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# Effects of Implementing a Formative Assessment Initiative

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EFFECTS OF IMPLEMENTING A FORMATIVE ASSESSMENT INITIATIVE

A Dissertation  
Presented to  
The Faculty of the Educational Leadership Doctoral Program  
Western Kentucky University  
Bowling Green, Kentucky


In Partial Fulfillment  
Of the Requirements for the Degree  
Doctor of Education

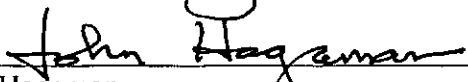
By  
Thomas A. Stewart


December 2011


EFFECTS OF IMPLEMENTING A FORMATIVE ASSESSMENT INITIATIVE


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To:

Jim, Lynne, and Mike;

Jamie and Will;

and my two greatest supporters, James and Nancy Stewart.

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Do not depend on the hope of results. . . . you may have to face the fact that your work will be apparently worthless and even achieve no result at all, if not perhaps results opposite to what you expect. As you get used to this idea, you start more and more to concentrate not on the results, but on the value, the rightness, the truth of the work itself. You gradually struggle less and less for an idea and more and more for specific people. In the end, it is the reality of personal relationship that saves everything.

*-Thomas Merton*

*The Hidden Ground of Love: Letters by Thomas Merton on Religious Experience and Social Concerns*

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## EFFECTS OF IMPLEMENTING A FORMATIVE ASSESSMENT INITIATIVE

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Directed by: Christopher Wagner, John Hagaman, Gary Houchens, and William Schlinker

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This dissertation supports the work of Black and Wiliam (1998), who demonstrated that when teachers effectively utilize formative assessment strategies, student learning increases significantly. However, the researchers also found a “poverty of practice” among teachers, in that few fully understood how to effectively implement formative assessment in the classroom. This qualitative case study examined a series of voluntary workshops offered at one public middle school designed to address this poverty of practice. Data were gathered via semi-structured interviews. The researcher used constant comparative analysis to discover patterns in the data for the following four research questions: (1) What role did a professional learning community structure play in shaping participants’ perceived effectiveness of a voluntary formative assessment initiative? (2) How did this initiative affect participants’ perceptions of their knowledge of formative assessment and differentiation strategies? (3) How did it affect participants’ perceptions of their abilities to teach others about formative assessment and differentiated instruction? (4) How did it affect school-wide use of classroom-level strategies?

Results indicated that teacher participants experienced a growth in their capacity to use and teach others various formative assessment strategies, and even non-participating teachers reported greater use of formative assessment in their own

instruction. Participants and non-participating teachers perceived little growth in the area of differentiation of instruction, which contradicted some administrator perceptions.

The workshops' contemplative, collegial, professional learning community structure also shaped participants' experience in important ways. Implications for stakeholder practice and further research are discussed.

## CHAPTER I: INTRODUCTION

Modern school administrators live in an age of choice. Educational consultants and test companies offer principals and superintendents potential solutions to their possible and imagined problems. Presented with an overabundance of programmatic options for implementing school-wide and district-wide instructional initiatives, school administrators should carefully discern their cognitive value and predicted effectiveness. However, when these options are combined with imposed senses of urgency from state departments of education and local boards of education, leaders sometimes neglect the reflection necessary for making sound decisions.

School leaders are not entirely to blame for craving quick fixes to deep issues, applying bandages to gaping wounds, or seeking 24-hour cures for illnesses that have incubated for years. High-stakes accountability systems and the No Child Left Behind Act of 2001 (NCLB) ushered in a form of public data reporting that, when misinterpreted, cost some schools and educators reputations and jobs. Rather than seek their problems' root causes, administrators and teachers scrambled to "fix" their test scores. When they did, they sought to broaden their schools' program bases, purchasing off-the-shelf, packaged curricula, instead of simply focusing on good classroom instruction.

Schools needed teachers who clearly understood the curricular standards for which they were responsible, and who could communicate those standards in ways their students understood. Teachers needed to be able to assess their students' progress toward standards. Teachers then needed to be able to take logical next steps informed by assessment-derived data. These next steps would lead to differentiated instruction – helping students meet the standards, or enhancing the students' learning who had already



met them. Schools did not need more test-taking strategies. Schools needed to equip their teachers with an instructional process proven to increase student achievement by clearly communicating progress toward an objective and aiding, through intervention and detailed feedback, progress toward meeting that objective. Schools needed formative assessment.

Schools and school districts did *not* need more programs; however, old habits die hard, and throwing money at instructional problems was an old habit plaguing public education. Program creators approached their potential clients with questionable motives when “formative assessment” was in danger of becoming the next big educational program. Popham (2006) warned of such practices, revealing, “More than one test company official has confided to me that companies affixed the ‘formative’ label to just about any tests in their inventory” (p. 86).

Some school and district leaders became so dependent upon off-the-shelf programs that they neglected the basic professional development needs of their teachers – needs that they could meet themselves with an appropriate amount of research, forethought, planning, time, and involvement. Opting against a strictly programmatic implementation of a formative assessment initiative, the researcher, with colleagues in a Kentucky public school district, aimed for what we hoped would be a deeper, more cognitive journey.

This dissertation utilized a single-case study approach to examine one collegial group’s experiences with the formative assessment concept and process. Fourteen educators (12 teachers, one curriculum specialist and one principal) volunteered to participate in a *Formative Assessment Academy* led by the researcher. This study

explored the six-month long process of implementing the Academy and evaluating its effectiveness.

## **Background**

### ***Formative Assessment and Kentucky's Core Academic Standards***

In 2009, Kentucky's newly-drafted Senate Bill 1, or *SBI*, (S. Bill 1, 2009) included a definition of *formative assessment*, the first time the term was ensconced in state law. The Kentucky Association for School Councils (2010) described formative assessment as, "a process used by teachers and students during instruction to adjust ongoing teaching and learning to improve students' achievement of intended instructional outcomes" (p. 7). The definition implied more than the traditional means of assessment of learning (Assessment Reform Group, 1999). Formative assessment was different than testing students at the end of units of study and then assigning grades for performance. Formative assessment was a process, and was usually ungraded and given back to students with descriptive feedback indicating levels of progress or denoting next steps for instructional and learning strategies (Popham, 2011b). Traditional assessment was only part of the entire formative assessment process.

Simultaneously, in 2010 Kentucky became the first state to adopt the *Common Core State Standards* (Common Core State Standards Initiative, 2010a) in English/language arts and math before final drafts were even completed. Kentucky educators started working with the new standards in a series of network meetings beginning summer 2010. In addition to guiding familiarity with the new standards, and promising fewer but deeper standards, facilitators from the Kentucky Department of Education also versed network participants in the language of Professional Learning

Community (PLC) models and, implicitly, communication and organizational change theories. Teachers and administrators also practiced methods for recognizing effective classroom-level formative assessment, a centerpiece of this state-mandated “balanced assessment” approach, at these initial network meetings.

Most teachers acknowledged the formative assessment process as a best instructional practice before it was enacted into law; however, most also had merely a nebulous understanding of the whole process and how to overcome its logistical challenges (Popham, 2011a). Others, though, formatively assessed their students instinctively, particularly in elementary grades where standards-based reporting and anecdotal record keeping were more commonplace. A primary reason for this informal, unintentional implementation of formative assessment was that classroom teachers had not been given ample opportunities to study the research supporting it or to adequately practice and reflect on teaching strategies to foster it (Chappuis, Commodore, & Stiggins, 2010). As a public school district administrator, the researcher had to own that fact, and then attempt to locally respond to the situation, beginning with self-study of the formative assessment process.

### ***Formative Assessment***

Scriven (1967) first utilized the terms *formative* and *summative* when writing about two possible purposes of evaluation. Bloom (1969) stated that the terms could also be applicable to teachers who specifically wanted to assess student progress toward a standard. Bloom (1971) soon introduced the foundation of assessment for learning (or formative assessment) in the *Mastery Learning* instructional model. Bloom’s Mastery Learning model stipulated that students would not progress to new concepts and

objectives until they met, or mastered, previous ones. Later models mirrored Bloom's work. These models also employed the following process: unpacking (or *deconstructing* as it is currently known) state curricular standards into smaller, teacher-friendly learning objectives; writing student-friendly learning targets; grouping those targets into learning progressions; and finally differentiating or providing interventions for students after formatively assessing their progress toward learning targets. Formative assessment, then, was the key to completing the cycle of teaching, assessment, and revised teaching. Popham (2008) advanced Bloom's model with his own learning progression work. According to Popham, teachers should formatively assess students using groups of learning targets, called progressions, which built upon each other and culminated in a significant "target curricular aim" (p. 24).

Fuchs and Fuchs (1986) completed a meta-analysis of 21 controlled events to test the instructional effectiveness of formative assessment, primarily focusing on students with learning disabilities. Their findings revealed such dramatic increases in learning and achievement that the researchers recommended formatively assessing special education student Individual Education Plans (IEPs) over traditional IEP evaluation methods. The research of Fuchs and Fuchs not only added to the foundational base for formative assessment but also to that of Response to Intervention (RTI), which, when employed in conjunction with formative assessment and appropriate differentiation of instruction, comprised an overall more effective picture of a school and district instructional program.

Forty-four years after Scriven (1967) first publicized the terms *formative* and *summative*, they were current buzzwords in education. But, like other common educational terms (e.g., the acronym PLC for Professional Learning Community), they

were also becoming distorted in their overuse and misinterpretations for individual purposes. Cauley and McMillan (2010) clarified:

One way to think about formative assessment is to contrast it with summative assessment. Although formative assessment can be performed after a test, effective teachers use formative assessment during instruction to identify specific student misunderstandings, provide feedback to students to help them correct their errors, and identify and implement instructional correctives. (p. 1)

Teachers had long used summative assessment measures as standard-markers of student achievement. Likewise, states measured school effectiveness using summative procedures. Formative assessment, though (with its sibling, interim, or *interim-benchmark*, assessment) only recently garnered the attention previously afforded summative assessment.

Taken together, formative, interim and summative assessments comprised what became commonly known in school districts as components of a *balanced assessment system* (Chappuis et al., 2010). Popham (2011b) had little use for interim assessments, stating that no research-based evidence existed to prove their instructional effectiveness. Chappuis et al. (2010) contended that of the three assessment possibilities daily classroom-level assessment for learning (or formative assessment) was most integral to student improvement and success. The authors stated that teacher and administrator assessment literacy was a prerequisite for successful formative assessment implementation. They also placed the onus of responsibility for teaching assessment literacy and effective use of formative assessment squarely on the shoulders of school administrators and higher-education authorities. Ironically, they wrote that even though

research had proven formative assessment's effectiveness, "historically, (classroom-level formative assessment) has been almost completely ignored as a school improvement tool" (p. 16). Schools needed formative assessment, but school leaders had not proven that they could support a formative assessment initiative that would translate to meaningful change.

Primarily, it was the researcher's experience that teachers recognized classroom formative assessment strategies as best practice. They received cursory introductions to the concept in teacher education courses. A few were even able to cite foundational researchers. However, many university and school district leaders had not intentionally equipped teachers with the tools necessary to successfully implement formative assessment. Holman (2007) recognized the logistical challenges for traditionally-trained teachers, admitting that the process of deeply implementing daily classroom formative assessment required a three-year cultural paradigm shift on the parts of all school stakeholders (including teachers, administrators, parents, and students). Nearly ten years earlier, Black and Wiliam (1998) bemoaned, "There is a wealth of research evidence that the everyday practice of assessment in classrooms is beset with problems and shortcomings" (p. 141).

