. The codes were: focused, grow, internalize, invested, peer interactions, ping-pong, and student motivation. Using these codes, it is apparent that it motivates teachers when students’ learning is transformed. To explain “ping-pong” and student learning:

…it’s about kids taking that responsibility and going into accepting the responsibility for their own learning, which is a big challenge. I think for me too, I think back to the student to the teacher back to the student and that gradual shift now from the teacher to the student to another student to another student and maybe back to me, and just continuing to ensure it doesn’t go back to that student-teacher kind of ping pong.

Figure 22: Student - Teacher “Ping Pong”.
Figure 23: Student - Student “Ping Pong”.

10. What motivates or excites you about implementing formative assessment? Teacher Practices

Participants reported that being honest about their practices and spending time to reflect and ask questions are motivating. Ask yourself, why am I doing what I’m doing as a teacher. I think it’s really important to ask yourself a lot of times because you can be really honest with yourself and say, well now, just as we need a break or we’re going outside and there is a purpose about that but we need to be really purposeful in our teaching and in our learning.

Figure 24 illustrates the emerging themes about what motivates teachers about implementing formative assessment.
Figure 24: Codes and related themes concerning what motivates teachers about implementing formative assessment.

**Individual Interview Question # Four:** *What are your ideas and beliefs about how students learn? How has your developing knowledge and skill of formative assessment informed your ideas and beliefs about how students learn?*

“...all of a sudden a light bulb went on; he was energized and he was motivated and his behavior changed, his attitude about himself and his classmates changed, and that was huge.”

The codes included in this interview questions are: 1) Student Learning, 2) Culture, 3) Teacher Practices, 4) Role of Teacher, 5) Relational, 6) Accountability, 7) Adult Learning, and 8) Teacher Behaviors. To illustrate the weight of each code within this interview question, I designed a pie graph that illustrates the weight of the codes as illustrated in Figure 25.
1. **What are your ideas and beliefs about how students learn? Student Learning**

   “I can’t say that my belief has changed but now I have ways to put my belief into practice because I’ve always believed that kids learn from when they are actively involved in their learning. It’s not a lecture.” To add to this belief, one teacher told a “story” about a student whose learning behaviors were transformed through formative assessment practice in the classroom:

   Definitely yes [responding to the question], and I can give you a concrete example. I’ve seen a teacher who had a student for two years and he was a boy who was struggling for lots of reasons, but he just wasn’t engaged. Didn’t have
the buy-in, wasn’t focused, wasn’t on task…When I was using the formative assessment techniques, his whole demeanor about school changed and I think part of it was the popsicle sticks and no hands up technique…I really pushed and made sure that he had a voice in the classroom, but making sure that you’re having those individual conferences with students and being very clear to say – here is where you are and that’s great but here’s where you need to move that next step and then being able to say, look how much growth, look at what you’ve done in such a short period of time and I don’t know if he ever got it that way. I don’t know if anyone ever explained to him that way and maybe I just hit him at the right age where all of a sudden a light bulb went on but he was energized and he was motivated and his behavior changed, his attitude about himself and his classmates changed, and that was huge.

Other participants added that they believe that students learn best by doing it, by seeing it done, and talking, working and sharing in partners and/or groups.

![Figure 26: Participants’ beliefs about student learning](image)
2. What are your ideas and beliefs about how students learn? Culture

Participants reported that student learning is fostered in a culture of curiosity, motivation, energy, collaboration, independence, and accountability. “You need to be able to foster independence of the others and if they can take care of themselves as learners and they really don’t have to have you there constantly.”

3. and 7. What are your ideas and beliefs about how students learn? Teacher Practices and Adult Learning

“I [used to] kind of pass the buck so to speak because it was easier than really, really looking at my teaching practices through a microscope and now it’s a reality.”

Teachers said that implementing the following practices enable students to learn in ways that are congruent to their (teachers’) beliefs:

- Sharing in groups;
- Providing many different opportunities to learn;
- Using learning intentions;
- Have a menu of strategies for teaching;
- Looking under a microscope about teaching practices.
4. What are your ideas and beliefs about how students learn? Role of Teacher

“I always go back to how my dad taught me to sail. Push me out in the boat, with the walkie talkie, and then my walkie talkie fell overboard and I was really on my own.”

Through formative assessment training and experience, teachers’ beliefs of how students learn impact their perception and practices in the role of teacher. Figure 27 represents the sentiments of the participants about their beliefs about how students learn in relation to their role of teacher.

Figure 27: Teachers’ roles as it impact their beliefs about how students learn.
5. What are your ideas and beliefs about how students learn? Relational

The initial coding about relationships and beliefs about how students learn included helping and learning from each other. The transcripts reiterate the beliefs about working together in groups, sharing, talking with each other about learning, and learning from each other.

6. What are your ideas and beliefs about how students learn? Accountability

The segment that addresses accountability in relationship to beliefs about how students learn included the motivation for being accountable for their own learning:

“Students are motivated to learn and I think that as a teacher, if anything, I might stop that motivation by not allowing them to be in charge, accountable for their own learning.”

8. What are your ideas and beliefs about how students learn? Teacher Behaviors

“The more and quicker that you know about what they know, the more and quicker you can respond to it.” Teachers report that they need to be responsive so that their beliefs about how students learn can be realized.
Individual Interview Question # Five: Are there particular strategies and associated techniques that have made a major impact or shift in how you perceive student learning?

To organize the data collected from this question, I listed the five formative assessment strategies and identified the participants’ responses under the appropriate strategy heading.

1. Clarifying and Sharing Learning Intentions
   - I think that people are using learning intentions, the strategy is really important.
   - To be able to state the learning intention, be really purposeful in your teaching so that you’re all on the same playing field.
   - My goal this year was learning intentions.
   - I think for me [learning intentions]it helps me be more focused in my class. For me too, I’m not sure how much, and that’s something I want to keep working on.
because I don’t think I do it very well, but I agree, it helps me as a teacher focus my thinking and planning and whatever.

- Learning intentions, clearly, we used those a lot.

2. Engineering Effective Classroom Discussions, Questions and Learning

- I think the biggest one is the questioning piece, it’s probably because everyone chooses the ‘no hands-up’ technique right away because it is an easy one to implement and they can see it.

- Well, I like learning logs.

- I use popsicle sticks.

- Obviously, wait time.

- I think the most obvious one is the no-hands. They still raise their hands but we use popsicle sticks or use the spinner or random names. They know they need to be able to give us an answer or seek an answer from somebody else and still have to restate what they said and I think that for me is the biggest shift.

- I think the questioning is what I use the most since I have started formative assessment. We spend a lot of time talking about it, but the popsicle sticks are different ways of getting to all the students in the classroom, making sure they are all accountable for their learning.

- We have used learning logs a lot this year…The learning logs are a good source of information for the kids- they have been able to work independently on those and share their ideas.
3. Providing Feedback That Moves Learners Forward

- So, like two stars and a wish, obviously conferencing with you as a teacher on their writing, I use that. Here are your two positive things, now what’s a goal that we need to work on and they’re really clear about that goal.

- We mark – we write, read these directions, and it’s short. We underline the area that they need to fix. It took a while for the kids to get used to that so they understand now what they need to do – we usually leave a little note on their paper if they need to fix something.

4. Activating Students as the Owners of Their Own Learning

- I see people doing more peer assessing.

- Definitely the student self assessment strategy.

- In my classroom it’s directly accountability because the things I am doing have mostly to do with students being accountable for their own learning.

- Red-Green-Yellow traffic lighting

5. Activating Students as Instructional Resources for One Another

- But I also think the peer, activating peers. I think that really motivated students….I’ve read all the research that has said that students respond to their peers better than adults and how powerful that it, but until I actually began doing it regularly, I didn’t really understand it and I was like, this really does work.

- If I could, if there is anything it’s that there is a greater emphasis on using other students to move one particular student along or whatever, you see them, their peers as resources.
- I have done some peer assessment. Other students might be reading their writing and asking them questions or helping with the student. They may edit with another student.

Figure 29: Strategies that have made a major impact on how teachers perceive student learning.

**Individual Interview Question # Six: What is your involvement with TLC’s?**

**How does the work in TLCs shape and influence your practice?**

The codes that surfaced from the TLC interview question are: 1) Adult Learning, 2) Role of Teacher, 3) Systemic Structures, 4) Accountability, 5) Deep Thinking, 6) Up Scaling, 7) Relational, 8) Culture, 9) Techniques vs. Strategies, 10) Year Two Implementation, 11) Assessment, 12) Challenges, and 13) Interaction of Initiatives. To illustrate the weight of each code within this interview question, I designed a pie graph that illustrates the weight of the codes as illustrated in Figure 30.
1. What is your involvement with TLCs? Adult Learning

The teachers report that the new learning segments of the TLC modules are the most important.

- The good piece is the new learning, so I wish in year two, the ‘how’s it going’ wouldn’t go so long so we would get to the new learning and I think that more so even next year because of the group that we have in the year two, they can go deep in those conversations…We need to continue with the new learning and get that out there.
• Some of the conversations are great but I think also we need to keep in mind that we do need to get that new learning because for me, that was the part that kept me energized.

• I think TLCs are the most important part. I don’t think it would have been successful for me or even for our school if we didn’t have the TLCs in place...I walk away every time having learned something. I am energized to get back and teach back in my classroom.

![Figure 31: Adult learning and TLCs](image)

2. What is your involvement with TLCs? Role of Teacher

![TLCs: Role of Teacher](image)
The responses elicited for the parent code ‘role of teacher’ were exclusively from the coaches. They said that their role in TLCs is to be objective, and the perspective of participant vs. coach needs to be foremost in their thinking and planning.

- I think it is difficult as a coach because you want to be trying it and doing it yourself, and that’s kind of tricky.
- Mine is a different perspective because I actually have two TLCs. My personal TLC which is with year one practitioners, the pilot project, and now I’m a coach of a TLC and I see them very differently.

3. What is your involvement with TLCs? Systemic Structures

The pilot project teachers are thinking on a “systems” level around the influence of TLCs and their practices:

- There’s been such rich conversations and we’ve shifted the whole school because we get into bigger topics. It has shifted, you can hear learning.
- We tend to look at the global picture. We tend to want to attack the systemic problems, or look at those big things because we look at the big pictures…
- The discussions we have had, they have become more about, I think, the operations of the building than anything else..

The structures of the TLCs hold teachers accountable for their new learning because they come back to the TLCs and talk about the techniques and strategies that they have tried, including failures and successes.
4. **What is your involvement with TLCs? Accountability**

As part of the *Keeping Learning on Track* modules, the teachers craft action plans and share their new learning as the impetus for accountability.

- When they are writing down what they are going to try and do for a technique, which leads to a strategy, that’s the piece that kind of holds them accountable to coming back to the TLC to talk about what they have tried.
• You’re talking about techniques and strategies with each other and you’re holding each other accountable and if you don’t have that you couldn’t necessarily do it and you wouldn’t get as deep into it and I think everyone leaves the TLC enthusiastically, but they always leave learning something new.

• It (TLCs) keeps us accountable in a way to keep us working on formative assessment stuff because I always felt kind of guilty if I go back to a TLC and haven’t really done …I feel like I sort of shirk my responsibilities in a way.

5. What is your involvement with TLCs? Deep Thinking

There was a transcript segment that noted deep thinking and the impact of TLCs in shaping practice:

…it’s that professional conversation and I don’t think the investment would be there if there wasn’t the TLC to go with. It changes the culture. The expectations are different. It sounds funny but you feel like you are in this club. It really does. I don’t know…it’s a safe place. We are a big school so when you think about it in terms of, here are five or six of my colleagues that I can truly be myself and share my successes and my failures….
6. What is your involvement with TLCs? Up Scaling

The theme of up scaling clearly identified the value of vertical teaming.

- It is very good to hear just in general what was happening across different grade levels and the expectations behaviorally and otherwise.
- It allows us to see how things work in 6th grade and vice versa. It’s allowed that colleagueship vertically that we don’t typically get the chance to have real professional conversation.
- It’s really important that they come and talk about what didn’t work because that’s when you see the vertical team really step up and say, well I tried it first this way..

7. What is your involvement with TLCs? Relational

The relational theme included the following code words: safe, shift in teacher culture, culture of community, sharing, colleagueship, and professional.

We could start a school with just those people, you know what I mean? It’s just a whole learning shift that has happened with the people that have taken formative assessment because they really see the value in the TLC and that’s where the
learning comes from, from each other, and just like in the classroom, you should have that kind of environment.

Figure 33: Relational codes as they pertain to TLCs.

8. What is your involvement with TLCs? Culture

The subject of culture is riddled throughout all the codes within this interview question. The codes of energy and motivation describe the culture of TLCs. “Part of the
success and energy that teachers get and bring back to their classrooms as a motivation comes from the TLC.”

9. What is your involvement with TLCs? Techniques vs. Strategies

A concern about differentiating strategies and techniques during TLCs is noted by a participant:

My only concern is I’m not sure they’re getting the connection between the strategy and the technique. When we have conversations I hear a lot of technique, technique and I always have to think, what about their action plan. They remember to tell me what strategy they’re really honing in on. What technique are you using to get to that strategy?

10. What is your involvement with TLCs? Year 2 Implementation

Concerns of year two TLC implementation included the following data:

- This year, year two, it doesn’t seem like we’re getting into new learning. I mean, I know we’re having conversations and they’re great conversations, but it doesn’t seem like we are getting into that new learning part.
• I think the first year was more impactful than the current year since we spent a lot of time specifically talking about techniques and strategies and how to implement them in the classroom.

11. What is your involvement with TLCs? Assessment

The standards based reporting system implemented at the St. Johnsbury School was a direct result in the work of the TLCs.

There have been topics that have arisen that we’ve shaped as a result based on the TLC, or should I say formative assessment philosophy. So, obviously, the report card sums up where we have tried to move away from a number or letter grades that are really meaningless and don’t have any basis of I won’t say fact, but any basis of GEs or learning intentions, really they are just numbers.

12. What is your involvement with TLCs? Challenges

The teachers identified two areas that are challenges concerning the structure of TLCs and the impact of student learners as an outcome of TLCs:

• There are times when I am not comfortable leaving my group [classroom].
• I do worry about next year that they [students] are going to end up in a classroom that doesn’t have that and any other strategies that we have used this year and that will allow them to slip back into their own little…

13. What is your involvement with TLCs? Interaction of Initiatives

Teachers discussed the similarities of pedagogical principles and the balance of guiding student learning with Reading Recovery®, Responsive Classroom®, guided reading, and on-going professional development practices.

Figure 34: Identification of the interaction of initiatives.
Involvement in TLCs centers on the professional development associated with formative assessment. Figure 35 surmises the emerging themes concerning TLCs and teachers’ practices.

![Diagram of codes related to teachers' involvement in TLCs]

Figure 35: Codes and themes around teachers’ involvement in TLCs.

**Individual Interview Question # Seven: How do you communicate student growth (to students, parents, and policy makers) through formative assessment?**

The codes identified in this interview question included: 1) Accountability/Productivity, 2) Systemic Structures, 3) Challenges, 4) Data Collection, 5) Assessment, 6) Teacher Behavior, 7) Culture, and 8) Parent Communication. To illustrate the weight of each code within this interview question, I designed a pie graph that illustrates the weight of the codes as illustrated in Figure 36.
1. How do you communicate student growth? Accountability/Productivity

Teachers are using formative assessment to measure student growth in academics, but in productivity and accountability as well. They are communicating/reporting this through a standards based reporting system, providing daily feedback to students, students as self assessors and by peer assessment.

- Well it has [changed the way I report student growth] in the way with report cards because we’ve separated the accountability and productivity which has been a huge shift in our culture, and so with our reporting system, a student
can do well in accountability and productivity and not so well in learning and content.

• So, to communicate student growth to students, they get direct input from me immediately.

• As far as personal accountability, it seemed, particularly when I first introduced it at the beginning of the year, they were asking for it. I still to this day, get parents who tell me how happy they are that they get that. Because if nothing else they see from their kid, they can look at that and know how at least behaviorally if they were on task and at least trying to do what they were doing.

2. How do you communicate student growth? Systemic Structures

The teachers identified the following systemic structures as support to implement formative assessment and reporting student growth:

Principal support -

• I think our support in having you [the principal] actively involved in year one; not that you weren’t in year two, but your support in going to Lake Morey with us and making that have to happen. We wouldn’t be where we are if you weren’t a part of all of that and had your excitement, so the support from the administration has been really important. The shift that our school has done with the school report card and all that has come from you being on board
with what’s happening in formative assessment. We need to get our administrators as excited as you are.

State support -

- The support from the state is huge for us in how they view us and they say that we’re a model school for it and that’s really exciting.
- The comprehensive local assessment system (CLAS), we can show how we use formative assessment.

Standards-based reporting system -

- Luckily this year we’re changing report cards but when I was doing it, we had to figure out a way to make it fit the grading program [Grade-Quick] and that was brutal because it didn’t make sense...

3. How do you communicate student growth? Challenges

Parents:

- It’s almost like you put parents on overload; it’s too much information about my student’s learning.
- It was a little disconcerting to have a parent say to you, yeah, this is great but did they get an A or a B? It’s like, ah, you’re not getting it.
- Probably one of the biggest changes that I had to struggle with formative assessment was the reporting. To students, and having that awareness what it really means when you talk about their growth in their learning, and then to
parents. How do you make it so it’s understandable and then in the bigger picture. How do you take what you know is working and fit it into the system that the school has?

4. and 5. How do you communicate student growth? Data Collection & Assessment

Student growth is reported through:

- Common assessments
- Benchmarks
- Standard based reporting systems
- Feedback
- Accountability & productivity
- Kids are accountable for their behavior and productivity
- Kids show evidence of productivity
- Show evidence of learning
- Verticle alignment
- Aligned to GE’s
- Learning logs
- Comment only marking
- Peer to peer
- Teacher to student

Figure 37: Communicating student growth concerning assessment

- There is a shift with recording and stuff and because we are working on common assessments.
• We have both common assessments and our own benchmarks in place, so you can say to parents, this is the running record, you have the evidence of where they need to be…

• They get feedback as a result of peers...

• So you know even the feedback from the day to day learning logs, this is where we give them feedback.

• I think we work really hard on giving really specific feedback.

6. How do you communicate student growth? Teacher Behavior

- I think before it was pretty much their progress grades in my little book and it was on my desk and it was sort of secret information. They got their work back and had their scores but they never have to think about whether they needed improving or not.

- It’s about observing students and assessing what they know, where they are, and knowing where they need to go which we have with the standards based, with our power standards and grade level expectations (GEs).

- You take your standards, you take your GEs, you break it down into concepts and learning intentions and you have multiple…so here’s where you are, here’s your evidence, this is where you are, this is where you need to be.

- We really want to think about what they’ve done.
• We did student-led conferences, I could articulate where every student was on any given standard, on any given concept, where they were.

• I knew where my kids were, kind of, but not like I do now, I didn’t have any way of really showing parents where they were, clearly and purposefully.

7. How do you communicate student growth? Culture

It is the sentiment of the participants that their beliefs and practices on assessing accountability and productivity have shifted the culture of reporting student growth.

• The only thing I can say is about their motivation or how they tried.
  Productivity and accountability, that’s when I would say: are you meeting the standard?

• The accountability and productivity is the screening to get on the honor roll, so maybe that has stepped up some kids to be more accountable. And it could have happened for the parents as well, and that’s okay to have a little parent pressure.

• Well, it has in the way with reports cards because we’ve separated the accountability and productivity which has been a huge shift in our culture...

8. How do you communicate student growth? Parent Communication
What are teachers communicating to parents? How are they communicating?

- I’m getting better at this in telling parents and working with kids on just the idea of maybe they’re not where they need to be, but they are moving in the right direction. They are making progress in whatever the skill is. That’s a change for me.
- So, hopefully, these conversations are happening between parents and kids.
- Well during parent-teacher conferences, I made formative assessment really clear, at least the techniques that I used in the classroom. The parents always knew what was happening what I was using...the personal accountability chart that we use and the stop lighting things were the two topics I talked about quite a bit so parents knew what was happening with their students in the classroom as well.

As Figure 38 demonstrates, there are multiple layers and perspectives involving communicating student growth.

Figure 38: Codes and themes about communicating student growth.
Individual Interview Question # Eight: What school policies or practices support or hinder your efforts to implement formative assessment?

The codes collected through the data concerning policies and practices included:

1) Systemic Structures, 2) Adult Learning, 3) Challenges, 4) Communication, 5) Culture, 6) Assessment, 7) Teacher Practices, and 8) Interaction of Initiatives. To illustrate the weight of each code within this interview question, I designed a pie graph that illustrates the weight of the codes as illustrated in Figure 39.

Figure 39: Codes identified for school policies and practices

1. What school policies or practices support or hinder your efforts to implement formative assessment? Systemic Structures
The systemic structures identified are: administrative support, the TLC structure, substitute teachers, early release days, school discipline policies, scheduling, and the school-wide action plan. Some of these structures presented a challenge, whereas some supported the implementation of formative assessment.

![Diagram of systemic structures]

Figure 40: Systemic structures supporting and/or challenging the implementation of formative assessment.

- I think it’s been hard this year because we have more people on board with subs and things like that and that’s tricky because people arrive late because the sub didn’t show.
• I think scheduling, I don’t know if it hinders as far as assessments specifically, but it makes teaching and learning more difficult when you have a fragmented schedule.

• Attendance, policies, tardiness, absenteeism, behavioral – I think that piece needs to be there if we’re going to be successful because otherwise they just aren’t invested.

• It’s totally supported by the administrators, that the formative training was put in place and supported by tying that with our action plan and looking at us as a school and where we are and where we need to go and put the whole formative assessment plan in place.

• So, I think our system supports it and it’s again because you are a part of that, you’re making the support for it.

2. What school policies or practices support or hinder your efforts to implement formative assessment? Adult Learning

Teachers identify a shift in their practice through their new learning.

• You have to know why you are using a technique. It’s all about knowing what you know. And also that we are learners, forever learners, so I can say to you, gee, I now that I’m a true believer in formative assessment. I know that I should be using these techniques and I am trying…
3. What school policies or practices support or hinder your efforts to implement formative assessment? Challenges

Teachers reported a challenge working with teachers that do not practice formative assessment: “I think next year is going to be tricky again for me, I don’t think there are going to be teachers in that house who would have taken formative assessment...I won’t say it is going to be a hindrance exactly, but it makes things not as easy.”

4. What school policies or practices support or hinder your efforts to implement formative assessment? Communication: Parents, Community, Teachers

The practices and policies (the way we do things) teachers identified as a venue for communicating the implementation of formative assessment are: the school wide action plan, the TLC structure, VT DOE presentations, staff meetings, parent meetings, and school board meetings.

- I think the biggest thing we did do was we went and did presentations to the school board, a couple of staff members went to the state board of education and to our staff.
5. What school policies or practices support or hinder your efforts to implement formative assessment? Culture: Parent Communications

The practice of TLCs creates a culture of learning. A challenge is how to communicate this culture of learning to parents through policy.

- The one issue, and I’ve brought it up during TLCs, it’s probably school policy. The whole issue of creating a culture of learning in the school is how do you go about getting families and students to realize how valuable their education is. That challenge. What policies do we have in place that allows parents to continue to encourage or not encourage their kids the right way?

6. What school policies or practices support or hinder your efforts to implement formative assessment? Assessment

The major assessment policy that has been influenced by the implementation of formative assessment is the standards based reporting system. Others include creating common assessments and implementing the Investigations® mathematics program.

- Well, we’ve started to shift and the obvious one is the report card and reporting system. We’ve started to get things in place for one that lends itself better.
• I really understand this a little bit more. It fits so nicely with formative assessment. The common assessments that we have in place, the Investigations® does work nicely with it.

7. What school policies or practices support or hinder your efforts to implement formative assessment? Teacher Practices

Teacher practices that support formative assessment are team teaching, grade level professional development and flexible grouping of students. Teachers report they can see growth and they know where their students are:

• So through team teaching this year we were able to do some different kinds of groupings, really pinpoint the needs of kids, the lower kids, the high kids, and it really works towards that. I think as a result of that we see some growth in our kids. Certainly we know them better and we know exactly what they need to be doing and we are able to give them the chance to be able to do that.

The school policies and practices that support and/or hinder formative assessment implementation are illustrated in Figure 41.

8. What school policies or practices support or hinder your efforts to implement formative assessment? Interaction of Initiatives


School Policies & Practices: Initiatives

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“…and this is such a natural link.”

