Understanding and Using Formative Assessments:
A Mixed Methods Study of *Assessment for Learning* Adoption

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Executive Summary

James Popham, a leading figure in educational test development and criterion-referenced measurements sums up the power of formative assessment in this way:

"The goal of formative assessment is to supply assessment-elicited evidence by which teachers or students try to enhance learning…Formative assessment helps students learn. It helps teachers be more instructionally effective and principals transform their schools into places where students are educated more successfully. In short, formative assessment can pay off for all those who are touched by it."

(2008, p.18, 20)

In an effort to promote formative assessment in Jefferson County Public Schools, during the spring of 2009 the district launched an initiative focused on the understanding and use of formative assessment. For this initiative, district leaders selected a program developed by Rick Stiggins and the Educational Testing Service called *Assessment for Learning*© (AfL).

The pilot phase of the *AfL* initiative began with nine self-selected schools – five elementary schools, one middle school, two high schools, and the district's on-line "virtual" school. In September of 2009 a team of three to five teachers and one administrator from each of the nine pilot schools attended two days of training on the *AfL* program conducted by Rick Stiggins and his associates. In conjunction with the pilot phase of the *AfL* initiative, JCPS partnered with our capstone project team to study various aspects of the pilot schools' experiences with the *AfL* program. As such, our project design is guided by four questions:

- What is the school culture concerning collaboration, specifically as it relates to formative assessment?
- How have pilot schools responded to the *Assessment for Learning* program at the school and classroom levels?
- What influence has the *Assessment for Learning* training had on instructional practices and attitudes at the pilot schools?
- What institutional and individual obstacles do teachers face in adopting *Assessment for Learning*?

We investigated these project questions through multiple data collection efforts, including teacher/administrator surveys, interviews with pilot school principals and *AfL*- trained teachers, observations at pilot schools and participation in district-wide professional development sessions related to the *AfL* initiative. Analyses of these data revealed the following key findings:

Early Stages of *AfL* Adoption

A number of practices and strategies associated with *AfL* adoption are evident in our findings. These, include the following:

- Principal commitment to the initiative.
- Regular collaboration around *AfL* among teachers and principals.
- Increased instructional intentionality and more purposeful planning have become more common among *AfL*-trained teachers.
- Students and *AfL*-trained teachers are developing partnerships around instruction and assessment.
- Student engagement and motivation has increased in *AfL*-trained teachers' classrooms.

Challenges to *AfL* Adoption

- *AfL* is a complex program and takes time and ongoing support to implement successfully and to earn teacher buy-in.
- Time is a barrier to program adoption as it is difficult to find time during the school day for *AfL* collaboration, reflection, and training of other school staff.
- Some teachers and principals are concerned that district support for *AfL* will be short-lived.
- Some teachers and principals perceive a tension between expectations regarding curriculum coverage, district assessments, and the goals of *AfL*.

Based upon these findings, we have developed several recommendations, which we believe will prove useful for future stages of the *AfL* initiative in JCPS. Specifically, our recommendations include the following:

AfL Training

- Hold *AfL* training sessions in the summer to allow for more focused program study and advance lesson planning that incorporates *AfL* strategies.
- Design *AfL* training sessions to be subject- and grade-level specific.

- In future training sessions, make use of *AfL*-trained teachers from the first *AfL* pilot cohort.

Administrative and District Support

- Ensure that school level administrators provide regular time for embedded *AfL*-related professional development.
- Encourage intentional, incremental program adoption across the district and within individual schools to increase teacher buy-in and provide time to master each *AfL* component.
- Carefully communicate how the *AfL* initiative aligns with district and state standards and goals to prevent a perception among teachers and principals that these are competing expectations.
- Maintain sufficient financial support for the *AfL* initiative.
- Foster a feedback loop among stakeholders through ongoing communication and evaluation of the *AfL* initiative, including measurement against characteristics of high quality professional development.

The findings of this report, while limited by the capstone project's scope and structure, contribute to the emerging body of literature on *AfL* specifically, and formative assessment, professional development, and district support/role more generally.

Section 1: Introduction to the *AfL* Initiative, Formative Assessment, and Embedded Professional Development in Jefferson County Public Schools

In 2002, the Wallace Foundation awarded Jefferson County Public Schools (JCPS) a multi-million dollar grant to increase teacher effectiveness and student achievement. The grant was funneled through a newly created Data Driven Decision Making (DDDM) council in JCPS. Soon after formation, the DDDM selected, as a multiyear district initiative, *Assessment for Learning (AfL)*, a formative assessment program designed to support and increase student achievement. The DDDM's decision to adopt this particular professional development program was due in part to the growing research base that suggests that student achievement may increase, especially for low-performing students, when teachers intentionally incorporate practices related to formative assessment into the classroom (Stiggins, 2007; Black & Wiliam, 1998; Hattie & Timperley, 2007). To this end, the *AfL* program is structured to facilitate teacher and principal understanding and use of formative assessment such that students become more actively engaged in their own learning. Specifically, the *Assessment for Learning* program trains teachers to regularly evaluate student learning through a variety of formal and informal measures and to subsequently use results of these assessments to guide instruction.

In the spring of 2009, at the district's invitation, nine self-selected pilot schools (two high schools, one middle school, five elementary schools, and the district's on-line "virtual" school) chose to adopt the *AfL* program in an effort to increase teacher and administrator understanding of this initiative. As part of the first stage of *AfL* program adoption in JCPS, pilot school principals and selected teachers at each school participated in an intensive, two-day training led by Rick Stiggins and his associates in September 2009.

After making the choice to incorporate *Assessment for Learning* into its data-driven reform efforts, JCPS partnered with our capstone project team to learn more about the early stages of program adoption in the eight pilot schools before moving forward with the initiative in other schools across the district. Specifically, using a mixed-methods non-experimental approach, we investigated the culture of collaboration in pilot schools, effects of the *AfL* training program on teachers' attitudes and classroom practices related to formative assessment, and barriers to program adoption at both the individual and institutional levels. The expectation for our capstone team was also to offer specific recommendations as the district prepares to expand the pilot phase of the initiative to include other schools in JCPS. To address these objectives, we developed a project design focused on four key questions:

- What is the school culture concerning collaboration, specifically as it relates to formative assessment?
- How have pilot schools responded to the *Assessment for Learning* program at the school and classroom levels?
- What influence has the *Assessment for Learning* training had on instructional practices and attitudes in the pilot schools?
- What institutional and individual obstacles do teachers face in adopting *Assessment for Learning*?

What We Know About Formative Assessment

While much more will be said in the sections that follow about the *AfL* program specifically, in order to fully understand the JCPS initiative, it first useful to review some of the fundamental principles, criticism, and confusion surrounding the notion of formative assessment itself as a means for improving teaching and learning.

Difficulties of definition. Over the past decade, formative assessment has emerged as a popular and promising educational strategy, particularly in the K-12 arena. Despite increasing interest in formative assessment however, the concept itself has suffered from vague and varied working definitions, and thus remains largely an enigma in the literature (Dunn & Mulvenon, 2009). In the seminal work by Black and Wiliam (1998) formative assessment is described as "all those activities undertaken by teachers and/or by their students, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged" (p.10). On the other hand, other scholars and educator groups have defined formative assessment not as "activities", but rather as a "process" employed during instruction to supply feedback for the purpose of adjusting teaching and learning in order to improve student achievement (Melmer, Burmaster, & James, 2008; Popham, 2008).

While at first glance these various definitions may not seem contradictory, the difference between defining formative assessment as an *activity* (i.e. a test or other form of assessment, self-reflection, etc.) as opposed to a *process* is actually an important distinction to make, with implications for both research and practice. As the literature on formative assessment makes apparent,

definitions of formative assessment range from those based on inherent characteristics of the assessment itself (i.e. assessment as an activity), to those that place emphasis on how the assessment is used (i.e. assessment as a process). While no one of these definitions is inherently more correct than another, given the variation in what is meant by 'formative assessment' it is important for researchers and practitioners alike to clarify how the term is defined in a given context (e.g. educational article, instructional curriculum, research study conclusions).

Attempts to operationalize formative assessment based both upon the assessment itself and the use of assessment results are similarly complicated by the fact that formative assessments serve a plethora of feedback-related purposes, ranging from academic diagnosis, prediction, and evaluation of teacher and student performance (Black & Wiliam, 1998). This lack of consistency in definition, and subsequently in operationalization, as Dunn and Mulvenon (2009) point out, has led to "a dearth of empirical evidence identifying best practices related to formative assessment" (p. 2). We argue that this has also contributed to confusion on the part of educators as to how formative assessment translates into effective classroom practice.

Effects of formative assessment on student achievement. Despite both the complicated nature of the term 'formative assessment' and subsequently attempts to operationalize it, there are numerous articles and studies on the subject. Due to varied working definitions of the concept however, drawing accurate and reasonable conclusions from the literature is a complex undertaking. Dunn and Mulvenon (2009) in particular provide a useful critique of the conclusion that Black and Wiliam (1998) draw from their

review of more than 250 articles related to formative assessment. Following their description of these various formative assessment studies, Black and Wiliam (1998) maintain that research "shows conclusively that formative assessment does improve learning," and that gains in student achievement attributed to formative assessment are "amongst the largest ever reported" (p. 61). Not surprisingly, this research is frequently cited as evidence that formative assessment improves student achievement.

Dunn & Mulvenon (2009), however, point out important concerns related specifically to the eight research studies on which Black and Wiliam (1998) base their conclusions. These include the danger of generalizing results from studies conducted in the context of special education and high-poverty students to the population of students at large, the difficulty in parsing out formative assessment effects from teacher effects, and other methodological problems including nonequivalent treatment groups, confounded experimental treatments, nonrandom assignment of subjects to treatments, and fidelity of treatment, among others (Fuch & Fuch, 1986, p.202).

Dunn and Mulvenon (2009) present the problems with these articles and studies not to claim that formative assessment is an ineffective strategy for improving student achievement, but rather to suggest that a more appropriate conclusion from the Black and William (1998) review might be have been that more research needed to be conducted. Since the Black and Wiliam (1998) review however, limited research has been done to investigate the potential impact of formative assessment on academic achievement, thus the need for empirical evidence still exists. This includes any systematic review of the *AfL* program specifically, though several

efforts of this kind are currently underway. While forthcoming studies will certainly contribute to our understanding of the effects of formative assessment and the *AfL* program specifically, as Dunn and Mulvenon (2009) suggest, more research is still needed to adequately assess the potential benefits and challenges of this increasingly popular instructional strategy. Though our report examines only eight self-selected schools in the early stages of adopting *AfL*, our findings add to the growing body of information and evidence regarding the complex process of understanding and using formative assessment practices in the K-12 classroom.

Three essential elements of formative assessment. The empirical evidence that Black and Wiliam (1998) present concerning the effects of formative assessment on student achievement may be subject to scrutiny, but the three essential elements of formative assessment that they identify still provide a valid foundation for understanding this instructional strategy:

1. Recognition of the *desired goal(s)* (skills/knowledge to be learned)
2. Evidence about *the learner's present position* (where am I now relative to the desired goal(s)?)
3. Some understanding of *how to close the gap* between the two

Depending on interpretation, these three elements can encompass distinct assessment activities, as well as a pedagogical process, all of which can inform instructional decisions and optimize student learning.

The role of feedback in formative assessment. The literature on instruction, assessment, and student achievement attests that a pivotal part of any formative

assessment program anchored by Black and Wiliam's (1998) three essential elements is training teachers and students in the art of delivering and receiving feedback. By focusing specifically on the type and timing of instructional feedback, teachers learn to more effectively communicate with students on both identifying learning goals and then also what is required to actually achieve these goals (e.g. Marzano, Pickering & Pollock, 2001; Chappuis, Chappuis, & Stiggins, 2009; Bell & Cowie, 2001). Similarly, as part of the *AfL* program, students learn to articulate the challenges they may experience in mastering learning targets, which can further assist teachers in knowing when and how to tailor instruction to students' specific learning needs. In this sense, the feedback component of formative assessment, and the *AfL* program specifically, is critical to enhancing student learning, particularly when there is a discrepancy between what understood and what is aimed to be understood (Hattie & Timperley, 2007). Furthermore, according to Hattie and Timperley (2007), feedback is most powerful if it is intertwined with specific instruction (see also Kulhavy, 1977 and Sadler, 1989). Winne and Butler (1994) likewise claim that feedback, when provided in the context of learning, can "confirm, add to, overwrite, tune, or restructure information in memory, whether that information is domain knowledge, meta-cognitive knowledge, beliefs about self and tasks, or cognitive tactics and strategies" (p. 5740).

Hattie and Timperley (2007) argue that feedback is a critical influence on student learning as it has been shown to increase effort, motivation, and/or cue-searching and task processes that lead to understanding. As they explain, feedback is most beneficial when it helps students reject erroneous hypotheses and provides cues for searching and strategizing within the context of a specific learning task or situation. Ideally, students move "from the task, to the processes or understandings necessary to learn the task", to the regulation needed to continue "beyond the task to more challenging tasks and goals" (p. 102). In this way, effective feedback plays an important part in moderating the learning processes that undergird sound formative assessment practices, and ultimately student performance.

What We Know About Professional Development

Efforts to reform K-12 education in the past quarter century have placed professional development at the core of school improvement programs and strategies. Attempts to define professional development have changed from the more straightforward, as in Little's (1987) definition of the concept as "any activity that is intended partly or primarily to prepare paid staff members for improved performance in present or future roles in the school districts" (p. 491), to the more complex idea that formal or informal learning communities among teachers can act as powerful levers for teacher growth and development (Stein, Smith, & Silver, 1999). Furthermore, over the course of the last few decades, millions of dollars have been spent on professional development by the U.S. Department of Education (e.g., the Eisenhower Professional Development Program), the National Science Foundation (e.g., systemic reform initiatives), states and school districts. In 2004-05, the federal government spent about $1.5 billion on professional development for teachers (Birman et al., 2007).

Desimone et al. (2006) suggest that the centrality of teachers' professional development to school reform efforts, and the funding required to implement such efforts,

make it critically important to gain a greater understanding of both the strategies of implementation (scale, duration, funding) used by schools, districts, and states and the components of effective professional development programs. Recent studies have provided valuable insights into both of these areas that universities, districts, and states can draw upon to deliver high-quality professional development (Desimone, Garet, Birman, Porter, & Yoon, 2002).

Research has also shown that very few teachers actually participate in high-quality professional development. The dominant mode of professional development for the majority of teachers is still "one-shot" workshops, often not focused on subject-matter content (Borman & Rachuba, 1999). Although states and school districts generally have requirements for continuing education and in-service professional development hours, the actual content of the activities is commonly the teachers' choice. A national study indicated that nearly 70 percent of teachers nationwide choose their own professional development activities (Garet et al., 2001). Though the element of choice is not inherently a bad one, it does mean that most teachers' PD lacks any overarching, long-term goals for substantive improvements in teaching and learning.

Strategies of implementation. A central challenge facing schools and districts seeking to implement effective, high quality professional development programs involves the concepts of scale and sustainability. Stringfield and Datnow (1998) define scaling up as "the deliberate expansion to many settings of an externally developed school restructuring design that previously has been used successfully in one or a small number of school settings" (p.271). Within this definition, researchers have differed as to

whether they define scale to involve replication of the reform in greater numbers of schools (Cooper, Slavin, & Madden, 1997; Fuchs & Fuchs, 1998) or emphasize a process of mutual adaptation (Datnow et al., 2002) whereby schools are encouraged to adapt reform models to the needs of their specific context.

Coburn (2003) however, argues that expanding to multiple settings is a necessary but insufficient concern in taking a reform to scale. Rather, Coburn suggests that scaling up requires not only spread to additional sites, but also consequential change in individual classrooms, endurance over time, and a shift such that knowledge and authority for the reform is transferred from the external organization to teachers, schools, and districts. Therefore, Coburn proposes that it is necessary to consider four interrelated dimensions for a more complete understanding of scale: depth, sustainability, spread, and shift in reform ownership.

A second model, by Newman, King, & Youngs (2000), offers five essential features of professional development: teachers' knowledge, skills, and dispositions; professional community; program coherence; technical resources; and principal leadership. These last two features differ from Desimone's (2009) model in that they emphasize financial support and building leadership. As Gamoran et al. (2000) maintain, instruction that boosts student achievement requires investments in curricular and instructional materials, various assessment instruments, and technology. In addition, Hallinger and Heck (1998) suggest that increasing teacher capacity and student achievement is dependent upon effective principal leadership. According to their observation and reasoning, principals serve as catalysts for directing and supporting the other four essential elements in this model,

thereby imbuing them with the potential to significantly affect instructional quality and to increase student achievement.

Formative assessment as a vehicle for professional development. Though empirical research on formative assessment remains limited due to inconsistent interpretations of the term and thus also to difficulties operationalizing the concept itself, as the literature makes apparent, the three elements put forth by Black and Wiliam (1998)—clear learning goals, evidence of a learner's present knowledge, and a game plan for closing the gap—are still generally thought to be an effective model of teaching and learning for students and adult learners alike (Dunn & Mulvenon, 2009; Marzano, Pickering & Pollock, 2001; Chappuis, Chappuis & Stiggins, 2009; Hattie & Timperley, 2007). While the JCPS formative assessment initiative is ultimately intended to improve the academic achievement of K-12 students, teachers and principals also take on the role of learner through reflection and collaboration around formative assessment practices. As educators learn more about formative assessment, in this case defined and conveyed through the *AfL* program, they are also engaged in an active learning process themselves, which according to the literature, is one of the hallmarks of sound professional development (e.g. Danielson & McGreal, 2000; Desimone et al., 2002).

Section 2: Background and Context: *Assessment for Learning* in JCPS

With over 98,000 students and more than 6,000 teachers, JCPS is a one of the largest, metropolitan school districts in the country and the largest by far in Kentucky. Not only notable for its size, as a district, JCPS also has a history of leading education reform in the state, dating back to *Rose v. Council* (1989) and the wave of changes that this decision sparked in K-12 education across Kentucky. Since this landmark ruling, in many ways JCPS has set the path for reform throughout the state.

As a district, JCPS enjoys several opportune relationships with not-for-profit organizations. Among them is the Gheens Foundation, a locally based organization with a strong bent towards education philanthropy, and the Wallace Foundation, known nationally for their support of education leadership and effective practices. Of singular significance for this project, however, is a grant awarded in 2002 through the Wallace Foundation that annually disburses $1 million to fund the efforts of a Data Driven Decision Making (DDDM) council in JCPS. This team of district personnel is charged with ensuring timely use of relevant, meaningful data to inform decisions about instruction, resource allocation, and ultimately to increase student achievement throughout the district.

AfL Overview and Program Components

One of the major initiatives of this newly commissioned DDDM group is the multi-phased adoption of *Assessment for Learning* (*AfL*), a formative assessment program designed by Rick Stiggins. Due to the fact that formative assessment often remains an imprecise concept for educators and scholars alike, it was important for a district like JCPS, in embarking on a formative assessment initiative, to provide a clear, consistent understanding of what formative assessment means in terms of both instructional practices (i.e. processes), and actual assessments (i.e. activities). In other words, while formative assessment, however one chooses to define it, is nothing new for educators, it is a distinct shift in the way most teachers and students have historically viewed and utilized assessment, and thus requires deliberate support and training. For these reasons, the district chose to use the *AfL* program, which offers a focused take on the concept of formative assessment, and also allowed a flexible approach to program adoption across the nine self-selected pilot schools in the district (Rodosky & Muñoz, personal communication, 2009).