Teachers fostering new ways of thinking about formative assessment practices steeped themselves in the foundational *Black Box* study (Black & Wiliam, 1998). Black and Wiliam (1998) explored these questions: "Is there evidence that improving formative assessment raises standards? Is there evidence that there is room for improvement? Is there evidence about how to improve formative assessment?" (p. 140). Educators who read and reflected upon this study discovered its findings could inform their own practice,

and that formative assessment positively affected student achievement, particularly “low achievers more than other students and so reduces the range of achievement while raising achievement overall” (p. 141). Reflecting on the seminal study, Black, Harrison, Lee, Marshall, and Wiliam (2004) later wrote, “We were convinced that enhanced formative assessment would produce gains in student achievement, even when measured in such narrow terms as scores on state-mandated tests” (p. 11). Other researchers explored and confirmed additional components of effective formative assessment. Researchers such as Cauley and McMillan (2010) and others (Chappuis, 2009; Sadler, 1989), for example, noted the power of student self-assessment and descriptive feedback as integral components of a balanced assessment system generally, and of effective formative assessment specifically, targeting not only student achievement but also student motivation. Chappuis et al. (2010) argued that student motivation was a necessary precursor to student achievement.

The formative assessment process, then, could increase student achievement as measured by various methods, including those that resulted in NCLB public reporting. Formative assessment initiatives needed sound structures to ensure their intentional implementations, though. Similar instructional initiatives utilized the Professional Learning Community structure. Some leaders found that this familiar structure might also support the implementation of a formative assessment initiative.

### ***Professional Learning Communities***

It was important that schools focus on a few things at a time and implement those few things correctly and to fidelity (Schmoker, 2011). The structure by which schools did this work was equally important. Recognizing this need, a handful of innovative

educators devised Professional Learning Communities (PLC's) to give schools focus and consistency in their improvement efforts.

Teachers and school administrators once worked in isolation. Administrators proceeded with the minutiae of running schools while teachers closed their individual doors and went about their own business. Those were days when a solitary method of working was status quo; those were also days of curricular chaos combined with comparatively minimal school accountability. However, with school reform, organized curriculum maps informed by state standards replaced chaos. High-stakes accountability systems that measured student learning, but also teacher and administrator effectiveness, replaced minimal accountability. Additionally, this method of accountability resulted in sanctions and improvement plans for schools and districts that did not meet a prescribed standard. Most disquieting to some, work that necessitated opening classroom doors, administrator visibility, and collegial cooperation replaced isolation.

The culture shift from isolation to inclusion was difficult for some teachers who were accustomed to and preferred separation. Holdouts from the era of isolation encountered difficulty in the forms of parent complaints and corrective action plans. Administrators were also challenged to shift from roles of school managers to those of instructional leaders. However difficult the transition, a modern school whose faculty members do not currently operate under some auspice of a Professional Learning Community is rare.

Components of Professional Learning Communities were long evident, not only in schools but also in other societal sectors. Social Identity Theory (Tajfel, 1970, 1972, 1978, 1981; Tajfel, Billig, Bundy, & Flamant, 1971; Tajfel & Turner, 1979), implicit in



the structure of PLCs, helps explain why they work. Generally, the theory stated that group members followed the expected rules and behaviors set forth by their other colleagues within the same group. The theory also stated that group members identified with other members of their group even when the individuals had little in common other than the group's work. Social Identity Theory explains why PLCs, intentional in their processes, *unintentionally* and informally function as they do. All social groups instinctively operate that way. However, the intentional, formal aspects of real Professional Learning Communities explained why meaningful ones worked, and, in contrast, why some groups were PLCs in name only.

DuFour and Eaker (1998) built upon small group communication components of Social Identity Theory (Tajfel, 1982) and organizational change theory (Kotter, 1995; 1996) to make the PLC structure marketable. Professional Learning Communities would distinguish themselves from other school-based group meetings. True PLCs would be job-embedded, collegial groups of teachers and administrators who worked together for positive change in curriculum, instruction, or assessment. The authors and others in their *Professional Learning Communities at Work* organization offered numerous resources (DuFour & Eaker, 1998; DuFour, DuFour, Eaker, & Karhanek, 2004; DuFour, Eaker, & DuFour, 2005; DuFour, DuFour, & Eaker, 2006; Eaker, DuFour, & DuFour, 2002; Eaker, DuFour, & DuFour, 2007; Graham & Ferriter, 2009; DuFour, DuFour, Eaker, & Karhanek, 2009; DuFour, DuFour, Eaker, & Many, 2010; Campbell, 2011) and professional development opportunities. Unlike some of their contemporaries, though, DuFour and Eaker (1998) were clear that PLCs were not a NCLB magic bullet. DuFour and Eaker emphasized the need for shared group norms and a focus on the important

issues of running a school (e.g., curriculum, instruction, assessment). Only PLCs maintaining this kind of focus deserved the title “PLC.”

A group of unique individuals with distinct personality types could only achieve a common purpose, vision, and mission using a structure of meaningful Professional Learning Communities (PLCs) that remained true to their original focus on curriculum, instruction, or assessment. Higher-functioning PLCs collaboratively developed group norms to guide their work (DuFour & Eaker, 1998). PLCs were not for advancing group members’ individual agenda items; PLCs operated ultimately for transforming curriculum, instruction, and assessment for the good of the student (DuFour & Eaker, 1998). Eaker et al. (2002) confirmed the following:

Schools that function as professional learning communities are *always* characterized by a collaborative culture. Teacher isolation is replaced with collaborative processes that are deeply embedded into the daily life of the school. Members of a PLC are not ‘invited’ to work with colleagues: they are called upon to be contributing members of a collective effort to improve the school’s capacity to help all students learn at high levels. (p. 5)

PLC implementation could not happen overnight. PLCs could not provide quick fixes to change issues requiring deep thought, planning, and reflection. According to Eaker et al. (2002),

While embracing the abstract idea of the PLC model, (some school and district leaders and teachers) lack confidence in their ability to move from abstraction to implementation, from promise to reality in their own settings. Thus, it is common for participants in our workshops to seek the step-by-step recipe they can follow

to create a PLC in their own school. The bad news, of course, is that no such recipe exists. (p. 2)

Additionally, following its inception, the term “PLC” became such a buzz phrase in the education community that thoughtful school leaders were forced to spend time educating their teachers about the differences between a true PLC (which might focus on deep curricular change) and a traditional faculty meeting (which might focus on upcoming school events or other such “business” items). When implemented with fidelity, PLCs provided the logistical and structural basis for implementing change focused on elements of a school’s or district’s instructional program.

School leaders could support a meaningful Professional Learning Community in order to implement a formative assessment initiative. To do so, they would also have to embrace the organizational change theory that was integral to both.

### ***Application of Change Theory for Deep Implementation***

Even supported by the structure of a high-functioning Professional Learning Community, a formative assessment initiative required deep institutional change, not only in instructional practice but also in culture. Change theories helped illustrate why such initiatives requiring deep, and initially overwhelming, change could still be successful.

Nash (2010) synthesized organizational change theory of Kotter (1995, 1996), Senge (1990), Heifetz (1994), and Heifetz and Linsky (2002) and studied not only effects on implementation, but also long term effects on the school reform process. Using a framework that embodied their major themes of leadership, vision, teamwork, and action implementation, Nash used each of the themes as separate measures of a reform effort’s effectiveness. Also, Molacek (2008) applied Kotter’s (1995, 1996)

change theory and Rogers' (1995) Diffusion Theory to evaluate the effectiveness of a piano keyboarding initiative implementation in a rural public school district.

Additionally, Herr (2006) explored change implementation in three private higher education institutions. Herr specifically analyzed leaders' roles using only Kotter's (1996) eight-step change process. DuFour and Eaker (1998) cited Kotter's (1996) principles of successful change for PLC work to be lasting and effective because much of the work on which these collegial learning communities centered was that of impending, or occurring, change in a school or district.

Kotter (1995) broke change phases into eight distinct steps. Kotter identified the following: creating a sense of urgency, forming a powerful coalition, creating a vision, communicating the vision, removing barriers, creating short-term wins, building on change, and anchoring the change in the organization's culture. Considering these steps, the researcher drew parallels to Kotter's change theory and the implementation of a formative assessment initiative known as *The Formative Assessment Academy*.

### ***The Formative Assessment Academy***

When formative assessment became a component of legislation, the researcher was an instructional supervisor in a Kentucky public school district. After a yearlong curriculum revision process during which teachers in the district unpacked standards and rewrote them as student-friendly learning targets, some teachers and administrators grew eager for the next step. We were a small district, but even in small districts schools operate at their own paces and knowledge levels. One school, whose teachers and administrators deeply engaged in the curricular revision process, and who regularly revisited it in high-functioning Professional Learning Communities, was ready for the

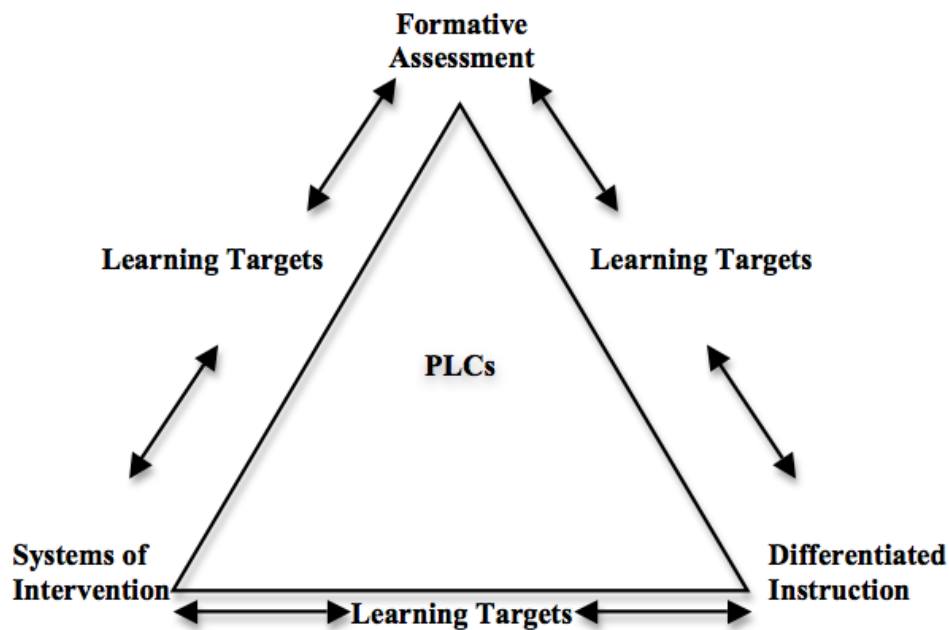
next instructional step before the others. When the principal approached the researcher and another administrator colleague about moving forward, we were initially apprehensive about taking the formative assessment leap before we felt they were ready, but we agreed to test the waters.

We presented a summary of and rationale for all the work we had done with curricular standards and learning targets to this school's entire staff. Then, we offered a vision of where this work was leading us. In essence, we restated what most of those teachers and administrators already knew: the learning targets we had spent the previous year writing and revising meant very little as stand-alone statements. Yes, communicating standards in student-friendly terms was already exponentially more effective than simply rewriting a standard on the board straight from the state's curriculum document. We knew these teachers sensed there was another purpose though. That purpose was for the means of better formatively assessing their students. More effective formative assessment processes would translate to increased student learning and achievement.