Other initiatives identified as seamlessly interacting with formative assessment principles and practices are: Math Recovery®, Reading Recovery®, The Reading Excellence Award (REA) program, common assessments, grade-level expectations, Investigations®, and the VT Standards.

• …and when Math Recovery® came, it was wow, those are links and now I’m like, using Investigations® but coordinated with our standards, GEs and looking what we need to teach is like, Okay…..it fits so nicely with formative assessment. The common assessments that we have in place, the Investigations® does work nicely with it. I’m not sure it is exactly perfect, but you do adjust when you do teach and when you do assess along the way.

Figure 41: Codes and themes related to school policy and practices as they relate to formative assessment implementation.
**Interview Question # Nine: What would the ultimate leadership model look like in our school as we continue to implement formative assessment?**

The codes identified in this question are: 1) Systemic structures, 2) Role of teacher, 3) Shared leadership, 4) Culture, 5) Teacher practice, 6) Trained administrators, 7) Up scale, 8) Relational, 9) Challenges, 10) Parent communication, 11) Adult learners, 12) Accountability, and 13) Interaction of initiatives. To illustrate the weight of each code within this interview question, I designed a pie graph that illustrates the weight of the codes as illustrated in Figure 42.

![Pie chart showing codes contributing to the teachers' perspectives of an ultimate leadership model.](image)

**Figure 42:** Codes contributing to the teachers’ perspectives of an ultimate leadership model.
1. What would the ultimate leadership model look like? Systemic Structures

The systemic structures leading to the ultimate leadership model include: the TLC structure and model; a trained principal; professional developers; coordinator of professional development; internal trainer of trainers; administrative support, knowledge, and involvement; shared vision about a leadership model, collaborative staff; a theory into practice model; shared responsibility; and building leadership from within at all levels.

Figure 43: Systemic structures identified as an ultimate leadership model.
• Well, obviously, the expansion of a TLC model, maintain that. I think that it is important that it be looked at for long term, not just a couple of years.

• I think we are on the right track, that we have had the principal and the curriculum people, staff developers, and having [name] as the trainer which is part of our school…That’s been purposeful and I think critical.

• It’s funny, what it [leadership model] looks like now, because we already kind of have that vision of what the leadership model looks like. I think we are progressive. It’s not top down, it’s very much collaborative and conversations, discussions and dialogue to come up with what’s going to meet the students’ needs and move that meaning forward.

• Well, I think to have the administrative staff know what the techniques are; know what you can get out of the techniques. Be willing to support teachers who want to apply techniques.

• Support, that’s where our system is supported, if you don’t have the right atmosphere to do that, and all of the structural pieces in place, you’re not going to get anywhere.

• It’s not finding new people to fill roles who may not be as familiar with what is going on in the school district. It’s building from within and I think that is really important so that you don’t have to start over all the time.

2. What would the ultimate leadership model look like? Role of Teacher
Teachers reported that having the formative assessment trainer of trainers on staff, as well as the staff developers and coaches, were an important piece of the model. In addition, a teacher added:

- The idea that you have a leader within the house [two-grade span] that would have time built into their schedule. I’m not saying how that would work, but it would give a little bit more autonomy to the house which has its pluses and minuses. The danger is to ensure how. There needs to be a consistency throughout the school, obviously.

3. and 7. What would the ultimate leadership model look like? Shared Leadership/Up Scale

The need to continue and expand teacher learning communities as well as growing leadership within the school district was identified by teachers:

- It would be nice if the person who takes the math staff developer position is a [FAP] coach or at least trained in formative assessment…because when you go into a classroom to coach anybody, you bring the techniques and strategies and so it would be nice that all administrators are on board and know what strategies and techniques are looking like so that it’s constant talk and that’s what we are doing in our school and it’s just the overall climate.

- What it might look like to see further growth for leadership, there might be somebody in our district who is amazing, an absolutely amazing instructor…I
think that energizes us, I think it energizes students, and energizes people we work with so the more we can hone in on that and use that the better off we’re going to be.

- And now with our TLC, we had two people rise out of that to be coaches and leaders, and then their groups, and I’m not sure that there will be people in their groups, that might be willing to step forward, it’s like a trickledown effect, and so it is more about that we’re all learners.

- It doesn’t matter if you’re principal or superintendent or school board member or a parent. We are all in this together. It’s a team effort and the students as well and we all have a piece in each other’s learning and we have to have one another to learn.

- I think it is really important to have teachers involved in leadership, to the point that I think they really should be; it requires a tremendous amount of time.

- It’s not finding new people to fill roles…it’s building from within.

Figure 44: Ultimate leadership model regarding shared leadership
4. What would the ultimate leadership model look like? Culture

The culture of teaming is a significant aspect of an ultimate leadership model:

- Teaming… interaction with each other….I think as many people using formative assessment and working towards common assessments in that way, is useful and I think that is a leadership model that supports those people that are doing that.

5. What would the ultimate leadership model look like? Teacher Practice

In the context of a leadership model, teacher practice would need to be supported and grown.

- Be willing to support other teachers who want to apply techniques. So as far as a specific model, that impacts a number of people and where they go in positions.

6. What would the ultimate leadership model look like? Trained Administrators
The teachers expressed the need for administrators that are supportive and knowledgeable about formative assessment in the larger picture of an ultimate leadership model.

- Well, I think to have administrative staff know what the techniques are…support teachers…I think is critical…

8. What would the ultimate leadership model look like? Relational

The teachers reported the need for communication between and across all TLCs.

- So, as far as leadership, I’d like to see some kind of connection between the TLCs in one way or another. I feel that it is important to have a somewhat formal connection so everyone knows what they might be doing and even the topic they are discussing.
- If there is some reporting out in general, I can say, ‘hey I heard your TLC tried this…what did you guys think about that…’ We don’t have notes…so I think that might be helpful.

9. What would the ultimate leadership model look like? Challenges
Teachers’ involvement in leadership takes time, and this was identified as a challenge in the ultimate leadership model:

- The big challenge with any leadership model is time, to make it successful.

10. What would the ultimate leadership model look like? Parent Communication

Parents as partners are important in a leadership model.

- Parents can look at their children objectively as learners...that would be the ultimate.

11. What would the ultimate leadership model look like? Adult Learners

The data indicates that teachers want to learn/share with each other as part of an ultimate leadership model.

- I think it would be great to get together and just meet and know what was going on [in TLCs]…
- Yeah, in the sense of leadership. So teaming in that way, interaction with each other.
- We have to have one another to learn.

12. What would the ultimate leadership model look like? Accountability
Common behavioral standards and accountability at all grade levels is an important part of the leadership model, according to the teachers interviewed.

With respect to leadership in the broadest sense, leading those students onto grades as grades go up, to understand that they need to have certain behavioral standards, so by making some kind of connection between TLCs there might be something we can find that has something to do with personal accountability…

13. What would the ultimate leadership model look like? Interaction of Initiatives

The leadership model must balance the school’s interaction of its initiatives. All of the themes for an ultimate leadership model aforementioned require balanced interactions:

- systemic structures,
- role of teachers,
- shared leadership, culture,
- teacher practices, trained administrators
- up scale, relational,
- challenges, parent communication,
- adult learners, accountability
Figure 45: Interaction and balance of initiatives

The teachers identified a variety of components to comprise an ultimate leadership model. Figure 46 illustrates the breadth of their perceptions.

Figure 46: Codes and themes related to what teachers perceive to be an ultimate leadership model.

**Interview Question # Ten: In your opinion, has student accountability changed as a result of implementing formative assessment?**

The codes identified relating to the change in student accountability are: 1) Accountability, 2) Adult learning, 3) Techniques & strategies, 4) Culture, and 5) Parent
communication. To illustrate the weight of each code within this interview question, I designed a pie graph that illustrates the weight of the codes as illustrated in Figure 47.

![Pie chart showing the weight of each code](image)

**Figure 47:** Codes identified as having an impact on student accountability

The accountability code comprised the majority of the responses in the transcribed segments pertaining to this question. To further analyze this code, I separated the teacher accountability responses from the student accountability responses as illustrated in Figure 48.
Figure 48: Codes describing teacher and student accountability

1. Has student accountability changed as a result of implementing formative assessment?

Accountability
As illustrated in Figure 49, the accountability variables for students as well as teachers have impacted the change in student accountability. Teacher sentiments include:

- That’s a major piece of this whole. They just can’t sit back anymore in a classroom. They have to be actively involved, active as a learner and that’s been a huge part of it.
- Yes, one of the biggest things I see with my kids…is that everything we do in class is important for them to be thinking about and you know, for the most part, everything we do is purposeful.
- I would say, definitely yes. I was holding students accountable and they were holding me accountable as well.
- Everyone is accountable.

Figure 49: Codes and themes related to change in student accountability.

2. Has student accountability changed as a result of implementing formative assessment?

Adult Learning
As part of the TLCs, teachers are active learners, and need to be accountable for that learning. Figure 49 captures the teachers’ perceptions for their own accountability.

- You are active as a teacher and you’re active as a learner.

3. Has student accountability changed as a result of implementing formative assessment?

Techniques & Strategies

In order to foster student accountability, teachers have implemented formative assessment strategies and associated techniques:

- Feedback is timely. Students had to use it to move forward and the accountability piece for students was huge. They knew that was the expectation.
- You need to be ready to share something you learned.
- It’s a lot of teaching them how to be responsible.
- Don’t waste my time by sitting, you need to say to me I need some time to think, you can go back and repeat the question, or say I need to ask a friend, but it’s really forcing them to be accountable.

4. Has student accountability changed as a result of implementing formative assessment?

Culture
• I think it’s a direct reaction. I think that if students are feeling valued and engaged and motivated and excited, behavior issues go by the wayside. The culture is learning and we are going to work together in a collaborative group so everyone does well.

5. Has student accountability changed as a result of implementing formative assessment?

Parent Communication

• That’s one thing that made a shift in formative assessment because before I never wanted a student to come [to parent conference] because I didn’t want to say something about their learning to the parent and have the student feel bad. And I noticed this year that the first conference I had some students come and I didn’t plan it, it was off the cuff, and it was natural that I said, why don’t you sit with us? What do you think? Tell your mom and dad about what we’re learning here. I got wonderful information myself and they would say what their thinking was.

• I think it is really important but I think they should be able to communicate to their parents, they do communicate their learning to their parents.
Accountability, a theme threaded throughout all of the interview responses, has changed student accountability as a result of implementing formative assessment. Figure 50 illustrates the themes emerging within the change of student accountability.

Figure 50: Misconceptions of stakeholders

*Individual Interview Question # 11: How have you described your formative assessment practices to various stakeholders? What are their reactions?*

The data for this interview question is organized into the following sections: 1) Critical misconceptions of stakeholders, 2) Descriptive language used to describe formative assessment practices to stakeholders, and 3) Shared leadership/teacher autonomy.

The teachers identified the stakeholders as: teachers not trained in formative assessment, superintendents, and the Vermont Department of Education.
1. Misconceptions of Stakeholders

The major misconceptions of stakeholders that teachers identified as concerning is the significant lack of clarity concerning the terminology of TLCs and PLCs at the state and local levels. Also critical are the teachers’ [not trained informative assessment] and administrators’ misconceptions of formative assessment practices and principles.

Teachers talked about these misconceptions and their concerns during this interview question:

- The naysayers are those who think it is just another fad and it’s going to disappear.
- They are two very, very different things [TLCs & PLCs], and I was very irritated, I have to admit, because they are very different things and I don’t think that has been articulated and the more information they [VT DOE] give out about it, the more that misrepresentation gets out to the population and that’s what worried me. It’s like I said. It’s that formative assessment, oh we do that, well, it’s not the same formative assessment we’ve always done. It’s the ‘Keeping Learning on Track’ formative assessment and so, yea, it’s a difference.
- Well, it surprised me because the state knows what TLCs are, but then they said you have to have a TLC but this is the criteria for the TLC, which is a completely different criteria that ‘Keeping Learning on Track’ professional development, so that was tricky, and I think the state might be shooting themselves in the arm by doing this. I think we need to write a letter.
• Well, the thing is that they’re confusing two things and it depends on how many books we’ve read in which they confuse TLCs with PLCs and then, your principal learning communities. I mean all that jargon has been muddled and my concern is that this another place where they are going to muddle what we’re doing and if they’re doing formative assessment, it’s not the TLC that they were talking about with the state.

• And even some guy, some superintendent said, okay, if this is a PLC, is this the formative assessment TLC, or is it the critical friend, blah, blah, blah, and then a DOE staff member said, it can be whatever you want it to be.

• It sounds good, but I can’t take on one more thing.

• When we first started doing it the first year, I remembered there was some suspicion, cultish thing about it.

• He wants to call it a new initiative and I keep saying it’s not.

2. Description of FA Practices to Stakeholders

Teachers trained in formative assessment have described formative assessment to stakeholders [other teachers] as best practice centered on principles of student and adult learning.

• I love it! It’s the best thing I’ve ever done. It’s all of that best practice, constructivism, all those jargon buzz words all tied into one and it made everything make sense and I’m energized. That’s what I tell them, and I encourage them to jump on board to try it.

• This is great teaching, and it’s made me a better teacher.
• You really need to do research to understand what it’s all about, and the valuable part is being able to share with other teachers.

• It follows a lot of best practices that they are familiar with and it brings it all together. It’s an interaction.

• Get into it a little bit at a time so it becomes habitual.

• It’s made me a better teacher. It’s made me more aware of students and student learning and it’s changed the focus of my instruction to student learning and that’s where we need to be and that’s how we are going to make the change and I just encourage them [teachers] to give it a try.

• You’re going to see, it’s so natural. It naturally gets into what you’re doing and all of a sudden it makes sense, just thinking about it differently.
3. Shared Leadership/Teacher Autonomy

Teachers have autonomy and feel supported. This is what they said:

- Who wants to go out on a limb by themselves and not feel like you're supported? Nobody. So that makes it feel comfortable and that it’s okay to have that teacher autonomy. That I can choose the parts that are most meaningful to me and really focus on those and that's a great thing and make that part of my practice and move on to something else.
First of all, it’s you, the principal. I mean, that’s huge. And I think that’s part of the reason we’re so energized is that, it’s funny, I mean we all like praise, so even though you’re not patting us on the head and going that a girl, having you part of the TLC and while we’re there, having those discussions, makes me feel that I’m not only valued, but that I’m having the okay and it’s supported.

Figure 52: Themes about how teachers describe FA practices

To conclude the individual interviews, I asked the interviewees: If you were to write our mission statement in five years, what would it say?
Since this question is asking participants to comment on a mission statement, I have included the current STS mission statement for the readers:

The mission of our educational community is to challenge and support members to be respectful, caring, lifelong learners. We will do this by measuring growth and providing diverse learning opportunities needed to meet academic, environmental, and social challenges equitably.

Of the seven participants, six stated the importance of having teachers and students accountable for their learning. Five of the seven identified the inclusion of lifelong learning. In addition, community support, celebrations, behavioral accountability and responsibility were identified as descriptors to include in the school mission statement.

Additional data about mission statement principles:
• I think it would be something about learning, something in regard to, we totally focus on student learning, but I think it also needs to be teacher learning.

• I would like to see something about that they’re accountable for their learning or their accountability. I mean, I see being a lifelong learner as being accountable. That to me is what a lifelong learner is, taking responsibility for themselves. They have to have the desire, too.

• I think accountability should be part of it. I really think that is one of the biggest things that formative assessment has pushed is that accountability piece. For teachers and for kids.

• So, I think the focus has to be on learning, so if it’s not student learning, maybe it’s professional learning, but it’s learning.

• Ooh rah rah formative assessment! Well I think that at our school we hold teachers and students accountable for their learning. We are all learners.

• Attached to that would also be the expectation that the community would support that.

• Well one change that I would have is that you have to be accountable for your behavior and performance.

• I also think there should be something in there about community, I think it is important that the parents, the school board, and the community are all working together.

• I feel that we should celebrate our success wherever you are in the learning continuum.
Embedded in the responses, there were additional themes of about accountability of data that are important to note:

I have to say, and I’m kind of chuckling with the state when they’re talking about their data chart. I know everybody has booed and hissed when that first came out, but I gotta tell ya, I was probably one of the biggest pooh poohers and now I think it’s the best thing since potato chips. It’s like one document; look at what we’ve accomplished because of that one document. Think about the conversations we’ve had for that one piece of paper that we had to fill out and they were meaningful conversations. I think that’s great and we do it a lot.

Focus Group Interviews

I conducted two focus group interviews with the 2007-2008 formative assessment program participants. Each TLC consists of seven teachers and one coach for a combination of 16 individuals. I combined and coded the responses of the two interviews by questions.

I asked nine of the 12 original questions in the individual interviews. I omitted the last three questions because the 2007-2008 teachers have had a year less of implementation experience; and the logistics of each focus group interview lasting over two hours.

Focus Group Interview Question # One: Has your perception of your role of teacher changed since implementing formative assessment? How so?

The codes that emerged from this interview question are: 1) Assessment, 2) Class Culture, 3) Students’ Behavior, 4) Role of Teacher, and 5) Teacher Behavior. To
illustrate the weight of each code within this interview question, I designed a pie graph that illustrates the weight of the codes as illustrated in Figure 54.

Figure 54: Codes identified concerning the change in the perception of the participants' role as teacher

1. Has your perception of your role of teacher changed since implementing formative assessment? Assessment

Teachers identified the theme of assessment as part of their changing role.

- It used to be we would send home a comment; we would assess that homework and those were grades that went on to the report card but now anything's that's assessed is assessed in class so we know their work and I don't know, it's just totally different.
• I felt more as a facilitator where I don't need to know all the answers. I just need to be able to lead the kids in the right direction basically. Use their work to guide where we go next instead of having a written unit, and this is what we're going to do, and we're going to do this way.

• What do I want the kids to get out of it and am I giving them this assignment just to have them to do, or is it really meaningful and really eliminating all the rest of that stuff?

Figure 55: Perception of change in teachers’ role as it pertains to assessment

2. Has your perception of your role of teacher changed since implementing formative assessment? Class Culture
The teachers identified a shift in their role as it pertains to classroom culture as the process in which they look at [students’] work.

- I think that’s a huge change and I think the class feels it because they are also looking at their work and are aware of what they did so I think the whole process of the way I look at work is very different then what I did before.
- I think my class culture has changed, or my XXXth graders have changed a lot…the kids know exactly what they have to do and they have clear expectations on how to accomplish it, but I have to help. I know who I have to help…I know more about what my students know and don’t know, now more than ever.

3. *Has your perception of your role of teacher changed since implementing formative assessment? Students’ Behavior*

Student accountability is a theme for teachers’ perceptions of the shift in their roles.

- …actually, it’s helped me to learn strategies to help the students become more responsible for their learning and for ways to communicate if they don’t understand what’s going on and starting to really think about their learning…
• I have a broad goal in mind, but I am a little bit more willing to have them shape what success looks like, how we are going to get there, what we need and when we are there, having them self assess so they understand, ok, we’ve met the goals.
• …my role has changed a lot. Mostly by holding kids accountable…

![Diagram of Student Behavior]

Figure 56: Perception of teachers’ role as it pertains to student behavior.

4. Has your perception of your role of teacher changed since implementing formative assessment? Role of Teacher
Teachers reported a shift in their perception of their role as a teacher in the following ways:

- I think the thing that’s really different this year is instead of a grader, I feel more as an evaluator, an assessor, of their work and so it’s changing the way I do work and how I respond to it.
- I felt more as a facilitator where I don’t know all the answers. I just need to be able to lead the kids in the right direction...
- I felt like I was finally their coach, it was almost like it changed from a coach to their guide.
• My role has changed a lot. Mostly by holding students accountable.

• Actually it has helped me to learn strategies to help students become more responsible for their learning…

5. Has your perception of your role of teacher changed since implementing formative assessment? Teacher Behavior

Figure 58: Teachers’ perception on their shift in role as it pertains to teacher behaviors.

Teachers commented on the shift in their role of teacher as it pertains to teacher behaviors:

• I probably wouldn’t have set lessons up the way that I set them up, I probably wouldn’t even use the student response systems the way that I use them, I
probably wouldn’t even know what I needed for ABC questions or the answers or to set something up…

- You can have seven different levels going on simultaneously with that technology [student response systems]…students can choose their own groups, based on their ability, just holding up their traffic light.

- It’s no longer the teacher being in front of the room…

- I think the shift only happened to me in the last couple of months, since January, I would say where I could actually go and sit by kids who I knew really needed it and give them what they need to move to the next level…

- We need to go back and rework the lesson, let’s try something different and the kids, why they aren’t getting it? What else can we be doing to get them going in the right direction?

Figure 59: Codes and themes pertaining to teachers’ perception of their changing role.

Focus Group Interview Question # Two: What motivates or excites you about implementing formative assessment?
The codes that I identified for this question included: 1) Assessment, 2) Class Culture, 3) Excitement, 4) Sustainability/Upscale, 5) Accountability 6) Teacher Behavior, and 7) Autonomy. To illustrate the weight of each code within this interview question, I designed a pie graph that illustrates the weight of the codes as illustrated in Figure 60.

Figure 60: Codes included in motivational factors about implementing formative assessment.

1. What motivates or excites you about implementing formative assessment?

Assessment

Teachers found the following as motivating factors about implementing formative assessment:
• I think it is really exciting to use all the kinds of assessment and seeing kids move from not getting it to sort of getting it. There are plenty of opportunities with these strategies.

• I think it is important too, that the kids do see that they’re making progress because they all don’t progress at the same rate.

• …it’s all exciting. Through this form of assessment, there’s lots of paperwork, and it’s not less time, but I feel like the time that I’m spending on this isn’t correcting papers, it’s planning the challenge or it’s looking where the kids need to go…

• …I am more efficient and that makes me excited because I used to spend ungodly hours here. My students would work harder on any assignment when they know I am not correcting it but someone else is going to be correcting and we are correcting as a class…

• We know where we are going because you base it on assessments that you have been working on all week and there’s not a question of where you’re going to from there.

• Oh, I just thought of a good one. To get your stuff scored… that’s what I’m going to do next. But, if you are basing tomorrow’s lesson on what gets done today, it has to get it done. It’s a motivator.

• The thing that excites me is the feedback we get from kids…they love the new 1, 2, 3 system. They know what they need to work on, what to improve on; they are not just getting this sort of judgment or evaluation…

2. What motivates or excites you about implementing formative assessment?
Figure 61: Culture as it relates to motivation for teachers.

- It kind of feels like an ultra class in just stating and sharing and working together in a variety of different ways and through that just makes the classroom more enjoyable from being a teacher and being a part of it.


- It’s kind of like starting fresh.
• There’s a few [students] that say, did you see what I did?
• It’s all exciting…
• I am a firm believer that students feel excited, they feed off our passion, so if we’re excited, motivated and energized it feeds the climate in the classroom, kids pick up on that and it just builds the energy level.
• I think it’s also kind of motivating and a nice change to get together with colleagues and when *** and I plan, we talk about what strategies we are going to use…I think it keeps things going, keeps things fresh.
• The other thing that motivates me is being able to come and talk about what I’ve done…it’s so exciting to come to a group [in TLCs] of people and say hey, this is what I did. It’s so awesome. Sometimes you have a great day and all of a sudden you are like, who am I going to tell…
• I’m lucky to have someone to talk to right next door…

4. What motivates or excites you about implementing formative assessment?

_Sustainability/Upscale_

The teachers reported the following areas concerning sustainability, up scaling efforts and systemic support that motivates them.

• That’s why we are doing this, because this is going to inform policy… What I say is that this needs to be here three years from now. What I say is it needs to be here 10 years from now because it is a great way to teach.
• Sometimes I wish they [teachers not trained] could have gone to the same training with us to have a better sense of how this works, but it’s coming.

• How wonderful that would be when everyone has had the training so everyone on your team has that.

• The other thing that motivates me is being able to come and talk about what I’ve done [in TLCs].

5. What motivates or excites you about implementing formative assessment?

Accountability

Participants reported student and teacher accountability factors as motivating.

• …they are starting to understand how it can shape what they do and how they can process the information and use it for their own betterment.

• One of the things I found is that I grade, I comment and grade papers like I’m going to be challenged by somebody to say why did I give them this grade.

Every time when I write comments on papers I’m thinking to myself, okay, so when somebody comes up and say why did little Jimmy get a 1, I would just say there, that’s why.