AfL **program objectives.** The *AfL* program consists of a professional development curriculum created by Rick Stiggins and produced by Educational Testing Service (ETS). The purpose of the program is to train teachers in understanding and using assessments to guide instruction rather than solely to measure student learning for grading purposes. Specifically, the training deals with use of formative assessment in the classroom context, effective feedback, and expansion of the student's role in designing and interpreting results of formative assessments. Ultimately, *AfL* seeks to encourage students to take responsibility for their own learning by increasing their motivation to learn (Stiggins, Arter, Chappuis, & Chappuis, 2007). The belief of the program authors is that making learning transparent increases student

engagement and leads to an increase in student learning (Stiggins, Arter, Chappuis, & Chappuis, 2007).

The power of feedback and student engagement. Though the literature on the concept of formative assessment itself is limited and often of questionable quality, the literature linking student engagement and student learning is more robust. Particularly, the literature on feedback, a key component of formative assessment, takes this linkage into account and provides some insight into the ways that deepening communication between teacher and student about learning can improve student performance (e.g. Hattie and Timperley; Winne & Butler, 1994; Hattie, 1999). For example, according to a 1999 synthesis of over 500 meta-analyses, involving 450,000 effect sizes from 180,000 studies, representing 20-30 million students, on various influences on student achievement (i.e. attributes of schools, homes, students, teachers and curricula), the average or typical effect of schooling was .40 (*SE*=0.05) (Hattie, 1999). In comparison, at least 12 meta-analyses have included specific information on feedback in classrooms; these meta-analyses included 196 studies and 6,972 effect sizes. The average effect size from these studies was 0.79 (twice the average effect of schooling).

To put the effect of feedback into further perspective, it fell in the top five to ten highest influences on achievement in Hattie's (1999) synthesis, along with direct instruction (0.93), reciprocal teaching (0.86), students' prior cognitive ability (0.71), and also can be contrasted with other influences such as acceleration (0.47), socioeconomic influences (0.44), homework (0.41)…reducing class size (0.12) and retention back 1 year (-.12) (Hattie & Timperley, 2007, p.83). Thus, as Hattie and Timperley (2007) conclude, feedback clearly can have a powerful effect on student achievement.

The effect sizes reported in the feedback meta-analyses however show considerable variability, indicating as Hattie and Timperley (2007) observe that some types of feedback are more powerful than others. Studies showing the highest effect sizes involved students receiving feedback concerning a specific task and how to approach it more effectively, which is the kind of feedback associated with formative assessment practices. Lower effect sizes were related to praise, rewards and punishment (Hattie & Timperley, 2007).

AfL **program structure and instructional guidance.** The *AfL* program trains teachers in methods of increasing student engagement through a variety of interrelated means, including the creation of clear learning objectives for students and providing students with on-going, specific feedback throughout the learning process. The program also draws upon three guiding questions that are similar to Black and Wiliam's (1998) three essential elements for formative assessment. In the *AfL* curriculum, it is proposed that teachers should evaluate both student learning and their own professional learning by answering these questions:

- "Where am I going?"
- "Where am I now?"
- "How can I close the gap?"
  > (Stiggins, Arter, Chappuis, & Chappuis, 2007).

These three guiding questions are further explicated in the *AfL* program curriculum by seven strategies designed to assist teachers

and principals in translating *AfL's* undergirding principles into practice:

Where am I going?
1. Provide students with a clear and understandable vision of the learning target.
2. Use examples and models of strong and weak work.

Where am I now?
3. Offer regular descriptive feedback.
4. Teach students to self-assess and set goals.

How can I close the gap?
5. Design lessons to focus on one learning target or aspect of quality at a time.
6. Teach students focused revision.
7. Engage students in self-reflection and let them keep track of and share their learning.
    (Stiggins, Arter, Chappuis, & Chappuis, 2007).

The program is designed for flexible adoption, with schools/teachers able to start with any one of the seven strategies. Stiggins, however, recommends starting with the reworking of standards and objectives into learning targets that are accessible to the students (Stiggins, Arter, Chappuis, & Chappuis, 2007). From this position, students and teachers then have a common, transparent list of learning targets from which they can begin answering the three guiding questions. The learning targets serve as the road map for teachers' planning and instruction and students' learning and reflection. The expectation is that full implementation of all seven *AfL* strategies will take between five to seven years (Stiggins R., 2009).

Program Adoption and Development

Challenges of scale. Understanding the protracted nature of the *AfL* program design itself, as well as the rationale for sustained, rather than traditional single-shot professional development, the DDDM council chose to develop the *AfL* initiative incrementally, with the idea that it would expand organically in the district over the course of several years. This approach to program development, though intentional and supported by the literature on formative assessment and PD, still entails sizeable challenges. In a district as large as JCPS, taking any initiative to scale is a daunting task, as teachers, principals, students and parents vary in distinct and important ways from school to school. The diverse nature of a district like JCPS that includes urban and suburban communities, numerous magnet schools, choice student assignment options, among other varied characteristics means that bringing an initiative like *AfL* to scale is a complex undertaking.

District leaders, therefore, need to ask and attempt to answer two critical questions: (1) Which strategies are effective at developing and nurturing depth in teachers' enactment of the *AfL* initiative? (2) How can the architects of a professional development initiative work to create the key conditions in schools and districts that support and sustain classroom change over time? (Coburn, 2006). Thus, distilled information and feedback from key stakeholders (i.e. teachers, principals, students) concerning their early experiences with the *AfL* program is particularly important in guiding district leaders' decisions regarding the future of the initiative.

Self-selection and a tentative timetable. The first step in the program adoption process occurred in April 2009 when an introductory session was held for all principals in the district. This initial session provided building-level administrators with an overview of the *AfL* program. After the introductory session, nine schools in the district self-selected for inclusion in the pilot stage of the initiative. These nine schools included two high schools, one middle school, five elementary schools, and the district's on-line "virtual" high school. Moving forward, JCPS plans to expand the *AfL* initiative to include increasingly more teachers and schools over the next several years, knowing that full adoption of the program at the school level takes between five to seven years.

Training and professional learning. The principal and three to six teachers from each pilot school then attended a two-day training session in September 2009, three weeks after the 2009-2010 school year had started. JCPS only offered the pilot training to this small group because the Kentucky Department of Education coordinated and sponsored the training sessions and limited the number of seats available to JCPS. Following the September training, pilot participants used the remainder of the fall semester to further their understanding of formative assessments and to begin utilizing them in their classrooms.

As our findings in subsequent sections will illustrate, the teacher teams at each of the schools, under the direction of, or consultation with, the principal, chose to focus first on one or two steps of the *AfL* program during the initial phase of adoption. Thus, these pilot teachers would attempt to foster professional communities focused on *AfL* throughout the school.

District-wide flop. The next step in the *AfL* initiative came on October 5, 2009, when JCPS held a district-wide professional development day to introduce the *AfL* initiative. Rick Stiggins presented an overview of formative assessment and initial steps in the *AfL* program. During the afternoon of October 5th, teachers participated in sessions at their respective schools. As one of our capstone team members observed, that afternoon some schools followed up on the *AfL* presentation, while others chose to engage in other professional development activities, choosing to postpone discussion of *AfL* until a later date. The decision to delay discussion of formative assessments was made at the discretion of building administrators; for some, this decision was made in light of frustrations about the logistics of the district-wide session, which included a traffic jam entering and leaving the facility, as well as a presentation forum that was less than conducive to sustaining audience attention.

New beginnings. The second phase of the *AfL* initiative began in December 2009, with another group of teachers from additional district schools participating in a two-day training session. Additionally, some of the schools that had postponed the *AfL* follow-up discussion on the afternoon of October 5th started the second semester with a day of in-house training on January 4, 2010, and the creation of study groups that will meet throughout the semester (Aberli, personal communication, Dec. 12, 2009). Due to the timing of our research effort however, the second cohort of schools is not included in the findings reported here.

What level of district support? With uncertainties in funding for the *AfL* initiative after this school year, the district was interested to see if self-initiated program development takes place in the pilot schools. If the adoption of the *AfL* program spreads within the pilot buildings without the need for

additional formal training by ETS, the district will be able to save money in their efforts to expand the initiative across other JCPS schools. Given that the recent literature on school reform has emphasized the critical role of school districts in establishing the context for professional development activities (Coburn, 2006; Borman & Rachuba, 1999; Desimone, et al., 2002), an important part of this initial adoption phase was to determine the level of district support needed at the school level to sustain and grow the *AfL* program (Elmore and Burney, 1996; Knapp et al., 1991; Spillane, 1996; Spillane and Jennings, 1997; Spillane and Thompson, 1997).

District-developed resources. To support the *AfL* initiative, the district also created a Learning Team Support in JCPS. This work group consists of researchers from the district's Accountability, Research, and Planning Department, professional development officers, resource teachers, and classroom teachers. Collectively, the LTS attempts to address the challenges that Coburn (2003) highlights - sustainability, spread, and shift in reform ownership - when scaling up a professional development initiative. The LTS group also oversees three resource teachers who are also charged with supporting participating classroom teachers in their adoption of *AfL*. The main objectives of the LTS, as identified by Evaluation Specialist, Dr. Marco Muñoz, are:

- Act as a liaison for JCPS district administrators to provide updates on learning team implementation progress and needs.
- Provide training to Learning Team Facilitators and troubleshoot with [Learning Team Liaisons] LTLs on issues related to process, pedagogy, and content needs.
- Collaborate with [Learning Teams] LTs and facilitate LTs networking.
- Provide professional development workshops to new LTs in collaboration with ATI/ETS as needed.
- Act as a liaison between JCPS and KDE for providing updates on LTs implementation progress and needs.
(personal communication, Oct. 28, 2009)

As is evident, the district has attempted to provide support for the pilot group of trainees, as well as the second group of participants who received the formal training in December. The research on school reform indicates that district strategies can shape school personnel's experiences with professional development in positive or negative ways. As such, it is important for a district like JCPS to continue to offer focused assistance for *AfL* adoption (Desimone et al., 2002).

Section 3: Project Design and Methodology

Our project utilized a mixed-methods, non-experimental design in order to accurately capture early reactions to the two-day *Assessment for Learning* training and the extent of program use in eight self-selected JCPS pilot schools. Our research approach combined a careful review of relevant extant literature, a survey of pilot school teachers, administrators, and trained resource teachers, as well as interviews with trained teachers and administrators and matched comparison group teachers at the pilot schools. In addition, we reviewed *Assessment for Learning* materials and participated in the training sessions ourselves to gain firsthand knowledge of the program. Finally, in March 2010, we followed up with a short on-line survey to the pilot school principals to gauge levels of sustained commitment to the *AfL* program. Appendix A shows the data collection methods for the project's key constructs and how our multiple data sources worked to support our overall project objectives.

Though not without limitations, this project design allows us to triangulate our findings across data sources (i.e. qualitative interviews were informed by survey data and literature, etc.). According to Creswell (2009), the mixed-methods approach "involves the use of both [quantitative and qualitative] approaches in tandem so that the overall strength of the study is greater than either qualitative or quantitative research [on their own]" (p. 4).

In essence, while the quantitative data provides information concerning the overview of the project questions, the qualitative interviews breathe life into the numbers. Additionally, by utilizing both quantitative and qualitative methods, it makes our project "more accessible for practitioners and may help bridge the gap between research and practice" (Creswell & Clark, 2007, p. 175). Finally, Johnson and Onwuegbuzie (2004) argue that a mixed methods approach can use the strengths of each single method design to overcome the weaknesses of the other, leading to a stronger design overall.

Survey Data

To collect pertinent quantitative data, we created and fielded a survey designed to measure pilot school personnel's perceptions of professional development and instruction, levels of collaboration in the school building, and beliefs and practices concerning the *AfL* initiative specifically. Because of the timing of the project in relation to the training session, we used a retrospective pretest design to gauge changes in perceptions and practices following the two-day training.

Survey creation. The fall survey was comprised of 64 previously-developed and scaled questions; questions focused on the following categories: educator beliefs about teaching, professional development, *AfL* training (for those who participated), classroom practices and behaviors, teacher collaboration, and respondent demographics (see Appendix B for survey and data construct map, including item sources).

During the development phase, revisions were made in response to suggestions from our clients at the district office of accountability and research, as well as the Learning Team Support for *AfL* in JCPS, who requested that we ask specifically about the various types of testing data teachers use for planning purposes.

The survey was then fielded using the district's web-based survey generator. Put into the field on November 13, 2009, the

survey remained open for approximately one month. Final survey results were then compiled in an Excel spreadsheet and converted into SPSS for data analysis.

Retrospective pretest design. Due to the objectives of our project, as well as the timing of the project relative to the *AfL* training sessions in September 2009, we chose to use a retrospective pretest design for the fall survey. Typically, a traditional pre-test/post-test survey design is used to measure changes in respondent attitudes and/or behaviors. However, due to timing and other logistical considerations, it is often difficult to survey participants prior to training or treatment, as was the case with the pilot participants in the September 2009 *AfL* training sessions. To address such logistical challenges, the retrospective pretest design includes both pre- and post-test questions on a single instrument, thus providing the opportunity to measure participants' initial beliefs and practices, as well as any changes that may result from the training (Allen & Nimon, 2007).

In a review of the efficacy of retrospective pretests, Allen and Nimon (2007) report an increasing acceptance amongst researchers to use retrospective pre-tests in lieu of the traditional pre-test for the sake of convenience (Hill & Betz, 2005; Lamb T. , 2005; Martineau, 2004; Lamb & Tschillard, 2005; Nimon & Allen, 2007; Raidl, et al., 2004; Lynch, 2002). Allen and Nimon also provide further justification for retrospective pretests, claiming that, "In most cases, when participants do not have sufficient knowledge to gauge their pre-intervention behavior, they tend to overestimate their level of functioning" (2007, p. 30). In other words, individuals might not know what they do not know prior to undergoing treatment or training, and therefore cannot provide accurate information about their own understanding or use of a particular concept like formative assessments until after training.

As Lamb and Tschillard state, "At best, even honest answers on a traditional pretest are likely to lack construct validity because of misunderstanding the questions and information asked for in the pretest" (2003). Retrospective pretests have the ability to minimize response-shift biases, which occurs when respondents' frame of reference changes as a result of the training, leading to results from traditional pretest/posttest model that underreport changes in behavior or beliefs (Rohs, 1999; Pratt, McGuigan, & Katzev, 2000).

Second semester follow-up. In an effort to capture additional information about the pilot schools' experiences in the second semester of *AfL* adoption, we also fielded a very brief follow up survey in late-March (Appendix C). This effort was primarily intended to collect feedback from principals in the pilot schools, but responses from a handful of trained teachers were also obtained. The survey was very brief, consisting of six questions. These questions asked about the introduction of *AfL* to other school faculty, perceived program benefits, and challenges to program adoption. Seven of eight principals responded, as well as eleven teachers.

Data collection. The timing of the fall survey coincided closely with our interviews of pilot participants, which took place approximately ten weeks after the initial training sessions in September. The district sent an initial email announcing the survey to faculty at eight of the nine pilot schools and researchers followed up with email reminders to principals several times during survey administration. The survey window persisted for five weeks, though this included the week of the district's Thanksgiving break.

The timeline of the fall survey administration highlights a concern with the retrospective pretest design in that the two and a half months that lapsed between participants' *AfL* training and completion of the survey might have affected participants' recall of the training and their survey responses. To address this concern, Pratt, McGuigan, and Katzev suggest, in an analysis of a retrospective pretest study of a 6-month training program, that asking about specific behaviors and "clarifying a defined period… may facilitate recall" (2000, p. 347). As such, the time period of interest was clarified for respondents in the survey introductory information and directions as well as through careful wording of relevant questions. Furthermore, the survey focused on formative assessment, particularly the *AfL* program, in an effort to help respondents recall their beliefs and behaviors prior to the training. For example, respondents were asked specifically about how they attempted to incorporate various components of the *AfL* program in their classroom, both before the September training and at the time of the survey.

Response rate. After a low initial response rate of six percent (partly due to the timing of Thanksgiving break), researchers sent follow-up emails the principals of the pilot schools on November 30, 2009, to encourage participation in the survey. This email request increased the response rate to only 23 percent. An additional email was then sent by district personnel to building administrators and teachers on December 10, 2009. The survey window remained open until December 21, 2009, to allow pilot school personnel maximum opportunity to complete the survey before the semester's end. At the district's request, the December 10th message also included for the first time 14 of the district's resource teachers who received separate *AfL* training and serve as facilitators for classroom teachers in their efforts to implement the formative assessment program.

At the close of the fall survey window, 217 responses had been submitted, for a final response rate of 55 percent (Table 3.1). The overall response rate for classroom teachers was 51 percent, however, *AfL*-trained classroom teachers responded to the survey at

Table 3.1
Response Rates by Position

Position	Number of Surveys Completed	Number of Potential Respondents	Percent Participating	Percent of Total Survey Respondents
Classroom teachers (Total)	186	364	51%	86%
AfL-trained	*50*	*54*	*93%*	*23%*
Not AfL-trained	*136*	*310*	*44%*	*63%*
Resource teachers	12	14	86%	6%
Administrators	19	19	100%	9%
Total Respondents	217	397	55%	-----

Note. Percentages do not equal 100% due to rounding.

a rate of 93 percent. As the purpose of this project is to describe pilot personnel's response to the *AfL* training sessions, the response rate for this subgroup of respondents is of greater importance than the overall rate of response.

While there is no firm rule on adequate survey response rates, Babbie relays that "[a] review of published social research literature suggests that 50 percent is considered adequate for analysis and reporting. A response of 60 percent is good; a response rate of 70 percent is very good" (2008, p. 289). These guidelines, coupled with the high

response rate for *AfL*-trained teachers, give us confidence in our ability to provide a descriptive analysis of the data.

Representativeness of the sample. In order to help explain the moderate overall response rate of 55 percent, Table 3.2 provides school-level demographics for the classroom teachers in the eight pilot schools. As indicated, the distribution of classroom teacher respondents between elementary, middle and high school levels is similar to the distribution of overall faculty at these three levels in the pilot schools. Additionally, 92 percent (n=185) of the classroom teacher

Table 3.2
Teacher Demographics and Response Rates

School	School Level	# of Faculty	Years Experience	% with Masters or higher	# of Respondents	% of Faculty	% of Total Classroom Teacher Respondents	% of Total Classroom Teachers
		School-level Demographics						
A	Elem	30	12.2	100%	7	23%	4%	8%
B	*Elem*	*37*	*8.1*	*70%*	*11*	*30%*	*6%*	*10%*
C	Elem	29	15.7	93%	19	66%	10%	8%
D	*Elem*	*32*	*11.1*	*78%*	*11*	*34%*	*6%*	*9%*
E	Elem	28	9.9	75%	21	75%	11%	8%
F	Mid/High	61	11.0	77%	39	64%	21%	17%
G	Mid/High	61	10.6	80%	18	30%	10%	17%
H	Mid/High	86	12.0	93%	51	59%	27%	24%
All Elementary		156	11.2	92%	76[a]	49%	41%	43%
All Middle/High		208	11.3	88%	110[b]	53%	59%	57%
Total		364	11.3	90%	186	51%	-----	-----

Note. Teacher demographic data aggregated from data books (2008-2009), as compiled by the Accountability, Research, and Planning Department of JCPS. Percentages do not equal 100% due to rounding.
Italics denote schools that were not included in the interviews.
[a] Includes seven Elementary respondents who did not specify a school.
[b] Includes two Middle/High respondents who did not specify a school.

respondents hold a Masters degree or higher, which also mirrors the educational attainment of the faculty at the pilot schools. Lastly, the average years experience in the pilot schools is 11.3 years (Table 3.2); for the classroom teacher respondents, the highest reported frequency of experience is in the 11 to 15 year range.