The researcher and his colleague demonstrated how the formative assessment process fit within the greater instructional program of the school and district. In this demonstration, we created the model shown in Figure 1 to illustrate the components of a high-functioning school district's instructional program. A PLC structure supported all initiatives that were currently in place. These initiatives informed and were informed by the others; none could effectively survive in isolation.

We explained in general terms the formative assessment process and how teachers might implement and manage it in their classrooms. Teachers viewed examples of some

formative assessment strategies and reflected on what they were already doing that could be considered components of the greater formative assessment process. Then we offered what their principal claimed they had been asking for.



*Figure 1.* A graphic representation of a high-functioning school district’s instructional program demonstrates the interdependent relationships of all necessary components (e.g., formative assessment, systems of intervention, differentiated instruction, and learning targets) supported by collegial learning communities.

Beginning the next month, we would meet after school in a Professional Learning Community to collegially study the formative assessment process. The researcher felt that the PLC structure was integral to the academy’s delivery, and these teachers did not question it. During the meetings we would remain focused strictly on curriculum, instruction, and assessment decisions made for the improvement of student learning. And we would collegially help each other internalize and implement the content so that we operated in a safe, contemplative environment. These teachers knew how real PLCs

operated, as opposed to faculty or committee meetings masquerading as professional learning communities. Because of this, they maintained high expectations for each other's commitment and active participation.

We would not offer professional development credit for the meetings. Enhanced professional learning was the only enticement. The researcher did not promise to make the participants formative assessment and differentiation experts; however, we did promise to collegially explore issues surrounding these topics. We would study research, look at strategies, discuss practices, and help each other become better practitioners. And it would be strictly voluntary. If teachers wanted to participate, then they would be expected to fully participate (e.g., in discussion, in practice). By the end of the final session, participants would also be prepared and expected to share their knowledge with others. If they felt that they were not ready for this step, then there would be no retribution for non-participation.

Six of Kotter's (1995) eight change theory steps could be identified at the onset of the initiative. The researcher created a sense of urgency, created a vision, and communicated the vision in the initial presentation. The volunteers and their administrators became our powerful coalition. The voluntary, after-school component and structure of the meetings removed any self-imposed barriers of time, while the researcher's support of participants also aided in removing barriers of risk. Too, operating as a true, collegial PLC removed much of what might have manifested as a barrier of competition. Participants were allowed short-term wins when they used the research and strategies immediately in practice. The researcher combined learning community philosophy (DuFour & Eaker, 1998; DuFour et al., 2005) with the

contemplative leadership concept (Merton, 1961, 2004; Steindl-Rast, 1999; Palmer, 2000) to create a unique, special community where being wrong was okay and where being vulnerable was accepted.

This first incarnation of the Formative Assessment Academy met monthly over a period of the following five months. Sixteen educators initially volunteered to participate in the Academy during which they would read and discuss relevant research, apply that research to practice, learn new classroom strategies, and collegially debrief strategies implemented after the last meeting. By the onset of the first session, the number was 15, and finally, after concluding the first session, settled at 14 (12 teachers, one curriculum specialist, and one principal) after one teacher opted out of workshop participation. This dissertation utilized a single case study approach to examine one collegial group's journey, operating in a voluntary Professional Learning Community structure in one Kentucky public middle school, to learn more about the formative assessment concept and process. This study explored the five-month long series of workshops.

### **Research Problem**

Due to an increasing need for the knowledge and practice of high-quality classroom-level formative assessment strategies, 14 educators participated in a five-meeting formative assessment initiative over a period of six months. This Formative Assessment Academy's ultimate goal was to enhance classroom practice. The researcher sought to equip teachers with foundational knowledge of classroom-level strategies, along with tools and increased levels of confidence in their own abilities to disseminate the pedagogy to their teaching-team colleagues.



This study investigated perceptions of improved or increased pedagogical knowledge of a group of Kentucky public middle school educators after their participation in a voluntary, PLC-supported formative assessment initiative. The group operated as a Professional Learning Community, following the tenets set forth by current practitioners of the model (DuFour, 1997; DuFour, 1999, McTighe & Emberger, 2006; Schmoker, 2001; Stiggins, 1999; Stiggins & Chappuis, 2006) and of the communication theory on which it was implicitly based (Tajfel & Turner, 1979; Turner, 1982).

### **Rationale**

The rationale for the current study is twofold. First, research indicates that assessment for learning, or formative assessment, helps students learn. Black and Wiliam (1998), though, identified a “poverty of practice” (p. 141) among classroom teachers regarding their use of formative assessment. In other words, teachers could not effectively practice strategies with which they were not equipped. While Black and Wiliam first noted this pedagogical deficiency, Chappuis et al. (2010) placed the onus of responsibility for it on school and district-level administrators and higher education authorities.

Second, at the time of this writing, many states were undergoing curricular standards revisions. In February 2010, Kentucky became the first state to adopt the *Common Core State Standards* in English/language arts and mathematics (Common Core State Standards Initiative, 2010a). The standards adoption partially answered requirements of Kentucky’s *Senate Bill 1* (SB1, 2009); however, it did not fulfill all of the requirements. When Kentucky’s governor signed SB1 on March 25, 2009, it contained a definition of “formative assessment” and a call for districts across the state to

institute “balanced assessment systems” – systems of equitable uses of classroom-level formative, interim-benchmark, and summative assessments (Kentucky Association Professional Educators, 2010).

The ultimate purpose of the current study, then, was to provide school leaders who were seeking to build capacity among their teachers and who were seeking to meet the letter of the law, but in a meaningful way, an implementation process to follow.

### **Research Questions**

Four research questions frame this study:

1. What role did a professional learning community structure play in shaping participants’ perceived effectiveness of a voluntary formative assessment initiative?
2. How did this initiative affect participants’ perceptions of their knowledge of formative assessment and differentiation strategies?
3. How did it affect participants’ perceptions of their abilities to teach others about formative assessment and differentiated instruction?
4. How did it affect school-wide use of classroom-level formative assessment strategies?

## **Definition of Terms**

### **Balanced Assessment System**

According to Chappuis et al. (2010), an assessment system was in balance when it promoted assessment for both formative and summative purposes. A balanced assessment system delivers equitable and appropriate forms of formative, summative, and interim-benchmark assessments.

### **Common Core State Standards**

This set of commonly adopted curricular standards were first known by the abbreviation “CCSS,” then renamed “Kentucky’s Core Academic Standards” in Kentucky only, and finally, for brevity, commonly becoming called “KCAS” in Kentucky. The mission of the Common Core State Standards Initiative (2010b) was stated as follows:

The Common Core State Standards provide a consistent, clear understanding of what students are expected to learn, so teachers and parents know what they need to do to help them. The standards are designed to be robust and relevant to the real world, reflecting the knowledge and skills that our young people need for success in college and careers. With American students fully prepared for the future, our communities will be best positioned to compete successfully in the global economy. (n.p)

Kentucky was the first state to adopt the Common Core State Standards. States that were early-adopters gained points in the Obama administration’s *Race to the Top* (RTTT) funding application process; however, adoption of the CCSS did not guarantee funding, and Kentucky failed in its own bid for RTTT.

## **Differentiated Instruction**

Tomlinson and Imbeau (2010) defined differentiation as “classroom practice with a balanced emphasis on individual students and course content” (p. 14). Other definitions of differentiation exist. However, for the purposes of this study, differentiation was considered a natural partner to formative assessment. Once teachers formatively assessed students and discovered groups of students who mastered different learning targets within a learning progression at different levels of proficiency, teachers then provided different, or differentiated, instruction for those groups according to their progress.

## **Formative Assessment**

Formative assessment is also called and described as assessment for learning (Assessment Reform Group, 1999; Stiggins, 2005). Formative assessment takes many forms, and thus answers to many differing definitions. Black et al. (2004) called it an assessment whose primary purpose was to aid in student learning. However, Popham (2011) described formative assessment as a process in which an assessment was but one component. The formative assessment process was one of measuring students’ progress toward a benchmark, a standard, or a learning target, and collaboratively (with the student) deciding where to go next when the student met the objective, or when the student did not meet the objective.

## **High-stakes Accountability Systems**

High-stakes systems of accountability primarily refer to forms of summative assessments that ultimately served the purpose of school improvement by measuring and publicly reporting student progress. They also “generally try to strengthen the incentives for school improvement by issuing salient rewards to high achieving schools and/or

imposing stiff sanctions on low performing schools” (Center for Education Policy and Leadership, 2005).

### **Learning Progressions**

Learning progressions are series of learning targets each building upon the last in the series and ultimately leading to a greater curricular aim (Popham, 2007; 2008) that most resembled the pre-unpacked state curricular standards. Learning progressions provided guidance in the form of a roadmap for teachers who could formatively assess early targets in a progression quickly and thus knew where individual students placed on a knowledge continuum of each concept studied.

### **Learning Targets**

Learning targets are products of unpacked standards. These typically student-friendly versions of state curricular standards are usually identified by their introductory phrase, “I can.” Learning targets are an integral component of the formative assessment process.

### **Professional Learning Community**

Also commonly known as *PLC*, DuFour and Eaker (1998) defined Professional Learning Community as “an environment that fosters mutual cooperation, emotional support, and personal growth as they work together to achieve what they cannot accomplish alone” (p. xii). In PLCs, educators focused on curriculum, instruction, and assessment.

### **Summative Assessment**

Summative assessment is also known and described as assessment of learning (Assessment Reform Group, 1999). Summative assessment is sometimes also best

described as a traditional test for which a student is graded. It is a summation and measure of student learning.

## CHAPTER II: REVIEW OF LITERATURE

Two key concepts undergird this study: the effectiveness of classroom-level assessment for learning, or *formative assessment*, and collegial learning in *Professional Learning Communities* (PLCs) implicitly based in *Social Identity Theory*. This review of literature includes three sections. The first section describes the formative assessment concept. This section begins with emerging characteristics of formative assessment from Scriven's (1967) and Bloom's (1971) research, leading to studies by Fuchs and Fuchs (1986), and Black and Wiliam (1998). The section explores why formative assessment is considered a powerful teaching and learning tool and concludes with practical classroom applications by authors who base their work in foundational research. The researcher explores implications for differentiation of instruction and proffers a definition of "formative assessment" based on literature in this section. The second section examines literature on how and why a Professional Learning Community structure supports effective adult learning, specifically within the context of deeply implementing a formative assessment initiative. Section three explains why Professional Learning Communities work as they do by describing empirical literature on Social Identity Theory, first identified by small group communication theorist Tajfel (1978) and explained further by Tajfel and Turner (1979). The chapter concludes by applying the literature to a conceptual framework for school leaders to more effectively implement formative assessment initiatives using the Formative Assessment Academy model.

### **Formative Assessment**

Effective formative assessment depends on structural planning and organization and deep teacher and student cognitive processing. Teachers informally practiced

formative assessment for many years; however, much of that practice was instinctive and unintentional. Teachers who instinctively practiced it in some form may have called it something else entirely, such as “checking for understanding.” The term “formative evaluation” eventually shaped the modern concept of formative assessment, even though researchers and authors still disagree on singular, concrete definitions of “formative assessment.” However, most contemporary authors concur that effective formative assessment is an intentional, thoughtful practice designed to raise student achievement in measurable ways.