• Part of that was the way I was doing things and the expectation that you do need to be a learner.
Teacher Accountability
The longer we do it, the more the practices are in place;
Evidence of learning;
Have high expectations for academics and behavior

Student Accountability
Students are accountable to share;
Students understand it shapes what they do;
Kids see that they are making progress;
Students admit they don’t understand;
Gives students more responsibility;
Students show evidence of learning;
Kids are learners

Figure 62: Teacher and student accountability as motivating factors

6. What motivates or excites you about implementing formative assessment? Teacher Behavior

- It gives you a focus too. I think that when *** and I sit down to plan our week new, that’s what is pushing or driving us. We know where we are going because you base it on assessments that you’ve been working on all week and there’s not a question of where you’re going to go from there. You might have to go in three different directions but the evidence is right there, so that makes it easier, more fluent, smoother, between the classes because we each have half the kids and they will see the other one of us but they are all getting the same thing.
• I said what motivates me, what excites me about it, I feel like it promotes teaming.

• I think it is good for me to look at what we teach, and how to react to what we teach, and how they react to what we’re teaching and really focus on the things we really want students to have and work from… to make sure we have assessments in place for that and allow the kids to have the opportunity to show what they’ve learned and con do tins and just focus in on what out teaching is doing for them.

• …clarity is excellent. Learning how to come up with meaningful assessment that I can get an instant idea in 10, 15 seconds I know if a kid knows something or doesn’t…

Figure 63: Teachers’ behaviors as motivating factors when implementing formative assessment
7. What motivates or excites you about implementing formative assessment?

**Autonomy**

When asked what motivates teachers about implementing formative assessment, the themes of autonomy and empowerment emerged.

- I have to comment on that. Actually, it was kind of nice, it felt like, I was kind of helping but I felt empowered to share [my learning].
- When you use the word empowered, that’s how I felt this year myself as a teacher and I think my student, many of them, have felt it too. I think they do it for themselves. They are empowered to learn. I think that keeps you going. It makes a difference.
- It gave me passion for teaching again. Every time I talk about it I was almost giddy, on a high.
- It’s given me more freedom in the classroom; it’s given the students more responsibility in the classroom.
- I think it is teacher empowerment too, you have been doing that, the freedom, the professional freedom to go…
Figure 64: Motivational factors identified by teachers

Focus Group Interview Question #Three: What are your ideas and beliefs about how students learn? Has this changed since implementing the formative assessment program?

The codes identified in this question were central to: 1) Student Behavior, 2) Teacher Behavior, 3) Curriculum and 4) Sustainability/Systemic Issues. To illustrate the weight of each code within this interview question, I designed a pie graph that illustrates the weight of the codes as illustrated in Figure 65.
Figure 65: Codes related to beliefs about how students learn.

1. What are your ideas and beliefs about how students learn? Student Behaviors

   The theme focusing on students’ behavior, mainly central to accountability was evident through participants’ responses.
Teachers’ beliefs about how students learn reflect the accountability of students in their learning. Opinions from interviews include:

- I think that is the key. They don’t have to say a lot, but they have to say what is important.
- I think the stigma is gone away from I don’t know. More and more it is okay to say I don’t know on this particular skill….I think that is the first step is that students have to be honest with what they know and don’t know so that we can support them.
- I find that kids who are really doing well with something can be very kind to a child who is really struggling and give them an opportunity to be in the role of teacher in the sense of helping other students.
• I think a huge part of formative assessment is the self reflection and students being able to… say this is what I don’t understand, it helps them figure out how to learn…
• …kids who are really struggling can learn from some others who might be up at the upper end and really benefit.
• I was thinking about how students learn and one thing that we know is true is that some students just do better when they are in groups.

2. What are your ideas and beliefs about how students learn? Teacher Behaviors

Through the interviews, teachers believe that their pedagogy and practices [behaviors] have a direct impact on their beliefs about how students learn.
Figure 67: Teachers’ Behaviors as it relates to beliefs about how students learn.

- I think it is a direct approach to sharing your learning intentions. If students know what it is that they’re suppose to be learning, it makes it a lot easier. If they don’t know, they could get lost.
- It also helps that changing the ways that we do groups of kids so that we are making sure we grasp that maybe those two might not be in the same place.
- Now I’m able to tell students this is what we are going to learn today and this is what I need you to show me when you get it. So I think that has really helped me to see students are learning…
- They have multiple opportunities to show what they’ve learned to work independently, and I think that can give you multiple techniques that you can try to work with peers or to work by themselves.
- Give them the freedom to be honest about where they are…
• So, now we are giving them clear steps, we are telling them that the thing is missing in your learning is not ability but it’s a lack of effort. Giving them clear goals and they either try to get it or they don’t, but that is what is fundamental to their learning.

• I think the model, student models, teacher modeling, has helped to explore new things...

3. What are your ideas and beliefs about how students learn? Curriculum

• Formative assessment is going to force us to look at our curriculum because we know if we use what we know about the way students learn and how we get there it’s going to force us to look at our curriculum and say, okay, how do we restructure it, what are those essential things that we need to do and what are those things that are essential. What are those things we are going to focus on?

• We are doing a lot of patting ourselves on the back but we have things to work on, also.

4. What are your ideas and beliefs about how students learn? Systemic/Sustainability

• What do we do as a team, as individual teachers, as a district to move that learning forward?
• Either way that is something that I feel formative assessment has allowed us to do, okay, if students didn’t get it in whole groups, we need to do small groups, it’s changed the way we schedule our day, we have study skills at the end of the day on purpose.
• …so I think that something is helpful that adds to formative assessment and is used more widely in the school is having more lab teachers and really working…

Figure 68: Codes and themes on beliefs about how students learn.

**Focus Group Interview Question # Four: Are there particular strategies and associated techniques that have made a major impact or shift in how you perceive student learning?**

To organize the data collected from this question, I listed the five formative assessment strategies and identified the responses under the appropriate strategy heading.
1. Clarifying and Sharing Learning Intentions

- Our learning intentions, particularly in reading, tend to go throughout the whole week and we can go back to it, so we’ve focused on that…we’ve focused a lot of our questions around the learning intentions…
- I haven’t done learning intentions prior to this year. It’s been really good for me, to keep me on track.
- I think the big one is learning intentions. Having it posted and going back to it and the second part to it us how you know if you have met it?

2. Engineering Effective Classroom Discussions, Questions, and Learning That Elicit Evidence of Learning

- I’ve been focusing a lot on wait time. My kids have gotten very good at waiting for someone to answer. To give a kid little more pockets of time or a little more thinking time to get their thoughts together and get out an answer and also after some of the answers to wait to give other people a chance to think about that they’ve just said before they respond again. That’s been real helpful.
- I have one strategy and technique that I think is very important because it’s really the formative part I think is the exit ticket. The exit ticket does some things in terms of just best practice which is that kids like to have a chunk of learning and then immediately assess which I really think is best practice, also it kept assuming that we could find the time the next day, it could really affect our plan for the next day.
• Another thing that is really helpful are Mondays. I ask kids what we did last week, and the kids get 10 minutes to write, they pick something that we learned about and they’ll write for 10 minutes…and they have to tell…
• Then the popsicle sticks will come up so I have to be ready to be the newscaster and tell them last week’s news. So, everybody is ready to work with their partner to find out what went on…
• I think one of the things about hinge questions for me is that I need to practice more.
• I would do that, I would put the misconception up there and say you know you agree or disagree…

3. Providing Feedback That Moves Learners Forward

• I think that comment marking is a huge change for me and it even changed part of my day with my students. That’s been working really, really well.
• Also, another one is two stars and a wish, when your peers assess that it’s been powerful because it gets the kids to know they have to get some positive feedback

4. Activating Students as Owners of Their Own Learning

• …I give them a reflection page…reflect on their week and it’s pretty, it’s not real deep but every now and then there’s a gem about and oh they did take a total level of depth. But just the idea of thinking over what they worked on, thinking about what they could do, or where did they go wrong in their thinking. How could they tweak what they’ve done.
• We added our reflective piece to our report card this time, The kids had to, we didn’t do all the learning, we picked what we did - key learning…

• I would say for me the two biggest strategies, I think started out with a lot of the self assessment, then student assessment and activating them as owners of their own learning, but then it piggy-backed so tightly with activating peers that they almost began to blur for me. I used it all the time. I don’t even remember a day when I didn’t use one or the other because it was so powerful...

• Sometimes they will give themselves a one because they don’t want to go that extra step, or they’ll color red… [traffic lighting & scoring guides]

• They usually do their reflections on Friday afternoons.

5. Activating Students as Instructional Resources for One Another

• One of the things we started with, we did a lot of work with exemplars. It just happened to be **** and I were doing a lot of team teaching at the time and we would just group all the kids together. I would bring a writing piece and we would put that in front of the students, and we would do a fish bowl and we would share that how do you do this... the conversation.

Also, teachers commented about the purpose of techniques:

• I think you should know if you’re using the technique, you should know why you’re using it. What purpose is it? I mean, you should know what and why you’re using the technique. You should have purpose for what you’re trying to teach the kids, purpose for what you’re using to teach.
• I think lots of techniques fall into more than one strategy or category. I mean that’s my opinion. I think you should know why you’re doing it. Why you’re using the strategy or technique.

Figure 69: Strategies and techniques that have made a major shift in how teachers perceive student learning.

Focus group interview question # Five: How does the work in TLCs shape and influence your practice?

The codes that emerged from this question are: 1) Accountability, 2) Adult Learning, 3) Interaction of Initiatives, 4) Relational, 5) Culture, 6) Systemic Structures/Change, 7) Upscale, 8) Assessment, and 9) Autonomy. To illustrate the weight of each code within this interview question, I designed a pie graph that illustrates the weight of the codes as illustrated in Figure 70.
Figure 70: Codes identified that influence teachers’ practices through the work in TLCs

1. How does the work in TLCs shape and influence your practice? Accountability

The teachers report that through TLC professional development, accountability is shared between teachers and students.

- That has been incredibly helpful, I think also earlier we were talking about students and how they have to reflect more and have more ownership over their own learning; well this is the same thing. It’s kind of we are practicing what we are preaching, we are also expecting to do peer assessments and self assessments and think about our own learning and makes us have ownership over what we are doing in our classroom…
• …I always correct(ed) everybody’s paper so at parent conference I would have the evidence. I am not doing that anymore either, next year I’ll keep all the assessments, so when they say, and I am hoping the parents get to the point when they look at the report cards and say what is the evidence, my child has…so I pull it out and show them so I don’t have to go through 75 social studies papers…so this is something I got out of here [TLCs], I didn’t have to do that anymore.

• Some of us know so much about our kids right now and that’s a big thing.

2. How does the work in TLCs shape and influence your practice? Adult Learning

TLCs have influenced and shaped the participants’ practices concerning their own learning in the following ways:

• Well, you figure how do we learn? Well, we learn by reflecting on our practices and if you don’t have time for reflection, then you are not going to move forward.

• If you have time to talk to other people and think about it, then you’re apt to try something new.

• …I like to be able to work and talk with other people, it’s how I learn, I am very auditory. Every time I come here, I either hear myself saying oh I need to slow down, I’m trying to move on I think I need something new. It really
helps me to hear what other people have been doing for different ways that they have tried assessment or different ways they have tried to question students.

• And to have the time to talk to other people that are all on the same plane about well, what can we do, and then some problem solving and the implementation of a change to make it better. But without the TLC time we probably wouldn’t be headed in this direction.

• It’s kind of we are practicing what we are preaching, we are also expected to do peer assessment and self assessment and think about our own learning and makes us have ownership over what we are doing in our classroom…you have the support of others around you, but it’s individualized.

• About another shift though. I was thinking about when we come to this group [TLC], we talk about strategies and we talk about the techniques but ultimately we are talking about students learning and assessing and evidence of students’ learning. I remember somebody said at one point, how powerful it’s going to be when teachers are no longer just talking about their weekend in the teacher’s room and their classroom, they are talking about student learning and evidence of student learning and the think we are there.

• I think the other part besides the motivational piece of the TLC you do hear specific strategies from each other. If you are a good listener and I think we have all worked at trying to be good listeners with each other, you learn specific things to help that you can use. What is better teaching than stealing the good stuff from other teachers?
3. How does the work in TLCs shape and influence your practice? Interaction of Initiatives

The teachers spoke about discussions during TLCs that impact formative assessment in relation to other initiatives.

- Is it an initiative that the district, well maybe that question comes up later?
  Should it be required? Are we going to be a formative assessment school, then do we all make it part of our shaping?
- …so we just did it and it took off and I think that is part of the reason we are where we are with standards based reporting systems, power standards, and concepts coming directly from GE’s…

4. How does the work in TLCs shape and influence your practice? Relational

The focus group participants highlighted the importance of sharing their learning and colleagueship as a significant influence on their practices.

- It [TLCs] gives you courage. It’s encouraging and it gives you courage. Does me anyway.
• You have the TLCs when you’re talking with your colleague and you’re building on what each other has done so you’re never really starting from scratch.

• I think this is the one I liked the best because I like to be able to work and talk with other people, it’s how I learn.

• I think it is important that we share what we’re doing …

• Hearing from people in the school who you never get to see, I appreciate that.

• We get together and share all the things we’ve learned.

• Colleagues trusted me to come in and say, well this is what I did, what do you think?

5. How does the work in TLCs shape and influence your practice? Culture

The cultural shift involved in TLC participation is the need for everybody to share; however the permission to practice elements that resonate for you, individually.

• There are so many different great people working on the same thing, and great ideas coming out of each person that you can take things and put together what works for you.

• I think it is important that we share what we’re doing so that other people can take off with them. I’ve gotten great ideas from people around this table.

• …getting other people’s perspectives is just golden.
• Continue as a staff but we also as a school need to build it in the reflection about the content we teach. I think that’s real important.

6. How does the work in TLCs shape and influence your practice? Systemic Structures/Change

In order for the formative assessment program to be sustained, TLCs must continue and all teachers that have not been trained need to so that the entire staff is involved in TLCs so that the school can make informed systemic changes.

• I think that the TLCs are probably the most important part for formative assessment and I wonder what formative assessment would look like without this…

• The same thing has come out of this, but the whole change with the reporting system and why that has to change. I think I was lucky enough that I had my team, and I took that together and new were given the freedom by Marion who was a member of our TLC to try whatever worked for us.

• So, the shift for *** and I too, we started gathering assessments around standards and all of a sudden, you know, the other report card wasn’t going to work. We had to get on board with the change on that. It just made much more sense…

• Well, the lab came from last year’s TLC when Marion decided to do the math lab because people were saying they just weren’t getting what they needed.
• We talk about the techniques but ultimately we are talking about students’ learning and the assessing and evidence of students’ learning…I think the shift has really happened, you know there was a small pocket last year, but now there are so many of us, and it feels good, it feels like we are heading in the right direction.

7. How does the work in TLCs shape and influence your practice? Upscale

Teachers in the focus groups find the need to have all teachers trained in formative assessment.

• Actually they’re [teachers not trained in formative assessment] going to get the content parts but not the TLC part.

• It won’t be anything like this kind of training but they may spark some interest with them and say, oh, the TLC would be very helpful so let’s now go to the training.

• I think too it might be creating some scaffolding as we’ve taught from the lower level to the upper. We are getting the picture of how things are progressing in our building, and as we adapt things to our level, where it’s like a puzzle coming together.

• This is an environment we want everyone to experience, the questioning has changed. I really like hearing from all the different grade levels.
8. How does the work in TLCs shape and influence your practice? Assessment

One of the major systemic changes made as a result of TLCs was the school wide transformation to the standards based reporting system.

- The student reflection that we did with our report card team…that whole idea came from networking and we might have come up with it on our own, but probably not likely.

- The whole change with the reporting system and why that had to change…

9. How does the work in TLCs shape and influence your practice? Autonomy

TLCs allow teachers practice autonomy within the critical principles of formative assessment implementation.

- We are all who we are and that is a great thing and we are all taking a little something different out of it and we are all tweaking it in a little different way and that is a good thing. A rich experience.
Focus Group Interview Question # Six: *How do you communicate student growth through formative assessment? Have your beliefs and practices about assessment changed since implementing formative assessment?*

Coding categories emerging from this interview question included the following:

1) Assessment, 2) Challenges, 3) Accountability, 4) Teacher Behavior, 5) Systemic Structures/Change, 6) Culture, and 7) Parent Communication. To illustrate the weight of each code within this interview question, I designed a pie graph that illustrates the weight of the codes as illustrated in Figure 72.
Figure 72: Codes identified as influential elements when reporting student growth

1. How do you communicate student growth? Assessment

Teachers reported using the technique of comment marking to communicate growth to their students:

• And they would read your comment. I think you can tell them so much in just a few comments. So much that they can work on and about the work that they’ve done and I think that’s great. That’s all I ever use.
• He knows he’s going to get a comment…He keeps them focused.
• We only will comment on these two things with procedures. That’s it…Only limit yourself to two or three things.
• I think for me, it’s comment grading method and putting comments in something and that catches student’s attention, I often want to start it off with a swear word because I would know they would read it.

2. How do you communicate student growth? Challenges

Teachers reported the challenge of parents’ understanding the principles and value of formative assessment and the time frame involved in reporting student growth.

• It takes me a long time. That’s the only downfall to it.
• They [parents] want scores. And how is my kid doing compared to others.
• Yea, and some of the parents totally don’t buy it, but I hear snippets for the kids in advisory, why do my parents pay taxes for me to get a three. So, if they’re hearing it at home and they’re coming in with that attitude; that makes it kind of hard.

3. How do you communicate student growth? Accountability

Communicating student growth is the responsibility of the students as well as their teachers.
Figure 73: Student and teacher accountability

- The kids definitely buy into it. Many of them. They are constantly on me if I don’t have that rubric up front or how many assessments. There was one recently where we didn’t have a rubric for chapter four and we were kind of wishy-washy about it, and they said ‘where’s the rubric so we know what to do?’ It was funny.

- Yes, they save their work, they have their work, they self assess, peer assess. The fact that they ask for the rubrics and they know what it means.

- I understand the specific learning intention and skill assessed.

- Kids understand there is not a one time chance. It’s all about making progress and it’s not the teachers giving me an A, or because she likes me or dislikes me. It’s not about that. I think that student and teachers communicating growth with each other and their parents…

- I also think we are teaching kids to acknowledge where they are in their learning. One of the biggest things is for a child to realize when they don’t get
it and where to go for support…we are really teaching kids to pinpoint what they have and what they don’t have…

4. How do you communicate student growth? Teacher Behavior

Teachers reported the shift in their behaviors concerning how they communicate student growth to students, parents, and their peers.

• …how do you make comments on a really good student’s paper?...For all intents and purposes, it’s perfect, when it’s all done correctly. What do you say? Good job just doesn’t seem enough.

• Keep it objective, and say, I noticed…what did they do right?

• In asking, have our beliefs changed? Yes, and this is why, this is how, because of the discussions we have. I absorb everything. I take note of everything, and I put them in my brain…

• I think my first year here I just sent everything home and graded everything and after that I kind of had a shift because of my master’s class and doing work and figuring out how to assess students, the important thing that I think you [colleague] said was, we aren’t just giving kids grades now we are having kids think about what progress they have made…

• That I think that is a shift that I got for myself. It’s no longer just social studies concepts or language arts concepts, I found myself doing a much better job weaving those concepts together.
• One thing *** and I have been emphasizing that importance of doing homework as practice to gain the skills we are working on...we don’t grade homework, we assess them on the skills we are asking them to practice.

5. How do you communicate student growth? Systemic Structures/Change

Educating and informing all stakeholders is essential in communicating student growth.

• I think it will be better when everyone is on board.

• It’s educating parents from what they’re familiar with.

• I will take people around and show them...the biggest thing is the state support in everything we do.

• If we knew something was going on in our classroom that was going to be especially, showing one of these techniques, and they [parents/stakeholders] came in and saw the kids doing it I think that would be helpful to them.

• We could also do another school board presentation.

• Especially parents whose students perform well. They are not happy, that is what they are communicating to me...They don’t understand.

• The whole honor roll comes into play, I am able to see their growth more and I think students are seeing their growth, but the parents are having a hard time understanding it.
• I think it is a valid concern for a parent to say well how is this going to impact them when they get to this other system [in high school]?

• I agree with what we are doing, I totally agree with what we are doing and I really like the difference in looking at where I record students’ scores on things because I can see that growth where I am recording it now whereas before it just was a page of different activities and numbers and you just average them up together and it really didn’t make a lot of sense.

Figure 74: Teachers identify systemic structures that help communicate student growth.

6. How do you communicate student growth? Culture

Communicating Student Growth: Culture
Informing students about how their growth will be communicated becomes part of the classroom and school culture.

- I think students are more comfortable with it.
- When we are separating the skills the students are learning from the accountability grade, I think that is important for kids to know what they are doing or how they are being accountable.
- We need to individualize and ask deeper questions. I haven’t had any parents complain about the way that we do it.


Once parents understand the value around measuring individual student growth, they become more comfortable with the reporting practices.

- When we took the time to explain it to him [a parent], he was okay with it.
- …it’s the higher performing students or the students who have always performed higher and gotten all A’s or whatever, that the parents are now freaking out because they are seeing all 2’s and it’s a 2 because we are just learning this skill we have just been introduced to this skill, it’s not because they are any less of a student that they have always been.
Figure 75: How teachers communicate student growth.

Focus Group Interview Question # Seven: What school polices or practices support or hinder your efforts to implement formative assessment?

What conditions are necessary to embed the principles of the FAP?

Parent codes identified: 1) Systemic Structures, 2) Challenges, 3) Assessment, 4) Culture, 5) Interaction of Initiatives, 6) Upscale and 7) Shared Leadership. To illustrate the weight of each code within this interview question, I designed a pie graph that illustrates the weight of the codes as illustrated in Figure 76.
Figure 76: Codes identifying school practices and policies that impact formative assessment implementation.

1. What School Policies or Practices Support or Hinder Your Efforts to Implement FA?

*Systemic Structures*

The systemic structures identified by focus group participants included: TLCs; availability of substitutes; common, classroom, high stake and local assessment systems; the structure of the schedule; lab classes; and fluid groupings.

- When I think of this and the TLCs, having the TLC during the day is definitely helpful.
• Data taken from the classroom, or common assessments; or the huge
evaluative assessments like NECAP. We have that data and you are doing
something about it and it’s changing the structure of our day.
• We are doing labs to meet those students’ needs and I think that is a bonus…
• Now I feel like okay, now what? There is actually a now what. There is a next
step and I am excited about that and I truly believe that formative assessment
and the people got us here.
• We are out of the box.

2. What School Policies or Practices Support or Hinder Your Efforts to Implement FA?

Challenges

Teachers did identify challenges within the policies and practices of the school:
• I don’t think it’s great for the kids [TLCs during the day], so that’s the
negative part of it. I think it is really hard. We have a group of kids that have a
sub all day because it’s two of us in the morning and two of us in the
afternoon.
• I could see where someone [naysayers] might say that those formative
assessments were forced; and the report cards…Their ‘fancy schmancy’
techniques…
• The only other piece that is critical, for some reason, we still don’t have a safe
learning environment in all classrooms and in all places in this school…
3. What School Policies or Practices Support or Hinder Your Efforts to Implement FA?

Assessment

The school is creating common assessments aligned with VT grade level expectations and the data received from the structures the system has in place.

- I am using the standards and GEs and assessing my kids constantly every day on how they are doing.
- I think for me the policies and practices more than ever, because formative assessment and the work started last year and continues to happen this year and more and more people get on board.

4. What School Policies or Practices Support or Hinder Your Efforts to Implement FA?

Culture

The school culture has an influence on polices and practices.
Figure 77: Cultural influence of policies and practices

- …because of that openness to listen, and work as a team, not an individual, that kind of climate…
- I don’t think I would do the teaming if there wasn’t formative assessment.
- …we’re open to changes and new ideas…
- Overall, it promotes learning no matter what curriculum you have.
- I mean talk about making a right hand turn, and we needed to make a right hand turn. This is so much better than what we have been doing all year…
- The kid who has never been able to shine in a group and she is just blossoming.
- We talk about each individual student, but we wouldn’t have known much about them if we didn’t have formative assessment.
- There were rich conversations and I think that teachers felt empowered.
• It’s like that it’s changed the culture.

• We have to figure out a way to insist that those kids get engaged.

• I feel like I need two of me. One to teach the kids that are really struggling in math and one to teach these kids who are ready for complex algebra.

5. What School Policies or Practices Support or Hinder Your Efforts to Implement FA?

Interaction of Initiatives

Teachers reported the necessity to continue responsive classroom, which supports formative assessment principles.

• You cannot do this TLC and get all this without having a good foundation about responsive classroom and it needs to be a school wide thing. I mean we have to have the same language.