The one concern is in the distribution of *AfL*-trained classroom teachers within the pilot schools versus the survey respondents. The *AfL*-trained classroom teachers make up 15 percent of the pilot schools' population, but they account for 23 percent of the survey responses. This discrepancy is not surprising considering the *AfL*-trained teachers heightened interest in the subject of the project.

In order to identify any possible bias due to the timing of respondents' survey submission, we created a contingency table by dividing respondents into two categories based on their training status and three categories based on the date of survey completion in relation to the three email notifications. Table 3.3 shows that those respondents who received the training tended to complete the survey with less prompting than those who did not receive the training, suggesting that respondents who took part in the training were more inclined to complete the survey from the outset.

Data analysis. Once the initial survey data were uploaded into SPSS, preliminary case summaries and descriptive statistics were run to identify any anomalies that needed to be scrubbed and/or variables that needed to be recoded. After testing for internal reliability, composite variables were then constructed to measure perceptions of teaching, perceptions of professional development, individual classroom practices and behaviors, and perceptions of collaboration in the building (Appendix D). Further statistical analyses will be discussed in the various findings sections that follow.

Qualitative Interviews

As the focus of this project is the response of pilot school teachers and principals to the *AfL* training, interviewing pilot school personnel provided a way to uncover substantive data from the emic perspective, or that of the practitioner. To achieve these ends, we were intentional in developing interview protocols that addressed the anticipated gaps in the survey data. Namely, we sought to learn about teachers' and principals' experiences with the initial adoption phase of the *AfL* initiative in order to better understand the complexities surrounding transfer of training in context of the *AfL* initiative.

Table 3.3
Training Status by Survey Reminder

	Initial email Nov. 13	1st follow-up Nov. 30	2nd follow-up Dec. 10	Total
AfL-trained	17.8% (13)	28.8% (21)	53.4% (39)	100.0% (73)
Not *AfL*-trained	6.3% (9)	28.5% (41)	65.3% (94)	100.0% (144)
Total	10.1% (22)	28.6% (62)	61.3% (133)	100.0% (217)

Note. Count is in parentheses. N=217. Pearson χ^2 = 7.495, df = 2 at *p* = .024.

Patton (2002) describes the importance of uncovering patterns, themes, and categories in qualitative research through creative and critical methods. In this way, systematic analysis is used to arrive at meaningful observations about the data. This process, known as substantive significance, requires qualitative researchers to carefully review and weigh their own interview experiences and judgments against the responses of those interviewed, as well as those who read and review the final research results.

Data collection. In order to facilitate this process, we first developed interview probes focused on the key project questions derived from our initial construct map. These questions, which informed our interview protocol, are as follows:

- What is the school culture concerning collaboration, specifically as it relates to formative assessment?
- How have pilot schools responded to the *Assessment for Learning* program at the school and classroom levels?
- What influence has the *Assessment for Learning* training had on instructional practices and attitudes in the pilot schools?
- What institutional and individual obstacles do teachers face in adopting *Assessment for Learning*?

Each project question contained sub-categories and corresponding questions (Appendix E). For example, project question #1 contained five sub-categories and questions related to collaboration around formative assessments, collaboration around summative assessments, teachers' role in collaboration, principals' role in collaboration,

and students' role in collaboration. Interview questions were developed within these each sub-category and project question for teachers, principals and resource teachers.

Interview protocol. Drawing from the guidelines for qualitative interviewing that Patton (2002, p. 346) espouses, we chose to use a semi-structured interview protocol specific for each group of interviewed personnel. This design minimized variation across the three project team members conducting interviews, but still allowed for further exploration of themes during the course of an interview (Appendix F). Furthermore, the semi-structured approach provided a script that allowed researchers to be efficient, which was particularly important due to time limitations imposed by the school bell schedule. Additionally, the standardized nature of the protocol question facilitated the data analysis phase of the project since responses were presorted into four major bins associated with our project questions: perceptions of collaboration around formative assessments, classroom practices related to *AfL* components, respondents' beliefs and attitudes concerning their role as educators, and obstacles to *AfL* adoption.

Sample of schools. In early November, interview sessions were conducted at a purposive sample of six pilot schools: three elementary, one middle school, and two high schools. The ability to choose a random sample of schools was limited by the size of the district's *AfL* pilot phase. Similarly, due to the project's limited research window, it was not possible to interview personnel at all eight pilot schools. In order to study *AfL* adoption in as many and varied settings as possible, however, we chose to conduct interviews at three of the five pilot elementary schools, in addition to the one middle school and two

Table 3.4
Student Demographics at Pilot Schools

School	School Level	AYP	Enrollment	White	A. American	Other	FRL
A	Elem	Y	559	32%	38%	29%	37%
B	*Elem*	*N*	*578*	*48%*	*30%*	*22%*	*81%*
C	Elem	Y	607	56%	26%	19%	32%
D	*Elem*	*N*	*624*	*63%*	*28%*	*9%*	*69%*
E	Elem	N	473	67%	23%	10%	69%
F	Mid/High	N	914	38%	39%	23%	82%
G	Mid/High	N	1161	63%	21%	16%	48%
H	Mid/High	N	1505	49%	39%	12%	59%
All Elementary		-----	2596	56%	40%	-----	52%
All Middle/High		-----	3425	46%	51%	-----	67%

Note. Student data aggregated from school profiles (2009-2010 school year), as compiled by the Accountability, Research, and Planning Department of JCPS. Percentages do not equal 100% due to rounding.
Italics denote schools that were not included in the interviews.

high schools. The three elementary schools were selected to maximize heterogeneity of the sample after examining student and teacher demographics at each school (Table 3.4). The two schools where interviews were not conducted were demographically similar to the six where they were conducted, so we felt that findings from our chosen sample would provide a reliable representation of *AfL* adoption at the eight pilot schools.

Selection of interviewees. In selecting personnel to be interviewed at each school, we utilized a stratified purposeful sampling model driven by our project design. To this end, we interviewed the three to five trained teachers and principal at the six schools that comprised our interview sample. Then we worked with principals to determine a matched comparison group of teachers to also be interviewed at each school. For this third set of personnel interviews, the primary consideration for researchers and principals was to select non-trained teachers who mirrored the grade and/or subject area of the teachers who participated in the *AfL* training session in September.

All total, 19 *AfL*-trained teachers, 14 non-trained teachers, and three principals were interviewed (Table 3.5). Interviews were conducted in groups of two to four teachers for both treatment and control groups. By participating with their colleagues, teachers are generally more at ease during the interview process, and subsequently more often willing to share information, which in this case concerned *AfL* program adoption.

As only one principal at each school participated in the *AfL* training, these interviews were conducted one-on-one with a researcher. In addition, researchers conducted

Table 3.5
Pilot School Interview Participants

School Level	# of Schools	# of Total Teachers	# of *AfL*-trained Teacher Interviewees	# of Control Group Teacher Interviewees	# of Administrator Interviewees	# of Resource Teacher Interviewees
Elementary	3	87	10	9	3	1
Middle/High	3	208	9	5	3	2
Total	6	295	19	14	6	3

phone interviews with three district resource teachers at the elementary, middle and high school levels respectively, who had taken part in a separate *AfL* training during September 2009. All interview sessions lasted roughly 35-50 minutes.

Data analysis. Because the purpose of this project is to provide the district with an understanding of how trained teachers have responded to the two-day *AfL* training session, as well as where the pilot schools are in the adoption process, we conducted a combination of the applied research model and the summative evaluation model that Patton describes (2002, pp. 217-220). As such, responses from interviewed personnel directly informed project findings. Specifically, we drew on interview findings to report on *AfL* pilot schools' adoption progress, and also to provide recommendations for moving forward.

To determine key findings for each of our project questions, interview recordings were first transcribed verbatim. Then, using the complete set of interview transcripts we read over the transcripts to gauge the overall tone of responses. During our second reading of the transcripts, we identified initial themes based on the bins associated with the interview protocols and highlighted illustrative quotes for each bin. In the third reading, we created a concept-specific level I

matrix for each interviewee driven by the interview protocols.

After reading through the interview transcripts a final time to ensure all substantive responses were included in the level I matrices, we developed a coding scheme to highlight the key concepts of our project outlined in our project construct map (Appendix E). We then reviewed the level I matrices for individual interviewees' emergent and divergent patterns, as well as across interviewee groups (*AfL*-trained teachers, untrained teachers, administrators, and resource teachers). These emergent and divergent patterns were then coded into a level II matrix, which organized themes and quotes according to the same bins as the level I matrices (Appendix G).

Limitations of the Project Design

Survey limitations. As discussed previously, the response rate for the survey was adequate, but there are limits to the generalizability of findings as a result of the potential self-selection bias of survey respondents. In consideration of the fact that principals at each of the eight pilot schools elected into the pilot program, then at their own discretion chose the teachers from their school to be trained in September, we are careful not to make unfounded recommendations for other schools in the district based solely on the survey data.

Additionally, the retrospective pretest design, while intended to measure changes in the pilot participants' perceptions and behaviors, is limited in its ability to measure similar changes in non-*AfL* trained respondents. Furthermore, the retrospective pretest design can in some cases create what is known as a "good subject" effect (Orne, 1962). In other words, respondents may indicate that growth has occurred because they realize that is what is expected.

Due to the nature of the district's on-line survey system, it was not possible to create a separate survey instrument for personnel in each of the four different groups (*AfL*-trained classroom teachers, *non-AfL* trained classroom teachers, *AfL*-trained principals and resource teachers, and *non-AfL* trained principals and resource teachers). Instead, using a single instrument for all surveyed personnel required careful wording of questions concerning the *Assessment for Learning* program and training. For example, in the section on individual classroom beliefs and behaviors, we adapted questions from a self-assessment survey used by the *AfL* program so that non-*AfL* trained teachers would understand the nature of the questions. In doing so, we are able to report on all teachers' perceptions and use of the larger concepts of the *AfL* program, like providing student feedback, rather than on the *AfL* program itself. Using a single survey instrument in this way, however, poses a risk that respondents might misinterpret their knowledge and implementation of *AfL* program components. This is particularly a concern for non-*AfL* trained teachers. That being said, the survey does provide valuable descriptive data of specific aspects of program adoption by the trained teachers, specifically reported changes in classroom practices and behaviors following the *AfL* training.

Interview limitations. While there are a number of strengths to the semi-structured interview design, there are also some limitations that are important to consider. Though flexibility to follow-up standard protocol questions with potentially unscripted probing questions allows for more natural, conversational dialogue and puts participants at ease, this flexibility raises a potential concern about interview validity in that the unscripted follow-up questions are not uniform across interviews.

What is more, the semi-structured interview also allows for a measure of flexibility in the ordering of protocol questions. Interviewers are able to dictate question order based on the flow of the conversation. However, changing the order of the scripted questions might mean that some participants are more predisposed, or primed, to give a particular type of response. This again raises a concern about validity.

Finally, the process of selecting interview participants posed an additional limitation for this project. Pilot school principals ultimately decided which teachers participated in the *AfL*-training, as well as which teachers were assigned to the non-trained teacher interview groups. Principals potentially could have selected teachers who would be accommodating of the principal's feelings towards *AfL* program adoption. Thus, selection bias is certainly a threat to findings.

The issue of time is also a limitation to the qualitative piece of this project. The constraint of 35-50 minute, one-shot interviews in some ways reduced interviewers' ability to establish strong rapport with interviewees. This time limitation for on-site interviews might have led to some degree of tentativeness in the participants' responses.

Section 4: Project Question 1 – What is the school culture concerning collaboration, specifically as it relates to formative assessments?

Our first project question investigates the relationship between a school's culture of collaboration and the use of formative assessments. The *AfL* program calls for a high level of partnership and collective reflection, thus we were particularly interested in understanding the culture of collaboration in the *AfL* pilot schools. Specifically, we wanted to learn more about collaborative practices around the creation of learning targets, analysis of various types of assessment (i.e. benchmark testing, course exams, informal formative assessments, etc.), and also the role(s) teachers, administrators, and students play in the collaborative process. To this end, both interview and survey protocols were designed to elicit information about school level collaboration.

Our findings indicate that teacher collaboration was taking place in the pilot schools prior to the 2009-10 school year. In addition, since the September *AfL* training, it appears that the focus of collaboration among *AfL*-trained teachers has increasingly been on instruction and assessment. What is more, a majority of respondents also indicate that they use data to inform both individual and collaborative planning and instruction. Findings also suggest that students are taking an increasingly active role in conversations about teaching and learning, though many

teachers and principals still have concerns about finding sufficient time for collaboration around the many aspects of the *AfL* program.

Perceptions of School-based Collaboration

Survey respondents were asked a series of questions about their perceptions of collaboration taking place in their schools; specifically questions focused on collaboration on using of data in a formative manner. These items were grouped into three composite variables: perception of collaboration last year, perception of collaboration this year, and perceptions of the extent that data is used in the school. Results suggest that instructional personnel in the pilot schools have a strong perception of intentional collaboration along the lines of what is suggested in the *Assessment for Learning* program.

The current culture of collaboration. Based on survey responses from all pilot school personnel, both trained and untrained, there appears to be strong agreement that collaboration around the use of data to inform instructional decisions is occurring in the pilot schools. 85 percent of respondents agreed or strongly agreed that collaboration was had occurred in their school during the previous
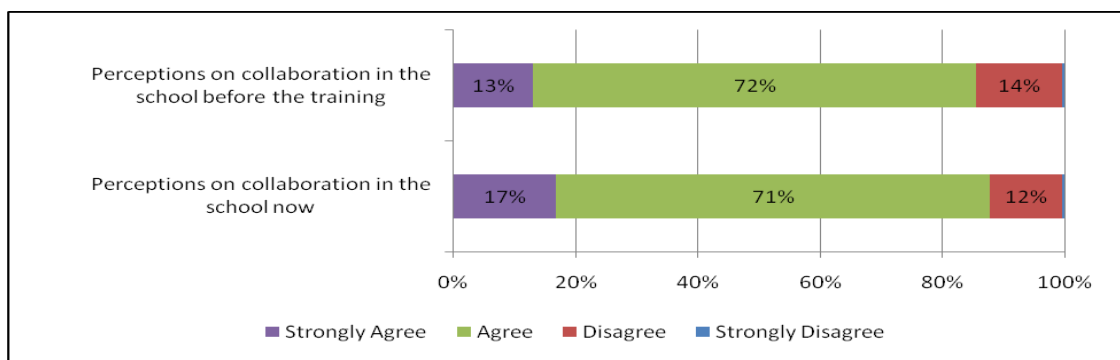

Figure 4.1. Perceptions of collaboration for all respondents.

Table 4.1

Differences in Perceptions on Collaboration by School Level

	Elementary (N=75)	Middle/High (N=110)	Mean Difference
Perceptions on collaboration before the school year	3.05 (.457)	2.86 (.480)	0.19**
Perceptions on collaboration now	3.15 (.440)	2.91 (.499)	0.24***

Note. Means are reported on a 4 point scale with higher values showing greater agreement. SD in parentheses below reported means.

** $p < .01$.

*** $p < .001$.

school year (Figure 4.1). For the current school year, the percentage agreeing or strongly agreeing that collaboration is taking placed increased to 88 percent (Figure 4.1).

In examining responses by grade level groups, a statistically significant difference in perceptions on collaboration between the elementary and middle/high school respondents was observed. Table 4.1 shows elementary respondents with significantly higher means on both composite variables than the middle/high school respondents. Interview responses confirm this commitment to collaboration around data use in the elementary schools, where teachers often report engaging in collaboration on their own time before or after the normal school day. *"My AfL-trained teachers continue to meet despite the lack of professional development*

money," reported an AfL-trained elementary principal.

AfL training encourages collaboration. Survey findings also indicate that the *AfL* training appears to encourage intentional collaboration around using data. While there is no significant difference between *AfL*-trained and untrained respondents' perceptions of collaboration during the previous school year, Figure 4.2 shows a difference in means that is significant at the $p<0.05$ level. An *AfL*-trained middle/high school principal offered conformation of these results in describing the effect the training has had on the pilot participants in her school. *"The AfL-trained teachers have formed their own little learning community,"* she stated.
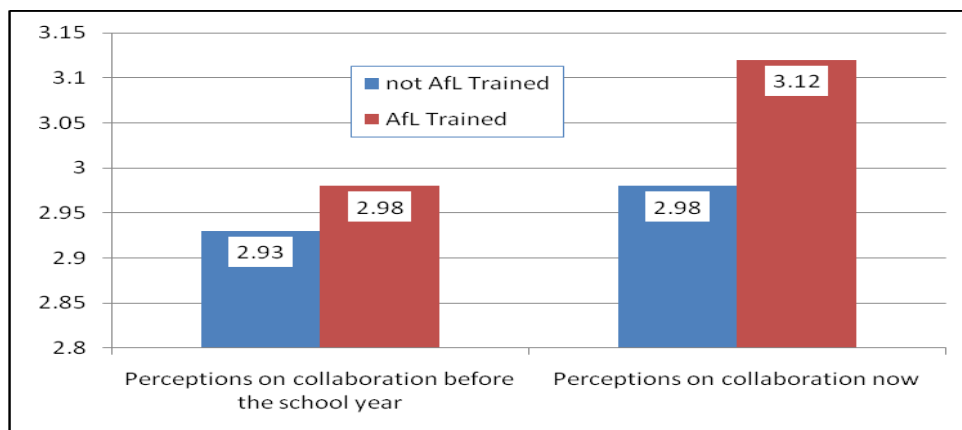
Figure 4.2. Difference in perceptions by training status.

Giving students a seat at the table. In interviews with both teachers and principals who participated in the two-day *AfL* training in September, belief that *AfL* was having a positive effect on the culture of collaboration was widespread. Not only did they report that collaboration between teachers was occurring, but they also stressed the inclusion of students in the collaborative process. A middle/high school teacher stated, *"We're bringing kids into the process, we're teaching them how to understand assessment, and that's huge."* Another middle/high school teacher noted a change in her students' academic behavior, observing, *"Students are able to articulate learning targets and ask for help, take ownership."* One middle/high school teacher also noted the importance of placing the student at the center of the assessment process as part of the *AfL* initiative. This teacher stated, *"Students now have a different understanding of formative assessment, that this is to help them grow, and not just another quiz."*

> *"We're bringing kids into the process, we're teaching them how to understand assessment, and that's huge."*

Fear of the unknown. Teachers who did not receive the two-day training were generally more apprehensive about the additional time-consuming collaboration that *AfL* seems to require. A middle/high school teacher in the non-trained, control group stated, *"It would be nice to interact with other teachers to follow up and to discuss how teaching has changed since the October 5th*

session. But there is no time for formal collaboration."* A control teacher in the same school echoed this concern, adding, *"AfL would be more successful if they gave us an additional period for collaboration."* An elementary teacher also in a control group noted, *"For 3rd grade, we haven't really done anything, we're just talking about (AfL)."*

Use of Data to Inform Instruction

As our interview and survey findings make apparent, the two-day *AfL* training that select teachers, administrators, and resource teachers attended had a distinctly positive effect on program knowledge and also trained teachers' assessment practices. Prior to the fall training, pilot schools' focus was strictly on summative assessment results; since the training however, trained teachers and principals report that they are attempting to structure collaboration around formative assessment, while also making greater efforts to use summative data in a formative way.