### ***Origin and Defining Characteristics***

The first uses of the term “formative evaluation” referred primarily to program effectiveness checks. Researchers documented work in the field of formative evaluation as early as the 1960s (Cronbach, 1963; Bloom, 1968, 1971, 1973, 1978, 1984; Scriven, 1967). Scriven (1967) specifically used the terms “formative” and “summative” to distinguish between methods of curriculum evaluation. Scriven noted that the terms could also be applied to other kinds of evaluation both inside and outside the education realm, such as job performance measures.

Bloom (1971) then “borrowed” (p. 54) Scriven’s terminology to describe tests that helped students learn rather than those that assessed students’ final performance toward meeting a learning objective. Guskey (2005) later identified well-crafted classroom-level formative assessment as the basis for Bloom’s (1971) mastery learning model. According to Guskey, “Bloom outlined a specific strategy for using formative classroom assessments to guide teachers in differentiating their instruction and labeled it ‘mastery learning’” (p. 1).



Black and Wiliam (1996) articulated defining components of the formative assessment process two years before publication of their *Black Box* study (Black & Wiliam, 1998) primarily by contrasting the characteristics of the formative assessment process with those of summative assessment. Black and Wiliam argued that any assessment gave evidence of performance and noted that formative assessment produced *evidence throughout the learning cycle*, while summative assessment produced evidence *at the end*. The researchers emphasized that formative assessment, although not widely or successfully practiced at the time, was not a new concept.

Stiggins and Chappuis (2006) continued clarifying the meaning of formative assessment. The authors warned instructional leaders to carefully approach test publishers' products claiming to be formative assessments and described many such products as more frequent summative assessments. Stiggins and Chappuis also stated that simply purchasing these off-the-shelf assessment packages did not "help teachers understand or apply the strategies that have been proven to increase student learning" (p. 13) any more than would one workshop or professional development session. The authors emphasized that purchased test packages could only be considered formative if teachers knew how to effectively use their results formatively to adjust instruction.

Additionally, according to Black (2007), teachers still had difficulty determining what constituted formative assessment:

A frequent misunderstanding is that any assessment by teachers, and in particular the use of a weekly test to produce a record of marks, constitutes formative assessment. It does not. Unless some *learning action* follows from the outcomes, such practice is merely frequent summative assessment. (p. 1)

Popham (2011) agreed. The author made clear that formative assessment was a process, not simply an assessment or a strategy. This process included an “assessment.” However, the assessment may take various forms (e.g., formal, informal, paper and pencil, anecdotal, kinesthetic activity) and was only one component of a process that included adjusted teaching and learning from the assessment’s data. Popham reemphasized a basic, but necessary, tenet of formative assessment: the use of collected evidence by students and teachers to decide a next course of action, either remediation or acceleration. An assessment was one component of the process, but that assessment might take many forms and was not necessarily one that could simply be purchased.

Popham (2008) earlier clarified that formative assessment was less about testing and more about good instruction. The author asserted that the general perception of formative assessment was skewed in that too many teachers and administrators still had a traditional notion of an assessment’s purpose. Traditionally, assessments were for grades, not continued learning. According to Popham, to combat this notion the word *formative* should get more emphasis than the word *assessment*. Continued learning as part of the formative assessment process would then be emphasized. Additionally, according to the author, teachers must intentionally know what to formatively assess by the means of *learning progression* structures on which they should base each turn of every lesson. Popham (2008) described learning progressions as sequences of connected learning targets, usually written as student-friendly “I can” statements, summarizing a lesson objective. Each target progressed to a final target in the progression that looked most similar to the curricular standard it addressed.

Black and Wiliam (1998, 2009), Popham (2008, 2011), and others asserted that the assessment-derived data, and how educators *and* students used them, were as important as the assessment itself. A formative assessment strategy was only effectively “formative” if teachers used its results to inform next steps in instruction. A strategy could not stand alone. Formative assessment was only effective and only true “formative assessment,” as a complete process linking learning targets, student progress toward mastery of those targets, and intentional instructional adjustments based on that progress.

Based on the literature reviewed in this section, the researcher broadly defines “formative assessment” as follows: an instructional process to measure student progress toward a learning objective that allows educators opportunities for adjusted teaching and allows students opportunities for adjusted learning.

Achievement will increase when teachers give students ample opportunities to learn. Black and Wiliam (1998), Popham (2008, 2011) and others conceptualized effective formative assessment processes. They suggested formative assessment properly implemented would significantly impact student learning. The next section will explore the formative assessment process’s effectiveness as an instructional tool.

### ***Efficacy of Formative Assessment***

Sadler (1983) suggested that student learning increased when teachers made students part of the learning process. Teachers could do this by showing students how to self-assess. In other words, students would formatively assess their own work. Sadler said teachers had to show students models of proficiency so students would know the standards to which they aspired:

Teachers often shelter behind undefined criteria until students submit their work, and then provide rationalizations of evaluations and grades after papers are returned. In other words, there is often the temptation to see what the students have done first. It is then irresponsible to say to students: ‘What I was really looking for was ....’ The student has no recourse for this, because the teacher can claim to have been ‘looking for’ any number of things, as least some of which could conceivably be invented on the spot. From the student’s point of view, such rationalizations are indistinguishable from preexisting sets of criteria that were simply not made public. (p. 76)

Sadler noted teachers also made students stakeholders in their own learning by providing constant, specific feedback for improvement. Teachers whose evaluations were deemed weak made generic comments on student papers (e.g., “good point”) or focused solely on editing mistakes. Sadler clarified, “Not that these are of no consequence; indeed any proper evaluation should take them into account. The weak evaluation, however, takes *only* these into account” (p. 76).

Fuchs and Fuchs (1986) explored the effectiveness of formative assessment (or “evaluation”) in a meta-analysis of 21 separate studies. The researchers hypothesized that individualized instruction helped special education students learn more and learn better. Their results suggested that students who received intentional individualized instruction resulting from frequent formative evaluation of Individual Education Plans (IEPs) performed 0.7 standard deviation units higher than their peers whose IEPs were not regularly formatively assessed. The researchers wrote, “Although some special education practitioners may object to systematic formative evaluation because of its time-

consuming nature, the magnitude of effect size associated with this methodology suggests that systematic formative evaluation may be worth additional teacher time” (p. 206).

According to Crooks (1988), a number of studies attempted to prove the instructional importance of student summative evaluations. Comparatively little research supported the effectiveness of formative evaluation; however, Crooks noted, “Students spend vastly greater amounts of time engaged in classroom evaluation activities than in standardized testing” (p. 438). Crooks’ meta-analysis reported results from 14 research studies that “cast light on the relationships between classroom evaluation practices and student outcomes” (p. 438), and caused the author to conclude, “Too much emphasis has been placed on the grading function of evaluation, and too little on its role in assisting students to learn” (p. 468). Crooks suggested that formative assessment practices were “powerful” (p. 438) and deserving of necessary time to plan and initiate in the classroom because formative assessment had greater impact on student learning than summative assessment.

These researchers and authors, along with others (Black, 1993; Hattie, 1987; Perrenoud, 1991), suggested formative assessment’s instructional impact when effectively practiced in classrooms. However, it was not until Black and Wiliam (1998) extensively synthesized previous research findings that the effectiveness of classroom-level formative assessment on student achievement was clear. In their meta-analysis, Black and Wiliam found that consistent, intentional formative assessment considerably reduced the amount of time that it took students to learn concepts. The researchers found that this reduction was most dramatic in students traditionally identified as lower performing. The researchers stated that all other school reform efforts, including the

public reporting of high-stakes accountability measures, were for naught without formative assessment practices in place. Black and Wiliam culled material from an initial 580 sources and reduced that number to 250 for their study. The researchers definitively asserted that formative assessment worked. Student learning gain effect sizes were between 0.4 and 0.7. The researchers explained,

These effect sizes are larger than most of those found for educational interventions. An effect size of 0.4 would mean that the average pupil involved in an innovation would record the same achievement as a pupil in the top 35% of those not so involved. An effect size gain of 0.7 in the recent international comparative studies in mathematics would have raised the score of a nation in the middle of the pack of 41 countries (e.g., the U.S.) to one of the top five. (p. 141)

According to Black and Wiliam, formative assessment helped students learn, and it particularly helped students traditionally identified as lower performing. They also found that, while formative assessment was a proven method of student and school improvement, its practice was regrettably lacking in classrooms in England and other countries. The researchers advocated for student self-assessment and descriptive teacher feedback as necessary components of the formative assessment process. They also encouraged thoughtful, rich dialogue between students and teachers

Black, Harrison, Lee, Marshall, and Wiliam (2003, 2004) expanded on the *Black Box* study (1998) by offering practical measures to incorporate formative assessment into classrooms. The researchers offered questioning techniques, feedback through grading, peer and self-assessment, and the formative use of summative tests as possible strategies. They also noted the importance of a reflective attitude and collaborative inquiry with

colleagues on the parts of teachers who desired to change their practices as integral to lasting formative assessment practice change.

Black and Wiliam (1998) suggested teacher preparation programs and school and district professional development workshops should place greater emphasis on effective formative assessment practices. The researchers noted a “poverty of practice” (p. 141) in that teachers still did not effectively use formative assessment even though its instructional impact was known. The next section highlights contemporary researchers, authors, and practitioners’ efforts to increase formative assessment’s teacher-accessibility.

### ***Formative Assessment in the Classroom***

The studies cited so far suggested that some teachers who formatively assessed their students did so unintentionally and/or instinctively. Authors also suggested that many teachers lacked the training, challenging professional development over time, and leadership assistance to foster lasting changes in classroom practice of formative assessment (Black & Wiliam, 1998; Stiggins, 2008; Stiggins & Chappuis, 2005). Teachers needed research. Then they needed to know what effective classroom formative assessment looked like, and how to use assessment-derived data to adjust teaching and learning through differentiated instruction.

Chappuis (2009) offered a starting point for teachers. Chappuis articulated basic differences between formative and summative assessment, demonstrated how learning targets guided instruction, modeled effective feedback, gave guidelines for teaching student self-assessment and goal-setting, offered ideas for formative teaching tools, and gave a reflective student protocol for helping them become equal stakeholders in the

learning process. According to Chappuis, if teachers communicated with students through learning targets, effective feedback, and reflection, then students would naturally accept their stakeholder roles. Teachers would then benefit from rich, shared instructional experiences with students.

Similarly, Popham and Stiggins (n.d.) asserted that descriptive formative feedback would engage students in learning and increase student affect toward the formative assessment process. They identified six specific strategies:

1. Provide student-friendly learning targets when introducing the lesson.
2. Accompany those targets with representative student work samples.
3. Provide continuous descriptive feedback – descriptive enough to let students know what to do next.
4. Teach self-assessment.
5. Help students improve by one component at a time in order to keep from overwhelming them.
6. Teach students ways of reflection. (n.p.)

Marzano (2006) also identified descriptive feedback as a meaningful component of the formative assessment process. The author distinguished between “encouraging” versus “discouraging” feedback, and said that teachers could incorporate principles of “drive theory” to motivate students with encouraging, but constructive, feedback. Marzano stated that to do this teachers should help students reinterpret low scores by providing detailed feedback as evidence of a correlation between greater effort and a higher score.



Moss and Brookhart (2009) challenged teachers to reflect on how their formative student questioning techniques shaped classroom culture. The authors also asserted that the formative assessment process enhanced teacher quality. According to Moss and Brookhart, if research suggested that formative assessment resulted in greater student achievement, then teachers who effectively used it must be improving their practice.