6. What School Policies or Practices Support or Hinder Your Efforts to Implement FA?

Upscale

Teachers have reported the need to have all teachers trained in formative assessment and have administrative support along the way.
• Hopefully, there’s a plan to involve the rest of the school staff who haven’t had that training to become a part of understanding and being a part of the change and maybe that will help with some of the change.
• More and more people get on board…
• Part of it is that knowing that you are part of the change…
• We have a large turnover of administration in this district. I think we all feel that this formative assessment is getting us to where we want to go. We are seeing positive forward movement through this program and through our interactions with children.
• My concern is almost the changing of the guard and the lack of value and understanding of formative assessment in the way in which we see it and the way that we implement it in our daily practices. That is my fear. How do we continue to keep what we got going even if the administration changes?
• Marion is supporting all of us as teachers and as educators and giving us that support, now we have to sustain it.
• How do we build or continue to build and continue to have conversations that we feel are relevant and significant to our professionalism without maybe it even structured into our day? You know what I mean? What happens if we don’t have a half day, what do we do as practitioners, as professionals, what are we willing to do to make sure this continues to be valued?
7. What School Policies or Practices Support or Hinder Your Efforts to Implement FA?

**Shared Leadership**

- That leadership has to come with the people from within, people are going to have to stand up. We are going to have to do something to keep its integrity and that it does continue to grow and that we do feel supported because what happens when we get an administrator that says they don’t support it.
- I feel like in some ways it’s been easier for me to do whatever I want with formative assessment because I have the freedom.
- I have a lot of flexibility in the XXXth grade to try different strategies, to try different groupings, which is kind of fun because I do that that flexibility.
- I think teachers feel empowered.

![Diagram of Policies and Practices]

Figure 78: Policies and practices that support or hinder formative assessment implementation.
Focus Group Interview Question # Eight: What would the ultimate leadership model look like in our school as we continue to implement formative assessment?

The parent codes identified in this question are: 1) Shared Leadership, 2) Systemic Structures/Supports, 3) Culture, and 4) Adult Learning. To illustrate the weight of each code within this interview question, I designed a pie graph that illustrates the weight of the codes as illustrated in Figure 79.

![Pie Chart showing weight of codes]

Figure 79: Codes reflecting teachers’ perspectives of the ultimate leadership model.

1. What Would the Ultimate Leadership Model Look Like? Shared Leadership

![Pie Chart showing predominant use of Shared Leadership]

The teachers find a need to have a model in which shared leadership is practiced in order for formative assessment to continue in the school.
• I think shared leadership. People need to feel like they have the opportunity to rotate in several curriculums [leadership teams] and feel like they are not left out.

• People have different strengths and weaknesses in terms of what they can bring back.

• Just because we’re all different personalities, we balance each other out in the long run.

• I think it is good to have our peers as coaches; the time to be able to talk and share. I’d love to be able to continue that.

• Think about it; if the goal of the whole school was to decide what a leader is… what do you want it to look like?... what should the rules be?

• I think coaches are a big important thing. If we didn’t have coaches who were motivated and excited about this and willing to come into the classroom and demonstrate things, it would make it hard.

2. What Would the Ultimate Leadership Model Look Like? Systemic Structures/Supports

Teachers identified the following systemic structures necessary in order to foster a shared leadership model: a rotating schedule where teachers took turns facilitating meetings; the principal’s liaison meetings; TLCs; coaches, professional development meetings, professional developers, and faculty meetings.
Figure 80: Systemic structures to support the leadership model

- Some sort of a rotating schedule so that everybody who wants to be a participant is able to, just to get everybody involved.
- More of a teamwork thing. Bringing things back to your team. I think one thing that has helped us this year was we’ve been switching roles in our team meetings which has been kind of nice rather than having one person in charge.
- Anything that allows us that time to talk to one another, whether you are having your TLC or your formative assessment. Just to have the chance to work with somebody.
- I think the professional development leaders need to be the curriculum masters of that focus… I think PD time should be really directed to that.
- I think it is a matter of what structures you put in there [TLC meetings]. I think that this program has given us that structure; those deep conversations and professional conversations and trust.
3. What Would the Ultimate Leadership Model Look Like? Culture

- More of a teamwork thing. Bringing things back to your team.
- Not only one person is in charge
- It’s like working in a classroom with somebody, the teaming thing, have someone else to bounce your ideas off, because different people think differently and you have to be able to collaborate.
- Encourage people to take on these [leadership] roles.
- It might be more people would like to buy in if they feel like their time that they’re spending at these meetings is valuable and actually moving forward.
- Talk and share; I’d love to be able to continue to do that.
- We talk about activating students and making them more accountable, I think in this school there definitely is a space for more student leadership.
- It’s trusting kids a little bit more, this whole year has shown me that the more trust kids have with adult guidance that more empowered they feel the more they buy into school, the more they feel they are an important member if the community and that ties in with climate and behavioral expectations.
- Wouldn’t you love to have a partner to talk to? Sometimes you just don’t get it. And a partner could.
4. What Would the Ultimate Leadership Model Look Like? Adult Learning

Teachers support leaders that are grown from within and are familiar with the school community.

- Professional development from somebody who knows the kids is huge. Knowing our particular population or maybe knowing specific students.
- Picking a coach for a group of people, this is a wealth of knowledge.

Figure 81: Themes emerging as an ultimate leadership model.
Focus group question # Nine: *Tell me about your classroom culture.*

*Has it changed since implementing formative assessment?*

Since culture was the single code identified, the following variables were identified:

![Diagram of Classroom Culture](image)

Figure 82: Cultural change in classrooms since implementing formative assessment.

- The biggest change that I can see is the kids not moaning and groaning about what partner they have. They just accept that they are going to be wherever I put them; wherever the popsicle stick falls; and they’re not going to complain about it. And they don’t have to marry the person or hate them, they just have to be a partner for one day or maybe a couple.
• They never choose their partner. Ever. Not allowed. I’m not saying it’s good or bad or whatever. It’s just the way we do it and it seems to work. That’s the expectation.

• I think I see a more willing worker in my room with the little changes that we’ve tried. They’re willing to work at things.

• I just feel like they’re very willing and I think if you tell them to hop, they’ll tell you how high. No, I’m just kidding.

• It’s a huge difference. It feels like they’re listening. I feel like they’re with me more.

• They’re accepting to us.

• They know that someone is going to get different [level] work, and it doesn’t matter. They really are very accepting.

• I think that part of it is because of the skills we are working on. There are three different packets. It doesn’t matter which one you have. Everybody is learning this particular concept. You are all going to show what you’ve learned. No competition, no comparing one to the other.

• I think that it is also that they know that everyone is working at their own level. It’s the formative assessment.

• I know we are all very different people, we have different personalities, but certain expectations need to be set up so that kids feel safe. If they don’t feel safe, they’re not going to participate. They are not ever going to buy in. They’ve got to feel like it’s okay to speak their mind and they’re not going to be ridiculed…
Field Notes: Teacher Learning Communities 2007-2008

I attended the following TLC sessions during the 2007-2008 school year:

<table>
<thead>
<tr>
<th>TLC</th>
<th>Dates: 2007-2008</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLC # 1 (Pilot Group)</td>
<td>9/27, 10/26 11/30, 1/25, 2/22, 3/28, 4/25, 5/23</td>
<td>8:00 – 11:30 AM</td>
</tr>
<tr>
<td>TLC #2 (2007-8)</td>
<td>9/21, 11/16, 1/18, 2/15, 3/21, 4/11</td>
<td>11:30 AM – 3:00 PM</td>
</tr>
<tr>
<td>TLC #3 (2007-8)</td>
<td>9/21, 11/16, 1/18, 2/15, 3/21, 4/11</td>
<td>8:00 – 11:30 AM</td>
</tr>
</tbody>
</table>

All TLCs have a standard framework for agenda items:

1. Learning Intentions
2. How’s It Going?
3. Action Planning
4. Summary of Learning

In order to organize my findings for the TLCs, I identified common themes, as illustrated in Figure 83. Then, I separated each theme by individual TLC and sorted related notes and quotes from each TLC as it pertained to the theme.

Figure 83: Codes and emerging themes identified in all TLC field notes.
When looking at the data quantitatively (see Table 9), the weight of the codes/themes between TLCs appears insignificant. In order to understand what the participants discussed during the TLCs, I included the focus of each theme and significant quotes from participants as well as my notes.

Table 9: TLC Quantitative Data

<table>
<thead>
<tr>
<th>Codes/Themes</th>
<th>All TLCs</th>
<th>TLC - 1</th>
<th>TLC- 2</th>
<th>TLC -3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountability</td>
<td>4%</td>
<td>4%</td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td>Challenges</td>
<td>3%</td>
<td>4%</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>Culture</td>
<td>10%</td>
<td>4%</td>
<td>10%</td>
<td>8%</td>
</tr>
<tr>
<td>Parent Communication</td>
<td>3%</td>
<td>0%</td>
<td>2%</td>
<td>5%</td>
</tr>
<tr>
<td>Reporting Systems</td>
<td>4%</td>
<td>9%</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>Reporting Systems that Effect Systemic Change</td>
<td>4%</td>
<td>5%</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Systemic Structures</td>
<td>11%</td>
<td>19%</td>
<td>4%</td>
<td>7%</td>
</tr>
<tr>
<td>Techniques &amp; Strategies</td>
<td>59%</td>
<td>53%</td>
<td>66%</td>
<td>68%</td>
</tr>
</tbody>
</table>

**Accountability**

TLC #1. The pilot project participants focused on goals for student independence.

“We need to make kids more vested in education.”

TLC #2. Behavioral accountability and developing rubrics for students to self-assess their progress in this area was an area of focus in the TLC #2’s discussions.

“Powerful.”
TLC #3. Participants in TLC #3 discussed academic accountability and students showing evidence of their learning. “Papers aren’t going home with a grade; they’re going home with evidence.” The themes for accountability varied concerning behavioral, academics, and personal accountability within the three TLCs.

**Challenges**

TLC #1. A challenge identified throughout the year in the pilot program TLC was a particular classroom that presented behavioral challenges. Also, this TLC identified the challenge of a lack of explicit, consistent, and vertical instruction in word work curriculum.

TLC #2. Challenges identified in this TLC were ‘naysayers’ in the school that made the focus on formative assessment harder. “The other *** grade teachers do not value formative assessment and don’t want to hear anything about it.”

TLC #3. N/A

**Culture**

TLC #1. The topics discussed included a collaborative learning culture: “I’m in a state of disequilibrium a lot because I’m working with a strong team [TLC #1].” Also identified was a collaborative teaching culture of working together to form skill groups and share students and the planning of lessons. A ‘wish’ from the group is to create a culture of collaborative learning during faculty meetings so that the learning is shared with all the teachers; a systemic shift. Motivation (as a result of TLC sessions) to implement strategies and associated techniques was threaded throughout the TLC discussions. The pilot year participants, all in all, discussed the culture that affects adult learners.
TLC #2. Culture discussions for TLC #2 included the culture of students and teachers. Teaming for both teachers and students was a focus. For students: “If you are a 4th grader, and you are stumped, go to a 5th grader.” “We will be able to work with everyone.” For teachers: Team teaching and splitting groups according to the information on the exits tickets: “huge relief for me.” They work together to create common assessments and “share the work load.” Also, the TLC has formed norms of collaboration set in ground rules; they recognized each other’s strengths and weaknesses and listen respectfully to each other.

TLC #3. The topics discussed concerning culture for this TLC focused on sharing their challenges with each other. This is an example of a sentiment shared: “I feel guilty that I haven’t tried anything new.” “I don’t think it’s bad that you’re not doing a lot of new things. Do a couple and do it well.” Also, when discussing implementing formative assessment a participant shared: “I have to work really hard to keep this together” and “maybe my classroom management is getting in the way of formative assessment.”

Parent Communication

TLC #1. N/A

TLC #2. The participants communicate the students’ learning intentions with parents through weekly letters. The students communicate their learning intentions and excitement of learning to their parents in weekly letters as well.

TLC #3. The participants in this TLC communicated the behavioral accountability as well as academic accountability to the parents. They reported a shift over time of how the students took over the responsibility of reporting their accountability. “There is a self reflection on learning intentions; they scored themselves and told parents, ‘this is how I
think I did.’” “One parent didn’t like the grading system, so we sent home the learning intentions with self reflection and had the parent sign it. We should start doing this right at the beginning of the year—they need to take ownership.”

**Reporting Systems**

TLC #1. Measuring growth, record keeping, scales and scoring were the themes discussed from the first TLC in September, 2007 until late January, 2008. Teachers felt strongly that they need to measure and indicate growth even though students did not necessarily meet standards. The record keeping and organizational system was identified as a priority to address. Along with the record keeping, a scale needed to be established to measure the growth toward meeting standards. “What do we use for a scale? 0-5; 1-5; 1-3; or 1-4?”

TLC #2. Teachers struggled with the ‘Grade Quick’ system (grades 5-8) for reporting student growth. Others commented that there would be no indication of a score or grade in the grade books until the students had an opportunity to fix their work.

TLC #3. The teachers in TLC #3 discussed the techniques in which they reported student growth to their students. These included the traffic lightning, and 1, 2, & 3’s. They reported that students understand the standards: “Kids are asking—’what do GEs mean?’ They are going to be devastated when I start popping a 2 at them.”

**Reporting Systems that Affect Systemic Change**

TLC #1. Significant systemic reporting system issues arose from the conversations during the TLC #1 sessions. They included: standards based reporting; separating behavioral accountability and productivity assessments with skill/concept assessments; limitations of traditional reporting systems; consistent reporting system K-8;
honor roll criteria; and the need to communicate with the school’s professional design team about these reporting system issues.

TLC #2. Discussions included the eligibility criteria for honor roll. Organizational systems is challenging to the participants: “I haven’t even made a grade book! But I keep everything for kids to have the evidence. I’m not sure what I should send home.” A system to communicate ‘warnings’ was discussed: “How do we do that?”

TLC #3. Progress reports and report cards were addressed early in the year. “[report cards] doesn’t fit what we are doing.” Progress reports and/or warnings are now problematic: “What are we going to do?”

Systemic Structures

The following tables represent the structure and discussion/quotes used for a specific date:

Table 10: TLC #1

<table>
<thead>
<tr>
<th>Structures</th>
<th>Discussion and/or quotes</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math lab</td>
<td>Discussion begins on when to start the lab</td>
<td>9/27/2007</td>
</tr>
<tr>
<td>Issue about lack of school-wide word study program</td>
<td>We don’t have a systemic word study or vocabulary plan or program</td>
<td>9/27/2007</td>
</tr>
<tr>
<td>Record keeping to support student learning</td>
<td>check marks, =, -, + comment only: need criteria for kids to see</td>
<td>10/26/2007</td>
</tr>
<tr>
<td>Student Response Systems</td>
<td>Participants want access to them</td>
<td>10/26/2007</td>
</tr>
<tr>
<td>Math lab</td>
<td>Discussed grouping for labs</td>
<td>10/26/2007</td>
</tr>
<tr>
<td>Placement of students</td>
<td>Vertical &amp; sending teachers to meet with receiving teachers</td>
<td>11/28/2007</td>
</tr>
<tr>
<td>Structures</td>
<td>Discussion and/or quotes</td>
<td>Date</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Students with FA experiences and those that do not have FA experience</td>
<td>Teachers are immediately noticing which students previously have had FA instruction. This is a systemic issue.</td>
<td>9/21/07</td>
</tr>
<tr>
<td>Teaming</td>
<td>“Structures are in order to team teach.”</td>
<td>1/18/08</td>
</tr>
<tr>
<td>Smart Boards and associated technology</td>
<td>“If you ask the right [hinge] question, you know if they got it.” – Discussion around the availability of SmartBoard Technology in FA classrooms.</td>
<td>2/15/08</td>
</tr>
<tr>
<td>Parent Conferences</td>
<td>“How do we get parents in?”</td>
<td>3/21/08</td>
</tr>
</tbody>
</table>
Table 12: TLC #3

<table>
<thead>
<tr>
<th>Structure</th>
<th>Discussion and/or quotes</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>Kids are not doing their homework; what systems are in place for this?</td>
<td>1/18/08</td>
</tr>
<tr>
<td>NECAPS</td>
<td>Discussion on motivational strategies, school-wide.</td>
<td>2/15/08</td>
</tr>
<tr>
<td>Change in practices</td>
<td>“FA pushed me to make a change.”</td>
<td>3/21/08</td>
</tr>
<tr>
<td>Reporting Systems</td>
<td>“This changed our reporting system!”</td>
<td>3/21/08</td>
</tr>
</tbody>
</table>

Techniques and Strategies

I searched my field notes and found the specific strategies and associated techniques discussed during the ‘how’s it going?’ section for each TLC.

Figure 84: Strategies discussed during TLC #1 sessions.
**Table 13: TLC #1: Techniques**

<table>
<thead>
<tr>
<th>TLC #1 Techniques</th>
<th>Occurrences</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>End of Lesson</td>
<td>1</td>
<td>Activating Students as Owners of Their Own Learning</td>
</tr>
<tr>
<td>Review</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activating Peers</td>
<td>2</td>
<td>Activating Students as Owners of Their Own Learning</td>
</tr>
<tr>
<td>Tape Recording</td>
<td>1</td>
<td>Activating Students as Owners of Their Own Learning</td>
</tr>
<tr>
<td>Thumbs Up</td>
<td>1</td>
<td>Activating Students as Owners of Their Own Learning</td>
</tr>
<tr>
<td>Traffic Lighting</td>
<td>4</td>
<td>Activating Students as Owners of Their Own Learning</td>
</tr>
<tr>
<td>Peer Assessment</td>
<td>1</td>
<td>Activating Peers as Instructional Resources for One Another</td>
</tr>
<tr>
<td>Turn and Talk</td>
<td>1</td>
<td>Activating Peers as Instructional Resources for One Another</td>
</tr>
<tr>
<td>Learning Intentions</td>
<td>2</td>
<td>Clarifying/ Sharing Learning Intentions &amp; Success Criteria</td>
</tr>
<tr>
<td>Comment Only</td>
<td>2</td>
<td>Feedback</td>
</tr>
<tr>
<td>Marking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Find and Fix</td>
<td>2</td>
<td>Feedback</td>
</tr>
<tr>
<td>2 Stars and a Wish</td>
<td>1</td>
<td>Feedback</td>
</tr>
<tr>
<td>Hinge Questions</td>
<td>1</td>
<td>Questioning</td>
</tr>
<tr>
<td>Exit Tickets</td>
<td>3</td>
<td>Questioning</td>
</tr>
<tr>
<td>Learning Logs</td>
<td>3</td>
<td>Questioning</td>
</tr>
<tr>
<td>Popsicle Sticks</td>
<td>3</td>
<td>Questioning</td>
</tr>
<tr>
<td>Q- A Loop</td>
<td>1</td>
<td>Questioning</td>
</tr>
</tbody>
</table>

**Table 14: TLC #1: Technique/Strategy**

<table>
<thead>
<tr>
<th>TLC #1 Technique/Strategy</th>
<th>Discussion and/or Quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hinge questions: ABCD cards/questioning</td>
<td>Need to go back and re-teach (9/27/07)</td>
</tr>
<tr>
<td>Comment-only marking/feedback</td>
<td>Disappointed kids aren’t responding to the comments (2/21/08)</td>
</tr>
<tr>
<td>Comment –only marking/activating peers as instructional resources for one another</td>
<td>“Child completely changed her writing” (3/28/08).</td>
</tr>
<tr>
<td>End of lesson student review/activating students</td>
<td>“People should know why we are doing this” (3/28/08).</td>
</tr>
<tr>
<td>Exit tickets/questioning</td>
<td>Implementing without disturbing the transition; is seamless (3/28/08).</td>
</tr>
<tr>
<td>Find and Fix/Feedback</td>
<td>“They need to be learners first before they can share their work” (2/21/08). The more you do it, the more they internalize (2/21/08).</td>
</tr>
<tr>
<td>Learning intentions/clarifying learning intentions</td>
<td>“Kids aren’t able to restate learning intentions after lessons” (11/28/07).</td>
</tr>
<tr>
<td>Learning logs/questioning</td>
<td>“They can’t respond in a timely manner” (3/28/08). “What do I do when I find out when most of the kids aren’t getting it?” (3/28/08).</td>
</tr>
<tr>
<td>Popsicle sticks/questioning</td>
<td>Turn and talk before pulling sticks (10/26/07); accountability and classroom culture (9/27/07).</td>
</tr>
<tr>
<td>Tape recording/activating peers</td>
<td>“Kids are listening to each other and critiquing” (3/28/08).</td>
</tr>
<tr>
<td>Traffic lighting/activating students</td>
<td>Organizational challenges for desks (9/27/07); “good way to remind them what it should look like or sound like” (4/24/08); Traffic lights on assignment, talking to kids about how they are doing (9/27/07).</td>
</tr>
</tbody>
</table>

Figure 85: Strategies discussed during TLC #2 sessions.
### Table 15: TLC #2: Techniques

<table>
<thead>
<tr>
<th>TLC #2 Techniques</th>
<th>Occurrence</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal Entries</td>
<td>1</td>
<td>Activating Students as Owners of Their Own Learning</td>
</tr>
<tr>
<td>Learning Reflections</td>
<td>1</td>
<td>Activating Students as Owners of Their Own Learning</td>
</tr>
<tr>
<td>Parking Lot</td>
<td>1</td>
<td>Activating Students as Owners of Their Own Learning</td>
</tr>
<tr>
<td>Traffic Lighting</td>
<td>5</td>
<td>Activating Students as Owners of Their Own Learning</td>
</tr>
<tr>
<td>Carousel</td>
<td>1</td>
<td>Activating Peers as Instructional Resources for One Another</td>
</tr>
<tr>
<td>Learning Intentions</td>
<td>12</td>
<td>Clarifying and Sharing Learning Intentions &amp; Criteria for Success</td>
</tr>
<tr>
<td>2 Stars and a Wish</td>
<td>1</td>
<td>Feedback</td>
</tr>
<tr>
<td>Comment Only</td>
<td>1</td>
<td>Feedback</td>
</tr>
<tr>
<td>Constructed Response</td>
<td>1</td>
<td>Feedback</td>
</tr>
<tr>
<td>Find and Fix</td>
<td>1</td>
<td>Feedback</td>
</tr>
<tr>
<td>Hinge Questions</td>
<td>7</td>
<td>Questioning</td>
</tr>
<tr>
<td>Entrance Tickets</td>
<td>2</td>
<td>Questioning</td>
</tr>
<tr>
<td>Exit Tickets</td>
<td>8</td>
<td>Questioning</td>
</tr>
<tr>
<td>Jigsaw</td>
<td>1</td>
<td>Questioning</td>
</tr>
<tr>
<td>Learning Logs</td>
<td>2</td>
<td>Questioning</td>
</tr>
<tr>
<td>Popsicle Sticks</td>
<td>9</td>
<td>Questioning</td>
</tr>
<tr>
<td>Wait Time</td>
<td>1</td>
<td>Questioning</td>
</tr>
</tbody>
</table>

### Table 16: TLC #2: Technique/Strategy

<table>
<thead>
<tr>
<th>TLC #2 Technique/Strategy</th>
<th>Discussion and/or Quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal entries/activating students</td>
<td>“Kids are writing to each other” (3/21/08).</td>
</tr>
<tr>
<td>Learning reflections /activating Students</td>
<td>“Send home on Fridays (2/15/08)”</td>
</tr>
<tr>
<td>Traffic lighting /activating Students</td>
<td>“It’s like night and day, this is how I determine who will be in the small group” (9/21/07); “After a question, hold up a red, yellow or green card. If you held up a red, go to a green and have three minutes to figure it out” (4/11/08); “If you are a green, go with a red” (3/21/08); Used on exit tickets (9/21/07).</td>
</tr>
<tr>
<td>Learning intentions/clarifying and sharing LI</td>
<td>“I wish I did more LI” (3/21/08); “I write a learning intention, ask the kids what it means, then write it in kid language” (3/21/08); “Kids are asking where the learning intention is if it’s not on the whiteboard!” (1/18/08); “Made me stay on task” (9/21/07); “Stresses why we are doing this” (4/11/08); “LI have focused my lessons, I refer to them all the time” (1/18/08).</td>
</tr>
<tr>
<td>2 stars and a wish/feedback</td>
<td>Using in writing workshop (2/15/08)</td>
</tr>
<tr>
<td>Comment only/feedback</td>
<td>“Is it for parents or students or both?” (2/15/08).</td>
</tr>
<tr>
<td>Find and fix/feedback</td>
<td>“People are slowing down when fixing their work” (4/11/08).</td>
</tr>
<tr>
<td>Hinge questions/questioning</td>
<td>“A lot more wrong than right!” (2/15/08); “It was a disaster” (2/15/08); “Threw a loop in what I was doing” (2/15/08); Used to develop the next day’s lesson (1/18/08); Discussion around distracters (2/15/08); Using student response systems (9/21/07).</td>
</tr>
<tr>
<td>Entrance tickets/questioning</td>
<td>“To reflect and mellow out” (1/18/08).</td>
</tr>
<tr>
<td>Exit tickets/questioning</td>
<td>3 exit tickets for each LI (3/21/08); to decide grouping (2/15/08); “They don’t have to be done at the end of class, they can be done right then” (9/21/07).</td>
</tr>
<tr>
<td>Learning logs/questioning</td>
<td>“Still confused” (9/21/07).</td>
</tr>
<tr>
<td>Popsicle sticks/questioning</td>
<td>Puts two blank ones in the can (1/18/08); “It never occurred to me to put the sticks back in the cup” (9/21/07); “No hands up in my classroom” (9/21/07); Uses them to pick learning partners (2/15/08).</td>
</tr>
</tbody>
</table>
Figure 86: Strategies discussed during TLC #3 sessions.