Data drives instruction. Respondents report frequent use of data in making instructional decisions. For example, 20 percent of the respondents indicate that data was being used at least once a week or more in their building (Figure 4.3). An additional 56 percent of surveyed personnel report using data once or twice a month (Figure 4.3). When broken down by school level,
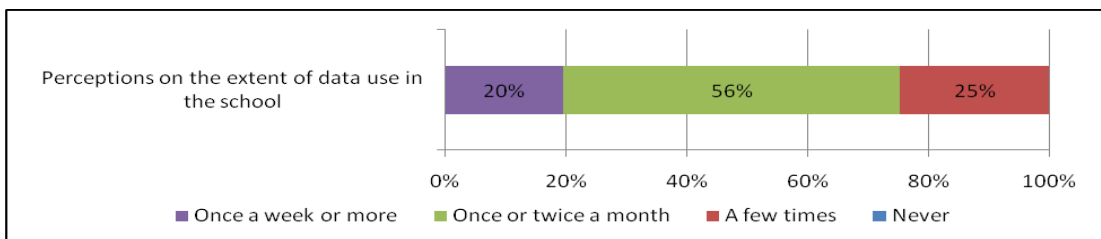

Perceptions on the extent of data use in the school

| 20% | 56% | 25% |

0%   20%   40%   60%   80%   100%

■ Once a week or more ■ Once or twice a month ■ A few times ■ Never

Figure 4.3. Perceptions of data use for all respondents.

elementary respondents report a greater frequency ($M = 3.11$, $SD = .529$) than middle/high school respondents ($M = 2.70$, $SD = .529$), $t(183) = 4.630$, $p<.001$.

Data and accountability is nothing new. In the current NCLB era of assessment accountability, it is of little surprise that most teachers and principals interviewed portrayed themselves as fairly adept at using assessment data even before they attended the *AfL* training. For example, one principal, in summing up the use of data at her school stated simply, *"We're used to using data all the time. I'm very data-driven as a principal"* (EL pilot principal). Another principal described the process of reporting and analyzing student assessment results at her school before the *AfL* training, saying, *"Teachers submit common assessment results to me; they are entered into CASCADE. Then I meet with teachers in grade level team meetings once or twice a month to talk about what the data means for instruction"* (EL pilot principal). Similarly, another principal reported using data *"to start tough conversations with teachers."* She went on to justify her rationale for this data-driven approach explaining that by referencing the data (i.e. student behavior referrals, assessment scores, etc.) the problem, and subsequently the path to resolution is *"not subjective, it's objective"* (MS pilot principal).

"There is more awareness of good assessment design, which has led to changes in class assessments"

A more balanced approach. Our interviews and survey results revealed that pilot schools were regularly using data before the *AfL* training. Table 4.2 shows the percent of respondents who use the various existing assessments in JCPS. However, teachers and principals alike report that following the training, their use of data expanded from a predominant focus on the summative to an increasingly more balanced approach that focuses on both summative and formative data. On the survey, respondents were asked about the extent to which they use various types of assessments for a variety of formative means. As numerous interview quotes illustrate, in many cases teachers and schools are trying to intentionally blend the two by using summative results in a formative way.

Table 4.2
Percent of Teachers Using Assessments for DDDM

Type of Assessment	Percent of Respondents
KCCTs[a]	70.1% (136)
CCAs[b]	69.6% (133)
DIBELS[c]	38.7% (75)

Note. N=194. Frequencies are in parentheses.
[a]KCCTs are state-level, criterion-referenced tests on Kentucky's content standards administered in grades 3-8 and 10-12.
[b]CCAs are district-wide benchmark exams used to prepare students for the KCCTs.
[c]DIBELS is a test of basic early literacy skills in the elementary grades.

For some, this is a new endeavor, sparked by the training; for others, it is building upon strategies that were already in place. *"We consider the Common Comprehensive Assessments to be formative, and always have,"* quoted one elementary pilot principal. Another commented that he believes following the *AfL* training, *"There is more awareness of good assessment design, which has led to changes in class assessments"* (EL pilot principal). Yet another, at the high school level, attested that while his school was attempting to utilize results of both summative and formative assessments, *"My teachers feel there is more value in their formative assessments than in the district summative assessments"* (HS pilot principal).

Digging up the data. Regardless of where schools are in building a balanced system of assessment that succeeds in blending both formative and summative assessments, since the training, *AfL*-trained teachers and principals appear to be consistently employing strong assessment practices that yield useful data. One teacher described her intentional approach to using formative data to drive instruction, saying, *"I use results from formative quizzes to decide what students need to work on; I have student leaders lead each group to work on needed targets"* (MS pilot teacher). Another declared, *"I've really had success with the post-test checklist for students"* (HS pilot teacher). One elementary principal seemed to sum up the effect of formative data on instructional practices in pilot teachers' classrooms in his pronouncement that, *"Since the training, there is more awareness of good assessment design, which has led to changes in class assessments"* (EL pilot principal).

Section 5: Project Question 2 – How have pilot schools responded to the *AfL* program at the school and classroom level?

Our second project question focused on the *AfL* adoption process in the pilot schools. Specifically, we wanted to understand how teachers and principals transformed their developing knowledge of the program into concrete strategies for adopting *AfL*. Given the deliberately unscripted district approach to the *AfL* initiative, pilot schools were free to begin with any one of the seven *AfL* steps, or "Keys to Quality Assessment" as they are called in program materials. What was the rationale for beginning with a particular key? How would schools assess their progress in putting this key into practice? What was the timetable and plan for integrating additional keys or strategies?

Our findings from the survey and interviews indicate that in this first year of program adoption pilot schools report widespread use of the *AfL* program components, both in the *AfL*-trained and untrained teachers. Schools have uniformly chosen to take an incremental approach to

adopting the program, selecting two or three key components as a starting point for program adoption. Trained personnel recognize that the *AfL* program is a complex undertaking and will take several years to adopt in full. Finally, *AfL*-trained teachers and principals also indicate that embedded PD time is a natural fit for *AfL* collaboration and development, but that finding adequate time for program related planning and reflection remains a barrier.

A New Way of Thinking

Survey findings suggest that teachers are by and large comfortable with core *AfL* instructional methods and practices. Creating a composite variable of eight items that are integral to the *AfL* program shows the frequency of classroom practices and behaviors related to program adoption. Figure 5.1 shows that 55 percent of respondents used *AfL* components either
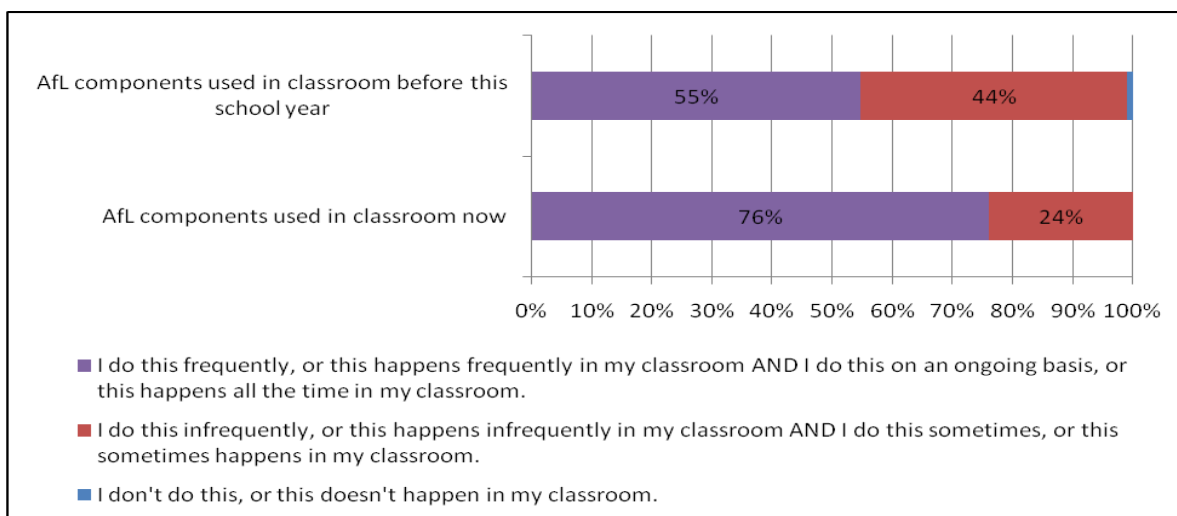

Figure 5.1. Overall reported use of the *AfL* components.

frequently or all the time. For the current year, 76 percent of the respondents reported using these same components frequently or all the time (Figure 5.1). An elementary teacher from a control group reinforced this observation, stating, *"What is so valuable about AfL is that it is not anything new, it's just thinking about what you're doing a little differently."*

Target Practice

For each of the eight items related to the *AfL* program, survey results show a statistically significant difference in the mean between last year and the current school year (Table 5.1).

The survey responses also suggest, however, that teachers focus primarily on a few key *AfL* program components. When results are grouped by teacher-centered and student-centered items, it becomes apparent that respondents report greater frequency of teacher-centered items (M = 4.12, SD = .629) than student-centered items (M = 3.68, SD = .795), $t(194)$ = 10.629, p<.001. What is more, upon closer inspection, elementary respondents engage in the teacher-centered

> *"What is so valuable about AfL is that it is not anything new, it's just thinking about what you're doing a little differently."*

Table 5.1
Overall Respondents' Use of AfL Components

Teacher-centered items	Before this school year	Now
I inform my students regularly, in terms they can understand, the achievement targets or learning objectives they are to learn	3.81	4.28
I consistently use classroom assessment information to revise and guide teaching and learning	3.96	4.25
My feedback to students is frequent, descriptive, constructive, and immediate, helping students know how to plan and improve	3.83	4.20
I transform these learning targets or objectives into dependable assessments that yield accurate information	3.55	3.94
I use assessments to build student confidence	3.48	3.90
Student-centered items		
My students can describe what targets or objectives they are to learn	3.46	3.94
My students are actively involved in assessment, including learning to manage their own learning through skills of self-assessment	3.13	3.56
My students consistently communicate with teachers and parents about their achievement status and improvement	3.13	3.53

Note. Based on 5 point scale where the higher the number the greater the frequency of use. N=185-199.
All differences are significant at the p < .001 level.

behavior with a statistically significant greater frequency than the middle/high school respondents (Table 5.2).

There are two individual components within the teacher-centered items in which the elementary teachers' survey results show a significant difference (Table 5.3). Elementary teachers report informing students of the learning targets at a higher frequency than do the middle/high school teachers. Likewise, elementary teachers report a higher frequency in the use of classroom assessments to revise and guide instruction than middle/high school teachers.

Table 5.2
Teacher- and Student-centered Behaviors by Respondent Groups

	School Level				Training Status			
	Elementary[a]	Middle/ High[b]	*t*	df	*AfL-* trained[c]	Not trained[d]	*t*	df
Teacher-centered behavior BEFORE this school year	3.78 (.734)	3.64 (.837)	1.166	183	3.65 (.788)	3.76 (.803)	.880	197
Teacher-centered behavior NOW	4.23 (.582)	4.00 (.686)	2.373*	184	4.24 (.633)	4.07 (.656)	1.664	199
Student-centered behavior BEFORE this school year	3.17 (.843)	3.27 (.876)	.774	179	3.27 (.868)	3.26 (.865)	.081	192
Student-centered behavior NOW	3.68 (.752)	3.64 (.833)	.292	181	3.87 (.775)	3.60 (.775)	2.153*	193

Note. Based on 5 point scale where the higher the number the greater the frequency of use. SD is in parentheses below the mean.
[a] n=73-76. [b] n=108-110. [c] n=56-60. [d] n=138-141.
* $p < .05$.

Table 5.3
Use of AfL Components by Respondent Groups

	School Level				Training Status			
	Elementary[a]	Middle/ High[b]	*t*	df	*AfL-* trained[c]	Not trained[d]	*t*	df
I inform my students regularly, in terms they can understand, the achievement targets or learning objectives they are to learn	4.47 (.683)	4.14 (.863)	2.803**	181	4.26 (.849)	4.28 (.783)	.191	194
I consistently use classroom assessment information to revise and guide teaching and learning	4.41 (.742)	4.13 (.897)	2.214*	179	4.28 (.840)	4.24 (.839)	.287	191
My feedback to students is frequent, descriptive, constructive, and immediate, helping students know how to plan and improve	4.30 (.674)	4.10 (.796)	1.792	182	4.28 (.701)	4.17 (.758)	.988	194
I transform these learning targets or objectives into dependable assessments that yield accurate information	4.00 (.993)	3.88 (1.002)	.823	176	4.09 (.900)	3.88 (1.008)	1.346	187
I use assessments to build student confidence	3.96 (.971)	3.80 (.911)	1.145	181	4.14 (.789)	3.80 (.964)	2.369*	194
My students can describe what targets or objectives they are to learn	3.95 (.842)	3.90 (.995)	.290	177	4.20 (.862)	3.83 (.919)	2.557*	189 *
My students are actively involved in assessment, including learning to manage their own learning through skills of self-assessment	3.56 (.913)	3.51 (1.022)	.320	178	3.76 (.989)	3.48 (.971)	1.769	189
My students consistently communicate with teachers and parents about their achievement status and improvement	3.54 (1.020)	3.50 (.922)	.302	175	3.64 (1.052)	3.48 (.961)	1.002	186

Note. Based on 5 point scale where the higher the number the greater the frequency of use. SD is in parentheses below the mean.
[a] n=72-76. [b] n=104-110. [c] n=54-58. [d] n=132-139.
* $p < .05$. ** $p < .01$

Similar Starting Spots

The interview findings appear to support these practices at the pilot schools. Through careful review and coding of interview transcripts, it became clear that pilot schools focused primarily on three of the seven *AfL* "Keys to Quality Assessment" in the early stages of program adoption. These selected keys all fall into the teacher-centered category: defining a clear purpose, using learning targets that have been rewritten in student friendly, and facilitating student self-evaluation after formative and/or summative assessments. Furthermore, the rationale for choosing these keys as a starting point for program adoption was on the whole consistent between schools. For instance, one elementary principal explained his schools' decision to start with the clear purpose and learning targets, saying that, *"they were the easiest and most natural to implement."* Another elementary school chose to begin

> *"I've changed my whole teaching style so that now I start with the end, the assessment and build backwards…"*

with learning targets and the student self-assessment checklist because, according to the principal, the school's *AfL* team felt that these two aspects of the program were an obvious pairing in that *"they are related to each other in a concrete fashion."*

Increased Instructional Focus

Furthermore, the *AfL* training and program adoption process appears to have made teachers more aware of the overarching goals of *AfL* and more adept at incorporating key program components in the classroom (Figure 5.2). Prior to the training, there was no significant difference between the trained and untrained groups in their use of the *AfL* program components. In the current school year, however, the mean difference between the two groups is significant at the *p*=.05 level.

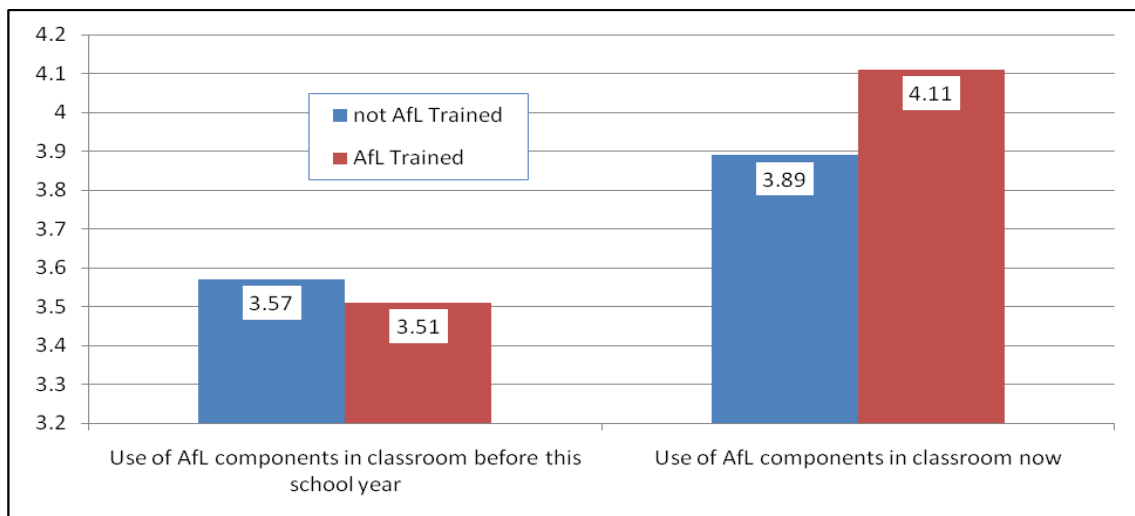This impact of the program was reaffirmed by one *AfL* trained middle/high

Figure 5.2. Difference in use of all *AfL* components by training status.

school teacher, who claimed, *"I've changed my whole teaching style so that now I start with the end, the assessment and build backwards; I use learning targets daily so students know what they need to know when they leave my class."* This increase in transparency and intentionality in teachers' approach to instruction and was echoed by numerous other trained teachers, including one middle school teacher who said *"I have converted standards into learning targets that my students can understand; I've also sent them home to parents."*

Additionally, *AfL*-trained respondents engage in the student-centered aspects of the program with greater frequency ($M = 3.87$, $SD = .775$) than untrained respondents ($M = 3.60$, $SD = .775$), $t(193) = 2.153$, $p<.05$ (Table 5.2). More specifically, survey responses from teachers who participated in the training reveal significantly higher rates for the following two items: use of assessments to build student confidence and students' ability to describe learning targets (Figure 5.3).

No Rush

There also seems to be a general consensus among the pilot schools that *AfL* is

best approached in an incremental, deliberate way, with an eye towards generating genuine teacher buy-in. This measured approach is meant to avoid the common distrust of new interventions or programs that dissipate rapidly after only one or two years. Pilot administrators were quick to quote Stiggins in what they believe is an important assertion -- that full *AfL* adoption is a three to five year process. As such, one elementary principal reported when interviewed, that he is directing his staff to engage in a *"reading year"* with the *AfL* material, and plans to move towards actual adoption during the 2010 -11 school year. Another elementary principal said that she *"didn't implement AfL school wide immediately; I chose to work first with AfL trained teachers, in order to anticipate staff questions and implementation issues."* A trained teacher at this same school seemed to be in accord with the principal's sentiment, explaining *"AfL teachers are building a school wide pilot unit for social studies to test out AfL concepts; guided also by district-mandated content."*
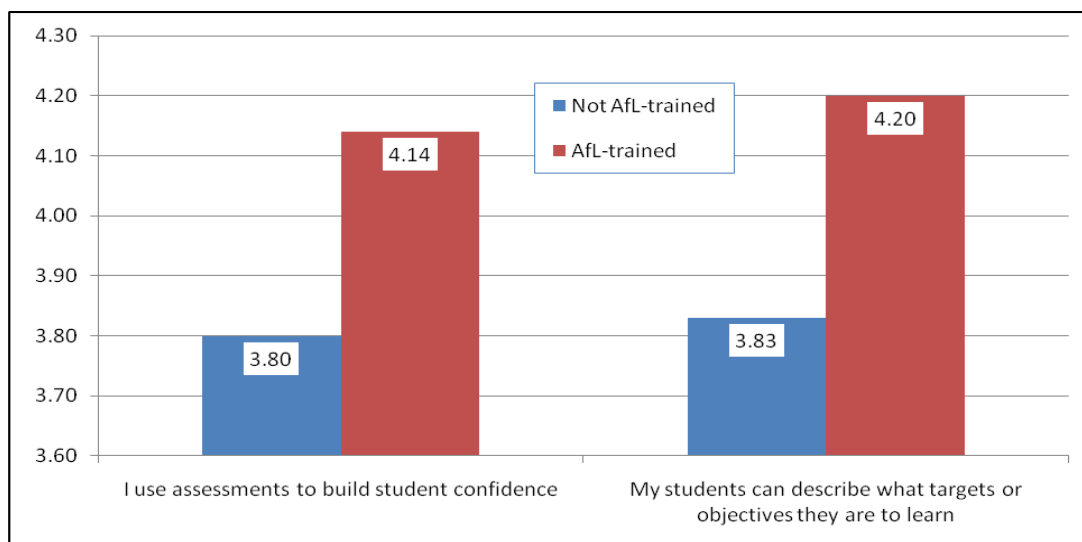

Figure 5.3. Difference in use of student-centered *AfL* components by training status.