Brookhart (2010) offered practical classroom-level formative assessment tools to assist teachers striving to improve and enhance their practice. Brookhart guided teachers through the formative assessment strategy-writing process but also gave strategy examples. The author created strategies to use when an assignment was given and a learning target was introduced, during direct instruction to engage students' thought processes, during group or individual project work, before a summative assessment, and after a summative assessment. Brookhart suggested the strategies could help teachers foster classroom communities of feedback, collaboration, and reflection.

Teachers' uses of classroom level formative assessment strategies helped some transition from seeing formative assessment as only a strategy to viewing formative assessment as a process (Popham, 2011). For teachers who felt strategy-dependent, though, Holman (2007) demonstrated formatively assessing students simply by means of traditional multiple-choice quizzes. Holman communicated learning targets and assessment dates to students, and then differentiated instruction using small groups, flexibly organized based on student progress toward targets. Students communicated their positive feelings about learning in Holman's risk-free, assessment for learning environment. According to one of Holman's students, Patricia, "He teaches us it's fine not to get it right the first time as long as when we do it again it's better than the last

time” (Holman, 2007). Another student, Emmanuel, noted the absence of pressure in Holman’s class and stated,

I think I did great on the test. Once you take the quiz and you don’t get it [the concept], he [Holman] reviews it and then when the test comes back ... it’s like, ‘Wow! I didn’t know this when I took the quiz, but now I understand things perfectly.’” (Holman, 2007)

Students also suggested Holman’s feedback and communication about the formative assessment process made them feel responsible for their own learning rather than dependent upon their peers’ progress. Eighth grade student Max noted, “In Mr. Holman’s class it’s nice because we get to extend our learning and learn new things, but in other classes we’re just learning the same thing over and over again” (Holman, 2007). Max’s classmate Stevie agreed, “He meets the needs of all of the kids in the classroom” (Holman, 2007). Holman himself concluded, “My students always know where they’ve been, and they always know where they’re going” (Holman, 2007).

Additionally, Holman (2007) demonstrated meeting student needs through the process of flexible group instruction. He stated,

The flexible grouping in my class is based upon the assessments that I do. I will assess the students and find out if they know the material or not, and then based upon that they are put into groups that give the best learning environment and the best learning experience. It’s not always the same students in the same groups. Students are free to move from one group to the other. So one day you may have a gifted and talented student that needs remediation and you might have a [learning disabled] student who understands the concept. They’re not always

locked into a particular group. It's really based upon the need of that student on that particular day.

Holman's flexible grouping strategy demonstrated formative assessment as a process. Holman formatively assessed students, and then utilized assessment-derived data to make individualized instructional adjustments. Holman differentiated his instruction. The next section briefly explores differentiation's connection to the formative assessment process.

### **Differentiation of Instruction**

Tomlinson et al. (1995) described teachers' awareness of classroom differentiation needs as "awareness of the needs of academically diverse learners" (p. 1) and differentiation as "[implementing or modifying] instruction to meet those needs" (p. 1). The researchers studied groups of preservice teachers after two separate treatment groups either a) participated in a one-day differentiation workshop or b) participated in a one-day differentiation workshop and worked with a curriculum coach on differentiation strategies during their student teaching experiences. Participants in both groups still identified differentiation as a professional growth area after the study.

Generally, teachers understood the differentiation concept; however, because teachers lacked training, their logistical concepts of classroom-level differentiation halted classroom implementation. Reiss et al. (1998) later refined a definition of differentiation as follows:

accommodating learning differences in children by identifying students' strengths and using appropriate strategies to address a variety of abilities, preferences, and

styles. Then, whole groups, small groups, and individual students can equally engage in a variety of curriculum enrichment and acceleration experiences.

(p. 75)

The authors recognized though that, like the preservice teacher groups in the previous study, many teachers were not comfortable differentiating instruction. Because they were not comfortable, they simply did not differentiate.

According to Reiss et al. (1998),

In a survey of randomly selected 3<sup>rd</sup> and 4<sup>th</sup> grade teachers in public schools, 61 percent indicated that they had no training in meeting the needs of high-achieving students in heterogeneous classrooms. Fifty-four percent of the responding teachers in private or independent schools indicated that they had no background or training in meeting the needs of such students. We also know that preservice and novice teachers understand, but do not have the background and skills to address, the diversity in levels of achievement and aptitude for learning in the classroom. (p. 75)

Tomlinson (1999) then succinctly described differentiated instruction as “personalized instruction” (p. 12). While earlier definitions highlighted differentiation’s uses for traditionally identified *gifted* students, Tomlinson’s explanation implied differentiation’s use for *all* students. The author also recognized that while teachers recognized differentiation’s value, differentiation “causes us to grapple with many of our traditional – if questionable – ways of ‘doing school’” (p. 12). Tomlinson also articulated teachers’ frustrations with the concept’s logistical challenges: “The nature of teaching requires doing. There’s not much time to sit and ponder the imponderables” (p. 13). The

author concluded though, “To make differentiation work – in fact to make teaching and learning work – teachers must develop an alternative approach to instructional planning beyond ‘covering the text’ or ‘creating activities that students will like.’” (p. 14).

Teachers did not have time to work out differentiation’s inevitable challenges, but paradoxically they needed time to develop new ways of doing their work.

Schmoker (2010) took this time spent on differentiated instruction’s “widespread adoption” and its “architect” [Tomlinson] to task (p. 22). The author stated that differentiated instruction was not supported by research and that its attempted implementations

seemed to complicate teachers’ work, requiring them to procure and assemble multiple sets of materials. I saw frustrated teachers trying to provide materials that matched each student’s or group’s presumed ability level, interest, preferred “modality” and learning style. The attempt often devolved into a frantically assembled collection of worksheets, coloring exercises, and specious “kinesthetic” activities. And it dumbed down instruction: In English, “creative” students made things or drew pictures; “analytical” students got to read and write. (p. 22)

Instead of differentiated instruction or other “fads,” Schmoker contended that schools first focus on “coherent, content-rich *guaranteed* curriculum” (p. 23).

Tomlinson and Sousa (2010) contended that while Schmoker (2010) claimed to disagree with differentiation, the author actually supported one of its primary tenets – good instruction begins with clear curriculum. Tomlinson and Sousa wrote,

[Schmoker] paints a picture of differentiation that is chaotic, counterintuitive, and implemented apart from any knowledge of effective curriculum and instruction.

[We] don't doubt that he has witnessed these aberrations. We have also seen such teaching and find it troubling. But we have also witnessed administrators and teachers working in a principle-guided, consistent, and coherent way to ensure that the model is implemented with fidelity. That some school leaders and teachers engage in an educational approach with little or no understanding of the model they claim to use is regrettable and damaging. (p. 28)

According to the authors, differentiated instruction was an integral component of Schmoker's (2010) "coherent . . . curriculum" (p. 23), but some teachers and administrators lacked training to effectively utilize differentiation principles.

Teachers and administrators who lacked differentiation training would always struggle to effectively differentiate classroom instruction. Tomlinson and Imbeau (2010) wrote, "A teacher who has the best intentions, dynamic curriculum, and plans for differentiation cannot – and will not – move forward unless that teacher is at ease with translating the ideas into classroom practice" (p. 72).

Based on the literature reviewed in this section, differentiation can be defined as adjusted, individualized instruction. Likewise, differentiation can also be considered a *result* of a formative assessment strategy – a step in the formative assessment process. However, teachers and administrators needed time and additional training to explore effective differentiation principles. Educators also still needed to know how to practice formative assessment, including differentiation, in schools and classrooms. The next

section will examine ways to deliver formative assessment training utilizing Stiggins' Assessment Training Institute work.

### ***Formative Assessment Professional Development Delivery***

Stiggins founded the Assessment Training Institute (ATI) in order improve classroom teachers' and school and district administrators' "assessment literacy" (Stiggins, 2004). ATI's secondary purpose was to assist district-level educators in leading local formative assessment professional development efforts. ATI distributed the *Classroom Assessment for Student Learning* (CASL – Stiggins, Arter, Chappuis, & Chappuis, 2006) workshop package. Stiggins, accompanied by associates, utilized these materials to conduct train-the-trainer workshops undergirded by the Black and Wiliam (1998) and Sadler (1983) foundational studies. Workshop participants received supplementary DVDs, books (Chappuis, 2007; 2009), and training manuals (ETS, 2009) to aid their efforts. The basic training text (Stiggins et al., 2006), to which classroom teachers commonly referred as "the CASL book," contained sections on outlining formative assessment principles, assessment quality, methods, communicating assessment results, and conferences.

Stiggins (2004) argued that teacher assessment literacy should be rooted in a *balanced assessment system*. The author began calling for assessment system balance to negate what he termed "a naïve and counterproductive assessment legacy" (p. 23). Stiggins identified, and then countered, the following four beliefs about assessment to reeducate classroom teachers:

1. Mistaken belief – High-stakes standardized tests are good for all students because they motivate them to learn. Counter belief – High-stakes tests

without supportive classroom assessment environments harm struggling students.

2. Mistaken belief – It is the instructional decisions of adults that contribute the most to student learning and school effectiveness. Counter belief – Students are crucial instructional decision makers whose information needs must be met.

3. Mistaken belief – The instructional decisions that have the greatest impact on student learning are those made once a year. Counter belief – The instructional decisions that have the greatest impact are made day to day in the classroom.

4. Mistaken belief – Teachers and administrators don't need to know about and understand the principles of sound assessment practice; the professional testing people will take care of that for us. Counter belief – Teachers must possess and be ready to apply knowledge of sound classroom assessment practices. (pp. 23-26)

Stiggins maintained that an equitable balance of formative, interim-benchmark, and summative assessment produced more accurate data and resulted in greater student achievement.

Chappuis and Stiggins (2008) further clarified that neither formative nor summative assessments were over- or under-used in a well-balanced classroom assessment system. “Assessment synergy” was achieved in such classrooms where high-quality, intentional formative and summative assessments were effectively utilized. The



authors outlined five indicators of teacher assessment literacy that resulted in more effective formative and summative classroom assessments:

1. Establish the purpose of each assessment and communicate how the results will be used and by whom.
2. Be clear with students about what learning targets they are responsible for learning.
3. Use an appropriate assessment method (selected response, essay, performance assessment, or personal communication) with procedures that ensure the accuracy of results.
4. Effectively communicate the results to maximize further learning.
5. Involve students where appropriate in the assessment process. (p. 13)

The authors also encouraged teachers to reflect on the following questions that correlated to each of the five previous questions:

1. Why assess?
2. Assess what?
3. Assess how?
4. Communicate how?
5. Involve students how? (pp. 13-14)

Stiggins' (2008) work for school stakeholders led to his imperative conclusion in a self-proclaimed "assessment manifesto" that district leaders should intentionally educate their teachers and principals on balanced assessment principles and assessment literacy.

Chappuis et al. (2010) articulated this charge as an “action guide” written specifically for school district instructional leaders. The authors recommended the following seven steps to ensure student success:

1. Balance the district’s assessment system to meet all key user needs.
2. Refine achievement standards to reflect clear and appropriate expectations at all levels.
3. Ensure assessment quality in all contexts to support good decision making.
4. Help learners become assessors by using assessment *for* learning strategies in the classroom.
5. Build communication systems to support and report student learning.
6. Motivate students with learning success.
7. Provide the professional development needed to ensure a foundation of assessment literacy throughout the system. (p. 5)

The authors recommended district and school leaders work toward creating collaborative cultures (e.g., via Professional Learning Communities) before seriously beginning assessment literacy work or balancing assessment systems.