Table 17: TLC #3: Techniques

<table>
<thead>
<tr>
<th>TLC #3 Techniques</th>
<th>Occurrence</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer Assessment</td>
<td>2</td>
<td>Activating Peers as Instructional Resources for One Another</td>
</tr>
<tr>
<td>Question Strips</td>
<td>1</td>
<td>Activating Peers as Instructional Resources for One Another</td>
</tr>
<tr>
<td>Share Exemplars</td>
<td>3</td>
<td>Activating Peers as Instructional Resources for One Another</td>
</tr>
<tr>
<td>Parking Lot Self</td>
<td>1</td>
<td>Activating Students as Owners of Their Own Learning</td>
</tr>
<tr>
<td>Traffic Lighting</td>
<td>4</td>
<td>Activating Students as Owners of Their Own Learning</td>
</tr>
<tr>
<td>Learning Intentions</td>
<td>1</td>
<td>Clarifying and Sharing Learning Intentions &amp; Criteria for Success</td>
</tr>
<tr>
<td>Comment Marking</td>
<td>6</td>
<td>Feedback</td>
</tr>
<tr>
<td>Feedback</td>
<td>4</td>
<td>Feedback</td>
</tr>
<tr>
<td>Exit Tickets</td>
<td>3</td>
<td>Questioning</td>
</tr>
<tr>
<td>Hinge</td>
<td>1</td>
<td>Questioning</td>
</tr>
<tr>
<td>Popsicle Sticks</td>
<td>10</td>
<td>Questioning</td>
</tr>
<tr>
<td>Wait Time</td>
<td>2</td>
<td>Questioning</td>
</tr>
<tr>
<td>TLC # 3 Technique/Strategy</td>
<td>Discussion and/or Quotes</td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td>--------------------------</td>
<td></td>
</tr>
<tr>
<td>Peer assessment/activating peers</td>
<td>Teachers report that kids aren’t always honest; “a little too nice” (9/21/07); Kids need to take ownership of their own learning (3/21/08).</td>
<td></td>
</tr>
<tr>
<td>Question Strips/Activating Peers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share exemplars/activating peers</td>
<td>Teachers are sharing 2’s and 3’s (11/16/07); Pick three students to share their strategies (11/16/07).</td>
<td></td>
</tr>
<tr>
<td>Self assessment/activating students</td>
<td>“Every assessment has a checklist or a rubric” (9/21/07).</td>
<td></td>
</tr>
<tr>
<td>Traffic lighting/ activating students</td>
<td>“Working fine” (2/15/08); “Overwhelmed, I have a needy class” (9/21/07); “Scrapping this” (2/15/08); “Are they honest with their red, yellow and green? One day I let her go back with the greens, and then the next day she joined the reds on her own!” (9/21/07).</td>
<td></td>
</tr>
<tr>
<td>Learning intentions/clarifying and sharing learning intentions</td>
<td>“How many learning intentions in a lesson?” (11/16/07).</td>
<td></td>
</tr>
<tr>
<td>Comment marking/feedback</td>
<td>“Students walk around the room and put comments on sticky paper; they don’t know whose paper is whose” (9/21/07); “I’m starting to notice that kids are being more careful” (3/21/08); “Do I score every piece?” (1/18/08); “Kids look forward to comments” (1/18/08); Teachers are making an effort to focus on one or two things to comment on (1/18/08).</td>
<td></td>
</tr>
<tr>
<td>Feedback/feedback</td>
<td>“I’m cognizant about what I’m writing and how this will move the students forward” (3/21/08); “We feel bad for the high kids, so we put them together so they get feedback from each other” (3/21/08); “Kids are more accountable for their learning” (9/21/07).</td>
<td></td>
</tr>
<tr>
<td>Exit tickets/questioning</td>
<td>“You have to have really good questions” (3/21/08); Teachers are combining exit tickets with learning intentions (1/18/08).</td>
<td></td>
</tr>
<tr>
<td>Hinge/questioning</td>
<td>“I’m trying this as I move away from traffic lighting” (2/15/08).</td>
<td></td>
</tr>
</tbody>
</table>
Videotaped Session: TLC #1 (January 25, 2008)

In order to document clips of TLCs for future professional development trainings concerning formative assessment, we videotaped the 1/25/08 TLC #1 session. The following transcript captures significant sentiments from the pilot participants:

- This [TLC] might help us, as a system; figure out what we can do for record keeping. (systemic)
- That’s why this [TLC] is successful. The conversations we have here, we should have with the whole school. (culture)
- It’s nice to have various grade levels’ perspectives and share ideas like I can take a piece of that and make it fit for sixth grade. (up scale; teaching practices)
- When I leave here, I think about things differently. It’s helped me look at systems. (systemic, deep thinking)
- I know we talked about it last year…if we should have a principal here. I appreciate your presence here…I appreciate your presence here solely because I feel comfortable in saying ‘I want to do it this way’. I just want to let you
know as I’ve seen you in various times being able to say ‘my principal knows I’m doing this’. You know what I’m saying? I don’t want to use the word scared or nervous but sometimes I want to try or not try or give up or not give up. But your presence here is helpful; the fact that you are recognizing that a lot of things here are systemic. The flip side is the number of peers we have that are not comfortable feeling that it’s Okay to do something different.

(shared leadership)

• We have to keep ourselves positive. (culture)

• Just think, the subject of popsicle sticks has moved into reporting systems! (up scale, systems)

• I think more about assessment than I have in the past. (deep thinking, assessment)

• Just to have this time to think about what we’ve done. (systems, TLCs)

• [Talking about the first year TLC] You accepted it [FA] as something you were going to do; I think the four days on the lake [initial training] helped. (systems, TLCs, up scale)

• In the state of Vermont, this school took it further that any school. (upscale)

• We found something that works. (culture)

• We have the freedom to do this…other administrators are dictators; ‘this is the way it’s going to be’. (shared leadership)

• This is a real culture here at this school. There is real teacher empowerment here; teachers are not going to tolerate someone coming in and saying you’re
going to do all five techniques by such and such a date… (culture; shared leadership).

End of Year ‘All TLC’ Share-Out Meeting

On June 12, 2008, all the TLCs met together for an end of the year share-out with trainer/coach, Beth Cobb, facilitating.

Cobb began the meeting with a “Chalk Talk” entitled: “One Big Idea…Students and teachers using evidence of learning to adapt teaching and learning to meet immediate learning needs minute-to-minute and day-by day” (ETS). Although I have provided the quotes in print for ease of reading in a table format below (see Table 19), it is important to note the location of the quotes because this activity allows participants to “piggy back” ideas with one another as they write their thoughts, silently (see Figure 87).
One Big Idea... Students as Assessors

The objective is to have students as assessors to demonstrate evidence of learning. 

Planning with focus on the final result, a clear understanding of key points.

The feedback is to guide students in planning.

Understanding through shared experience.

Students to move forward.

Critical thinking and problem-solving.

Collaboration is a required element.

Learning about self-assessment, peer assessment, and accountability.

Teachers and students.

Kids and teachers using evidence of learning to adapt teaching and learning.
Figure 87: Chalk Talk quotes

Table 19: Chalk Talk Notations

<table>
<thead>
<tr>
<th>Chalk Talk Notations</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both teachers and students</td>
<td>Accountability</td>
</tr>
<tr>
<td>Teacher and peer</td>
<td>Accountability</td>
</tr>
<tr>
<td>Teacher and student accountability</td>
<td>Accountability</td>
</tr>
<tr>
<td>Accountability for all</td>
<td>Accountability</td>
</tr>
<tr>
<td>Hold students accountable for their learning</td>
<td>Accountability</td>
</tr>
<tr>
<td>Thinking about learning</td>
<td>Adult learning</td>
</tr>
<tr>
<td>Self reflection</td>
<td>Adult learning</td>
</tr>
<tr>
<td>New learning</td>
<td>Adult learning</td>
</tr>
<tr>
<td>No grading busy work</td>
<td>Assessment</td>
</tr>
<tr>
<td>Data driven</td>
<td>Assessment</td>
</tr>
<tr>
<td>Graphing data</td>
<td>Assessment</td>
</tr>
<tr>
<td>Real assessment</td>
<td>Assessment</td>
</tr>
<tr>
<td>Less mindless grading</td>
<td>Assessment</td>
</tr>
<tr>
<td>Difficult at times</td>
<td>Challenges</td>
</tr>
<tr>
<td>Challenges</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Never have enough time to review/evaluate/assess student work with other</td>
<td></td>
</tr>
<tr>
<td>teachers to look for benchmark pieces and to design instructional changes</td>
<td></td>
</tr>
<tr>
<td>to increase understanding – I agree, more vertical team time</td>
<td></td>
</tr>
<tr>
<td>Cooperative responsibility</td>
<td>Culture</td>
</tr>
<tr>
<td>Great for team &amp; community building &amp; accountability</td>
<td>Culture</td>
</tr>
<tr>
<td>Team designed rubrics</td>
<td>Culture</td>
</tr>
<tr>
<td>Helpful, valuable, powerful, clear</td>
<td>Culture</td>
</tr>
<tr>
<td>Team work for differentiating instruction</td>
<td>Culture</td>
</tr>
<tr>
<td>Self verses house</td>
<td>Culture</td>
</tr>
<tr>
<td>Unwinding and supporting through TLC</td>
<td>Culture/Relational</td>
</tr>
<tr>
<td>Colleagueship is a required element: for students and teachers</td>
<td>Culture/Relational</td>
</tr>
<tr>
<td>Forming relationships</td>
<td>Culture/Relational</td>
</tr>
<tr>
<td>Sharing challenges</td>
<td>Culture/Relational</td>
</tr>
<tr>
<td>Risk takers – kids and teachers</td>
<td>Mission</td>
</tr>
<tr>
<td>Helpful for teachers and students</td>
<td>Mission</td>
</tr>
<tr>
<td>Let students guide planning</td>
<td>Role of Teacher</td>
</tr>
<tr>
<td>How can we involve parents in the process?</td>
<td>Stakeholders/Communication</td>
</tr>
<tr>
<td>Traffic lighting system promotes student self assessment</td>
<td>Student learning</td>
</tr>
<tr>
<td>Easier to admit knowledge level</td>
<td>Student learning</td>
</tr>
<tr>
<td>Peer assessment</td>
<td>Student learning /Accountability</td>
</tr>
<tr>
<td>Self assessment</td>
<td>Student learning/Accountability</td>
</tr>
<tr>
<td>Next year’s schedule makes it challenging to build in finish and fix time</td>
<td>Systems</td>
</tr>
<tr>
<td>Invaluable for all</td>
<td>Systems</td>
</tr>
<tr>
<td>Improving and changing old ideas</td>
<td>Systems</td>
</tr>
<tr>
<td>TLC</td>
<td>Systems</td>
</tr>
<tr>
<td>Vertical teams, finally</td>
<td>Systems</td>
</tr>
<tr>
<td>Systemic change</td>
<td>Systems</td>
</tr>
<tr>
<td>TLC – key to guiding me this year</td>
<td>Systems</td>
</tr>
<tr>
<td>TLCs are an awesome support</td>
<td>Systems</td>
</tr>
<tr>
<td>TLCs – best part of teaching</td>
<td>Systems</td>
</tr>
<tr>
<td>Learning drives instruction daily</td>
<td>Teacher practices</td>
</tr>
<tr>
<td>Does our instruction drive learning?</td>
<td>Teacher practices</td>
</tr>
<tr>
<td>Look at my plan book, arrows everywhere!</td>
<td>Teacher practices</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Keep asking, so what’s the next step?</td>
<td>Teacher practices</td>
</tr>
<tr>
<td>Frequent check-ins with individuals</td>
<td>Teacher practices</td>
</tr>
<tr>
<td>Leads to meaningful instruction</td>
<td>Teacher practices</td>
</tr>
<tr>
<td>Not every block filled with trivial stuff</td>
<td>Teacher practices</td>
</tr>
<tr>
<td>Clearer understanding of students’ knowledge</td>
<td>Teacher practices</td>
</tr>
<tr>
<td>Used to move forward in planning lessons and differentiating instruction</td>
<td>Teacher practices</td>
</tr>
<tr>
<td>Focused</td>
<td>Teacher practices</td>
</tr>
<tr>
<td>Clearer expectations which keep both students and teachers focused</td>
<td>Teacher practices</td>
</tr>
<tr>
<td>Better use of time for teachers and students</td>
<td>Teacher practices</td>
</tr>
<tr>
<td>Working smarter not harder</td>
<td>Teacher practices</td>
</tr>
<tr>
<td>Best practice</td>
<td>Teacher practices</td>
</tr>
<tr>
<td>Letting kids know what they should know</td>
<td>Teacher practices</td>
</tr>
<tr>
<td>Affirming</td>
<td>Teacher practices</td>
</tr>
<tr>
<td>Learning intentions share with kids</td>
<td>Techniques</td>
</tr>
<tr>
<td>Keeping lessons focused and finite with learning intentions and exit tickets</td>
<td>Techniques</td>
</tr>
<tr>
<td>Planning with end results primary focus – exit tickets</td>
<td>Techniques</td>
</tr>
<tr>
<td>Posted learning intentions rubrics and assessments known beforehand</td>
<td>Techniques</td>
</tr>
<tr>
<td>Success criteria, great with a model</td>
<td>Techniques</td>
</tr>
<tr>
<td>Focused comment-only detailed comments</td>
<td>Techniques</td>
</tr>
<tr>
<td>Find and fix</td>
<td>Techniques</td>
</tr>
<tr>
<td>Wait time accountability</td>
<td>Techniques</td>
</tr>
<tr>
<td>Focused feedback</td>
<td>Techniques</td>
</tr>
<tr>
<td>Variety of strategies</td>
<td>Techniques</td>
</tr>
<tr>
<td>Carousel</td>
<td>Techniques</td>
</tr>
<tr>
<td>2 stars and a wish</td>
<td>Techniques</td>
</tr>
<tr>
<td>Learning logs</td>
<td>Techniques</td>
</tr>
<tr>
<td>Peer assessment; model and practice</td>
<td>Techniques</td>
</tr>
<tr>
<td>Popsicle sticks</td>
<td>Techniques</td>
</tr>
<tr>
<td>Keep students focused with learning intentions and popsicle sticks</td>
<td>Techniques</td>
</tr>
<tr>
<td>Love learning intentions</td>
<td>Techniques</td>
</tr>
<tr>
<td>Entrance tickets</td>
<td>Techniques</td>
</tr>
<tr>
<td>Show what you know tickets</td>
<td>Techniques</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>This [traffic lighting] got a bit old for me, so I went to 1,2,3 system and comment marking</td>
<td>Techniques</td>
</tr>
<tr>
<td>Mindful comment marking</td>
<td>Techniques</td>
</tr>
<tr>
<td>Smart board</td>
<td>Technology/Systems</td>
</tr>
<tr>
<td>Can’t wait to try it next year</td>
<td>Up scale</td>
</tr>
</tbody>
</table>

**Chalk Talk Codes**

![Chalk Talk Codes Diagram]

*Figure 88: Codes from chalk talk*
Then, Cobb crafted seven questions to frame the content of the meeting: 1) How have the techniques you implemented address the big idea? 2) If you had to name one technique, which one would you say had the most impact on you and your students? 3) What strategy or technique are you most proud of implementing and how did you adapt it for your classroom? 4) What strategy or technique didn’t go well, why didn’t it succeed, and would you try it again? 5) Tell us about a specific time that you felt supported from a colleague in the formative assessment program, 6) If you were to tell a person about KLT
and how it transformed your instruction, what would you say? and 7) What can you do to support the new learners of KLT?

1. How have the techniques you implemented addressed the big idea?

   Exit tickets:
   • Misconceptions are essential; you get these through exit tickets;
   • They force you to constantly switch;
   • Graph the growth and helpful for kids to see; we can’t move on because 90% of the class didn’t get this.

   Learning intentions:
   • Conquer one skill, take ownership of that and move onto a new skill;
   • Specifically in mathematics.

   Focused Feedback:
   • It’s been key, right now they are going to master this specific concept.

2. If you had to name one technique, which one would you say had the most impact on you and your students?

   • Learning intentions and exit tickets, if I had to choose, exit tickets; keeps it focused, take care of the skill and move on or don’t;
   • Using learning logs, it motivates them, it lets me see what/how they were thinking; thinking about their learning;
   • Traffic lighting and popsicle sticks are important in students assessing their own learning. One student in particular wouldn’t have ever raised his hand, accountability moving toward independence;
• Traffic lighting is the skeleton of class; without it my class wouldn’t be the same, the neighbor would say: ‘why aren’t you using the cards?’

3. What strategy or technique are you most proud of implementing and how did you adapt it for your classroom?
   • Focused feedback and also the +/- was it better than, worst than, or the same as the last assignment? It allowed them to say, ‘hey, I’m making progress’;
   • Find and fix to respond to feedback and we need time to look at student work.

4. What strategy or technique didn’t go well, why didn’t it succeed, and would you try it again?
   • Exit tickets, I ended up ditching it; I used an entrance ticket instead;
   • Carousels;
   • Hinge point questions.

5. Tell us about a specific time that you felt supported from a colleague in the formative assessment program.
   • All of you;
   • All of you and questions from the field;
   • At the beginning of the year I was having a problem with learning intentions and I had the opportunity to talk with **** to figure it out. It is possible to watch another colleague as well;
   • I watched ****’s room;
   • Supported by colleagues during TLC time;
• Same positive things can be tried at all grade levels, it’s Okay to try something that didn’t work;
• With help in the report cards;
• Help to integrate work, it made us a strong team;
• I was encouraged to try stuff and Okay to drop stuff;
• **** helped me with traffic lighting; he just did it.

6. If you were to tell a person about KLT and how it transformed your instruction, what would you say?
• I know my students better;
• I know my kids are more accountable;
• Student accountability;
• Teacher focused; know where you are going and communicating that to kids.

7. What can you do to support the new learners of KLT?
• The organizational piece; to get them started, if they had a system to get them started;
• It might be that it is Okay not to take data at first; get comfortable, then go with it;
• Start small;
• Encourage classroom visits.
Under the leadership of the superintendent, the St. Johnsbury School instituted a team to meet monthly to give input around professional decisions. The focus for the 2007-2008 school year included: 1) Reporting Systems, 2) Scheduling, 3) Technology, and 4) the Consolidated Federal Programs Budget. The minutes cited in this document pertain only to the conversations addressing the reporting system issues.

The team membership included: superintendent, principal (myself), technology coordinator, eighth grade teacher (formative assessment trained the summer of 2007), fifth grade teacher (formative assessment trained the summer of 2007 and coach for 2008-2009), mathematics professional developer (the formative assessment trainer and coach), literacy professional developer (formative assessment trained during the pilot training and coach for 2007-2008; 2008-2009), first grade teacher, unified arts teacher, school counselor, kindergarten teacher, special educator, fourth grade teacher, and director of special education (resigned in the fall of 2007).

9/13/07 PDT Meeting Minutes

The agenda for the initial 9/13/07 meeting included: 1) establishing norms for the year, 2) clarifying the purpose for the team, and 3) identifying the tasks to be achieved for the year. The tasks identified were: 1) reporting to parents; 2) scheduling; 3) technology; and 4) the Consolidated Federal Programs (CFP) budget.

For the purposes and significance of this study, the following elements of a good reporting system were identified at this meeting:

- Stating the 3 power standards for math and literacy (vertical perspective);
• Language that is doable and understandable by parents;
• Shows what you are working on within the standard for that quarter;
• Know who your audience is (i.e., parents);
• Answer what the reporting system is for;
• Not so time-consuming to fill out;
• Is consistent with what you are assessing;
• Decide if we are averaging or reporting where students are at that time;
• Social dimension/effort;
• Grades for U/Arts;
• Should we have an honor roll? Weighting grades;
• Decide if we have numbers or letters;
• What is the scale?;
• How often;
• Should there be warnings and/or positive reinforcements mid-cycle?

10/11/07 PDT Meeting Minutes

The agenda for the 10/11/07 meeting focused on immediate report card decisions.

**** said that everyone should work towards grading to the power standards, which will be a coordinated effort between the classroom teachers and the special educators. **** said that special educators would like to grade according to students’ IEPs, which is different from power standards. **** said that this will need to be discussed further in order to establish consistency throughout the grades.
- Can progress reports include positive comments or should their function remain to serve as academic warnings?

All grades do this in one form or another, whether it’s by phone call, EST meeting, or narrative. Currently, 7th grade teachers send out Grade Quick warnings, which are strictly negative. Teachers in 8th grade send out narratives. **** recommended getting rid of Grade Quick, but she reminded the team that if a child is having difficulty, something needs to be documented half-way through the quarter.

- Is a student’s ability to participate in sports currently tied to anything?

Previously, students had to maintain a 70 average in order to be eligible to participate in sports. This year, eligibility will depend on student effort and behavior. There will be no cuts – two teams will be created. These same guidelines should apply to participation in all extra-curricular activities.

- Honor Roll Eligibility

**** asked the team what the parental reaction would be if the honor roll is eliminated. The response: “They won’t be happy!” **** stated that given the current grading system based on whether the student is meeting the standard or not, it’s really not possible to create an honor comparable to past honor rolls. **** asked how the team felt about developing a list of students who are meeting the standards in place of the standard honor roll. *** suggested that the staff proceed with caution until a consensus has been reached, given that there are currently so many variations on reporting. This may morph into a “Proficiency Roll.”

- In Conclusion
**** asked everyone to talk with their cohorts and establish succinct, crisp, and clear definitions of what the standards-based numbers 1, 2, 3, and/or 4 should represent. Included with these minutes is a packet of reporting ideas gathered from various houses. Check with your colleagues to see if any of these collected ideas appeal to them. **** will visit houses to answer questions from staff, and they will also prepare a letter to be sent home to parents explaining that the report card system is a work-in-progress. The goal for 2008-2009: By the opening week of school next August, the new reporting system will be rolled out in complete form.

11/8/07 PDT Meeting Minutes

The agenda included teacher feedback about the reporting system and defining the reporting scale.

• Seventh grade has turned in their grades;
• Eighth grade is doing their own except for U/Arts and special education;
• There should be consistency among grade levels;
• There’s no need to upset the community; this is sounding confusing;
• Can’t use letter grades with the learning going on in FAP;
• We can’t be shackled by the Grade Quick program;
• By January, can there be some semblance of order?
• Today’s goal is to establish definitions of 1, 2, 3, and/or 4;
• Reports will still look different grade-to-grade because the standards are different;
• How is attendance going to be recorded?
- Honor Roll will be determined for grades 5 – 8.

Definitions of 1-2-3-4: After considerable discussion, the following definitions were agreed upon:

1. Demonstrates initial understanding of concept or skill with significant prompting.
2. Demonstrates understanding of concept or skill; performs inconsistently, or may need occasional prompting.
3. Understands concept or skill and performs independently, consistently, and with accuracy.
4. Understands concept or skill; performs independently, consistently, and with accuracy; and makes higher level extensions and connections.

12/4/07 PDT Meeting Minutes

No minutes to document for the purposes of this study.