Section 6: Project Question 3 – What influence has the *Assessment for Learning* training had on instructional practices and attitudes in the pilot schools?

Another key question that guided our interviews and survey work was that of *AfL* training transfer. Specifically, as requested by our client, we were interested in discovering what teachers and administrators learned about *AfL* during the two-day training in September as evidenced by what aspects of the program they were attempting to apply at the school and classroom level.

To learn more about the transfer of *AfL* program knowledge and practices in pilot schools, we designed survey questions and interview protocol to elicit information regarding educators' understanding of formative assessment, and the degree to which they were endeavoring to adopt the *AfL* program itself (See Appendix B and F for complete survey and interview protocols). Given that *AfL* program adoption greatly depends on effective professional development, we were also interested to learn about pilot school personnel's perceptions of professional development and teacher efficacy as these perceptions might affect the extent of the *AfL* training's influence. Finally, we also fielded a short follow-up survey in late March to gauge the extent to which teachers and principals in the pilot schools were still attempting to use the program in the second semester of the 2009-10 school year.

Survey and interview findings suggest that the two-day training was instrumental for teachers and principals in gaining a strong grasp of essential *AfL* concepts specifically as related to sound assessment and instruction. On the whole trained-teachers' indicate that they are comfortable with the first two "Keys to Quality Assessment" and have incorporated these in their classrooms. Furthermore,

trained teachers and principals appear to be using data to drive instruction and attempting to take a more balanced approach to blending summative and formative assessments. Not all teachers in the pilot schools report using data to inform instruction however, thus this appears to be an area that needs continued focus as program adoption efforts continue.

Perceptions of Teacher Efficacy and Professional Development

AfL is also having an impact on the structure and content of some school-based instructional teams, although this is not yet uniform throughout the pilot schools. JCPS, like numerous other large public districts, has adopted a school-based model for professional development. This embedded approach to professional development is supported by recent research that underscores the importance of school-based professional development that is incorporated into teachers' daily activities (Garet, et al., 2001; Coburn, 2003; Desimone, 2009). Such an approach requires teachers and administrators to actively and regularly take part in a variety of professional development activities directly linked to curriculum, content and instruction.

Teachers' perceptions of the profession. In order to identify the receptiveness of pilot school personnel to a program like *AfL*, composite variables were created for beliefs about teacher efficacy and professional development in general. An overwhelming number of the respondents indicate agreement with the idea that teachers can affect student learning. Figure 6.1 shows a breakdown of
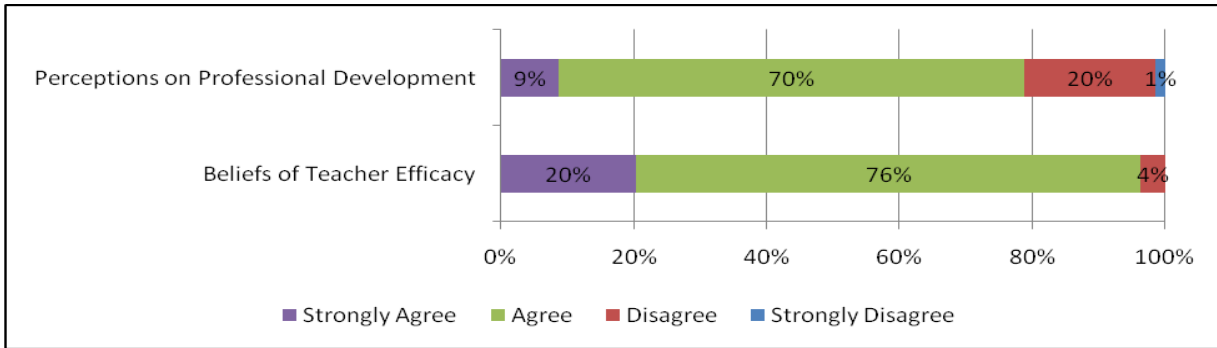
Figure 6.1. Respondents' beliefs about teacher efficacy and professional development.

the 96 percent that report that they agree or strongly agree with this statement. Additionally, 79 percent report that they believe professional development is usually worthwhile (Figure 6.1).

A natural fit with embedded professional development. In terms of the *AfL* training's influence on embedded PD in the pilot schools, a quick look at survey responses divided by those who received training and those who did not shows a significant difference between the two groups for both perceptions of professional development and beliefs of teacher efficacy (Figure 6.2). It is not possible from the

results of the personnel survey however, to determine if the *AfL* training caused teachers to hold a more favorable view of professional development. Though not the focus of this project, it is distinctly possible that the pilot school teachers chosen to take part in the *AfL* training were already disposed to think favorably about professional development, though interview results do lend credence to the notion that the *AfL* training had a positive influence on teacher views.

For example, one high school teacher stated, *"we're trying to replace our monthly quality teams meeting with Stiggins stuff and adding a Stiggins-type walk-through checklist for administrators."* A middle school teacher

Figure 6.2. Differences in beliefs by training status.

who attended the *AfL* training provided a similar observation. *"We (the three AfL-trained teachers) have become an AfL learning community, and now we're going to start becoming leaders for other learning communities at each of our respective grade levels in the school."*
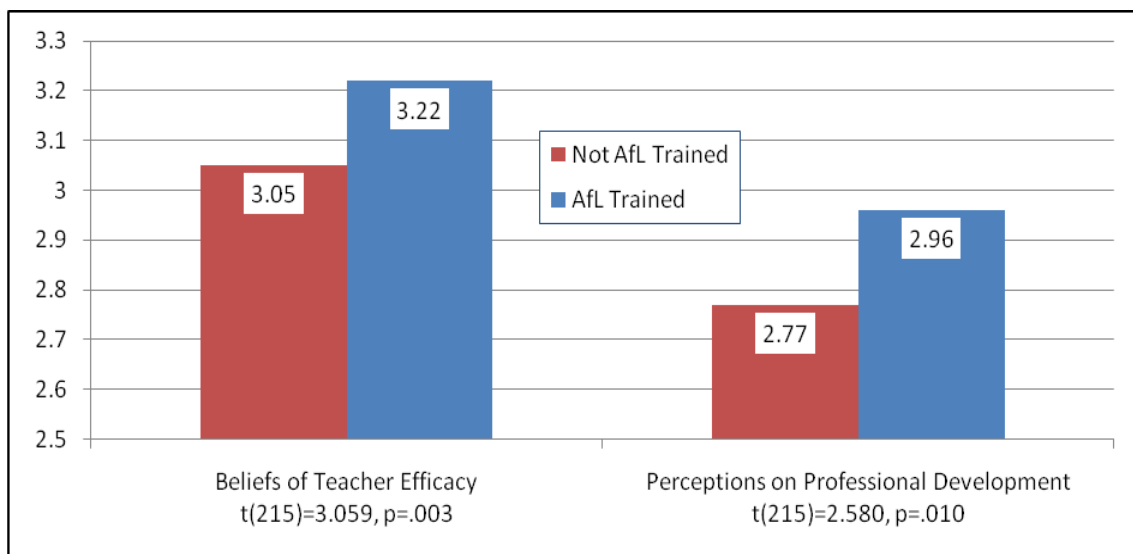
Knowledge of *AfL*

Through thorough review of our interview transcripts, analysis of survey results, and relevant extant literature, several significant findings emerged with respect to the question of training transfer. Teachers and principals who attended the two-day *AfL* training sessions in September appear to have a strong grasp of essential *AfL* concepts, as well as the program resources and material available for use in the school and classroom. In other words, these teachers and principals believe that as a result of the training, they have enough fundamental knowledge of the *AfL* program and resources to successfully begin adoption in their respective classrooms and schools.

> *"We have become an AfL learning community, and now we're going to start becoming leaders for other learning communities at each of our respective grade levels in the school."*

Program competence and confidence. When asked on the survey about their knowledge of *AfL* as a result of the two-day training session, participants report significant gains over the previous year in both understanding of key concepts and confidence in applying these concepts. Several of our interview findings also illustrate this initial transfer of key *AfL* concepts and practices, as well as preparation for continued learning following the two-day *AfL* training. For instance, teachers and principals at the pilot schools were easily able to describe the basic premise and purpose that forms the foundation for formative assessment and the *AfL* program explicitly. At one pilot elementary school, a teacher offered the following concise explanation when probed to articulate her understanding of the basic *AfL* concept: *"AfL is to guide your own planning and to differentiate instruction"* (EL trained teacher). This same fundamental awareness of the underlying principle behind formative assessment generally, and the *AfL* program
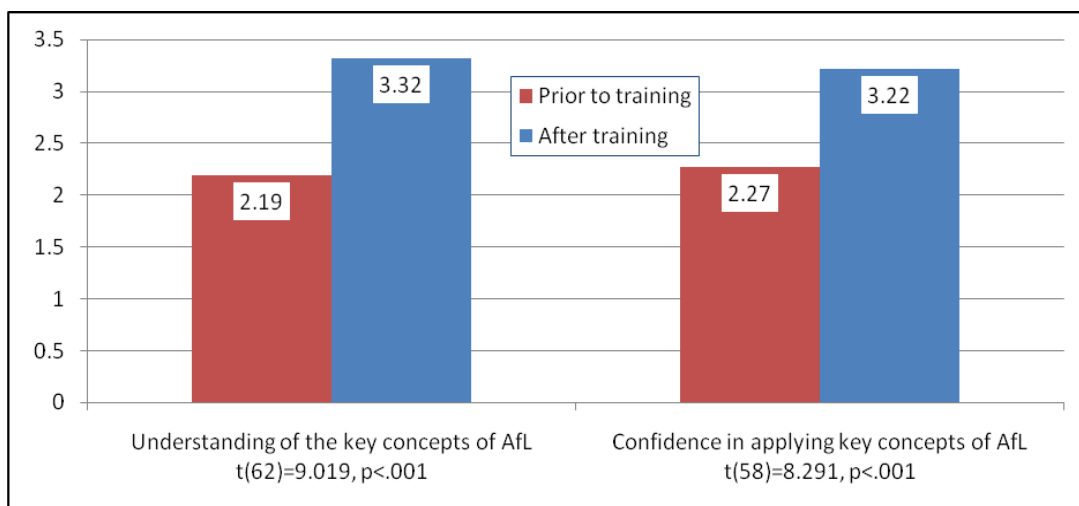

Figure 6.3. Influence of training session on respondents' facility with *AfL*.

specifically, was expressed without exception in all the interviews with personnel who had attended the two-day training in September, including those with principals and resource teachers. *"FA is an ongoing look at what students are doing so that the teacher can then use that information to plan next steps"* (MS trained resource teacher). Or as one principal stated with confidence, *"I feel like I have a good grasp of the (AfL) concept. I would be comfortable leading a PD on AfL with my faculty"* (MS pilot principal).

Following the training, principals and teachers alike also reported that they are more knowledgeable about the qualities of sound assessment practices as put forth in the *AfL* program. For example, one high school teacher who was part of his school's *AfL* pilot team, acknowledged that, since the September training, *"I recognize the need to increase the student's role in learning and assessment…I have more variety now in my assessments"* (HS trained teacher).

Similarly, an *AfL*-trained middle/high school teacher, referring to assessment practices since the two-day *AfL* training, asserted that as a team, *"We've really focused on creating student-friendly learning targets."* Another *AfL* trained teacher at this same school went on to explain, stating that in her classroom, she now gives her students *"an objective checklist of learning targets for each chapter that we cover"* (MS pilot teacher). This reported growth in aspects of the *AfL* program is evident as well in survey responses to questions about individual classroom practices and behaviors (Section 5).

Furthermore, principals and teachers who took part in the September training, while confirming that they are comfortable with the first two steps in the *AfL* program and prepared to continue learning about *AfL*, believe that there is still a lot left to master. *"This is a 2-5 year process,"* stated one high school principal. Or as one literacy resource teacher expressed, *"There is always a lot more to learn with AfL, another piece to the puzzle."* Such interview responses were consistent for all types of personnel and level of schooling. *"The AfL materials are great, but can feel a little overwhelming because there is so much,"* concluded an elementary pilot teacher. That being said, 78 percent of teachers who participated in the two-day training report that it was useful (Figure 6.4).

> *"There is always a lot more to learn with AfL, another piece to the puzzle."*

Non-trained teachers. Finally, with regards to transfer, teachers at the pilot schools who did *not* attend the training do not appear to have nearly the same understanding
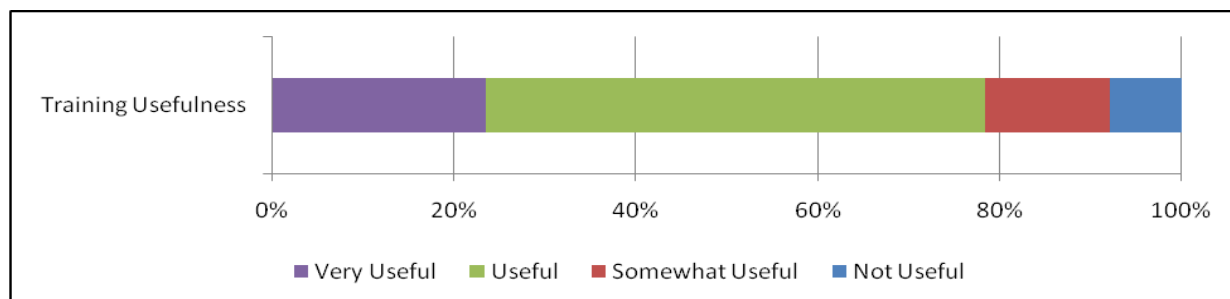

Figure 6.4. Respondents' belief in usefulness of *AfL* training.

of *AfL* concepts as trained teachers. Though perhaps not surprising due to the short lapse in time between the *AfL* training and our survey and interviews, this is still an important finding. In some cases, these teachers are attempting to utilize select *AfL* practices, like the student self-assessments or learning targets, but in most cases these teachers reported that they had not yet been formally introduced to the program and thus that their knowledge of *AfL* was rudimentary at best. *"I would like to know more about AfL; it was difficult to get much out of the Oct. 5th Gold Day,"* said one control teacher interviewed at a pilot elementary school. Or as another contended, *"I don't really know what formative assessment is, though I like some of the stuff about student review of assessment results that some of the other teachers are doing"* (EL control teacher).

Though not the norm, a small number of control group teachers claimed however, that despite a lack of specific knowledge about *AfL*, they were tentatively attempting to make use of some formative assessment practices. For instance, one elementary teacher stated, *"I've done some formative assessment; I just didn't know that's what it was called"* (HS control teacher). Or another who in answer to a question about any preliminary use of *AfL* or formative assessment practices, said, *"I've made a chart to assess the kinds of mistakes students make on an assessment"* (EL control teacher). While there was also some evidence of growth in classroom practices and behaviors around aspects of *AfL* for the untrained teachers in the survey data, as reported in Section 5, any practical significance of this growth is minimized by the lack of our ability to precisely interpret the untrained respondents' answers due to the survey's retrospective pretest design. The effect of trained teachers on non-trained teachers, while difficult to capture due to the time constraints of this project, will be important to examine in subsequent evaluations of *AfL* program adoption.

> *"I've done some formative assessment; I just didn't know that's what it was called"*

Section 7: Project Question 4 – What institutional and individual obstacles do teachers face in adopting *AfL* at the school and classroom level?

Our fourth project question attempts to determine what barriers teachers and principals face in adopting the *AfL* program in the pilot schools. Our findings suggest that obstacles include the need for ongoing support following the initial training, lack of time to collaborate, reflect and implement *AfL*, lack of sufficient discretionary funds for professional development at the school level, and finally, a concern by some that *AfL* may suffer the same fate as past district initiatives if commitment and support is not sustained over time. All of these concerns and obstacles to program adoption reflect features of professional development that, according to recent empirical studies, are critical to increasing teacher knowledge and changing teaching practice (Desimone, et al., 2002)

Need for Ongoing Training

In the interviews and survey responses, many teachers and principals indicated that the two-day September training was instrumental in developing a solid understanding of the program however, due to the complex nature of the *AfL* program, they still feel an acute need for further instruction to sustain their initial efforts. For instance, one pilot principal made the comment that *"We need more training for such a complex system"* (HS pilot principal). Similarly, an elementary teacher remarked, *"There needs to be a lot of workshops and embedded PD in order to move forward"* (EL trained teacher).

> *"TIME! We need time to plan, implement, and monitor the program throughout the building"*

Lack of Time during the School Day

Teachers and principals alike cite the need for more time to plan, reflect, and incorporate *AfL* training and practices into the school day as a key challenge to *AfL* adoption at the school level. In the late-March survey, 82 percent of respondents mention time as one of the biggest challenges to adopting *AfL* at their school. The following open response answer from this follow-up survey illustrates the widespread perception of time as a major barrier to program adoption. *"TIME! We need time to plan, implement, and monitor the program throughout the building"* (EL pilot principal).

Lack of time during the school day for *AfL* related activities also emerged from teacher and principal interviews as a very real barrier to *AfL* adoption. Teachers and principals report that it has been challenging to find time for the numerous demands that *AfL* places on a very finite amount of time during the school day. Namely, they note that it is difficult to make sufficient time to integrate the core aspects of the program into the classroom, to reflect on changed practices, and to meet in instructional teams for purposes related to *AfL* adoption.

As one principal observed, *"It just takes time. Time to process everything, to implement (AfL) ideas while continuing with core content – it's a lot"* (EL pilot principal). This same concern regarding adequate time was shared by a high school pilot principal, who noted that, *"Not having shared planning*

time for the trained teachers has been tough" (HS pilot principal). Numerous other teachers and principals voiced comparable sentiments:

> *"Time spent assessing can interfere with time need to teach, to cover content"* (EL trained teacher).
>
> *"I think it will be a challenge to find time to meet with your team members to collaborate about AfL"* (EL control teacher).
>
> *"AfL requires more time for collaborative planning than we currently have built into the school schedule"* (EL pilot principal).
>
> *"We used to have more in-service days. Now we're expected to do much more of this kind of thing before and after school"* (HS pilot principal).

Lack of Discretionary Funds

Another significant obstacle that pilot principals cite is the lack of discretionary professional development money available to pay *AfL* teacher leaders for the work needed to expand the *AfL* program school wide. Nearly fifty percent of principals report on the late-March survey that lack of discretionary PD funds is a sizeable barrier to program adoption. Interview data also illustrate that principals would like to be able to pay the *AfL* trained teachers for the extra time they spend collaborating around *AfL*, and training other teachers in the school. As one commented, *"I can't always pay everyone for everything I need them to do outside the regular school contract, and*

therefore there is a lot that doesn't get done" (MS pilot principal). Another principal lamented, *"Our PD money has been cut by 40% this year"* (HS pilot principal). A shortage of discretionary PD funds has meant that many schools have had to limit the time that trained teachers meet outside regular school day hours to discuss and reflect upon the first stages of *AfL* adoption. This finding has important implications for the *AfL* initiative, and thus is reflected in our recommendations.