Stiggins’ popular train-the-trainer CASL workshops did not in themselves guarantee formative assessment classroom implementation. CASL participants had to be intrinsically motivated to lead local initiatives. Researchers for the Central Region Educational Laboratory (Randel et al., 2011) measured CASL’s impact on classroom-level formative assessment practices in Colorado. The researchers found significant increases in intervention group teachers’ *knowledge* of formative assessment with a measured effect size of 0.42. However, they also discovered no significant increases in

actual practice or student involvement in the formative assessment process, reporting an effect size of 0.03. Researchers described CASL as “self-executing, without a coach or external facilitator” (p. 5).

In summary, definitions of formative evaluation components evolved into the modern concept of formative assessment. Even though definitions differ, research suggests that formative assessment can be a powerful teaching and learning tool. Stiggins provided tools based on foundational research, but these tools still required supportive structures in order to be effective. School leaders must utilize logistical structures to adequately support meaningful formative assessment initiatives.

Literature suggests that the Professional Learning Community structure is a viable option. Black and Wiliam (2003) were confident that advancing classroom-level formative assessment would raise student achievement: “For us, the question was therefore not ‘Does it work?’ but ‘How do we get it to happen?’” (p. 7). The researchers formed the two-year King’s-Medway-Oxfordshire Formative Assessment Project to support 24 teachers in a collegial learning group. “As the teachers explored the relevance of formative assessment for their own practice, they transformed ideas from other teachers into new ideas, strategies and techniques, and these were in turn communicated to other teachers, creating a ‘snowball’ effect” (p. 9).

The next section, then, will examine the power of collegial learning, first as informed by adult learning principles, and then in the guise of Professional Learning Communities.

## **Collegial Learning**

School leaders can rely upon collegial learning structures to achieve goals and implement initiatives. Adults have different learning needs than children, but some professional development workshops still operate according to children's learning principles rather than adults'. Effective collegial learning groups operate according to specific principles based in adult learning theory.

### ***Adult Learning***

Knowles (1968) articulated the theory of andragogy. Contrasted with pedagogy, which assumed that students would learn information that teachers imparted (McGrath, 2009), andragogy identified unique adult learning principles. Adults needed to know *why* they were learning, and they needed to know that *what* they were learning was important. These principles were “need, self-concept, prior experience, readiness, orientation (or context), and motivation” to learn new material (Knowles, Holton, & Swanson, 1998).

According to Gregson and Sturko (2007), teacher professional development was exponentially more effective when leaders and workshop facilitators applied adult learning principles based on Knowles' (1968) theory. The researchers designed a semester-long professional development workshop for career and technical education teachers. Gregson and Sturko used the following adult learning principles to support an adult learning-centered professional development workshop conceptual framework:

Principle 1: Create a Climate of Respect

Principle 2: Encourage Active Participation

Principle 3: Build on Expertise

Principle 4: Employ Collaborative Inquiry

Principle 5: Learn for Immediate Application

Principle 6: Empower through Reflection and Action (pp. 9-14)

As a result, participants contrasted the workshop with traditional professional development using language that supported the principles' effectiveness. One participant contributed, "I am more willing to try things and look at ways to incorporate the strategies into my classes" (p. 10). Another stated, "I'm getting a lot out of the class because . . . I'm able to gather some more strategies with every [class]" (p. 13). One teacher commented, "I believe that any teacher would benefit from this class" (p. 14). Gregson and Sturko stated that traditional professional development did not consider adults' unique learning needs. Additionally, they wrote,

If the professional development environment provides opportunities for classroom-based experimentation, on-going support, and collaboration and if it considers the unique needs of the adult learner by creating an environment that respects and values teachers' knowledge and experiences and empowers them to act, then there are several potential outcomes. Teachers can construct professional knowledge with their peers and become more reflective practitioners in the process. They may also experience transformative learning as they open up their frame of reference to new ways of teaching and learning. Finally, working collaboratively to become better practitioners has the potential to create a sense of community and collegiality among teachers as they share their knowledge, support each other, and become more caring professionals. (p. 6)

Merriam (2008) agreed that adults learned differently but disagreed that adult learning could be limited to a single theory. Merriam called adult learning a "complex

phenomenon” (p. 94) that involved “mind, body, spirit, and emotion” (p. 98). Also, Merriam elaborated on Knowles’ (1968) approach by adding the concept of reflection. The author stated that reflection was necessary for meaningful adult learning to occur – that it “enables learning to take place” (p. 97). Merriam added,

learning to reflect – especially in a critical manner – is itself a developmental process that needs to be fostered in adult learning settings. Critical reflection is necessary for transformative learning, . . . for developing brain capacity, and for confronting power and politics in workplace learning. (p. 97)

Additionally, according to Merriam,

Recognition that adult learning is more than cognitive processing, that it is a multidimensional phenomenon, and that it takes place in various contexts has not only enhanced our understanding of *how* adults learn but expanded our thinking as to which instructional strategies might be employed to foster adult learning. (p. 97)

Merriam suggested adult learning principles’ practical implications. Drago-Severson (2008) addressed these implications in school settings. According to the author, school principals could practice just four strategies to support meaningful teacher professional growth. Each practice necessitated collaboration with peers and fostered reflection. These were “teaming, providing leadership roles, collegial inquiry, and mentoring” (pp. 62-63). Additionally, the author’s strategies took into account how adults learned or made meaning from their experiences. Drago-Severson (2008) utilized Kegan’s (1982, 1994, 2000) constructive-developmental theory to articulate three diverse adult-learning perspectives: instrumental, socializing, and self-authoring. The author

identified principal and teacher strategies to facilitate learning and growth in each learner type and how collegial, self-reflective processes can enhance professional learning. For example,

(Instrumental) learners cannot yet fully consider or acknowledge another person's perspective. Principals and teachers can help instrumental knowers grow by creating situations where they must consider multiple perspectives. . . . participating in teams or mentoring relationships . . . can support their growth.  
(p. 61)

Jackson and Street (2005) earlier connected similar strategies of collegial learning to qualities of high-functioning Professional Learning Communities. Hellner (2008) wrote,

Writing about collaborative enquiry, an intertwined strand in the PLC fabric, Jackson and Street (2005) argue for its potential as a development tool, especially appropriate to the needs of professional adults, because it offers a constructivist approach in a social learning environment. The collegial, self-directed and autonomous nature of the tasks proves motivating and engaging to adults. The same arguments apply to the critical attributes of the wider PLC. (p. 51)

Adult learning principles form the foundation for high-functioning Professional Learning Communities that support collegial learning for the purpose of meaningful change. Defining characteristics indicate effective Professional Learning Communities. The next section will examine literature on tenets of Professional Learning Communities (PLCs), as well as studies that suggest their worth as structures for meaningful adult learning and change.

### ***Professional Learning Communities***

In the midst of school reform efforts, teachers and administrators recognized that a culture of isolation and autonomy would not support their work. Rosenholtz (1989) identified collaboration and collegial inquiry as characteristics of schools undergoing *meaningful* reform and *lasting* change. Reeves (2009) later wrote that a cultural change that supported collaboration and inquiry must occur in schools and organizations before any other meaningful and lasting change could occur. He stated, “Two of the foremost change researchers, John Kotter and Holger Rathgeber, suggest that ‘90 percent of organizations were either ignoring relevant changes or were trying to adjust in ways that were not meeting their aspirations’” (pp. 36-37). School leaders could achieve cultural changes that supported collaboration and inquiry through Professional Learning Community (PLC) implementation. The next section describes PLC principles and highlights how PLCs could support meaningful school reform efforts.

#### ***PLC defining characteristics and principles.***

DuFour and Eaker (1998) suggested their concept of PLCs as an effective means of promoting organizational change, combining elements of small group theory with communication elements of leadership change theory (Kotter, 1996). About their model, the authors wrote,

If schools are to be transformed into learning communities, educators must be prepared first of all to acknowledge that the traditional guiding model of education is no longer relevant in a post-industrial, knowledge-based society. Second, they must embrace ideas and assumptions that are radically different than those that have guided schools in the past. (p. 19)



DuFour and Eaker identified six key characteristics of high-functioning Professional Learning Communities (PLCs):

1. Shared mission, vision, and values.
2. Collective inquiry.
3. Collaborative teams.
4. Action orientation and experimentation.
5. Continuous improvement.
6. Results orientation. (pp. 25-29)

The authors suggested a definition of “Professional Learning Community” that implied a structure in which “educators create an environment that fosters mutual cooperation, emotional support, and personal growth as they work together to achieve what they cannot accomplish alone” (p. xii). DuFour and Eaker (1998) also emphasized the importance of reflective dialogue within school communities. They claimed school change efforts would flounder without it. PLCs, then, provided modern public school administrators and teachers the logistical and structural basis for implementing meaningful instructional change.

In an era during which high-stakes accountability systems distributed both rewards and sanctions, The No Child Left Behind Act of 2001 (NCLB) prompted some struggling schools and districts to seek quick fixes for below-benchmark test scores. Schools that successfully implemented quick fixes saw rises in test scores. These rises were often temporary; however, some mistakenly translated even temporary test score improvement as meaningful, lasting change. The Professional Learning Community

model was heralded by some as a cure for all the ills exposed by NCLB, and, likewise, as a quick fix. Its creators disagreed.

DuFour et al. (2004) asserted that they were “not apologists for NCLB” (p. 26), and that the PLC model was created for more than raising test scores. According to the authors, better test scores would naturally result from collegial, reflective communities that lived out their mission and vision statements centering on curriculum, instruction, and assessment.

Teachers and administrators who were new to the concept of Professional Learning Communities were prone to dub meetings of any sort, “PLCs.” Faculty meetings and colleagues’ personal celebrations carried the “PLC” moniker, sounding much more instructionally meaningful than before. Indeed, DuFour and Eaker (1998) wrote,

Until changes become so entrenched that they represent part of “the way we do things around here,” they are extremely fragile and subject to regression.

Although charismatic leaders or influential committees can help generate initial enthusiasm for change, neither can sustain the change process over time. A school will experience a fundamental shift only when its members can generate a sufficient number of supporters for new ideas and practices. (pp. 105-106)

Teachers’ professional collaboration time allotment did not alone guarantee that professional collaboration would occur. Therefore, DuFour and Eaker stated that lasting PLC change must be supported through communication and collaboration.

Authors suggested that Professional Learning Community implementation would translate into meaningful reform. The next section examines research supporting the

connection between meaningful PLC structures and positive instructional practice change.

***Relevant PLC research.***

Andrews and Lewis (2002) examined a collaborative Professional Learning Community's impact on teachers' practice in Queensland, Australia. The researchers stated that real PLC work that was centered on innovative change focused on teacher actions in classrooms. The researchers employed a single case study approach to communicate results of a voluntary Professional Learning Community instructional initiative – an “innovative change process called IDEAS (Innovative Design for Enhancing Achievement in Schools)” (p. 237) designed to enhance teacher practice and teacher leadership. The ten teachers who participated in the PLC initiative perceived the collegial structure's connection to their increased pedagogy. However, it was reported that little was achieved when the teacher participants attempted to disseminate the new instructional knowledge to their non-participant teacher colleagues. The researchers noted that non-participant colleagues relied upon informal collaboration with participant teachers rather than the intentional support of a real PLC.