1/24/08 PDT Meeting Minutes

Questions raised by the PDT members during the discussion included:

- Is this new report card going to become unmanageable?
- Are we scoring to GEs or are we scoring to standards?
- How will special education students be handled?
- The more systematic assessments can be made, the more valuable they’ll be later. Evidence is needed and that’s where a good system will be beneficial;
- Are we assuming that kids who are reading at grade level will earn a 3? What if they’re reading and responding at a much higher grade level?
• Each quarter, the 1/2 house specifies where kids should be at what time of year. There’s a certain place they need to be at this quarter and every quarter;

• Honor Roll. 7/8 arrived at criteria: The first grade is receiving all 3’s on the productivity/accountability scale; then 80% of all grades are a 3 will be honors; 100% of all grades a 3 will be high honors. 5/6 is going to do it the way they’ve done it in the past;

• Report cards go out next week. Marion’s going to send a letter to parents encouraging them to share feedback;

• Next year, conferences should be set up at a time when report cards are due so that it will be necessary for parents to come in and pick up their child’s report card;

• How many times a year should report cards be given?

• Administrators will figure out ways to cut costs on mailings;

• The final report card won’t have parent signatures;

• What is the actual report card going to look like? Four separate ones?

• To do for next meeting: All house representatives provide a copy of at least one actual report card that was sent out. Send a copy (including sped) with student name blacked out so packets can be made for everyone to review at the February meeting. We will be able to see the elements of what we’ve got out there. Please also include comments/feedback from other members of houses/teams (including what it felt like filling these out – was it easy? cumbersome? Did it feel like it captured the student achievement?) Include any input from parents. The ultimate goal is that a report card coming from
SJS feels like a SJS report card; it should have a feel to it that parents/teachers can get used to.

2/14/07 PDT Meeting Minutes

- Report Card Formats/Feedback:

  • PK/K: **** said that most teachers in Kindergarten are pleased with the direction the report cards are going in. The new format is much more efficient than writing complete narratives on all students. Record-keeping is huge! Well-documented notes are necessary and especially helpful.

  • 1/2: **** stated that the 1/2 teachers have not completely converted to the proposed format, but they are getting there. Some parents complained of inconsistent formats among the grades and others wanted clarification on the numerical meanings. During third quarter, 1/2 teachers will use the conference report rather than a report card. Their house will finish out the year with the present formats and will start with the new model next year.

  • 3/4: **** provided samples from third and fourth grade. She said that it didn’t take long to complete them as they were all on the computer. One concern was that there is no place on the report card for parent feedback. It was suggested that perhaps a feedback section isn’t needed if communication is taking place through the Friday Folder system. The third grade report card listed topics that will be covered throughout the year while the fourth grade cards focused on subjects addressed that particular quarter. On future report cards, it was determined that the standards need to be included. Since the
present report cards are different for grades three and four, they will work towards developing a consistent reporting system.

- **5/6**: **** explained that the 5/6 team used the “old-fashioned” model where grades are determined by averaging. The 6th grade wants to finish the year with this report card, but **** and **** are moving towards using the newer model next quarter with assistance from the professional developers.

- **7/8**: Seventh grade teachers liked the model, but they would like to see subcategories added because it appears too general the way it is. There was also a self-assessment section for seventh graders, which the team liked. Eighth grade found it very overwhelming at first, but they are now feeling better about it. **** said that although the 7/8 teachers are using the same format as the kindergarten teachers are, one major difference is that they do not keep anecdotal notes on students. They need to develop a system of gathering information so that they all become familiar with keeping records. **** shared a letter from another teacher regarding the reduced information that parents are receiving with the new report card. He believes that more information should be provided to parents and he is also concerned that the new model will be used primarily for tracking kids within the district. He also believes that parents want to see more specific scores. **** added that there needs to be discussion around accountability/productivity as the eighth grade sees many differences. **** added that the 7/8 report card that will be going to the Academy with next year’s ninth graders consists of 11 pages. This will create a logistical nightmare.
• Special Education: **** explained that special educators are supposed to report on goals at the same rate as regular education. She said that she and **** sometimes reported out on same thing about five times. She is not sure if all the special educators are on the same page.

3/6/08 PDT Meeting Minutes

How often would houses like to send report cards?
• PK/K would like trimesters; two report cards/conferences a year if done quarterly;
• 1/2 would like trimesters and have two conferences (November and March).
• 3/4 had no consensus re: quarters and trimesters;
• 5/6 would prefer trimesters and suggested using conferences rather than progress reports though some communication should be made in the middle;
  Final report card – both positive and negative comments should be allowed;
• 7/8 wants to do quarters, which allows for more check-ins. This will give parents more opportunities for providing feedback. Not a lot to report out on during first quarter due to NECAPs and all of the testing going on then;
• What about two paper report cards and two conferences?

4/24/08 PDT Meeting Minutes

No reporting systems discussion.

5/8/08 PDT Meeting Minutes

Report Cards
• We will soon begin using our new computerized report card program which was developed here in Vermont. Pretty much everyone PK - 8 has come on
board with the universal report card. They’re all standard-based; they will all be scored alike, on a 1-3 scale. Reporting will take place on a quarterly basis.

- It was suggested that a school-wide, accountability rubric is needed. The numerical explanations work; but the language around the productivity piece may need to be tweaked.

Classroom Observations as Field Notes

The following chart (Figure 90) documents the observed strategies and techniques enacted in classrooms during 10 classroom observations of formative assessment teachers:
<table>
<thead>
<tr>
<th>TLC year</th>
<th>Clarifying and Sharing Learning Intentions Criteria for Success</th>
<th>Learning Intention posted and stated</th>
<th>Success Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Engineering Effective Classroom Discussion, Questions, and Learning Tasks that Elicit Evidence of Learning</td>
<td>Popsicle sticks/spinners</td>
<td>Exit Tickets</td>
</tr>
<tr>
<td>10.5</td>
<td>Student Response System ~ SMART technology</td>
<td>Wait Time</td>
<td>Providing Feedback that Moves Learners Forward</td>
</tr>
<tr>
<td>10.5</td>
<td>Two Stars and a Wish</td>
<td>Feedback through Student Response Systems</td>
<td>Activating Students as the Owners of Their Own Learning</td>
</tr>
<tr>
<td>10.5</td>
<td>Accountability Slips</td>
<td>Journals</td>
<td>Activating Peers as Instructional Resources for One Another</td>
</tr>
<tr>
<td>10.5</td>
<td>Students worked in pairs/small groups</td>
<td>Think-Pair-Share~ Turn and Talk</td>
<td></td>
</tr>
<tr>
<td>10.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 90: Strategies and techniques enacted during classroom observations**
Cynthia Tocci from Educational Testing Services and Gayle Taylor from the VT DOE wrote this paper to present at the annual meeting of the American Research Association (AERA) and the National Council on Measurement in Education (NCME) in April of 2008. It describes the FAPP from conceptualization and design stages through the first year of implementation (2007). More specifically, the paper is focused on the implementation of the ‘Keeping Learning on Track’ professional development content.

The paper outlines the program and its participants, including the St. Johnsbury School, as described in the introduction of this dissertation. Relevant findings to this study, which were reported through the coaches, include:

- The mid-year data indicated that all teachers implemented assessment for learning techniques, ranging in quantity from one to 19. Teachers reported changes in their practices as a direct result of FAPP, and principals have observed the use of formative assessment within their classrooms and into other content areas (p. 13).

- Regarding student understanding and use of formative assessment, teachers reported a pattern of student reactions including: increased student engagement, most notably those students who have historically not participated, increased student ownership or self accountability of learning,
increased respect for and listening to peers, and student adjustment to less grading and more comment-only marking (p.13).

- Teachers and principals began to intentionally share the FAPP work with their faculty, school board, and parents (p. 14).

Vermont Department of Education Formative Assessment Pilot Project (FAPP) Project Findings

Amy Cole and Maura O’Brien, researchers for the FAPP, prepared the project’s findings report in July, 2007. Data applicable to my study include:

- Teachers have used their TLCs for sharing and as a means of reflection and collegial support for the implementation of formative assessment. A dominant theme reported is the sharing that happens among colleagues. Sharing of ideas, questions, successes, learning from each other’s experiences and problem solving challenges, along with time to be focused on their goals for formative assessment, and the feeling of a safe and non threatening environment are the most commonly mentioned benefits of the TLCs (p. 8). Teachers and principals expressed favorable support for the use of the TLC model for embedded professional development. They report the benefit of having an effective format and structure to the meetings. They see the value in focusing on student learning and how that leads to the belief that all students can be successful; they see the value of taking risks to try out new ideas and receive peer feedback. Their beliefs in the benefits of collaboration and teamwork are reinforced by the work done in TLCs. There is time to work together professionally, to process the new learning and take it deeper, time
for self review and reflection on their own practice, time or purposeful planning, and there are opportunities to be validated in what they are doing. They report the meetings have kept them motivated and accountable to the group and have provided a safe, non-judgmental space to share problems and receive ideas for solutions (p. 12).

- Teachers and principals have provided primarily positive feedback about having a coach assigned to their TLC. Knowledge and skills, being supportive, along with the ability to keep group focused and on track with the FA goals are positive attributes mentioned about coaches (p. 8).

- School leadership has been identified as a critical component to the effectiveness of the project and for any future work on formative assessment. Teachers indicate a desire for the project to continue and relate to other school initiatives. They cite training, attention to a collaborative culture, cultural changes in teaching and learning, systems supports, and curriculum and instructional resources as necessary supports for sustainability and scale-up (p. 13).

- Teachers and principals have begun to intentionally share FA work with their faculty, school board and parents (p. 9).

- The evidence gathered throughout the FAPP indicated growth in teacher and student learning and supports overall effectiveness of this model (p. 11).

- Teachers reported a shift in classroom culture which included an increase in active student engagement in their own learning, increased student learning
and new opportunities for teachers to better understand and meet the needs of individual students (p. 11).

- Teachers reported a stronger understanding of and appreciation for the use of formative assessment practices for student learning. The statements of change in beliefs show that teachers have moved from concern about the innovation affect on them personally and how to manage implementation of the ideas and strategies to concerns about how it affects their students’ learning (p. 11).

*Comprehensive Local Assessment Systems (CLAS) Mathematics & Science Network Meeting: Creating Collaborative Structures that Work for Schools: (4/2/2008)*

On April 2, 2008, a team comprised of the pilot project participants presented at the CLAS mathematics and science network meeting hosted by the VT DOE. Our learning intention for the audience was to share how the St. Johnsbury School’s shared leadership culture and practices support out on-going professional development efforts.

Our presentation was in a panel forum, after which we had the opportunity to present a historical perspective of our formative assessment background.

The VT DOE facilitators, Greg Wylde and Pat Fitzsimmons, set the tone for the day-long meeting rolling out the Department’s vision for CLAS in Vermont as illustrated in Figure 91.
As our learning intention stated, we highlighted shared leadership and ongoing professional development as they are enacted at the St. Johnsbury School as elements of our comprehensive local assessment system.

The session was videotaped as well as audio taped; for the purpose of this study, pilot program participants and Wylde are quoted.

Wylde invited the audience to engage in a conversation with the St. Johnsbury School team, which he referred to as “ordinary people”. He began stating: “Some of you can make it happen, these people can help you. The VT DOE is going in this direction and we can make it concrete, and get a real world representation.”

Then, the St. Johnsbury team shared their perspectives and experiences implementing formative assessment. “What we are doing now, on-going professional
development and shared leadership, we can’t do one without the other. The shared leadership is a huge piece because we can trust and be comfortable.”

Wylde added: “We took the risk that was substantive; it was embraced locally and there was local leadership. That’s what happened in St. Johnsbury; if it doesn’t resonate with you, it has no business going anywhere.”

The St. Johnsbury teachers told the audience that they are “given freedom to think about what we want to do.” “We each have an action plan that is tied to what we are comfortable in doing; it makes it successful.” Also, a teacher chuckled: “TLCs are tender loving care.”

The teachers shared the challenge of grading and implementing formative assessment: “There was a conflict with the grading system; it didn’t fit! When it was time for grading we asked, now what do we do? How does that translate? Why do we have to grade this way?” “Because Marion was part of the TLC, it allowed us to branch out and have a school system, prekindergarten to grade eight, that we transformed the reporting system; it started here.”

Risks were taken with support: “The principal knew we were going to try it, we took a lot of risks. My principal knows I’m doing this and yes, it’s a risk, but we are in this together.”

“Yes, the culture has changed, we are more willing to help each other, the culture has changed, and we are accountable.” “The sacred time in TLCs feels professional; it couldn’t be any more powerful.”

To conclude Chapter 5, Data Analysis, I have provided data concerning the change in teachers’ practices and their perceptions of the critical pedagogical principles.
necessary to effectively enact formative assessment in their classrooms and teacher 
learning communities at the St. Johnsbury School. The data includes:

- Seven individual interviews;
- Two focus group interviews;
- All TLCs exit interview;
- 10 classroom observations;
- Monthly professional design team meeting minutes;
- Monthly TLC field notes;
- ETS Vermont Pilot Project Findings;
- VT DOE Pilot Project Findings;
- VT DOE CLAS presentation.

Chapter 6 will follow with the interpretations as they pertain to my purpose of the 
study: To understand how the practices of teachers change as they enact the Keeping 
Learning on Track program in their classrooms and teacher learning communities. In 
addition, teachers’ perceptions of the critical pedagogical principles of formative 
assessment will be discussed. My guiding research questions and interview questions 
provide the framework for presenting the interpretations. The link to the relevant research 
included in the literature review guides the theoretical implications of the study.
CHAPTER SIX: FINDINGS

Introduction

In this chapter, interpretations are drawn from the direct data and findings of the study participants, the formative assessment teachers, teacher leaders, and their trainer. The aim of my qualitative study was to understand the change or transformation of teachers’ practices as they implement the Keeping Learning on Track program at the St. Johnsbury School. In doing so, a twin aim was to understand their perceptions of the critical pedagogical principles in order to effectively enact assessment for learning. The pedagogical principles I am referring to are pragmatic in that they synthesize a set of practical, instructional experiences specific to the KLT program. Given this, they facilitate the process of devising the strategies, which in turn will determine how teachers and students engaged and responded to the KLT program.

Given the breadth and depth of data obtained from the interviews, field notes, documents and presentations, themes have emerged. The presentation of the findings will be organized using the emergent themes.

Emergent Themes

I identified 244 rudimentary codes collected through the transcriptions of interviews, observations, field notes, and documents. From there, I condensed the rudimentary codes into 26 ‘parent codes’ by combining alike content and themes. Finally, eight emerging themes that resonated with the triangulated data were identified with student and adult learning central to all: They are: 1) Accountability for Students and Teachers; 2) School Culture; 3) Shared Leadership; 4) Beliefs and Attitudes; 5)
Motivation of Students and Teachers; 6) Systemic Support; and 7) Teacher and Student Practices.

Figure 92: Emergent themes.

The Findings

The Shift from Teaching to Learning & the Regulation of Learning

The findings that underpin this study are the paradigm shift from ‘teaching - centered’ to ‘learning - centered’ practices and pedagogical principles as teachers enact the KLT program at the St. Johnsbury School. Theoretically, this is referred to as ‘the regulation of learning’. Within this conceptual framework, “the actions of teachers, the
learners and the context of the classroom are evaluated with respect to the extent to which they contribute to guiding the learning towards an intended goal” (Wiliam & Leahy, 2006, p. 7).

In order to hypothesize that the overall findings support this paradigm shift to the regulation of learning, I have identified the aforementioned themes, only when considered holistically, as representing the teachers’ perceptions about their change in practices and critical pedagogical principles.

*The Shift to Learning: The Changing Role of Teachers*

“...my role has changed a lot. Mostly by holding kids accountable.”

The perception of the shift in teachers’ roles is to produce learning, not provide instruction. The three critical formative assessment processes, referred to as ‘regulation of learning’, assumes a shift in equilibrium toward a serious attitude toward learning (Tunstall & Gipps, 1996a). The processes include roles for teachers and their students to 1) know where the learner is, 2) where they are going, and 3) how to get there. Within this framework, the actions of the teachers and the learners and the contexts within the classroom are all evaluated on how they contribute to guiding the learning toward the intended learning goal (Wiliam & Leahy, 2006). In this context, teachers do not create the learning, learners do. My hypothesis is that this learning centered shift is a result of the changing role of teacher to a facilitator of learning. This hypothesis is accepted by the evidence in the data collected through interviews, presentations, TLC field notes, and pilot project findings. Furthermore, my hypothesis is supported by the research delineated below.
Participants reported in the interviews that their role of teacher is to “know what students know.” They felt that they are held accountable for reporting evidence of student learning. Teachers reported a shift in their role as it pertains to the assessment of students. Assessment happens seamlessly during class and students’ work is used as a guide to inform instruction. Teachers have “learned strategies to help the students become more responsible for their learning and ways to communicate if they don’t understand what’s going on and start to really think about their learning…”

Teachers described their role as a facilitator of learning, rather than a dictator. Changes in their behaviors have played a role in how teachers perceive themselves: “So, my role as a teacher is to try to get the kids to do more and for me to back up and just be more of a coach, more of a guide, put the stuff in and give direction, very specific, particular directions when needed …but in areas that don’t need to be guided quite as much, back off.” Their newly perceived role has caused a shift in the classroom culture as the process in which they look at student work. “I think my class culture has changed…the kids know exactly what they have to do and they have clear expectations on how to accomplish it, but I have to help. I know who I have to help…I know more about what my students know and don’t know, now more than ever.” Working in a community of learners (students and teachers) and in a school where they are supported provides a level of comfort for the teachers.

Gardner (2006), as well as the participants in this study, emphasizes the importance of transferring the responsibility of learning to the students. By changing the teachers’ role to that of facilitator, it causes student thinking, and the learning is more transparent in the classroom. Wiliam & Leahy (2006) suggest that the role of the teacher
is not to teach, but to engineer situations in which students learn effectively. Their perspective relates to the role that formative assessment has in the regulation of learning (Wiliam, 2006) and its impact on a well-regulated learning environment.

The data from the participants of this study concur with the research of Gardner (2006), Tunstall and Gipps (1996a), and Wiliam and Leahy (2006) concerning the teachers’ perspectives of their role as an ‘engineer’ of the learning environment.

Motivation

“It gave me passion to teach again.”

Attention is taken in which KLT affects motivation for students and teachers. The structures that have been put in place to seamlessly support KLT have been motivating factors for teachers. The structures they identified are the TLCs embedded within the school day and the resources provided by federal grants which are sacredly allocated for the KLT program.

Motivating factors expressed themselves in interview questions as students taking ownership of their learning. “I think what excited me the most was turning the ownership to them.” This empowers the students to learn, giving the responsibility back to them. “Kids do see that they are making progress.” Kids are giving feedback to teachers; they know what they need to work on.”

As a result of assessment for learning, there was a shift in reporting and measuring student progress. “Being able to tell where a kid is at any given time is really, really good for me.” Formative assessment drives the instruction and teachers are able to focus in the direction from the evidence of students’ learning.” This supports Blooms’ (1969) theory that “evaluation in relation to the process of learning and teaching can have
strong positive effects on the actual learning of students as well as on their motivation for
the learning and their self-concept in relation to school learning” (p. 50).

Teachers’ attitudes toward teaching shifted as a result of the professional
development during TLCs. The connection with theory and practice is realized. “The
excitement is, well, it’s the best professional development that I’ve been involved in…”
The collegiality and deeper level conversation involved during TLCs support teachers as
learners. They are honest about their practices and spend time to reflect and ask
questions. Teachers reported that AfL promotes teaming and empowers them to share
their learning. “It gave me passion to teach again.”

Motivation has changed the climate of the classroom: “I am a firm believer that
students feel excited, they feed off our passion, so if we are excited, motivated and
energized it feeds the climate in the classroom; kids pick up on that and it just builds the
energy level.”

The most powerful link to research is that teachers have an influence on
motivational factors depending on how they mediate the impact of assessments on
students; so teachers’ beliefs on assessment affect their pedagogy and practices; therefore
students’ motivation about learning (Gardner, 2006).

Beliefs About How Students Learn

“...kids learn from when they are actively involved in their learning...”

Beliefs about how students learn are impacted by the permutation of teacher
behaviors and practices, systemic structures, culture, accountability, relationship factors,
and teachers’ perceptions of their roles as teachers. To exemplify, teachers looked closely
at their practices and behaviors: “I used to kind of pass the buck so to speak because it
was easier than really, really looking at my teaching practices through a microscope and now it’s a reality.” Teacher behaviors and practices that include providing students with multiple opportunities to learn is the overarching belief echoed by the study participants’ interview responses. These included clear learning intentions, a menu of strategies and techniques, and flexible student grouping.

Aikenhead’s (1997) viewpoint about the value-laden nature of the assessment process is teachers’ beliefs about learning. This emphasis on the ethical and moral aspects of assessment links to the importance of understanding a learner’s response in relation to that learner’s expectation about the classroom process and the empowerment of the learner. In order to blur the lines of instruction and formative assessment practices, research clearly indicates that what is needed is teachers to foster a classroom culture of questioning and deep thinking, in which students learn from shared discussions with teachers and peers (Wiliam, 1998).

The teachers identified the need for systemic support in order for students to learn. Teachers and students need the time, resources, and support of the system. “Formative assessment is going to force us to look at our curriculum because we know if we use what we know about the way students learn and how we get there it’s going to force us to look at our curriculum and say, okay, how do we restructure it, what are the essential things that we need to do and what are those things that are essential…?”

Teachers reported that student learning is fostered in a culture of curiosity, motivation, energy, collaboration, independence, and accountability. The overarching belief concerning accountably and beliefs about how students learn is that students know where they are in their learning. This is supported by the research on the process of
formative assessment and the ‘regulation of learning’ (Wiliam, 2005). This is evident when the learner knows where they are in their learning, where they are going, and how to get there. “When the learning environment is well regulated, much of the regulation is pro-active, through the setting up of didactical situations… (the teacher) puts in place a metacognitive culture… (p. 32).” Teachers believe that it is their role to know where kids are in their learning as it pertains to their role and the regulation of learning.

“…making sure that you’re having those individual conferences with students and being very clear to say - here is where you are and that’s great, but here’s where you need to move that next step and then being able to say, look how much growth, look at what you’ve done in such a short period of time…”

The interpersonal relationships between students and students, students and teachers, and teachers to teachers are believed to have an impact about how students learn. Teachers see a value in students and teachers working together in groups, sharing, and learning from each other. “I find that kids who are really doing well with something can be very kind to a child who is really struggling and give them an opportunity to be in the role of teacher in the sense of helping other students.”

As the examples given by the study participants illustrate, teachers’ beliefs about learning affect the interpretation of their students’ learning and will ultimately determine the quality of their formative assessment practices (Gardner, 2006).

Accountability

“I am holding students accountable

and they are holding me accountable as well.”

As a result of implementing assessment for learning, teachers and students are
holding each other accountable for learning. Teachers are holding each other accountable; students are holding each other accountable; teachers are holding students accountable; and students are holding teachers accountable. This manifests itself in classrooms, with parents, and in teacher learning communities.

Teachers described student accountability in the interviews as students being active as learners, being ready to share learning, thinking about what they know, finding ways to solve problems, ready to say “I don’t understand”, sharing with peers, and being responsible for their behaviors.

Students are also expected to share their learning with their parents by showing evidence of their learning. “That’s one thing that made a shift in formative assessment because before I never wanted a student to come [to parent conference] because I didn’t want to say something about their learning to the parent and have the student feel bad. And I noticed this year that the first conference I had some students come and I didn’t plan it, it was off the cuff, and it was natural and I said, why don’t you sit with us? What do you think? Tell your mom and dad about what we are learning here. I got wonderful information myself and they would say what their learning was.” Data from field notes indicate that students are also communicating their learning with their parents through weekly newsletters.

The Five Key Strategies: Evidence in Teachers’ Practices

“Teachers are thinking about learning, teachers are thinking about strategies to move learning forward for every learner.”

1. Clarifying and sharing learning intentions and criteria for success. Research (Lyon & Leusner, 2008) supports that students need to understand what they are learning
and how they will be assessed to support one another. Given this, students need to understand what is expected before they can take responsibility for their learning. Classroom observation data indicated that all 10 teachers observed implemented the learning intention strategy, however, only one provided the students with the success criteria. The data from my field notes of the TLCs indicated that the learning intentions and success criteria strategy was the least discussed. The pilot participants discussed learning intentions twice during the TLCs; moreover, their quotes suggest that the teachers did not feel successful in the implementation: “Kids aren’t able to restate learning intentions after lessons”. However, another TLC group discussed learning intentions 12 times during the “how’s it going” segments. The data proposed a greater level of success: “Learning intentions focused my lessons, I refer to them all the time;” “Kids are asking where the learning intention is if it’s not on the white board.” In contrast, the remaining TLC only discussed learning intentions once during their TLC.