Cautious Investment

A final barrier that interviewees repeatedly mentioned was the potential for teachers and principals to resist a program that might be perceived as 'just something more to do' and/or something that will soon go by the wayside. For instance, one teacher expressed the thought that *"a lot of teachers are going to be resistant because it is 'more work'"* (HS control teacher). Furthermore, teachers have so much on their plates already that *AfL* could quite possibly get lost in the flurry of regular school activity. *"Teachers often feel so overwhelmed now, that they lose their instructional focus,"* a literacy resource teacher remarked. Similarly, an elementary teacher commented that it is *"Hard to invest in something if it will be dropped in a year or two"* (EL trained teacher). Or, in the words of one resource teacher, *"As with a lot of new district initiatives, this is looked on as something extra"* (MS resource teacher).

> *"Teachers often feel so overwhelmed now, that they lose their instructional focus,"*

Section 8: Discussion

The purpose of this project was to examine *AfL* program adoption in eight pilot schools taking part in phase one of the *Assessment for Learning* initiative in Jefferson County Public Schools. Specifically, using a mixed-methods approach, we investigate the culture of collaboration in pilot schools, effects of the *AfL* program and training on teachers' attitudes and classroom practices related to formative assessment, and barriers to program adoption at both the individual and institutional levels. In the next section we review key findings from our study of the pilot phase of JCPS *AfL* initiative, drawing from current literature on formative assessment, instructional leadership, professional development, and large-scale reform efforts as a lens for interpreting their significance. This discussion of project findings, grounded in extant research, provides robust feedback to district officials not only in terms of early responses to the program, but also to inform potential expansion of *AfL* across the district.

> *"I really see the short and long term benefits to AfL; my faculty has really embraced it (AfL)"*

Overall Results

A number of promising practices and strategies, as well as barriers associated with *AfL* program adoption are evident in findings from both interview and survey data. Sound practices and strategies apparent in the early stages of the JCPS *AfL* initiative include principal commitment to the program, regular collaboration focused on *AfL,* increased instructional intentionality, and a growing partnership between students and teachers around instruction and assessment. Similarly, several significant challenges to program adoption were also evident in our findings. These challenges include finding adequate time to continue learning about the program, reflect on successes and obstacles, train other teachers, and monitor adoption efforts. Additionally, interview responses and survey results reveal concern that the initiative may not receive adequate, sustained support from the district, and a perception that district-required assessments run contrary to *AfL* theory.

Principal Commitment

First, and perhaps most essential to program adoption, is our finding that pilot school principals are committed to the *AfL* initiative. As interview and survey results suggest, this high level of commitment by school administration appears to facilitate staff interest and buy-in to the program. Principals generally feel that the *AfL* program works and is not something that teachers should see as 'extra', but rather as an integral part of effective instruction. All six pilot school principals interviewed in November expressed a positive response to the *AfL* initiative and were able to articulate what steps they were taking to facilitate program adoption at their schools. This finding was reaffirmed in results of the short follow-up survey fielded in late March, in which all eight pilot school principals reported that they were still using *AfL,* had a favorable opinion of the program and that in all but one school, faculty beyond the initially trained teachers had been introduced to the *AfL* program.

This high level of administrator commitment is well illustrated by one principal who expressed her view during the interview that *AfL* could make a positive impact immediately, and also for the duration. *"I really see the short and long term benefits to AfL; my faculty has really embraced it (AfL)"* (MS pilot principal). Another echoed a similar sentiment about his belief in the potential for *AfL* to transform classroom practices, stating that, *"AfL is not an add-on, but can inform instruction and increase student motivation; the pilot group believes in the value of AfL"* (HS pilot principal). Yet another observed that interest in *AfL* continued to grow at her school: *"It's been nice because I've had other teachers come up and express interest…it's getting so much positive feedback from all the staff"* (EL pilot principal). She went on to explain her own belief in the program stating, *"I think it (AfL) really works: it works for kids, it helps teachers, we really like it"* (EL pilot principal).

> *"I think it (AfL) really works: it works for kids, it helps teachers, we really like it"*

Administrator support for the *AfL* initiative has important implications for sustaining support for the program in the pilot schools. As Elmore (2000) maintains, the primary job of effective educational leaders is to improve instructional practice and performance. Stein and Nelson (2003) add to this idea, arguing that school leaders need leadership content knowledge. This concept brings together subject matter knowledge and the practices that typically define leadership. Furthermore, as Stein and Nelson maintain, leadership content knowledge is a critical characteristic of effective school and district leaders.

Without informed administrator support, instructional improvement efforts at the school level are not likely to have lasting effect. While the voluntary nature of the pilot phase of this initiative is likely a contributing factor in the pilot school principals' strong support of *AfL*, this finding should still inform future stages of the AfL. For example, in future phases of the initiative the district will want to take care to ensure that school leaders support program adoption on the outset so that schools are well-positioned for positive, effective program adoption.

AfL Collaboration

As the literature and *AfL* program materials attest, collaboration at the school level is critical in efforts to advance effective teaching and learning. Recognizing this, we designed our interview and survey to learn more about the culture of collaboration in the pilot schools and how this affected adoption of the *AfL* program. Specifically, we wanted to learn if and how teachers and principals in the pilot schools engage in collaboration around substantive issues of instruction and student achievement.

Elmore (2000) explains that teachers and principals must both take part in continued learning in order to hone the skills needed to support student achievement. The model Elmore (2000) puts forth is necessarily dependent upon regular collaboration among teachers themselves, as well as between teachers and administrators. Collective participation is critical because when teachers from the same subject, grade level, and/or school interact there are significant opportunities for discussion and reflection,

which can be a powerful form of teacher learning (Borko, 2004).

Similarly, the *AfL* program requires collaboration among teachers, and between teachers and administrators, in order to achieve program goals, including setting clear, student-friendly learning targets, understanding and using assessments to guide instruction and encouraging students to take responsibility for their own learning (Stiggins, Arter, Chappuis, & Chappuis, 2007). Thus, an important focus of our project was to examine the ways teachers and principals in the pilot schools were attempting to take part in substantive collaboration.

Though at the time of our interviews, most pilot schools reported that *AfL* collaboration took place primarily between trained teachers and administrators, all schools attested that extending this practice to include other teacher teams was a pivotal part of plans to establish *AfL* throughout the school. One principal commented, *"We debrief about AfL about every two weeks…talk about what we've tried, what went well and what didn't"* (EL pilot principal). This was consistent *AfL*-specific collaboration was apparent throughout the pilot school interviews and also in the survey results. While schools report that the learning team model had facilitated collaboration among teachers prior to *AfL*, what has changed since the September training is the nature and focus of this learning team collaboration.

Instructional Intentionality

In addition, *AfL* appears to have increased the level of thoughtfulness in planning,

instruction and assessment practices among trained teachers. Pilot teachers and principals alike alleged that *AfL* has triggered a new level of instructional intentionality in that *AfL*-trained teachers, as compared to non-trained teachers, are now using assessment practices to drive lesson planning decisions. For example, one 20-year veteran pilot teacher acknowledged, *"AfL has forced me into a more reflective, deliberate practice"* (HS trained teacher). Pilot principals observed positive instructional change as well, with one noting that *"one of the best things has been watching these teachers grow – instructionally they are more thoughtful, intentional"* (MS pilot principal). Yet another teacher shared a similar sentiment, describing the effect of *AfL* as *"causing us to reflect more, and use each other more to become better teachers"* (HS trained teacher).

As evidenced in the interviews, teachers are increasingly planning lessons and instructional units with the end assessment in mind, a sound practice widely supported in the literature (e.g., Wiggins and McTighe, 2006). Furthermore, though *AfL*-trained teachers and principals were able to articulate a clear understanding of the program concepts and goals, because of the self-reporting nature of both the survey and interviews, we are cautious about drawing conclusions about how directly this understanding is translating into changed classroom practices. To determine the extent of transfer more accurately will require classroom observations, additional follow-up surveys and interviews after pilot school personnel have had more time to internalize and adopt the *AfL* program.

> *"AfL has forced me into a more reflective, deliberate practice"*

Modeling Best Practice

Related to increased instructional intentionality is a best practice that emerged at the elementary level. *AfL* trained teachers at one of the pilot schools report that they worked last fall and winter to create a Social Studies unit that was introduced for use across all grade levels as a way to model *AfL*-based instruction and assessment for other teachers in the school. The principals and trained teachers at this school felt that piloting a specific instructional unit that clearly showcased *AfL* principles, trained and non-trained teachers alike would be able to better understand how *AfL* should inform teaching decisions and how these principles translate into individual lessons and unit plans.

> *"Kids are more accountable for their own individual goals; they set their own goals"*

In the late-March follow up survey, this principal indicated that the model unit had elicited a positive response from non-trained teachers at the school. *"This activity of planning a social studies unit was the springboard for introduction of AfL to the entire staff,"* she explained. Furthermore, in the principal's estimation, students seem to have similarly benefited from this shared unit. *"We have also seen improvement in student achievement throughout the school with the unit planned by teachers using only the clear target goals."* As this principal's observations illustrate, developing and sharing a common, *AfL*-driven unit amongst all instructional personnel may be a practice that other schools want to emulate in

> *"Student reflection sheets are working well to encourage student engagement and ownership of learning"*

their own attempts to introduce *AfL* to non-trained teachers.

Student Learning Partnerships

Trained teachers and administrators also report a growing instructional partnership with students as a result of early program implementation. *AfL* trained staff in the pilot schools describe students as more motivated and engaged in academic activities. Most believe this increased attention and involvement in classroom work is because of the clear learning targets that teachers are now using with their students. As a result, students have concrete benchmarks for monitoring their own learning. For instance, one trained resource teacher claims that, *"much of the work we've done with formative assessment has increased student engagement"* (MS trained resource teacher). Another teacher reports that in her classroom *"Kids are more accountable for their own individual goals; they set their own goals"* (EL trained teacher).

At the middle school level, one trained teacher echoes a similar assessment of student engagement saying, *"Students are able to articulate learning targets and ask for help, take ownership"* (MS trained teacher). And finally, as illustrated in the following quote, teachers also believe that student reflection, a key component of *AfL*, has been effective in facilitating students' academic commitment. *"Student reflection sheets are working well to encourage student engagement and ownership of learning"* (EL trained teacher).

Reflecting on the Data: Student and Teacher Roles

Since student engagement and responsibility is a key component of the *AfL* program, as Table 5.1 shows, teachers still appear to be missing a critical aspect of formative assessment if they are not regularly involving students in the process of reflecting on their own learning. Bransford et al. (2005) describe this as "assessment-centeredness", or generating evidence that will provide information about what students are really learning, which subsequently should inform teachers' decision related to instruction and their own professional development (p. 41). Not only should teachers use the results of formative assessments to guide their instruction, but they should increase student participation in the process as well. Though interview responses did suggest that teachers are starting to learn how to use assessment data to drive decisions about teaching and learning, student involvement is an area where pilot schools may want to place concentrated focus in future stages of *AfL* program development.

To this end, principals and instructional coaches might design school-level PD to specifically target the kinds of knowledge and pedagogy that teachers need to be able to generate and make use of assessment data in the classroom. In the literature it is clear that the role of principal is vital in efforts to implement a professional development process like *AfL*. Elmore (2000) describes a common, but problematic educational phenomenon, "loose-coupling", as decisions about teaching and learning that are made exclusively in individual classrooms, cannot be clearly translated into reproducible behaviors, and are not conducive to reliable external evaluation. To avoid this pitfall, principals must focus on guiding and directing the process of instructional improvement with an initiative like *AfL*.

Time – Never Enough

Teachers and principals both report that time is a perpetual obstacle to program adoption efforts. Interviews in the various pilot schools reveal however, that the constant struggle to make time for program related planning, reflection, and classroom practices is not insurmountable. In fact, several examples of creative scheduling and time management emerged as possible models for teachers and principals struggling to incorporate *AfL* activities into already hectic school days, many of which are already common throughout the district.

Setting aside time for regular meetings between content area or grade level teachers, whether through common planning periods or some other means of scheduling, is one way to create time within the school day for teacher planning and collaboration around *AfL*. Through what JCPS deems "embedded professional development" or "embedded PD", teams of teachers (curricular, grade level, or both) in JCPS schools meet regularly using "protected time" during the school day to address issues of instruction and to hone their skills as educators. Through our interviews, it became apparent that *AfL*-trained teachers in the pilot phase of the initiative often use this established meeting time to specifically discuss challenges and promising practices related to adopting formative assessment in their respective schools and classrooms (personal interviews, 2009). In this way, these teachers are positioning themselves to follow the three steps that Black and Wiliam (1998) believe form the foundation for formative assessment itself.

Sustained Support for *AfL*

In his framework, 'How People Learn', Bransford (2005) discusses the concept of "preparation for future learning" as a key element of successful transfer. He explains that the better prepared someone is for future learning, the greater the transfer, in terms of efficiency and quality of learning (Bransford, et al., 2005, p.70). Thinking about transfer in this way, after attending the two-day training, teachers and principals demonstrate high levels of "preparation for future learning" with regards to *AfL*. While recognizing the important role that the two-day training had in furthering their understanding of formative assessment in general and the *AfL* program specifically, in the interviews and survey results teachers and principals also repeatedly acknowledged a desire for ongoing development of *AfL*-related skills.

This professed desire for continued coaching fits with much of the literature on professional development that shows sustained guidance and instruction is needed for a professional development program to have lasting effects (e.g. Desimone, et al., 2002). For example, a number of studies suggest that the duration of professional development is related to the depth of teacher change (Shields, Marsh & Adelman, 1998; Weiss, Montgomery, Ridgeway, & Bond, 1998). Similarly, other research indicates that self-sustaining, generative change depends not only on the principles of a professional development program like *AfL*, but also to a large extent on the understanding and conceptions that individual teachers construct as a result of experiences with the program (Franke, Carpenter, Fennema, Ansell, & Behrend, 1998).

The history of public education is littered with evidence of professional development efforts that have barely gained traction in influencing teacher behavior and increasing student achievement (Cuban, 1988; Elmore, 1996). When teachers do bring professional development lessons into their classrooms it varies substantially in depth and substance. It is common to place these new approaches on top of existing practices without altering classroom norms or routines (Coburn, 2002). Coburn (2006) argues that high quality professional development must go beyond changing surface structures (change in materials, routines, or activities) to alter teachers' beliefs and pedagogical principles embedded in the curriculum. Thus, while the two-day *AfL* training appears to have been an effective way to launch the implementation process, it is reasonable to suppose that continued coaching and support of *AfL* principles will be necessary to achieve substantive, enduring change in teacher practices.

A Common Language for Formative Assessment

Through the use of the *AfL* program materials and training, the DDDM council in JCPS has attempted to provide a common language and structure for adopting formative assessment throughout the district. From this shared foundation, the DDDM council has thus far permitted individual schools to develop their own unique plans and practices with respect to formative assessment. In doing so, district officials are following the first step that Stiggins puts forth in his *AfL* program –establishing a clear and commonly recognized purpose for learning, and also adhering to a key component of best practice as explicated in the professional development literature – allowing schools to chart their own course with the actual program implementation (e.g., McLaughlin and Talbert, 1993; Desimone et al., 2002). By

providing a common framework for putting formative assessment into practice, and permitting principals and teachers the freedom to decide exactly what this looks like at the school level, JCPS is enabling teachers, principals and students at the pilot schools to engage in formative assessment practices in meaningful ways.

While this flexible approach to program adoption is widely embraced in the literature on professional development, our findings indicate that a minority of schools may however, desire more district input, and that all schools would benefit from clear communication about how the *AfL* initiative fits with other district and state activities and expectations. The literature makes clear that there is an inherent tension between the 'loose' and 'tight coupling' of effective school reform. Some schools with dynamic instructional leaders may thrive on a 'loosely coupled' approach to adopting a program like *AfL*, while other schools may require a more "tightly coupled" approach in order to confidently move forward with program adoption.

Our findings and review of the literature indicate however, that *all* schools will best be served by clear, continuous communication regarding general program expectations, available support, and how *AfL* goals and activities complement other educational endeavors and initiatives. Ultimately, as explained further in our recommendations, the district must thus necessarily be prepared to offer a range of support to schools throughout the district in order to advance *AfL* adoption.

Significant Findings in Context of the Project

The findings described here are relevant at the individual teacher level, school level and/ or district level, with considerable overlap between levels and project questions. To better understand the relationship between these significant findings and how they fit into the overarching project structure, we have constructed the following Level II Findings Matrix (Appendix F).

Section 9: Recommendations and Conclusion

Based on our triangulated analysis of findings from the survey data, interviews, related literature and *AfL* program materials, there are several recommendations that we would make for planning future steps with *AfL* in JCPS. These recommendations reflect our best attempt to consider feedback and insight provided by staff in the first round of *AfL* pilot schools as well as the literature that directly informs professional development initiatives, particularly those that originate at the district level.

Training Structure and Design

Our first recommendation concerns the timing of district-led *AfL* training sessions. Based on our interview findings, results from the survey and literature on effective professional development, the two-day *AfL* training is integral to building a basis for understanding and adopting *AfL*, but would be best held over the summer break, rather than during the first semester. Holding the training over the summer would provide time for teachers and principals to become familiar with program materials and to incorporate *AfL* principles into their lesson plans prior to the start of the school year. When training is conducted in the fall after the school year is already in full swing, teachers and principals report that it is difficult to find time to fully digest the complex *AfL* program and to integrate these new teaching and learning concepts into their lessons and classroom practices.

On a related note, feedback from the interviews and review of the research literature also reveals that the training might be enhanced and teacher participation increased if previously trained JCPS teachers

play a role in the training process (e.g., McLaughlin and Talbert, 1993).

For example, McLaughlin and Talbert (1993) found that those teachers who made effective adaptations to improving teaching and learning had one thing in common: each belonged to an active professional community which encouraged and enabled them to transform their teaching. While the aim with the first *AfL* cohort has been to train a core team of three to four teachers who can then help train other teachers within a school, these same *AfL*-trained teachers could also be utilized in the district-led trainings to present success stories and offer tips for program adoption from their own experiences with *AfL*. Using trained *AfL* teachers at future training sessions is a strategy for increasing teacher buy-in and building a community of professional expertise related to formative assessment practices.

Likewise, another suggestion for the district-led training design is to make the two-day sessions specific to elementary teachers (who juggle lesson planning for multiple subject areas), and then also for middle and high school teachers by subject area. As supported in the literature and pointed out by numerous teachers and principals in our interviews, organizing *AfL* training by grade level and/or subject area would support discussion and discovery of explicit practices most relevant to teachers' regular classroom activities (e.g., Desimone et al., 2002). Even if training sessions cannot be held specifically for elementary teachers or secondary teachers by subject, training could include breakout sessions by grade/subject groups to facilitate dialogue regarding *AfL* practices specific to a teacher's subject or grade level. This would allow for more intentional professional development designed to increase teachers'

pedagogical content knowledge, which is a point of emphasis in 21st century teacher reform (Shulman, 1986).

Coupled with increasing teachers' pedagogical content knowledge would be the development of what Stein and Nelson (2003) have termed leadership content knowledge, which is necessary for all building and district leaders leading reform efforts like *AfL*. Leadership content knowledge, as defined by Stein and Nelson (2003), is knowledge of subjects and how students learn that is used by principals when they function as instructional leaders. Without knowledge that connects subject matter, learning, and teaching to acts of leadership, leadership floats disconnected from the very processes it is designed to govern (Stein and Nelson, 2003).