Harris (2003) also identified teacher leadership enhancement in local school reform efforts as the Professional Learning Community's primary reason for existence. The researcher found that minimal collaboration occurred under “top-down” leadership models. In contrast, PLCs provided teachers opportunities to collaborate on instructional methods, and PLCs also promoted opportunities for real pedagogical improvement through shared decision-making. Teachers were active decision-makers in PLC-based initiatives.

Nelson (2009) studied a Professional Learning Community's impact on teacher learning. The researcher focused on the second year of a PLC professional development model implementation. Nelson described the PLC's work in terms of their inquiry focus (e.g., some focus on student improvement), collective activities (e.g., developing graphic organizers, analyzing student work, planning common lessons and common assessments), and stance (e.g., engaged as experts, engaged as learners, engaged dialogically as learners about teaching, learning, and instructional goals and values). The researcher concluded that engaged participants became intrinsically motivated to participate in the PLC's work and collaboratively support their colleagues through professional dialogue and inquiry.

Similarly, Langer and Colton (2005) called collaborative focus, collegial inquiry, and analysis of student work the "lifeblood" of local school reform efforts. Langer and Colton also asserted that school reform efforts failed to produce meaningful, real PLCs because they did not engage teachers in deep, professional dialogue and collaborative inquiry.

Graham (2007) studied classroom practice improvement and enhanced efficacy in light of teacher PLC-participation. Graham's case study highlighted practices in a middle school implementing DuFour and Eaker's (1998) PLC principles. According to Graham, "the primary strength of the professional learning community model was the way in which it opened up opportunities for teachers to learn from other teachers in the building" (p. 18). Graham found a positive relationship between PLC participation and teacher effectiveness as measured by results of a "teacher activity survey." The researcher reported a 3.70 mean response from all teachers responding to a five-point Likert scale item on enhanced knowledge and skills. The researcher also reported a 2.00 mean

response from all teachers responding to a three-point Likert scale item on improvements in classroom practices. Teachers in the study cited greater incidents of collegial inquiry and leadership support as positive effects of the PLC.

Graham (2007) noted emerging conversations about student learning among PLC teacher participants. Eaker and DuFour (1998) stated those conversations were necessities in true Professional Learning Communities. According to Servage (2008), though, such conversations were often veiled discussions about raising test scores in an age of accountability. Servage contended that PLCs would meaningfully support schools' change and reform efforts when teachers were given opportunities for reflective practice and open, honest communication. These opportunities should not only include dialogue centered on what teachers did well, but also on what they perceived as weaknesses in practice. Servage then said that teachers' theories of practice would more closely align with their espoused theories of action (Argyris & Schön, 1978; Houchens, 2008; Mitchell & Sackney, 2000). True collaboration and collegial inquiry would then occur in Professional Learning Communities.

Richmond and Manokore (2011) wanted to find out what "teacher talk" in PLCs revealed about teachers' reflective practice and subject area-specific collegial learning group effectiveness. The researchers analyzed data from a group of science teachers' voluntary participation in a five-year PLC project designed to foster collaboration and enhance collegial inquiry. The goals of the project were

develop disciplinary knowledge of core scientific theories, concepts, ideas, and models, and scientific ways of generating, representing, and validating knowledge; understand students' ideas and ways of learning science; implement

standards- and research-based methods for teaching science; recognize, critique, and adapt exemplary science curricula useful for their teaching needs. (p. 544)

Richmond and Manokore used the following research questions to guide their work:

“What were the features that characterized talk by participants during PLC meetings? To what extent did PLC membership shape participants’ reflection on their own teaching practice?” (p. 545). The researchers identified four key elements from their analysis of PLC meeting notes and interviews: the PLC’s positive effect on teacher learning and collaboration, evidence of professional community components and principles, increases in content teaching confidence, and teacher accountability (to their PLC colleagues and to their district and state). While teachers were primarily accountable to their PLC colleagues, they also felt obligated to their non-participant colleagues in the school.

According to Richmond and Manakore,

Somewhat surprisingly, in both PLC meetings and interviews teachers in our study wondered whether, had project participation been mandatory, there might have been greater impact. The PLC participants felt accountable to be change-makers, but worked each day in buildings with peers who did not share the same set of goals. Teacher professional communities are much more likely to be supported if the culture of learning is widespread in the school and in the district. The voluntary nature of participation in the project may also mean that participants were not representative of the district’s teaching staff. Individuals passionate about their own learning and relatively self-reflective about their own knowledge are most likely to be attracted though in many cases those who need such opportunities are least likely to be part of PLCs. How to offer PD

opportunities that have appeal and value to a diverse population of teachers is an issue with which PD providers have long struggled. (p. 566)

### ***Summary***

In summary, school leaders should be cognizant that adults learn and collaborate in ways that affect the outcomes of school-based initiatives. Leaders can study tenets of Professional Learning Communities to help ensure deeper implementation of initiatives, particularly those focused on formative assessment. Authors and researchers suggest that PLC participants are more likely to deeply absorb new pedagogy. Researchers also suggest that, while PLC participants are largely motivated to teach non-participant teacher colleagues their new knowledge, results of such teaching can be mixed.

High-functioning PLCs that support lasting reform efforts should operate according to defining principles and characteristics; however, PLC groups' initial formations may be explained by communication theory. The next section will examine literature on Social Identity Theory, which is implicit to the Professional Learning Community Structure. Social Identity Theory explains why PLCs work by articulating individuals' subconscious identification with group culture.

### ***Social Identity Theory***

Social identity small group theory informed much of the collaborative learning that is the structural basis for locally led school reform efforts using collegial learning communities today. Turner (1982) stated, “. . . a social group can be usefully conceptualized as a number of individuals who have internalized the same social category membership as a component of their self-concept” (p. 36).

Tajfel, the originator of social identity theory (as cited in Turner, 1975), found that simply classifying people as a “group” was sufficient for group identity to begin forming. With that group identity came attitudes and preconceived notions about individuals who did not, for whatever reason, belong to or associate with the group.

Building on intergroup prejudice research by Tajfel et al. (1971), Tajfel and Turner (1979) developed Social Identity Theory. The researchers stated that individuals base their personae on group membership and that they change these personae, or selves, when they change group affiliations. Social Identity Theory illuminated differences between and dynamics of different groups, but also differences between and dynamics of members of the same groups (Poole, Hollingshead, McGrath, Moreland, & Rohrbaugh, 2005). This latter focus of social identity theory informs collegial learning group structure dynamics.

Individuals associate with each other for multiple reasons. Turner (1982) presented a definition of *group* that included two or more individuals who associate with each other “(for the) attainment of goals or consensual validation of attitudes and values” (p. 16). These reasons are also essential components of high-functioning Professional Learning Communities. Additionally, according to Turner, individuals who form a *group* might share very little else in common except a desire for the attainment of common goals. Common goal attainment would be enough to provide group cohesion. Likewise, Professional Learning Community members collaboratively function for common goal attainment: collaborative, meaningful, lasting school reform.

Rabbie and Wilkins (1971) and Brewer and Silver (1978) described how social identity explains group cohesion and group member loyalty to each other. Social identity



and group identification trumped any extrinsic reward to betray group members in these researchers' studies.

Additionally, according to Lave and Wenger (1991), collaborative learning groups formally and informally operated everywhere, not simply at work. However, the authors characterized communities of practice as being more than informally formed clubs or social groups. Wenger (2007) said that members of a community of practice shared an interest, built relationships in order to learn from each other, and shared a practice.

### **Conclusion**

In conclusion, this chapter's reviewed literature highlighted foundations of the formative assessment process. It also discussed formative assessment's potential as a powerful tool for student achievement through teacher instructional adjustments, and student learning adjustments. One possible effective instructional adjustment is differentiation.

Formative assessment is a powerful tool for effecting classroom practice change. However, only effective structures of professional learning can meaningfully support lasting formative assessment initiatives. Professional Learning Communities can be effective structures, but leaders should know their tenets and theory on which they are based in order to successfully create and sustain them.

The next section will synthesize the reviewed literature into a conceptual framework and model on which the study is based.

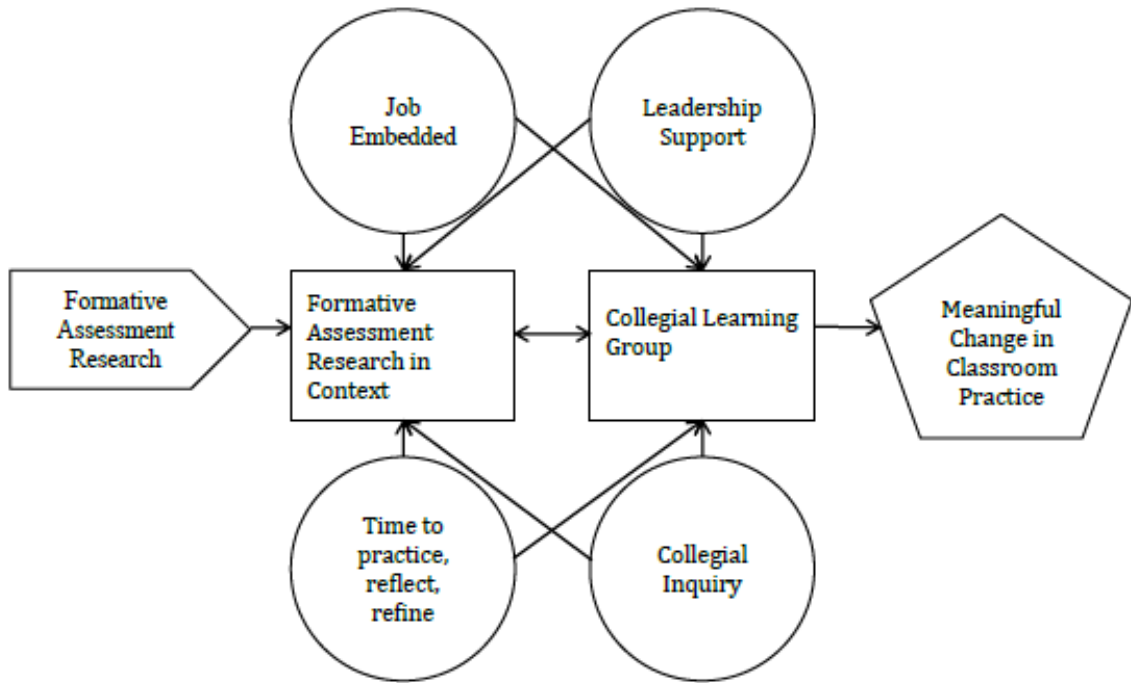
## **Conceptual Framework for the Study**

Formative assessment implemented effectively results in positive instructional change (Black & Wiliam, 1998, Fuchs & Fuchs, 1986). However, leaders must consider adult learning needs for effective implementation of a formative assessment initiative (Drago-Severson, 2008). Additionally, one-day professional development sessions are not as effective as the same learning in a collegial group over time (Chappuis et al., 2009). These collegial groups form a cohesive structure, in part because of their subconscious observance of Social Identity Theory (Tajfel & Turner, 1979; Lave & Wenger, 1991; Wenger, 2007) principles.