Further data collected during the ‘chalk talk’ at the exit interview at the end of the school year suggested that learning intentions were valued and successful. Of the 20 comments written that addressed strategies/techniques, learning intentions were notated six times. Teachers identified the learning intention strategy as having a positive impact on their students’ learning.

Individual and focus group interview data supported the implementation of learning intentions and success criteria. Teachers reported that when this strategy is employed, the learning is purposeful and focused. Teachers have noted that they want to continue to focus on this strategy: “Learning intentions help me be more focused in my class, I’m not sure how much, and that’s something I want to keep working on because I
don’t think I do it very well, but I agree, it helps me as a teacher focus on my thinking and planning.” Those that are feeling more proficient in implementing this strategy state the importance for children to know what learning is expected and what the criteria for success is. “The big one [strategy] is learning intentions. Having it posted and going back to it and the second part to it is how do you know if you have made it?”

The findings of my study support research about clarifying and sharing learning intentions and criteria for success. The research indicates that when teachers identify and share learning intentions and expectations, students take responsibility for their own learning and when doing so, students are better able to support each other (Lyon & Leusner, 2008). My hypothesis about the findings of this specific section of the study suggests that teachers are using learning intentions primarily to focus their lessons; not necessarily to foster students supporting each other. They value the strategy and want to continue to hone their skills in order to successfully continue with the implementation. The evidence used to make this assumption is through the data collected in my classroom observations, interviews and field notes. However, teachers have positively reported the shift in student accountability when using this strategy.

2. Engineering effective classroom discussions, questions, and learning tasks that elicit evidence of learning. KLT equips teachers with the strategies and techniques that elicit evidence of student learning. Research has found that when teachers engage students in higher order thinking by requiring responses from all students, it increases the engagement of all students, not just those that raise their hands (Lyon & Leusner, 2008). By collecting evidence of learning through questioning, it enables teachers to make
instructional changes to move learning forward. Through KLT, teachers use classroom discussions, questions, and learning tasks to collect evidence of learning.

Classroom observation data revealed that all 10 teachers used the questioning strategy during the lesson. Nine used the popsicle stick technique, eight used the exit ticket technique, three teachers used student response systems to collect responses for hinge questions, and six teachers used the ‘wait time’ technique.

My field notes of the TLCs indicated that the questioning strategy was the most widely and frequent strategy implemented, overall. The pilot group discussed this strategy during the “how’s it going” sessions 11 times. Discussions about the techniques indicate that popsicle sticks, learning logs and ABCD cards were used most commonly. Another TLC discussed the questioning strategy 31 times. Hinge question techniques were tried with success and with challenges. “It threw a loop in what I was doing” and “I used it to develop the next day’s lesson.” They also implemented entrance and exit tickets, learning logs, and popsicle stick techniques satisfactorily. The remaining TLC discussed this strategy 16 times. Techniques included exit tickets, hinge questions, popsicle sticks, and wait time. Discussions about the quality of questions used on exit tickets and hinge questions indicated the need for careful planning. “You have to have really good questions.” “A lot of practicing” and “They have an answer, right or wrong!”

The data collected on the chalk talk pertaining to the questioning strategy indicate that teachers in all TLCs use exit tickets to identify misconceptions in students’ learning and to adjust their teaching. The exit ticket and entrance ticket techniques were identified as having the most impact in keeping the lesson focused and a way to measure the acquisition of skills. Popsicle sticks or the no-hands technique held students accountable.
Hinge-point questions were identified as a technique that did not go so well for some teachers.

Individual and focus group interview data about the questioning strategy clearly found that all the participants initially used the no-hands technique which caused the shift in their practice. “I think the most obvious one [technique] is the no-hands. They still raise their hands but we use popsicle sticks or use the spinner or random names. They know they need to be able to give us an answer or seek information from somebody else and still have to restate what they said and I think this is the biggest shift.” The other techniques reported during the interviews were: learning logs, wait time, exit and entrance tickets, and hinge questions. Participants qualified the purpose for using the techniques as making kids accountable for and engaged in their learning. “We spend a lot of time talking about it, but the popsicle sticks are different ways of getting to all the students in the classroom, making sure they are all accountable for their learning.”

Another purpose for practicing the techniques is to adapt instruction. “The exit ticket does some things in terms of just best practice. Kids like to have a chunk of learning and then immediately assess which I really think is best practice, also it kept assuming that we could find the time the next day, it could really affect our plan for the next day.”

The findings in research are parallel with the findings of my study. The central purpose for the questioning strategy is to increase student engagement and adapt instruction (Lyon & Leusner, 2008). Teacher testimony has confirmed the success of student engagement through the implementation of this formative assessment strategy. Teachers are collecting information about students’ learning on exit and entrance tickets to adapt instruction; they are providing wait time in order to foster deep level thinking;
and collecting evidence of students’ thinking by simultaneously collecting responses from all students (ABCD/hinge questions) to increase student engagement.

3. Providing feedback that moves learners forward. “The KLT model assumes that for feedback to effectively improve student learning, the student must act on such feedback” (Lyon & Leusner, 2008, p. 10).

The information obtained during classroom observations demonstrates that only two teachers implemented this strategy during their lessons. The techniques used were two stars and a wish, feedback through the use of student response systems, and accountability slips. My field notes indicated that there were five discussion occurrences concerning feedback during the ‘how’s it going’ segment of TLC cohort. The specific techniques used were comment only marking (2), find and fix (2), and two stars and a wish. Teachers reported conflicting results with the comment only technique: “I am disappointed kids aren’t responding to the comments (2/21/08)” and “...child completely changed her writing (3/28/08).” The find and fix technique is a process over time. “They need to be learners first before they can share their work…the more you do it, the more they internalize.”

Another TLC cohort discussed feedback on four occasions according to my field notes. The specific techniques used were two stars and a wish, comment only marking, constructed response and find and fix. Teachers questioned the use of comment only marking as it pertains to students and their parents: “It is for parents or students or both?” Success is underway for using the find and fix technique. “People are slowing down when fixing their work (4/11/08).”
There were 10 occurrences of feedback discussions of the final TLC group. Six included the specific technique of comment only marking; the remaining four were general feedback discussions. Comment only marking testimonials include: “I’m starting to notice that kids are being more careful;” “Kids look forward to comments;” “Teachers are making an effort to focus on one or two things to comment on;” and “I’m cognizant about what I’m writing and how this will move the student forward.”

The data collected during the chalk talk indicated that teachers were using feedback as part of their practices. Four specific techniques were noted: comment-only marking, find and fix, focused feedback, and two stars and a wish. Focused feedback has been “key” at addressing the “big idea” of KLT. “It’s been key; right now they are going to master this specific concept.” Teachers found that using + and – as feedback allowed kids to see their progress over time.

When asking participants the interview question: Are there particular strategies and techniques that have made a major impact of shift in how you perceive student learning, the pilot participants reported two stars and a wish and find and fix techniques, while the focus group participants reported comment marking along with two stars and a wish. The findings suggest that the shift in providing meaningful feedback has given the students the opportunity to respond to their learning. “…it’s been powerful because it gets the kids to know they have to get some positive feedback.”

The research on the impact of feedback indicates that it empowers learners with strategic information that supports self regulation and is effective for teachers to adjust their instructional strategies as well as supporting a climate of accountability (Lyon &
Leusner, 2008). My findings support the interaction of empowering learners and informing instructional adjustments, as it pertains to the regulation of learning.

4. Activating students as the owners of their own learning. The research on the self regulation of learning indicates that students that engage in this are more likely to develop a sense of empowerment as well as a sense of autonomy (Lyon & Leusner, 2008). This shift in the learning paradigm is when students assume meaningful responsibility for their own learning; not the teacher (Popham, 2008). The aim for teachers is to provide classroom techniques to foster opportunities for students to “take responsibility for their own learning by engaging students in the process of thinking about, assessing and acting on evidence of their own learning” (Lyon & Leusner, 2008, p. 8).

Classroom observation data indicated that four teachers used this strategy during their lessons. The techniques observed were: sharing exemplars, traffic lighting, journals, and thumbs up. Field notes of the TLC sessions found that the pilot participants discussed this strategy nine times during the ‘how’s it going’ session. Techniques implemented included end of lesson review, tape recording, thumbs up, and traffic lighting. “Traffic lighting was a good way to remind them what it should look like or sound like and knowing how they are doing on assignments.” Another TLC discussed this strategy on eight occasions. The techniques were: journal entries, learning reflections, parking lot and traffic lighting. When reflecting on using the traffic light technique, teachers are giving students the ability to act on the evidence of their thinking and learning: “After a question, hold up a red, yellow or green card. If you held up a red, go to a green and you have three minutes to figure it out.” Then teachers use the information students provide to
adjust instruction: “It’s like night and day, this is how I determine who will be in the small group.” The last TLC discussed this strategy six times. Techniques included the parking lot, self assessment, and traffic lighting. Students are holding themselves accountable to their learning: “One day I let her go back with the greens, and then the next day she joined the reds on her own!”

The data on the chalk talk provided less information about the activating peers as the owners of their own learning strategy. Of the 21 techniques noted, there were two that addressed this strategy: learning logs and show what you know tickets. Traffic lighting was highlighted, however, during the group discussion as central to classroom practice.

“Traffic lighting is the skeleton of class. Without it my class wouldn’t be the same, the neighbor would say: why aren’t you using the cards?”

Individual and focus group interview data point toward the use of the traffic lighting technique as self assessments for students being accountable for their learning.

“…just the idea of thinking over what they worked on, thinking about what they could do, or where did they go wrong in their thinking. How could they tweak what they’ve done?” These findings support the research about students building the capacity to work at a meta cognitive level (Black et al., 2004) through the support of implementing the activating students as owners of their own learning strategy.

5. Activating peers as instructional resource for one another. When students are provided with the structures, supports, and guidance for working collaboratively, they can effectively support one another (Lyon & Leusner, 2008). Research corroborates that not only do the students that receive feedback benefit, but the students that give feedback to their peers benefit. They are forced to engage in understanding the content of others’
work, which is less emotionally charged (Leahy et al., 2005). Also, students effectively communicate better with each other than with their teachers. Leahy et al. caution that this strategy is effective only if the focus is on improvement, not on grading.

Data obtained in classroom observations indicated that eight of the 10 teachers observed used the strategy of activating peers as instructional resource for one another. The techniques used were students working in small groups (all eight teachers) and think-pair-share with turn and talk. My field notes indicated that one TLC discussed this strategy two times during the ‘how’s it going’ segment. The techniques were peer assessment and turn and talk. Teachers noted “kids are listening to each other and critiquing.” An additional TLC discussed this only once; the technique discussed was the carousel. This was positively received by the students. “Kids are writing to each other.” The remaining TLC discussed this strategy six times. The techniques were peer assessment, question strips and sharing exemplars. Teachers reported that “kids aren’t always honest; a little too nice.”

The notations on the chalk talk displayed information about the activating peers strategy indicating the use of peer modeling and the carousel techniques.

Individual and focus group interview data enforce the motivation factor when students are responsible for their learning. “But I also think the peer, activating peers really motivated students…I’ve read all the research that has said that students respond to their peers better than adults and how powerful that is, but until I actually began doing it regularly, I didn’t really understand it and I was like, this really works!”

The data about teachers’ practices as they relate to the five key strategies are congruent to theoretical research. Echoed throughout the data is the acknowledgement of
adaptation in instruction as a direct result of implementing the strategies. This adaptation blurs the line of assessment and instruction, a principle central to assessment for learning practices. “Teachers are thinking about learning, teachers are thinking about strategies to move learning forward for every learner.”

When teachers engage in AfL, they are focusing on how students learn and how learning affects motivation. Linking back to the research on motivation (Gardner, 2006), teachers’ beliefs on assessment affect their practices and pedagogy as well as their students’ motivation about learning. Dekker and Feijs (2005) imply when teachers’ attitude and pedagogy change, they have a fuller understanding of assessment. Therefore, my hypotheses is that the participants in this study have transformed their pedagogy and practices and have a fuller understanding of assessment as a result of implementing AfL strategies and associated techniques.

Black & Wiliam’s (1998) research concerning teacher autonomy is that “each teacher must find his or her own ways of incorporating [assessment for learning] into his or her own patterns of classroom work and into the cultural norms and expectations of a particular school community” (p. 146). The findings support this principle because it is clear in the data that teachers are implementing different strategies and techniques at different times, frequencies, and levels of success. More importantly, they have the autonomy to put into practice strategies that they feel are suitable at the right time and place. Wiliam (2005) agrees: “That is why there can be no recipe that will work for everyone. Each teacher will have to find a way of incorporating these ideas into their own practice; and effective formative assessment will look very different on different classrooms” (p. 34).
Teacher Learning Communities: Teachers’ Perspectives and Conditions for Learning

“Yes, the culture has changed, and we are accountable...the sacred time in TLCs feels professional; it couldn’t be more powerful.”

Data concerning the transformation of teacher practices and perspectives of critical pedagogical principles through the venue of TLCs was collected from individual and focus group interviews, TLC field notes, TLC exit interview, TLC videoed session, VT DOE pilot project findings, and the DOE CLAS presentation.

Researchers have learned that in order for professional development to be effective, it needs to attend to the process as well as the content elements (Reeves et al., 2001; Wilson & Berne, 1999). The process concerns the local circumstances, over a period of time, where teachers are actively involved. The content refers to the focus on deepening teachers’ knowledge of the content they are teaching, and strategies they can employ. In the context to the findings of this section it is worthwhile to note that Wiliam and Thompson (2007) suggest that TLCs show the greatest potential for improving teaching practices and student achievement.

Interviews. The themes that emerged from the individual and focus group interviews included: the power of a collegial and learning culture; systemic influences brought about by the work in TLCs; accountability for student and adult learning; and teacher autonomy.

The learning that occurred during TLCs influenced and shaped the participants’ practices. More specifically, the findings strongly point to the conditions in which the learning occurred, which made the TLCs so powerful.
The sentiment of collegiality involved in the learning community echoed throughout the findings. “It’s that professional conversation and I don’t think the investment would be there if there wasn’t a TLC to go with. It changes the culture…It sounds funny, but you feel like you are in this club, It really does…It’s a safe place.” And, “…it’s just a whole learning shift that has happened with the people that have taken formative assessment because they really see the value in the TLC and that’s where the learning comes from, from each other, and just like in a classroom, you should have that kind of environment.” Through the collegial culture, trust and courage are fostered. “Colleagues trusted me to come in and say, well this is what I did, what do you think?” And, “It is encouraging and it gives you courage.”

Not only is the learning collegial, it is rigorous. “I walk away every time having learned something. I am energized to get back and teach back in my classroom.” And, “There has been such rich conversation.”

Systemic issues were influenced by the learning in the TLCs. Teachers feel that their new learning and practices had an impact on systemic, school-wide issues. “There have been such rich conversations and we’ve shifted the whole school because we get into bigger topics. It has shifted, you can hear the learning.” And, “There have been a lot of topics that have arisen that we’ve shaped as a result based on the TLC, or should I say the formative assessment philosophy…it’s like a puzzle coming together.”

The culture of accountability of learning and to each other was an opinion voiced by many teachers as an influential factor for shaping their practice. “That has been incredibly helpful; I think also earlier we were talking about students and how they have to reflect more and have more ownership over their own learning; well this is the same
thing. It’s kind of we are practicing what we are preaching, we are also expecting to do peer assessments and self assessments and think about our own learning and makes us have ownership over what we are doing in our classrooms…” And, “When they are writing down [in their action plans] what they are going to try to do for a technique, which leads to the strategy, that’s the piece that kind of holds them accountable to coming back to the TLC to talk about what they have tried.”

Teachers appreciate the level of autonomy that is afforded to them as they learn through TLCs. “You have the support of others, but it’s individualized.” “There are so many different people working on the same thing, and great ideas coming out of each person that you can take things and put together what works for you.” And, “We are all who we are and that is a great thing and we are all taking a little something different out of it and we are all tweaking it in a little different way and that is a good thing.”

The pilot group revealed that they need to spend more time with the new learning during TLC sessions. “The good piece is the new learning. So I wish in year two, the ‘how’s it going’ wouldn’t go so long so we would get to the new learning and I think that more so next year because of the group that we have in the year two, they can go deep in those conversations…we need to continue with the new learning and get that out there.”

The research of DuFour (2007), DuFour (2003), and Eaker (1998) support the culture of collaboration and collaborative colleagueship through professional learning communities. They found through their research that the core principles of successful learning communities include: collective synergy, spirit, imagination, inspiration and continuous learning of teachers. These principles accurately reflect the responses from the participants of the study. Reeves et al. (2007) and Schmoker (2004) agree with the
participants of this study in that they believe that professional learning communities are necessary to improve teacher learning; and teachers must hold each other accountable and provide support for each other.

*TLC field notes and TLC videoed session.* A growing theme that developed from my TLC field notes was the connection of culture with motivation. The collaborative learning culture was focused on adults working together to share and reflect on their learning. They added that this is a motivational piece to implement AfL strategies and techniques. Segments from the videotaped TLC echo themes of culture concerning positive, deep conversations within the TLC. Also captured was a sense of teacher autonomy and leadership. “There is a real culture here at this school. There is real teacher empowerment here, teachers are not going to tolerate someone coming in and saying you’re going to do all five techniques by such and such a date…”

*All TLC meetings.* Responses on the chalk talk were coded as documented in the data chapter of this study. The codes/data concerning the professional development (through TLCs) and changing teacher practices were identified as: accountability (students and teachers), adult learning (reflection, new learning), culture (cooperative, valuable, powerful), colleagueship (relationships, sharing, supportive), systems (change, TLCs), and teacher practices (expectations, communication, instruction, next steps).

*VT DOE pilot project findings.* The findings in the VT DOE pilot project report support the findings of this study. Cole and O’Brien (2007) reported that teachers used their TLCs for sharing and a means of collegial support. The focus is on student learning and the belief in the benefits of collaboration and teamwork are reinforced. “They report
the meetings have kept them motivated and accountable to the group and have provided a safe, non-judgmental space to share problems and receive ideas for solutions.”

**DOE CLAS presentation.** During the DOE presentation, teacher autonomy resonated with the group. The teachers (study participants) told the audience that they are “given the freedom to think about what we want to do…we each have an action plan that is tied to what we are comfortable in doing; it makes it successful.” They added comments about the culture. “Yes, the culture has changed, and we are accountable…the sacred time in TLCs feels professional; it couldn’t be more powerful.”

The topics that reverberated from the data and research concerning teachers’ perspectives, practices, and pedagogical principles as they relate to TLCs are a collegial learning culture, accountability for learning, teacher autonomy, motivation, and systemic influences. Black et al. (2003) found that teachers who received KLT training and were provided with on-going, collaborate support were able to make substantial changes within their classrooms. Given this, assessment for learning is successful when teachers work in a collaborate, collegial culture where they share their learning and practices, hold each other accountable, motivate and encourage each other, foster autonomy, and influence the practices of the system.

**Shared Leadership**

“It doesn’t matter if you’re principal or superintendent or school board member or a parent. We are all in this together. It’s a team effort and the students as well and we all have a piece in each other’s learning and we have to have one another to learn.”

“We took the risk that was substantive; it was embraced locally and there was local leadership. That’s what happened in St. Johnsbury...” (Wylde, VT DOE)
Developing leadership for all teachers is necessary when implementing KLT. McLaughlin and Talbert (2001) report: “We encountered no instances to support the ‘great leader’ theory…effective principals empower and support teacher leadership to improve teaching practice” (p. 118).

Data collected through the interviews encompass a shared vision of what the ultimate leadership model should look like. It included: a collaborative, supportive staff, shared responsibility, knowledgeable administrators, leaders grown from within, and a culture where shared leadership is valued.

Teachers were content with the evolution of the existing leadership model since the implementation of KLT. “It’s funny…we already kind of have that vision of what the leadership model looks like. I think we are progressive. It’s not top down…”

Research designates two fundamental types of teacher leadership: formal and informal teacher leaders (Danielson, 2007). Formal teacher leaders fill the roles of coaches, professional developers, or pseudo administrators. Informal teacher leaders emerge through and by their expertise and practice (p. 16). Fullan (2007) describes teachers as “custodians of school culture”, having an institutional memory. Teachers interviewed support the notion of leaders grown from within and described this as it relates to their vision of shared leadership. Teachers reported that they support leaders grown from within because they “know our particular population or maybe knowing specific students.” And, “It’s not finding new people to fill roles who may not be as familiar with what is going on in the school district, it’s building from within…you don’t have to start over all the time.” Leaders were grown from the up scaling of KLT. Teacher participants from the pilot group took on teacher leader roles to facilitate the newly
formed TLCs. “…we had two people rise out of that to be coaches and leaders…” And, “I think it is really important to have teachers involved in leadership…”

The relationship with colleagues is dependent on the success of teacher leaders (Johnson & Donaldson, 2007). It takes the efforts of all educators to redefine the norms of teaching and support teacher leaders. The visions of the participants are congruent to this relational leadership principle. “Teacher practice would have to be supported in order for it to grow.”

Teachers need administrators that are supportive as well as being knowledgeable about formative assessment. “…have administrative staff know what the techniques are to support teachers…it’s critical…” Administrators need to support the culture of shared leadership and the teachers who are engaged in it. “…I think that is a leadership model that supports those people that are doing that…” The culture in which shared leadership is supported is important. “Teaming…interacting with each other…I think that is a leadership model that supports those people that are doing that…”

Data from the participants during the videoed TLC session indicated the value of having the autonomy, empowerment, and shared leadership to implement KLT using their professional expertise. “We have the freedom to do this…other administrators are dictators; ‘this is the way it’s going to be’.” The notes on the chalk talk echoed the freedom to implement KLT as well as support colleagues as implementation is underway.

The meeting minutes from the professional design team reflected the shared leadership of the team in decision making for system-wide issues. The main focus of the 2007-2008 school year was process of transforming from a traditional reporting system to a standards based system. This transpired from the practices of the formative assessment
teachers and the realization that the traditional reporting system was ineffective in reporting students’ learning. Of the 14 members, five were trained in KLT; it was under their leadership that this evolved. The main point I would like to express is that the leadership of the KLT teachers was powerful enough to shift, shape and influence the structures of the organization. “There was a conflict with the grading system; it didn’t fit! When it was time for grading we asked, now what do we do? How does this translate? Because Marion was part of the TLC, it allowed us to branch out and have a school system prekindergarten to grade eight; that we transformed the reporting system, it started here.” This work will be further discussed in the section entitled ‘systemic structures and supports’ below.

The VT DOE FAPP findings support that the school leadership has been identified as a critical component to the effectiveness of KLT. In order for the program to be sustained, participants cited cultural changes in teaching and learning, systems support and curriculum and instructional supports are necessary.

During the VT DOE CLAS presentation, the pilot formative assessment teachers focused on two critical elements of a high quality comprehensive local assessment system: shared leadership and on-going professional development. The teachers said that they could not practice one without the other. Wylde from the VT DOE added: “We took the risk that was substantive; it was embraced locally and there was local leadership. That’s what happened in St. Johnsbury…” Participants were clear to state that the shared leadership involved risks; however, they felt supported to take risks because of the professional culture that had been formed. “The principal knew we were going to try it,
we took a lot of risks. My principal knows I’m doing this and yes, it’s a risk, but we are in this together.”

To summarize my findings succinctly, teachers have a powerful influence on the organizational and relational culture of the school through the transformation of shared leadership practices involved in KLT.

*School Culture*

The cultural beliefs are articulated and spread throughout the findings as they pertain to the roles of teachers, the connection with motivation, beliefs about how students learn, accountability, teacher practices, teacher learning communities, and shared leadership. It is yet to be exhausted in my findings. One of the interview questions asked the participants to share how their classroom culture has changed since implementing formative assessment.

The shift in classroom culture has fostered student and teacher accountability. The techniques and strategies used are forcing students to be accountable for their learning as well as holding teachers accountable for their students’ learning. “I definitely find myself thinking a lot more about students, their understanding; just not making assumptions about what they understand. It’s a shift from teaching to learning.”

Classrooms possess a feeling of motivation, independence and involvement. Relationships are caring, although learning is at the center. “Everyone is respectful of one another and everyone has a part in building that community.”

Teachers encourage students to take care of themselves, academically and behaviorally. Students are referred to as ‘learners’. The culture is about learning:
“Students are thinking about learning, and teachers are thinking about strategies to move forward every learner.”

The theoretical framework of the regulation of learning resounds itself. The roles of the teacher, learner and the context of the environment affect the overall classroom culture. It is the interaction of this process that forms the classroom culture. The teacher creates the situations which cause the learning to take place. It is within this well-regulated environment that the culture is formed and shaped. Teachers are making sense of the students’ responses in order to adjust the instruction.