Protected Time for Embedded PD

Our second recommendation is to provide protected time for school-level *AfL*-related professional development coupled with continued district support. The literature on high-quality professional development suggests that professional development that succeeds in increasing teacher knowledge and changing teaching practices is characterized by active learning opportunities and is sustained and supported over time (e.g., Birman et al., 2000; Garet et al., 2002). This research found that sustained and intensive professional development is more likely to have an impact than is shorter professional development. In addition, professional development that focuses on academic subject matter, gives teachers opportunities for interactive work, and is integrated into the daily life of the school is more likely to produce an increase in knowledge and skills (Garet et al., 2002). Thus, successful, sustained adoption of *AfL* will likely require

continued commitment at both the school and district level.

Principals will need to plan and protect regular time during the school day for teachers to meet about *AfL* in order for teachers to successfully internalize and integrate *AfL* principles into their classroom practices. Though regular, embedded collaboration appears to already be well established at the pilot schools, it may be a challenge to make time specifically for collaboration around *AfL* practices. As the first cohort of trained teachers expressed in the interview and survey findings, however, *AfL*-focused collaboration appears critical to the initial stages of adopting such a complex program.

Similarly, our findings suggest that *AfL* adoption is best done incrementally, allowing teachers to master one program step at a time before moving on to the next component. Thus, the district will need to sustain support and assistance in the form of ongoing training and resources over the duration of time needed for the *AfL* program to take root in district schools. One way to demonstrate and marshal this critical support of *AfL* is through co-funding – the contribution of funds from two or more sources to support the same professional development activity (Desimone, et al., 2002, p. 1271). The literature suggests that this approach to sustaining a particular professional development program is a mark of successful coordination and integration of reform efforts in a district (e.g., Corcoran, 1995; Elmore and Burney, 1996). This practice would reinforce the method of designing and developing effective professional development with the alignment of activities, pedagogy, and curriculum linked to standards and assessments adopted by the state and district. This alignment has been used by effective districts to develop a

coherent professional development reform strategy. (Desimone et al, 2002).

Program Alignment and Coherence

An additional recommendation that we would make to JCPS concerns the need to align district-sponsored programs like *AfL* with curriculum, standards and assessments. Districts are often criticized for lacking focus and coherence among programs, policies and reforms (Schlechty and Whitford, 1983), and findings from our interviews with pilot school personnel tell us that JCPS is not impervious to such critique. Therefore, to avoid leaving teachers and principals feeling like they are being asked to implement competing policies and initiatives, it will be important to work towards coherence and alignment of *AfL* with other district goals and vision.

For example, several teachers and principals interviewed for this project remarked that they found it difficult to reconcile district-mandated assessments with *AfL* program theory. In their estimation, the district-directed assessments should be retooled to support and fit within the *AfL* framework. One method for accomplishing this might be to circulate district benchmark tests among teachers prior to the start of the school year, both to solicit teacher feedback on the tests themselves and to make it possible for teachers to use these assessments in a formative way with their students. In this manner, district assessments could be used to inform instruction and assessment practices and at the same time avert criticism that *AfL* runs counter to other district policies and instructional goals.

Continuous Program Improvement

Our final recommendation to JCPS district officials regarding the *AfL* initiative is to foster continuous program improvement by establishing an effective feedback loop based on program evaluation and communication. As the literature maintains and our interview findings reaffirm, continuous improvement of professional development initiatives involves not only alignment and coherence, but also careful two-way communication with teachers and principals about district goals, standards, and assessments. This kind of information exchange can help schools successfully integrate *AfL* activities with other district goals and expectations (Newman, King, and Rigdon, 1997), which will also aid efforts at program coordination and clarity.

Intentional strategies will be needed to facilitate high quality *AfL* adoption and development over time. First, the district will want to continue to assess teacher needs and to evaluate the stages of program adoption as the initiative expands to other schools throughout the district. Second, the district will want to measure results of program and needs evaluations against characteristics and indicators of high quality PD like those cited throughout this report (e.g., Birman, Desimone, Garet, and Porter, 2000; Desimone et al., 2002). This information stream concerning progress towards district goals for *AfL* and program development should serve as a feedback loop, in which ongoing communication and data inform discussions and decisions about program strengths and weaknesses, and therefore also future strategies and steps. For example, Salem City Schools in Salem, VA, has created a website for their district personnel to discuss successes and challenges in their implementation of the *AfL* program; this website is open to outsiders and serves as an on-line collaborative community centered on formative assessments. In essence, JCPS should use the same *AfL* program concepts regarding formative assessment in designing

and executing professional development opportunities for its teachers: *Where are we going? Where are we now? How to close the gap?*

Conclusion

Professional development of teachers is a key element in efforts to improve student learning through increased attention to high quality teaching practices. What is more, the school district's critical role in setting the context and climate for professional development has been well documented in the literature on school reform (e.g., Elmore and Burney, 1996; Knapp, Zucker, Adelman, and St. John, 1991; Spillane and Jennings, 1997). Thus, like many districts, JCPS faces a daunting challenge to make professional development meaningful, effective and consistent with state and district reform goals. Even so, in an era characterized by assessment and accountability, districts can play a pivotal role in developing teachers' instructional knowledge and practices, which will lead to increased student learning.

The potential for high quality professional development to positively affect teaching and learning has clearly not been lost on JCPS. As a district they are to be commended for turning effort and attention towards the adoption of a potentially valuable professional development initiative like *AfL*. Though there are indeed challenges inherent in adopting such a complex program, as our findings convey, the reception of *AfL* among pilot school teachers and principals has been altogether positive, a finding that bodes well for continued development and successful expansion throughout the district.

> *Where are we going?*
> *Where are we now?*
> *How to close the gap?*

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Appendices

Appendix A: Data Analysis Construct Map

Table A

Data Analysis Construct Map

Research Question	Development of AfL Initiative	Meetings with District Contacts	Principal Interviews	AfL-trained Teacher Interviews	Control Group Teacher Interviews	Staff Survey	AfL Program Materials	Follow-up Survey
1,2,3,4	AfL Program Theory	X					X	
1,2,3,4	District Objectives	X					X	X
Research Question	**Teacher/ Administrator Perceptions**	Meetings with District Contacts	Principal Interviews	AfL-trained Teacher Interviews	Comparison Group Teacher Interviews	Staff Survey	AfL Program Materials	Follow-up Survey
1,3	AfL content & methods		X	X	X	X		X
1,4	Locus of control		X	X	X	X		X
1,3,4	Value of PD generally		X	X	X	X		
Research Question	**Climate of Collaboration**	Meetings with District Contacts	Principal Interviews	AfL-trained Teacher Interviews	Comparison Group Teacher Interviews	Staff Survey	AfL Program Materials	Follow-up Survey
1,3	Formative Assessments		X	X	X	X	X	
1,4	Summative Assessments	X	X	X	X	X	X	
1,3	Teacher role(s)		X	X	X	X	X	
1,3,4	Principal's role		X	X	X	X	X	X
Research Question	**AfL Implementation**	Meetings with District Contacts	Principal Interviews	AfL-trained Teacher Interviews	Comparison Group Teacher Interviews	Staff Survey	AfL Program Materials	Follow-up Survey
3	Training Sessions	X	X	X		X	X	
1,2,3,4	School level efforts		X	X	X	X		X
1,2,3,4	District Activities and Support	X	X	X	X	X		X
Research Question	**AfL Training Transfer**	Meetings with District Contacts	Principal Interviews	AfL-trained Teacher Interviews	Comparison Group Teacher Interviews	Staff Survey	AfL Program Materials	Follow-up Survey
1,2,3,4	Knowledge of AfL		X	X	X	X	X	
1,2,3,4	Use of data	X	X	X	X	X	X	X
1,2,3	Models of best practice	X	X	X	X		X	X

Appendix B: Survey Concept Map and Instrument

Perceptions of Professional Development

General PD

Questions 11-15

adapted from (Torff, Sessions, & Byrnes, 2005)

***AfL* Training Session**

Questions 19-24

Collaboration concerning

Collaboration

Questions 47-56

Data Use

Questions 57-68

Changes in Beliefs and Practices

***AfL* Beliefs and Practices**

Questions 25-40

Data-Driven Decision Making

Questions 41-46

Perceptions of Teaching

Educator Beliefs

Questions 2-10

Demographics

Questions 1, 69-74
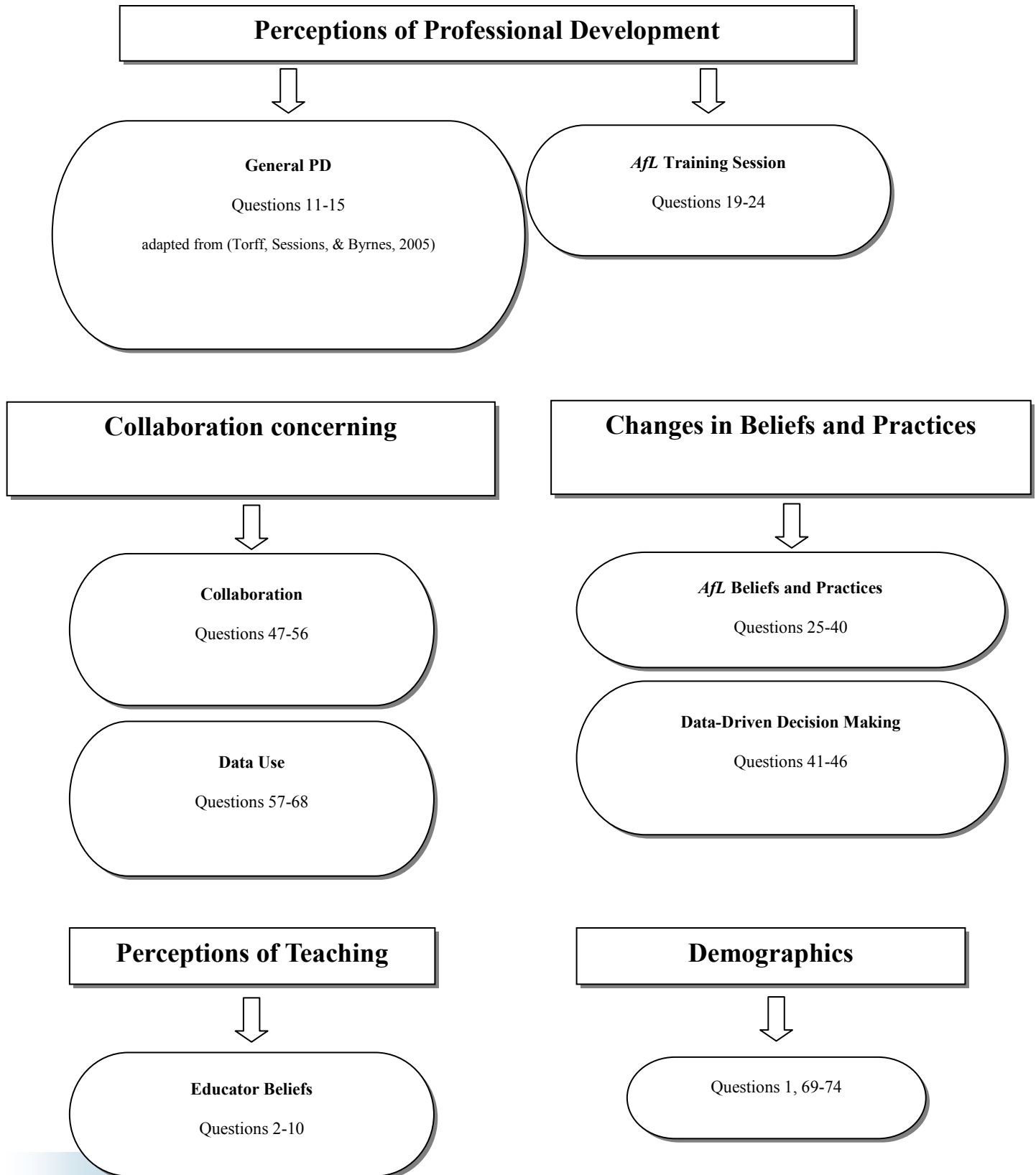
Assessment for Learning in JCPS

As you may know, Jefferson County Public Schools has elected to participate in a balanced assessment initiative, guided by the text *Assessment for Student Learning: Doing it Right—Using it Well* by Dr. Rick Stiggins. This is a district-wide movement towards thinking more deeply about assessment and how it connects and contributes to student learning. As part of the district's commitment to this undertaking, JCPS has joined with Vanderbilt University's Peabody College to conduct an initial review of the assessment for learning (AFL) initiative to learn more about the implementation of AFL thus far.

Participation in this survey is *voluntary* and your responses will remain *confidential*, but your feedback will be helpful as the district makes future plans for the Assessment for Learning initiative. This survey is an opportunity to offer your perceptions about the AFL program and to provide insight into what works and what doesn't in implementing AFL at the school level. No identifying information will be included in any reports on this project. All responses will be reported in the aggregate. The survey should take approximately 20-30 minutes to complete.

Thank you for your time and assistance.

1.	First, please select your status from the following list	AfL Trained Classroom Teacher	AfL Trained Administrator or Resource Teacher	Non-AfL Trained Classroom Teacher

Section I: This section concerns attitudes towards data-driven decision making and professional development.

Directions: In this section, please circle the appropriate number to indicate to what degree you **AGREE or DISAGREE** with each of the following statements.

1-Strongly Agree; 2-Agree; 3-Disagree; 4-Strongly Disagree				
Educator Beliefs	SA	A	D	SD
2. Our success as educators should be determined primarily by our impact upon student learning.	1	2	3	4
3. Teachers and administrators are valued members of this district's data-driven reform efforts.	1	2	3	4
4. Our success or failure in teaching students is primarily due to factors beyond our control rather than to our own efforts and ability.	1	2	3	4
5. Using data has improved the quality of decision-making in this district.	1	2	3	4
6. By trying different teaching methods, teachers can significantly affect students' achievement levels.	1	2	3	4
7. If we constantly analyze what we do and adjust to get better, we will improve.	1	2	3	4
8. Teachers in this district feel personal responsibility when school improvement goals are not met.	1	2	3	4
9. Students in this district believe that they will succeed at learning if they keep trying.	1	2	3	4
10. Teachers have the knowledge and skills necessary to improve student learning.	1	2	3	4

1-Strongly Agree; 2-Agree; 3-Disagree; 4-Strongly Disagree					
	Professional Development	SA	A	D	SD
11.	If I did not have to attend in-service workshops, I would not.	1	2	3	4
12.	Professional development events are worth the time they take.	1	2	3	4
13.	Professional development workshops often help teachers to develop new teaching techniques.	1	2	3	4
14.	I have been enriched by the teacher training events I have attended.	1	2	3	4
15.	Staff development initiatives have not had much impact on my teaching.	1	2	3	4
16.	Professional development has helped me use data more effectively.	1	2	3	4
17.	Professional development has improved my skill in developing classroom assessment.	1	2	3	4
18.	I have significant input into plans for professional development and growth.	1	2	3	4

If you attended the training program for Assessment for Learning on September $1^{st}/2^{nd}$ or $3^{rd}/4^{th}$, or have been trained in the program as a resource teacher, how would you rate your *understanding* of Assessment for Learning

19. PRIOR to attending the training?	Poor	Fair	Good	Very Good	Excellent	Did Not Attend
20. AFTER attending the training?	Poor	Fair	Good	Very Good	Excellent	Did Not Attend

If you attended the training program for Assessment for Learning on September $1^{st}/2^{nd}$ or $3^{rd}/4^{th}$, or have been trained in the program as a resource teacher, how would you rate your confidence in *applying key concepts* of this training in your classroom

21. PRIOR to attending the training?	Poor	Fair	Good	Very Good	Excellent	Did Not Attend
22. AFTER attending the training?	Poor	Fair	Good	Very Good	Excellent	Did Not Attend
23. If you attended the training program for Assessment for Learning on September $1^{st}/2^{nd}$ or $3^{rd}/4^{th}$, or have been trained in the program as a resource teacher, how useful did you find the 2-day training in helping you to understand and apply key concepts of Assessment for Learning with your students?	Very useful	Useful	Somewhat useful	Not useful	Did Not Attend
24. If you attended the training program for Assessment for Learning on September $1^{st}/2^{nd}$ or $3^{rd}/4^{th}$, or have been trained in the program as a resource teacher, how were you selected to participate in the training session?	Self-selected	Team leader	Department Chair	Admin.	Did Not Attend

Section II: This section concerns individual classroom practices and behaviors.

Directions: In this section, please circle the appropriate number to indicate the frequency with which you do each of the following statements according to the following scale. If you have NOT participated in any of the district's training, just respond to the "BEFORE this school year" statements.

1 = I don't do this, or this doesn't happen in my classroom.
2 = I do this infrequently, or this happens infrequently in my classroom.
3 = I do this sometimes, or this sometimes happens in my classroom.
4 = I do this frequently, or this happens frequently in my classroom.
5 = I do this on an ongoing basis, or this happens all the time in my classroom.
6 = Does not apply.

I use assessments to build student confidence.						
25. BEFORE this school year	1	2	3	4	5	6
26. NOW	1	2	3	4	5	6
I inform my students regularly, in terms they can understand, the achievement targets or learning objectives they are to learn.						
27. BEFORE this school year	1	2	3	4	5	6
28. NOW	1	2	3	4	5	6
My students can describe what targets or objectives they are to learn.						
29. BEFORE this school year	1	2	3	4	5	6
30. NOW	1	2	3	4	5	6
I transform these learning targets or objectives into dependable assessments that yield accurate information.						
31. BEFORE this school year	1	2	3	4	5	6
32. NOW	1	2	3	4	5	6
I consistently use classroom assessment information to revise and guide teaching and learning.						
33. BEFORE this school year	1	2	3	4	5	6
34. NOW	1	2	3	4	5	6
My feedback to students is frequent, descriptive, constructive, and immediate, helping students know how to plan and improve.						
35. BEFORE this school year	1	2	3	4	5	6
36. NOW	1	2	3	4	5	6
My students are actively involved in assessment, including learning to manage their own learning through the skills of self-assessment.						
37. BEFORE this school year	1	2	3	4	5	6
38. NOW	1	2	3	4	5	6
My students consistently communicate with teachers and parents about their achievement status and improvement.						
39. BEFORE this school year	1	2	3	4	5	6
40. NOW	1	2	3	4	5	6

During *this* school year, how often have you used the following data to make decisions about your classroom?		Never	A few times	Once or twice a month	Once a week or more	Does not apply
41.	Classroom-level assessments	1	2	3	4	5
42.	District benchmark assessments	1	2	3	4	5
43.	State-level assessments	1	2	3	4	5
44.	National assessments	1	2	3	4	5
45.	Student grades in the current school year	1	2	3	4	5
46.	Student grades for the previous school year	1	2	3	4	5

Section III: This section concerns teacher collaboration and school-wide use of data.

Directions: In this section, please circle the appropriate number to indicate to what degree you **AGREE or DISAGREE** with each of the following statements.