Systemic Structures and Supports for KLT

It seems logical that the systemic structures and supports section conclude the findings of this chapter. I will link the conceptual framework for scaling up school reforms (Wiliam & Thompson, 2007): *Tight but Loose*, Coburn’s (2003) concepts of scale and the findings of my study as it pertains to the teachers’ perceptions of the systemic supports and structures necessary to implement as well as scale up the KLT program at the St. Johnsbury School.

Included in the introduction of this study, attention to the concept of scale and expansion of the program is addressed. The fidelity of the program as well as its core principles have been discussed throughout; however, now I will explicitly connect the research with the findings. Prospects for the future are attended to in the following and final chapter of this study: Implications of the Study.

In Wiliam & Thompson’s (2007) introduction of *Tight but Loose*, they discuss the scaling up the KLT program:
Scaling up an intervention is a challenge. Not only is the sheer number of classrooms daunting, the complexity of the systems in which the classrooms exist, the separateness of these classrooms, and the private nature of the activity of teaching means that each and every teacher has to ‘get it’ and ‘do it’ right, all on their own. No one can do it for them, just as no one else can do students’ learning for them. No matter how good the intervention’s theory of action, no matter how well designed its components, the design and implementation effort will be wasted if it doesn’t actually improve teachers’ practices – all in the diverse contexts in which they work, and with a high level of quality. This is the challenge if scaling up. (p. 1)

The starting point for presenting the data is the principle that teachers use assessment for learning as a central part of their practice. Wiliam and Thompson (2007) suggest: “Where the system works to support that, then leave it alone. Where the system is in the way, change it (p. 40).” The focus will begin at the intervention level and aligned toward the goal of improving teaching and learning.

The teachers identified the following factors as impacting the overall supports for KLT as it affects the systemic structures [from individual and focus group interviews, year-long TLC field notes, videoed TLC session, exit TLC meeting, professional design team meetings, VT DOE pilot project findings, ETS project findings, classroom observations, and the VT DOE CLAS presentation]: Administrative support, action plans, TLC structure, reporting system, team teaching, mission statement, lab classes, learning environment, culture, shared leadership, record keeping, stakeholder communication, vertical alignments, technology, scheduling, and honor roll eligibility.
The TLC structure, the reporting system, administrative support, teacher practices, and shared leadership were repeatedly identified as non-negotiable elements in order to implement KLT. These are considered “tight” by the teachers of the St. Johnsbury School.

A logical and obvious “tight” element is that the system supported scheduling the TLCs during the school day, with eight or less teachers in each TLC. Substitutes were provided for half a day, once a month. The substitutes were funded by the Consolidated Federal Grant (CFP) money and Title One Pass Through money to support the KLT project as required by the commissioner’s required actions. Two teachers took over leadership roles and assumed the teacher leader roles for the additional two TLCs formed in year two. The teacher leader for the pilot TLC assumed a ‘trainer for training’ role as well as a teacher leader role. The TLCs are vertically aligned. This alignment could be considered “loose;” however, the feedback concerning the vertical alignment from the first year teachers was strongly in favor of this, so the newly formed TLCs were intentionally aligned vertically.

KLT teachers have the freedom to make judicious choice of practical techniques (loose); however, they are expected to implement all the strategies over the course of a year (tight). Teachers are expected to be accountable to their peers during TLCs, sharing their practices in a supportive culture. Another tight element concerning teachers’ practice is, “You have to know why you are using a technique. It’s all about knowing what you know.” The scalability of this intervention requires that teacher know both the “know how” and the “know why” (Wiliam & Thompson, 2007). This empowers teachers to make decisions that enhance the theory of action instead of detracting from it.
The most powerful transformation instigated by the KLT teachers was the transformation of the reporting system. Although in theory, this would be considered “loose”, the teachers felt strongly about the impact KLT has on student learning, and the traditional report cards did not reflect or measure student growth or students’ learning according to their (teachers’) new learning. Given this, the professional design team met nine times in the course of the year for two-hour sessions and seven of the nine sessions were dedicated to this work. Shared leadership from the KLT teachers and the support of the administration were also considered “tight”.

When teachers were asked what they would write on a mission statement for our school, six of the seven participants stated the importance of teachers and students being accountable for their learning. The theory of the regulation of learning continues to be cyclical in this study, therefore another “tight” element.

What are the indicators that the KLT program at the St. Johnsbury School is at scale [or making progress at being at scale]? Wiliam & Thompson (2007) state that in order for KLT to be effective and scalable, there are three factors that must be met: 1) A clear idea of what is being enacted including all the components and theory of action; 2) a comprehensive notion of what it means to scale up; and 3) consideration for the particularities of the context into which the intervention is to be scaled (p. 36). The data from this study affirm the three factors aforementioned.

The theory of action has been clearly articulated through the data by the study participants that confirm this three step model:

- Teachers learn about minute-to-minute and day-by-day assessment for learning via an initial workshop and then the learning is sustained through
TLC’s; (data included in findings: teachers are learners; TLCs are sacred; time and structure is supported; clear understanding of theory; accountability of colleagues)

- Teachers make minute-to-minute and day-by-day assessment for learning a central part of their everyday teaching practice, implementing the five strategies that support the Big Idea; (data included in findings: change of teaching practice; teachers choose techniques)

- Student learning improves as a result of the particular ways in which the teaching is made more responsive to the immediate learning needs of students (p. 25). (data included in findings: practicing the five key strategies; pushing student to think about learning; getting evidence of learning, changing roles of teachers and students)

What does it mean to scale-up?

As Coburn (2003) points out: “Definitions of scale have traditionally been restricted in scope, focusing on the expanding number of schools reached by a reform” (p. 3). When considering assessment for learning, however, she discusses four interrelated dimensions explained and defined in the literature review chapter of this study – depth, sustainability, spread, and shift in reform ownership. All of these dimensions have been considered during the implementation process. For example, teachers’ beliefs, norms of interactions in the classroom and in TLCs, and pedagogy have been altered by the implementation on KLT (depth). There is a culture, structure, and the power of shared leadership which influences and ensures the TLC model (sustainability). The principles of KLT are driving the school’s practices and policies. This manifests itself with the shift
in the reporting system and policy, and the scheduling structure to ensure appropriate
time and support for TLCs (spread). Lastly, shift is noticeable with an increase of teacher
leaders who have the capacity to sustain the theory of action included in KLT.

Finally, the St. Johnsbury School keeps the fidelity of KLT to its core principles
tight). Sustainability is carefully planned as we move forward in our up scaling efforts
which will be addressed in the final chapter of this study.

To add an additional dimension to the findings, I revisited the five guiding
research questions that helped frame this study and developed broad hypotheses around
these questions. 1) What are the perceptions of the teachers concerning their role as they
enact KLT in their classrooms and teacher learning communities (TLC’s)? 2) How has
the implementation of the KLT program influenced school structures and practices? 3)
How has the implementation of KLT influenced or changed school culture? 4) What are
the benefits of assessment for learning to student and teacher learning? and 5) What are
the indicators that assessment for learning reform is at “scale”?

Table 20: Five Guiding Research Questions and Hypotheses

<table>
<thead>
<tr>
<th>Guiding Questions</th>
<th>Proposition</th>
<th>Evidence from data</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the perceptions of the teachers concerning their role as they enact KLT in their classrooms and TLCs?</td>
<td>Their roles have shifted because:</td>
<td>In classrooms: Teachers’ role is to facilitate learning;know where kids are in</td>
</tr>
<tr>
<td></td>
<td>1. Teachers engineer situations in which students learn.</td>
<td>their learning; guide them to their intended learning goals; and provide evidence of student learning.</td>
</tr>
<tr>
<td></td>
<td>2. Teachers are learners and reflective practitioners.</td>
<td>In TLCs: Collegial new learning and reflective practice.</td>
</tr>
</tbody>
</table>

320
<table>
<thead>
<tr>
<th>How has the implementation of the KLT program influenced school structures and practices?</th>
<th>School structures and practices are influenced by KLT because: <em>The beliefs about how students and adults learn have influenced the practices of the SJS system.</em></th>
<th>The following structures and practices have been influenced by KLT: Reporting system, TLC structure, teacher leadership roles, school wide scheduling, classroom practice, structures for struggling students, and parent/community involvement strategies.</th>
</tr>
</thead>
<tbody>
<tr>
<td>How has the implementation of KLT influenced or changed school culture?</td>
<td>School culture has changed because: 1. Students and teachers are held accountable (and hold each other accountable) for their learning. 2. Students and teachers are learners. 3. Leadership is shared. 4. Collaborative teaching culture</td>
<td>School culture data includes: Student and teacher accountability factors that cause a shift in culture, TLCs foster adult learning and a collaborative environment, change in roles of teachers enable shared leadership, change in teacher practices put learning central to school culture, teachers’ practices are transparent.</td>
</tr>
<tr>
<td>What are the benefits of assessment for learning to student and teacher learning?</td>
<td>KLT benefits student and teacher learning because: 1. <em>Teacher and student motivation is increased.</em> 2. <em>Students and teachers know where students are in their learning, know where they need to go, and know how to get there.</em> (regulation of learning and the learning environment)</td>
<td>The regulation of learning is central to the three -step KLT theory of action model. (1. initial teacher workshop, 2. implement strategies and techniques in the classroom, and 3. improved student learning)</td>
</tr>
</tbody>
</table>
What are the indicators that assessment for learning reform is at “scale”?

AfL is at scale because:
1. *There is a clear understanding of the KLT theory of action.*
2. *The SJS keeps the fidelity of the KLT to its core principles.*

Four interrelated dimensions of scale from research theory is evidenced in the data:
1. depth
2. sustainability
3. spread
4. shift in reform ownership

The purpose of this study was to understand how the practices of teachers change as they enacted KLT in their classrooms and TLCs. In addition, I sought to understand what teachers perceive to be critical pedagogical principles in order to effectively implement KLT.

**Discussion**

The themes that emerged: accountability, culture, shared leadership, beliefs and attitudes, motivation, system support, teacher practices, and professional development created the holistic framework that are central to the critical pedagogical principles necessary to implement KLT. These synthesized principles determine the effectiveness of the pragmatic enactment of KLT in classrooms and TLCs. Because pedagogical principles are the fundamental points of this study, it is important to clarify that in this context, they are influenced by change, they are not static, and they are further developed or adapted as new learning occurs.

By the very nature of a qualitative study, the data is vast. The overarching evidence this study suggests is that teachers’ practices and principles have been substantially transformed through the implementation of KLT. It seems somewhat
obvious that teachers have identified that the changes in their beliefs and attitudes have a
direct relationship to the shift in their practices. In other words, their newly developed
pedagogical principles about KLT were directly responsible for the change in their
practices. Specifically, the data supports a shift in: teachers’ roles; serious attitudes and
beliefs about learning and assessment; the support identified as essential to change their
practices; shared leadership, school culture, and professional development.

Teachers indicated that the KLT program impacted the above substantive aspects
of their professional practice as well as the theoretical underpinnings of this study. TLCs
had a positive impact on their learning. Additionally, teachers identified this as one of the
essential supports necessary to change their practices.

The regulation of learning is fundamental to the paradigm shift from teaching to
learning. KLT has developed this aspect of teachers’ practice and the learning
environment. The theory of KLT is well understood by the teachers and they have a solid
understanding of the “tight” elements to keep the fidelity of the program intact.

Most importantly, the teachers value the principles involved in the enactment of
KLT, which will be a significant factor for sustainability. Given this, the final chapter
will address the implication of the study, where we are in the following year of
implementation (2008-2009), and the prospects for further research.
CHAPTER SEVEN: NEXT STEPS, PROSPECTS FOR RESEARCH AND IMPLICATIONS

“The proof of the pudding is in the eating.”

As this proverb suggests, the true value or quality of something can only be judged when it is tried and tested. The pedagogical principles identified as being essential to teachers’ practices evolved from ongoing application and trials.

A Year Beyond the Study...Where Are We Now? 2008-2009


The successful implementation of years one and two led to an additional (summer 2008) immersion workshop of the initial KLT training and additional teacher leader training. To visualize the upscale of the KLT program in St. Johnsbury, the table below is provided.

Table 21: St. Johnsbury KLT Participants, 2006-2009

<table>
<thead>
<tr>
<th>Training Year</th>
<th>2006-2007 (Pilot Year)</th>
<th>2007-2008 (Study Year)</th>
<th>2008-2009 (Year After Study)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trainer (s)</td>
<td>ETS, VT DOE, Dylan Wiliam</td>
<td>VT DOE, Beth Cobb</td>
<td>VT DOE, Beth Cobb</td>
</tr>
<tr>
<td>Number of Participants</td>
<td>6 + principal</td>
<td>22 + principal</td>
<td>41 + principal</td>
</tr>
<tr>
<td>Number of TLCs</td>
<td>1</td>
<td>3</td>
<td>7</td>
</tr>
</tbody>
</table>
As previously explained in the literature review, Coburn (2003) and Thompson and Wiliam (2007) provide a framework for understanding scale through four dimensions: depth, sustainability, spread, and shift. They stress that in order for a reform strategy to be successful, the implementation must be flexible with local restraints; however, keep true to the fidelity of its core principles. Coburn and Thompson and Wiliam believe that the definition of scale must draw attention to the changing pedagogical principles of the reform, which have been addressed specifically in the findings of this study. Also, Elmore (1996) and McLaughlin and Mitra (2000) concur that in order for a strategy to be at scale, it must effect deep change in classroom practice.

**Depth**

Depth can only be achieved by altering teachers’ beliefs and attitudes and assumptions about how students learn. Have the teachers of the St. Johnsbury School changed their beliefs and attitudes about how students learn? Absolutely! This is evidenced by the data obtained from interviews and classroom observations. This study addressed elements of depth as change in teachers’ roles, teachers’ practices, professional learning, and relationships.

**Sustainability**

The second element of scale is sustainability. Coburn (2003) notes that scale depends on sustainability. Systemic structures and strategies have been put into place to ensure sustainability for KLT at the St. Johnsbury School. Since the original immersion KLT training, we have increased to seven teacher leaders, one trainer and 41 trained teachers. Because of the greater number of TLCs, the **structure and purpose of the early release days** have changed to accommodate TLCs. There are multiple levels of
sustainability support for the KLT program at the St. Johnsbury School which include shared school leadership, a professional community of colleagues, and a positive rapport with the VT DOE.

*Spread*

Rather than thinking spread as growing outwardly; deep pedagogical principles are apparent when they influence policy, school procedures, and professional development (Coburn, 2003). The evidence from my data points directly to this element of scale. The significant structural and procedural transformations that were driven from KLT teachers enacting KLT in classroom and TLCs are: 1) a change to a school-wide, *standards-based reporting system*, 2) a *school-wide schedule* that affords struggling students supplemental instruction and also provides time for embedded *professional development*, 3) the formation of a *professional development team* that focuses on assessment for learning strategies, 4) the formation of a *formal data team* that researches a variety of data sets to inform instruction, systemic structures, professional development, and reporting to stakeholders, and 5) the upscale to seven TLCs and teacher leaders.

*Shift*

In order for the shift in ownership to occur, the reform needs to take on its own control, not dependent on external reform efforts. The St. Johnsbury School is not dependent on external reform efforts, but *dependent on the beliefs and attitudes of the teachers* of the St. Johnsbury School. In addition, we look toward the VT DOE for its support in KLT implementation and upscale. We have identified KLT as our strategy for the commissioner’s corrective actions mandated by the NCLB laws. The strategic
decision-making process was shared with school leadership, the VT DOE and KLT teachers.

What is Tight and What is Loose?

The Tight but Loose framework is drawn from the KLT theory of action, so the challenges and successes of scaling up are discussed here. The theory of action is the what, how and why components: the initial immersion training of KLT; the support for ongoing professional development in TLCs; and the adoption of KLT strategies in everyday learning and practice to improve student achievement. These three components must be present to keep the fidelity of the program. Given this, the “tight” parts are the central design principles, and the “loose” parts are accommodations to the unique particularities of the school. It is important to realize that the “loose” parts can only be implemented if they do not conflict with the KLT theory of action (Wiliam & Thompson, 2007).

Table 22: Local ‘Tight but Loose’ Components

<table>
<thead>
<tr>
<th>Tight (Theory of Action)</th>
<th>Loose at SJS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Immersion KLT Training</td>
<td>Three-days during the summer</td>
</tr>
<tr>
<td>Monthly TLCs; manageable number of participants; implement the essential elements of professional learning through KLT modules</td>
<td>Vertical grade level alignment of TLC membership: 6-8 participants; early release days (2008-2009)</td>
</tr>
<tr>
<td>Implement the 5 key strategies and a variety of techniques over a span of time</td>
<td>Judicial choice of techniques and strategies to implement</td>
</tr>
<tr>
<td></td>
<td>Funding: CFP, Title One Pass-Through</td>
</tr>
</tbody>
</table>
Partnerships: Educational Testing Services and The St. Johnsbury School

To elaborate on the breadth of the upscale of the 2007-2008 KLT study, ETS (October 2008) invited two representatives from the VT DOE, Beth Cobb and me, to work with them on their new KLT training materials. We traveled together to Princeton, NJ, to meet with their research and development team, Dylan Wiliam and Steve Chappuis. Our perspectives were captured through video interviews and we provided written feedback to the materials that were in the development stages.

Next, ETS traveled to The St. Johnsbury School (November 2008) to capture KLT classroom implementation, TLC footage, student interviews, KLT teacher-leader interviews, KLT teacher interviews and a school board member interview.

Feedback was received after the visit to the St. Johnsbury School from Teresa Egan, ETS research and development team. She commented on school culture, teacher and student practices, professional learning, systemic support, and leadership.

School Culture

“…. Even though we had very high hopes about what we would see and hear during our visit to document the St. Johnsbury implementation, we were quite surprised
at what actually unfolded during our time in the school. As we moved throughout the school in classrooms from 2nd through 8th grade, we were struck by the very different atmosphere in the school – one of trust, cooperation, and respect. This was evident with the students, teachers, administrators, and even a school board member with whom we had the opportunity to meet.”

**Strategies and Techniques**

“…The teachers structured classroom interactions using techniques that encouraged respectful ‘wait time’ while all students thought about questions posed and formulated their own responses. Students were obviously used to engaging with each other as instructional resources. Both students and teachers offered feedback that helped students to move along in their thinking.”

**Professional Learning**

“…Our interviews with the instructional staff confirmed our hypothesis about how this learning atmosphere came to be. Each interviewee spoke of their commitment to learning and practicing new teaching methods through professional development and ongoing teacher learning communities.”

**Leadership and Systemic Support**

“…The leadership that planned, executed, and supported this ongoing professional development effort was key to helping teachers make dramatic changes in their instruction by affording the time for them to meet as professionals to discuss their ongoing efforts. It was clear that these changes had already impacted student attitudes toward their own learning. We can only imagine that they will continue to foster an atmosphere where all students will be able to learn, while developing valuable lifelong
skills that will have positive results as they continue in future academic and workforce settings” (T. Egan, personal communication, November 17, 2008).

Further Research and Prospects for Further Research

Longitudinal Quantitative Study

The St. Johnsbury School’s data team is presently collecting quantitative data from the New England Comprehensive Assessment Program (NECAP) to inform the impact of KLT on student achievement on high stake testing. The data we are presently collecting are:

- Student achievement levels of SJS students who had KLT in 2006-2007: (2007 fall testing) n=105;
- Student achievement levels of SJS students who had KLT in: 2006-2007 and 2007-2008: (fall 2008 testing) Disaggregated by those that received instruction both years by KLT teachers and those that received instruction by KLT teachers only one year, n=TBD;
- Student achievement levels disaggregated by SJS students who had KLT between 2006-2007 and 2008-2009. (fall 2009 testing) n=TBD;
- Classroom achievement data disaggregated by KLT teachers;

This data will uncover trends in teacher-level data as well as at the student-level data to measure the impact of KLT on student achievement.

National Presentation and Research Articles

An additional research article will be written and supported in a presentation in collaboration with ETS to be presented at the Council of Chief State School Officers
The presentation and article will focus on how teachers can be supported over time as they explore their use of daily formative assessment practices. The approach for the presentation will be from three different perspectives: the first presenter (Caroline Wylie from ETS) will provide an overview of what the research tells us about supporting teacher learning through teacher learning communities and how that research translates in practicalities. The second presenter (Marion Anastasia) will report about the creation of a school environment in which teacher learning communities with a formative assessment focus can flourish. And, the final presenter (Beth Cobb) will explain how the support to members of teacher learning communities across multiple schools and will also focus on the tension between providing support for teachers while at the same time not taking the learning away from them (C. Wylie, personal communication, October 25, 2008).

Also, a proposal will be submitted in February, 2009 to the Journal of the National Staff Development Council (NSCD) for the winter 2010 theme: “Professional Learning 101”. This journal will be written in collaboration with ETS and the St. Johnsbury School, focusing on the transformation of learning at the St. Johnsbury School as a result of the KLT implementation. There is an additional thought of combining this journal article along with a case study video for download on the ETS website (T. Eagan, personal communication, November, 20, 2008).
Implications

*High Stake Testing and Student Learning*

This study begs further research about the impact of high stake testing (summative) on student learning. It is clear that summative tests rank students, schools, states, and even countries against each other. What is the position of policy makers for the discrepancy model concerning student learning and the value of high stake assessments? Particularly, what are the implications of the NCLB high stake assessments on student learning? In addition, have policy makers considered the ethical implications that impact student learning and motivation as it relates to high stake assessments?

As longitudinal quantitative data and research is conducted, the St. Johnsbury School will provide new information to policy makers (not yet available in the US) about the outcomes of the KLT program and high stake assessments used for NCLB accountability.

*Policy*

The implications of this study plead for investigation about the stance state and federal policy makers should have in local formative assessment practices. Should they build policy structures that support local, including formative, assessments and foster professional learning? The repercussions of the current federal policies hinder the assessment practices of this study, thus the attention toward local assessments is a strong implication.

Along with policy implications, further investigation at the state and federal level about resources, accountability design, policies, and support for professional
development is abound. Legislative funding priorities and reallocation of existing resources to support formative assessment is a major implication of this study.

This study proposes a vision for learning, instruction, assessment, and school quality that state and federal policymakers should be clear about. Given this, the implications lie within the philosophical consistency among various initiatives and polices. As part of this vision, reform efforts should be prioritized and embedded with a credible research design.

**Teacher Professional Development**

This study offers implications about the future of professional development. Teacher reform efforts on the state, federal, and local levels, according to this study, indicate that there is a tremendous need and value around professional development that relates to learning and assessment reform.

**Structures of Schools**

Like professional development design and structures, what are the implications from this study that will impact the structures and policies of school schedules, reporting systems, shared leadership models, curriculum design, and support to struggling students in the future? How will the findings of this study affect the state’s stance on omitting early release days for ongoing professional development for all Vermont schools?

**VT DOE ~ State Leadership**

What implications does this study have for the Vermont Department of Education? How does the KLT program impact the commissioner’s required actions? What structures, supports, practices, and policies will they support, evaluate, negate, and/or adopt as school improvement strategies? How does this study support the effort to
develop the comprehensive local assessment plan (CLAS)? Has this study validated the desirable outcomes of the original pilot study statewide? Given the data from this study, how will the state proceed with the KLT program?

**District and Local Level Leadership**

The most transparent implication concerning leadership that this study brings is the power and effectiveness of shared leadership at all levels of an organization. This impacts beliefs, attitudes, structures, policies, school culture, values, resources, knowledge, and a common vision among all stakeholders.

**Closing Thoughts…**

**A Culture of Risk-Taking**

*To learn is to risk; to lead others toward profound levels of learning is to risk; to promote personal and organizational renewal is to risk. To create schools hospitable to human learning is to risk. In short, the career of the lifelong learner and of the school based reformer is the life of a risk taker.*

*Ronald Barth* (Buffum, 2008, p. 47)

This quote about the culture of risk-taking resonates with me. Over the last two and a half years, my engagement in this study has provided me with the steadfastness, knowledge, and courage to become a more effective and informed instructional leader for The St. Johnsbury School. I have grown as a leader and a learner. I am not afraid to take risks and make mistakes, the inherent part of this learning journey. I also encourage teachers and students to take risks and learn from their mistakes.

To guide my leadership vision, I have placed student and teacher learning as our fundamental purpose. This vision has helped me address and move forward the
“resisters” with patience, courage, and a moral purpose. On the contrary, leaders have arisen with the passion, beliefs, and wherewithal to lead the school community in its pursuit for improved learning for all.
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