1-Strongly Agree; 2-Agree; 3-Disagree; 4-Strongly Disagree				
Collaboration	SA	A	D	SD
Teachers in this school meet regularly to look at student data and make instructional plans.				
47. BEFORE this school year	1	2	3	4
48. NOW	1	2	3	4
When teachers in this school meet with each other, they usually focus on student learning outcomes.				
49. BEFORE this school year	1	2	3	4
50. NOW	1	2	3	4
Teachers in this school work collaboratively to improve curriculum and instruction.				
51. BEFORE this school year	1	2	3	4
52. NOW	1	2	3	4
Teachers in this school are given adequate time for collaborative planning.				
53. BEFORE this school year	1	2	3	4
54. NOW	1	2	3	4
Teachers in this school regularly discuss assumptions about teaching and learning.				
55. BEFORE this school year	1	2	3	4
56. NOW	1	2	3	4

	To what extent do teachers in your school use data for the following purposes during *this* school year?	Never	A few times	Once or twice a month	Once a week or more
57.	Identifying individual students who need remedial assistance	1	2	3	4
58.	What data source(s) do they generally use? Check all that apply.	KCCT EDU CCA'S		DIBELS Other Does not apply	
59.	Tailoring instruction to individual students' needs	1	2	3	4
60.	What data source(s) do they generally use? Check all that apply.	KCCT EDU CCA'S		DIBELS Other Does not apply	
61.	Developing recommendations for tutoring or other educational services for students	1	2	3	4
62.	What data source(s) do they generally use? Check all that apply.	KCCT EDU CCA'S		DIBELS Other Does not apply	
63.	Identifying and correcting gaps in the curriculum for all students	1	2	3	4
64.	What data source(s) do they generally use? Check all that apply.	KCCT EDU CCA'S		DIBELS Other Does not apply	
65.	Encouraging parental involvement in student learning	1	2	3	4
66.	What data source(s) do they generally use? Check all that apply.	KCCT EDU CCA'S		DIBELS Other Does not apply	
67.	Identifying areas where teachers need to strengthen their content knowledge or teaching skills	1	2	3	4
68.	What data source(s) do they generally use? Check all that apply.	KCCT EDU CCA'S		DIBELS Other Does not apply	

Section IV: Demographics.

<u>Directions</u>: Please circle the appropriate response for following items.

69.	What is your highest earned degree?	Bache-lor's	Mas-ter's	Specialist	Doctor-ate			
70.	How many years have you been teaching in total (including this school year)?	0-5	6-10	11-15	16-20	21-25	26-30	>30
71.	How many years have you been teaching at this school (including this school year)?	1	2	3	4	≥5		
72.	What subject area do you teach the most?	<u>Drop-down menu to select from:</u> Elementary Mathematics Science Social Studies English World Language Business & Technology Vocational Special Education Art, Humanities, & Music Health & PE						
73.	What is your position at school?	Classroom teacher		Resource teacher		Administrator		
74.	If you are a classroom teacher, at what school do you work?	<u>Drop-down menu to select from:</u> Not a Classroom Teacher Brandeis Elementary Kenwood Elementary Wilder Elementary Wilkerson Elementary Wilt Elementary Thomas Jefferson Middle Atherton High School Seneca High School						

Appendix C: Follow-up Survey for AfL Principals

Are you still attempting to use the *Assessment for Learning* (*AfL*) program in your school and/or classroom? (yes/no)

    (If no) What contributed to your decision to abandon the program? (text box response; branch to question 4)

If yes:

Have other school staff members beyond the *AfL* trained teachers been introduced to the program? (yes/no)

What do you feel have been the biggest benefits to adopting this program in your school and/or classroom? (text box response)

What have been the biggest challenges to adopting this program in your school and/or classroom? (text box response)

Do you have any other comments about your experiences thus far with *AfL* that might inform future program plans? (text box response)

Are you a classroom teacher? (yes/no)

Table D.1

Reliability Statistics for Composite Variables

	Cronbach's α	*N of items*
Perceptions of Teaching	.758	8

Our success as educators should be determined primarily by our impact upon student learning.

Teachers and administrators are valued members of this district's data-driven reform efforts.

Using data has improved the quality of decision-making in this district.

By trying different teaching methods, teachers can significantly affect students' achievement levels.

If we constantly analyze what we do and adjust to get better, we will improve.

Teachers in this district feel personal responsibility when school improvement goals are not met.

Students in this district believe that they will succeed at learning if they keep trying.

Teachers have the knowledge and skills necessary to improve student learning.

	Cronbach's α	*N of items*
Perceptions of Professional Development	.856	8

If I did not have to attend in-service workshops, I would not.

Professional development events are worth the time they take.

Professional development workshops often help teachers to develop new teaching techniques.

I have been enriched by the teacher training events I have attended.

Staff development initiatives have not had much impact on my teaching.

Professional development has helped me use data more effectively.

Professional development has improved my skill in developing classroom assessment.

I have significant input into plans for professional development and growth.

	Cronbach's α	*N of items*
Individual Classroom Practices and Behaviors (Before this school year)	.884	8

I use assessments to build student confidence.

I inform my students regularly, in terms they can understand, the achievement targets or learning objectives they are to learn.

My students can describe what targets or objectives they are to learn.

I transform these learning targets or objectives into dependable assessments that yield accurate information.

I consistently use classroom assessment information to revise and guide teaching and learning.

My feedback to students is frequent, descriptive, constructive, and immediate, helping students know how to plan and improve.

My students are actively involved in assessment, including learning to manage their own learning through skills of self-assessment.

My students consistently communicate with teachers and parents about their achievement status and improvement.

Table D.1
Reliability Statistics for Composite Variables (cont.)

	Cronbach's α	N of items
Individual Classroom Practices and Behaviors (Now)	.859	8

I use assessments to build student confidence.
I inform my students regularly, in terms they can understand, the achievement targets or learning objectives they are to learn.
My students can describe what targets or objectives they are to learn.
I transform these learning targets or objectives into dependable assessments that yield accurate information.
I consistently use classroom assessment information to revise and guide teaching and learning.
My feedback to students is frequent, descriptive, constructive, and immediate, helping students know how to plan and improve.
My students are actively involved in assessment, including learning to manage their own learning through skills of self-assessment.
My students consistently communicate with teachers and parents about their achievement status and improvement.

	Cronbach's α	N of items
Perceptions of Collaboration in School (Before this school year)	.761	5

Teachers in this school meet regularly to look at student data and make instructional plans BEFORE this school year.
When teachers in this school meet with each other, they usually focus on student learning outcomes BEFORE this school year.
Teachers in this school work collaboratively to improve curriculum and instruction BEFORE this school year.
Teachers in this school are given adequate time for collaborative planning BEFORE this school year.
Teachers in this school regularly discuss assumptions about teaching and learning BEFORE this school year.

	Cronbach's α	N of items
Perceptions of Collaboration in School (Now)	.762	5

Teachers in this school meet regularly to look at student data and make instructional plans NOW.
When teachers in this school meet with each other, they usually focus on student learning outcomes NOW.
Teachers in this school work collaboratively to improve curriculum and instruction NOW.
Teachers in this school are given adequate time for collaborative planning NOW.
Teachers in this school regularly discuss assumptions about teaching and learning NOW.

	Cronbach's α	N of items
Perceptions of the Extent of Data Use in School	.816	6

To identify individual students who need remedial assistance.
To tailor instruction to individual students' needs.
To develop recommendations for tutoring or other educational services for students.
To identify and correct gaps in the curriculum for all students.
To encourage parental involvement in student learning.
To identify areas where teachers need to strengthen their content knowledge or teaching skills.

Appendix E: AfL Construct Map: Key Project Questions with Corresponding Survey Questions and Interview Probes

This project is designed to provide JCPS district administrators with information regarding the six key areas of exploration listed vertically along the boxes of the construct map that follows. In some cases, sub-questions are also listed, as are corresponding survey questions and interview probes.

AFL Training Transfer

- What aspects of the AFL training have transfered into changed attitudes and behavior on the part of teachers?
- What aspects of teachers, administrators, resource teachers' knowledge about AfL and changes in practice can be attributed to AfL training?
- How are teachers and other staff using student assessment data?
- What models, if any, of best practice in AfL are now in operation?
- INTERVIEW Questions: Teachers-7,9-14,17,20,21,24-29; Administrators-4-10,17,18,21-24,26,27
- SURVEY Questions: 19-46

Teacher and Administrator Perceptions

- What are teacher and administrator perceptions regarding the content and method of the AFL initiative?
  - Is AfL seen as valuable?
  - Is AfL viewed as an 'add-on' to all the other 'stuff' the district demands?
- What is their locus of control?
- In general, is PD seen as valuable?
- INTERVIEW Questions: Teachers-5,6-8,11,12,14,17, 20,23-30; Administrators-6-11, 15,17,20-28
- SURVEY Questions: 2-18

AfL Keys to Quality Assessment

- Are teachers, administrators, resource teachers clear about AfL's underlying principles and key qualities?
- Which of the AfL keys to quality assessment did schools choose as their focus?
- Where are schools now in the AfL process?
- INTERVIEW Questions: Teachers-11,12,18-22; Administrators-6,8,15-17
- SURVEY Questions: 25-40

Climate of Collaboration

- What is the school climate concerning collaboration, specifically as it relates to formative assessments?
- INTERVIEW Questions: Teachers-16,17,21,22; Administrators-4,5,7,13,14,18,19
- SURVEY Questions: 47-68

School Leadership

- What roles do teachers, administrators, resource teachers, and students play in driving collaboration around assessment?
- INTERVIEW Questions: Teachers-7,9,10,13,16,19,25-29; Administrators-4-7,9,13,14,16,22-25
- SURVEY Questions: 47-68

Obstacles to Implementation

- What institutional and individual obstacles do teachers face in implementing AFL at the school and classroom level?
- INTERVIEW Questions: Teachers-14,15,22,30; Administrators-11,19,28
- SURVEY Questions: 11-18, 47-56

Appendix F: Interview Protocols

Protocol for Teachers (Cohort and Non-cohort)

I) Demographics

How many years have you been teaching in total (including this school year)?

How many years have you been teaching at this school (including this school year)?

What grade/subjects do you teach?

How has this school year (so far) been compared to previous years?

II) Classroom Practices

How are your students this year compared to last year(s)?

If stronger or weaker, why do you think this is the case?

Has your teaching changed in response to the state-wide assessments mandated by NCLB? If yes, how? If not, describe.

What is your understanding of the concept of formative assessment?

Has your use of formative assessment changed since the AFL training? If so, how? If not, describe.

Have you created or redesigned formative assessments since the AFL training? Explain.

How would you assess your own understanding of the AFL concept at this point?

The September Stiggins training emphasized the concept of "learning targets" to drive instruction. What does this term mean to you, or how would you describe it in relation to your own teaching?

--Are "learning targets" different from curriculum goals you've used in the past? If so, please explain.

In the training, Stiggins also talked about changing students' academic focus from 'performance goals' (i.e. working for grades, points, etc.) to 'learning goals' (i.e. working to improve and grow as a learner). How would you describe your students' academic focus, before and after you attended the AfL training in September?

Have you seen any change from performance to learning goal orientation with regards to assessments used in your classroom since implementing AFL? Please explain.

What are the biggest advantages and disadvantages about implementing AFL in your classroom?

Are there barriers that currently exist to implementing the seven strategies of AFL in your classroom? If yes, please describe. If not, please describe.

<div align="center">Seven Strategies</div>

Where am I going?	1. Provide a clear and understandable vision of the learning target
	2. Use examples and models of strong and weak work
Where am I now?	3. Offer regular descriptive feedback
	4. Teach students to self-assess and set goals
How can I close the gap?	5. Design lessons to focus on one aspect of quality at a time
	6. Teach students focused revision
	7. Engage students in self-reflection, and let them keep track of and share their learning

III) Teacher collaboration and professional learning communities

How would you describe the atmosphere about collaboration among the faculty with teaching and learning issues? In your department/grade level?

Is there a difference in levels of teacher collaboration around the two different types of assessments (i.e. formative and summative)? Please describe.

Has the level of collaboration changed since the AFL training? If so, describe. If not, describe.

How did you decide where/when/how to begin AfL implementation at your school following the September training? Please describe the approach you took and rational for doing so.

Are there barriers to teacher collaboration in your building? In your department/grade level? If so, describe. If not, describe.

IV) Beliefs/Attitudes

What factor(s) do you believe has the largest impact on student achievement? Please explain.

Has your attitude about the rationale for using formative assessment changed since the AFL training? Please explain.

Has your attitude about the role of the teacher as part of AFL changed since the training? Explain.

Has your attitude about the role of the student as part of AFL changed since the training? Explain.

Have you observed any changes in student academic motivation since the AFL training? Describe.

Do you think that the AFL training has had an impact on the effectiveness of your own teaching practices? Please explain.

Do you think that the AFL training has had an impact on the effectiveness of your colleagues' teaching practices? Please explain.

Protocol for Administrators

I) Demographics

Where (what school) did you start your career in education? What year?

How long have you been a principal? What school(s)?

How long have you been a principal at this school?

II) Classroom practices

How do you assess student learning at your school?

What do you do with this information-the links between data and instructional strategies?

Has the teaching in your building changed in response to the state-wide assessments mandated by NCLB? If yes, how? If not, describe.

Has your teachers' use of formative assessment changed since the AFL training? If so, how? If not, describe.

Have your teachers created or redesigned formative assessments since the AFL training? Explain.

How would you assess your own understanding of the AFL concept at this point?

Has the focus of students' academic attention, with respect to assessments used in AFL classrooms, changed since its implementation? (I.e. Have you observed any change from 'performance' orientation to 'learning orientation'?)

What are the biggest advantages and disadvantages about implementing AFL in your building?

Are there barriers that currently exist to implementing the seven strategies of AFL in your building? If yes, describe. If not, describe.

Seven Strategies

Where am I going?	1. Provide a clear and understandable vision of the learning target
	2. Use examples and models of strong and weak work
Where am I now?	3. Offer regular descriptive feedback
	4. Teach students to self-assess and set goals
How can I close the gap?	5. Design lessons to focus on one aspect of quality at a time
	6. Teach students focused revision
	7. Engage students in self-reflection, and let them keep track of and share their learning

III) Teacher collaboration and professional learning communities

How would you describe the atmosphere among the faculty about collaboration with teaching and learning issues? By department/grade level?

Is there a difference in levels of teacher collaboration about summative assessments vs. formative assessments? Describe.

Has this level of collaboration changed since the AFL training? If so, describe. If not, describe.

How did you and your team of trained teachers decide where/when/how to begin AfL implementation at your school following the September training? Please describe the approach you took and rational for doing so.

Are there barriers that currently exist around the issue of teacher collaboration in your building? By department/grade level? If so, describe. If not, describe.

IV) Beliefs/Attitudes (questions 2-6 refer to table 2.2 Comparing Assessment *for* and *of* Learning: Overview of Key Differences on p. 33 of Stiggins book)

What factor do you believe has the largest impact on student achievement? Explain.

Has your attitude about the reason for using formative assessments in your building changed since the AFL training? Describe.

Has your attitude about the role of the teacher with AFL changed since the training? Describe.

Has your attitude about the role of the student with AFL changed since the training? Describe.

What have you observed about student motivation in relation to academic achievement since the AFL training? Describe.

Has your attitude about the role of the parent with AFL changed since the training? Describe.

What is your perception about the effectiveness and impact of the AFL training on those teachers in the cohort?

What is your perception about the effectiveness and impact of the AFL training on your entire faculty?

What is your perception about the effectiveness of implementing AFL across the entire district?

Protocol for Resource Teachers

I) Demographics
1) How many years have you been in education total (including this school year)?
2) How many years have you been working in your current role (including this school year)? And with what school(s)?
3) How has this school year (so far) been compared to previous years?

II) Classroom Practices
What is your understanding of your role as a resource teacher for your school(s)?

How does this role relate to the AfL initiative?

How do you see your role with this initiative changing over the course of this year? In the future?

What is your understanding of the concept of formative assessment?

Has your use of formative assessment changed since the AFL training? If so, how? If not, describe.

How would you assess your own understanding of the AFL concept at this point?

In the September training Stiggins emphasized the concept of "learning targets" to drive instruction. What is your understanding of this term in relation to your own coaching?

In your opinion, has students' academic engagement and attention, changed since implementing AFL?

What are the biggest advantages and disadvantages about implementing AFL in your school(s)?

Are there barriers that currently exist to implementing the seven strategies of AFL (p. 42-45 in Stiggins book) in your school(s)? If yes, please describe. If not, please describe.

III) Teacher collaboration and professional learning communities
How would you describe the atmosphere about collaboration among faculty with teaching and learning issues at the school(s) where you work?

Is there a difference in levels of teacher collaboration around the two different types of assessments? Please describe.

How would you rate your understanding of the five keys to quality assessment? [clear purpose, clear targets, sound design, effective communication, and student involvement]

**If needed: use a scale of 0-10, where 0 represents no understanding and 10 represents perfect understanding.

**Did your school choose one of these five keys to quality assessment as a starting place for the school's work with formative assessment?

-If so, what was the rationale for choosing this particular key?

How would you describe your own understanding of this key to quality assessment?

-Has your understanding of this key to quality assessment translated into changes in classroom practice?

-How would you assess the faculty's understanding and classroom practice related to this key?

Has the level of collaboration changed since the AFL training? If so, describe. If not, describe.

Are there barriers to teacher collaboration in your building? If so, describe. If not, describe.

IV) Beliefs/Attitudes (questions 2-5 refer to table 2.2 Comparing Assessment *for* and *of* Learning: Overview of Key Differences on p. 33 of Stiggins book)
What factor(s) do you believe has the largest impact on student achievement? Please explain.

Has your attitude about the rationale for using formative assessment changed since the AFL training? Please explain.

Has your attitude about the role of the teacher/student as part of AFL changed since the training? Please explain.

Do you think that the AFL training has had an impact on the effectiveness of your own coaching practices? Please explain.

Do you think that the AFL training has had an impact on the effectiveness of your colleagues' practices? Please explain.

Do you think that implementing AFL across the entire district would be effective? Please explain.

Appendix G: Level II Matrix for Interview Findings

Table F		
Key Findings – Level II Matrix		
Project Question	**Key Project Finding**	**Relevant at Level (s) – Individual teacher, School, District**
1)What is the school culture concerning collaboration, specifically as it relates to formative assessment?	Teachers and principals express a positive reception to *AfL* on the whole. (also informs Q.'s 2 & 3)	Individual School
	Collaboration between teachers is regular and routine at pilot schools; among trained teachers, collaboration around *AfL* is also common. (also informs Q.'s 2 & 3)	Individual School
2) Where are the pilot schools in the *AfL* implementation process?	Most schools have chosen to use learning targets as the entry point for *AfL* implementation. (also informs Q. 3)	Individual School
	The 2-day *AfL* training was very valuable in solidifying teachers' and principals' understanding of *AfL*; the 10/5 session at Freedom Hall was not conducive to learning about the program. (also informs Q. 3)	Individual District
3) What aspects of the *AfL* training transfer into changed behavior and attitudes?	*AfL* is encouraging teachers to be more intentional in their planning; backward mapping has become common for trained teachers. (also informs Q. 2)	Individual
	Teachers are learning to use more intentional, descriptive feedback with students– though for most teachers they are just beginning to work on this aspect of *AfL*. (also informs Q. 2)	Individual School
	Student engagement and motivation has increased in *AfL* trained teachers' classrooms; this factor has led to buy-in on the part of these teachers. (also informs Q. 1 & 2)	Individual School
4) What institutional and individual obstacles do teachers face in implementing *AfL* at the school and classroom level?	*AfL* is a complex program; it takes time to implement successfully and also to earn teacher buy in. (also informs Q. 2)	Individual School District
	Time is barrier to implementation; difficult to find time during the school day for *AfL* collaboration, reflection, and training of other school staff. (also informs Q. 2)	Individual School
	Some teachers and principals are concerned that district support for *AfL* will be short lived.	Individual School District
	Teachers feel it is a challenge to simultaneously cover curriculum and also fully incorporate *AfL* practices. (also informs Q. 2)	Individual School
	There is a perception among pilot school teachers and principals that district assessments run contrary to *AfL* theory and goals. (also informs Q. 2 & 3)	Individual School District