The literature reviewed in this chapter formed a conceptual framework for the *Formative Assessment Academy* conducted in the case study school district (see Figure 2). In the Formative Assessment Academy, formative assessment research and literature was disseminated via a collegial learning group operating according to Professional Learning Community principles. As the facilitator of this learning group, the researcher adhered to adult learning principles by encouraging collegial, job-embedded inquiry and practice. Participants implemented research-based strategies over time and reflected on their practice in order to refine it. The researcher and colleagues offered leadership support to participants; additionally, participants collegially supported each other. Finally, the Formative Assessment Academy's primary goal was to effect meaningful classroom practice change.

The literature reviewed in this chapter informed components of the Formative Assessment Academy's conceptual framework. Schools and districts seeking a structure

to support meaningful and lasting change may use this research-informed model to effect meaningful change in classroom practice and in student learning.



*Figure 2.* The Formative Assessment Academy conceptual framework demonstrates the relationships between research, adult learning principles and lasting instructional change.

The current study adds to the reviewed bodies of literature on instructional effectiveness of formative assessment, teacher struggles to meaningfully differentiate instruction, adult learning principles, and teacher leadership resulting from the support of collegial Professional Learning Communities. The researcher implemented a series of professional development workshops based on the preponderance of evidence in this chapter’s literature. Formative assessment improves teaching and enhances learning. Adults have unique learning needs that collegial inquiry groups, known as Professional

Learning Communities (PLCs), can effectively support. According to Chappuis et al. (2009),

Effective professional development is supposed to foster lasting change in the classroom. When it doesn't, we waste valuable time, resources, and most important, our teachers' trust that time engaged in professional development is well spent. Professional development also works best when it's on-site, job embedded, sustained over time, centered on active learning, and focused on student outcomes. (p. 56)

High-functioning PLCs relentlessly focus on curriculum, instruction, or assessment. PLCs are also job-embedded and support initiatives over time, allowing adults to deeply practice and absorb pedagogy. Social Identity Theory explains why PLC group members inherently support and collaborate with each other.

In the current study, the researcher hoped to demonstrate enhanced pedagogy for voluntary participants in a PLC-supported formative assessment initiative and for their non-participant teaching colleagues. The researcher also hoped to discover patterns in data that suggested the Formative Assessment Academy model's effectiveness in order to provide a framework of implementation for other school and district instructional leaders. Data patterns emerged from four research questions.

### **Research Questions**

The following four questions framed this study:

1. What role did a professional learning community structure play in shaping participants' perceived effectiveness of a voluntary formative assessment initiative?

2. How did this initiative affect participants' perceptions of their knowledge of formative assessment and differentiation strategies?
3. How did it affect participants' perceptions of their abilities to teach others about formative assessment and differentiated instruction?
4. How did it affect school-wide use of classroom-level formative assessment strategies?

### CHAPTER III: METHODOLOGY

This study measured a voluntary formative assessment initiative's effectiveness. The study examined teacher-participants, their colleagues, and school and district administrators' perceptions of increased pedagogical knowledge and skill after having studied, experienced, and practiced research and samples of classroom-level formative assessment strategies and differentiation principles. Denzin and Lincoln (2008) advocated studying subjects in their natural settings and then interpreting phenomena in terms of the meanings that people made of their experiences. The researcher desired to convey perceptions of the effects of participating in the voluntary formative assessment initiative and to articulate those perceptions in order to make meaning of them for others.

Twelve educators who taught grades six, seven, and eight in a Kentucky public middle school (representing the subject areas of math, reading, science, and social studies) participated in the study. One school-level curriculum specialist and one principal also participated in the initiative and in the subsequent study. Teacher participants' colleagues, their supervising administrators, and the superintendent of schools also participated in the study. The researcher was a district administrator serving as an instructional supervisor delivering professional development in the participants' school. The researcher was also assigned to the school district as a Highly Skilled Educator for the Kentucky Department of Education from 2006 until 2008.

The following four research questions frame this study:

1. What role did a professional learning community structure play in shaping participants' perceived effectiveness of a voluntary formative assessment initiative?

2. How did this initiative affect participants' perceptions of their knowledge of formative assessment and differentiation strategies?
3. How did it affect participants' perceptions of their abilities to teach others about formative assessment and differentiated instruction?
4. How did it affect school-wide use of classroom-level formative assessment strategies?

Black and Wiliam (1998) demonstrated the power of effectively implemented classroom-level formative assessment on student learning; however, the researchers stated that teachers were woefully underprepared to effectively practice assessment for learning. While Black and Wiliam first noted this deficiency in practice, Chappuis, Commodore, and Stiggins (2010) flatly blamed school- and district-level administrators and higher education authorities for failing to provide professional development and educational opportunities in the area of assessment literacy.

Additionally, in February 2010, Kentucky became the first state to adopt the *Common Core State Standards* (now uniquely named *Kentucky's Core Academic Standards*, or KCAS, in the state of Kentucky) in English/language arts and mathematics (Common Core State Standards Initiative, November 2010). The adoption of these standards only partially answered requirements of Kentucky's *Senate Bill 1* (SB1). SB1 also contained a definition of "formative assessment." Therefore, Kentucky school districts were now legally bound to make their teachers assessment literate.

This study could provide school leaders who are seeking to build capacity among their teachers an implementation process to follow. This study could help school and district leaders meet the letter of the law of implementing formative assessment, but in a

meaningful, cognitively challenging series of professional development workshop sessions resulting in lasting instructional change.

## **Design**

This study examined how teachers, their colleagues, and their administrators viewed changes in the teachers' pedagogy after participating in a collegial, voluntary formative assessment initiative in one Kentucky public middle school. The researcher surmised that any discernible effects were dependent on many factors, including the very collegial nature by which the initiative operated. Using a Professional Learning Community structure, the researcher concluded that participants were subconsciously tapping into and guided by tenets of organizational change (DuFour & Eaker, 1998; Kotter, 1995, 1996) and social identity (Tajfel & Turner, 1979) theories. The researcher designed, implemented, and led the Formative Assessment Academy initiative over a period of six months during the 2009-2010 school year while employed as an instructional supervisor in the school district.

This study used a qualitative single-case study approach. Of qualitative research studies, Miles and Huberman (1994) wrote that the reader could "see precisely which events led to which consequences, and derive fruitful explanations" (p. 1). Patton (2002) recognized that fieldwork conducted over a period of months could result in a single case study. Patton also stated, ". . . a single case study is likely to be made up of many smaller cases – the stories of individuals, families, organizational units, and other groups" (p. 297). Patton's point is reflected in this study's design. The researcher interviewed not only Formative Assessment Academy participants but also their colleagues who did not participate and school- and district-level administrators who supervise their instruction.



While the Formative Assessment Academy approach later spread to other schools within the same district, and is now being utilized by other surrounding school districts, this study will concentrate solely on the first incarnation of the formative assessment initiative model. Stake (2008) concurred with this focusing of case studies. According to Stake, “Many a researcher would like to tell the whole story but of course cannot . . . . Even those inclined to tell all find strong the obligation to winnow and consolidate. The qualitative researcher . . . must choose between telling lots and telling little” (p. 137). Other implementations of the Formative Assessment Academy may illuminate next steps for further research; other questions may be answered. For the purposes of this study, though, the researcher will examine only the first Formative Assessment Academy initiative.

While a case study approach best suits this particular study, Wolcott (2009) warned that if a case, or narrative, approach was utilized then more-than-ample detail regarding the specific methods of collecting data was necessitated. The researcher’s narrative of thick, rich description (Geertz, 1973; Lincoln & Guba, 1985; Strauss & Corbin, 1990) will provide this level of individual and contextual detail. According to Lincoln and Guba (1985), this vivid description allows the reader to compare information from one case to others. Case study research is an accepted scholarly approach (Merriam, 1998; Stake, 1995; Lincoln & Guba, 1985). Stake (1995) warned, however, “Ordinariness of phenomena is more likely when actors have little interest in learning more about what is being studied” (p. 60). The researcher’s relationship to and prior knowledge of the participants – the actors, to use Stake’s metaphor – caused him to predict that the phenomena examined in this research study would not prove ordinary.

Other recent qualitative dissertation studies have set or maintained a precedent by having employed either a multi- or single-case study approach (Avila, 2011; Getty, 2011; Houchens, 2008; Upright, 2009). Some recent dissertation studies have employed a case study approach to examine teacher use of formative assessment and the Professional Learning Community structure (Baccellieri, 2009; Jett, 2010). Published studies on either formative assessment or the Professional Learning Community structure abound (Birenbaum, Kimron, & Shilton, 2011; Buck, Trauth-Nare, & Kaftan, 2010; Cook & Faulker, 2010; Crossouard, 2011; Crossouard & Pryor, 2009; Dargusch, 2010; Graham, 2007; Hackmann, Walker, & Wanat, 2006; Havnes, 2009; Hipp, Huffman, Pankake, & Olivier, 2008; Huggins, Scheurich, & Morgan, 2011; Hume & Coll, 2009; Kilbane, 2009; Lee, 2011; Nelson, Slavit, Perkins, & Hathorn, 2008; Wong, 2010). Given the structure of this single-case study, then, and the preponderance of support for case study research, the researcher concluded that a single case study approach was appropriate.

### **Participants**

Merriam (1998) defined sampling as “the selection of a research site, time, people and events in a field research” (p. 60). Patton (2002) elaborated about purposeful sampling:

Cases for study . . . are selected because they are ‘information rich’ and illuminative, that is, they offer useful manifestations of the phenomenon of interest; sampling, then, is aimed at insight about the phenomenon, not empirical generalization from a sample to a population. (p. 40)

This study utilized a somewhat modified form of purposeful sampling since subjects in the current study were limited to participants in the original formative assessment

initiative, their colleagues, and their administrators. The sampling was modified in that, while subjects in this research study were limited, participants in the original Formative Assessment Academy were only limited by their teaching in the specified school where the formative assessment initiative took place. Participation in the initiative was voluntary. Therefore, this seeming limitation should not diminish the power of purposeful sampling.

This researcher contacted all potential subjects by email and/or telephone. Nine of the twelve teachers who participated in the Formative Assessment Academy agreed to be part of this research study. One former principal, now a district administrator, participated in the initiative; one former curriculum specialist, now serving in a different role in the district, also participated in the initiative. Both agreed to be part of this research study. Additionally, six of the teacher-participants' colleagues, one from each of the teaching teams represented in the original formative assessment initiative, participated in this study, as did their current assistant principal. The researcher used random sampling to choose teacher participants' colleagues for interviews when possible. In some cases, only one non-participant colleague per teaching team was available for an interview because of teacher absence or teacher supervision of field trips. Regardless, participants and non-participants from each teaching team in the school participated in the study. The superintendent of schools also agreed to participate. While the superintendent did not participate in the Formative Assessment Academy, his perception of the initiative's effectiveness was an important one to include. Table 1 demonstrates relevant teacher participant demographic information of those who consented to participate in this study.

Table 1

*Demographic information for teacher participants in the original formative assessment initiative.*

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<u>Teacher</u>	<u>Grade Level(s)</u>	<u>Subject Area</u>	<u>Years of Experience</u>
Debra Darden	8	Science	8
Naomi Davison	7	Math	5
Eric Deegan	7	Science	11
Sharon Farrante	7	Math	1
Sabrina Leverett	7	Science	4
Cody Rossow	8	Social Studies	7
Kay Smyth	7	Math	1
Michelle Sutphin	6	Math	6
Mattie Wesley	6-8	Music	6

Table 2 demonstrates relevant research study administrator demographic information.

For the purposes of this table, “relevant role” denotes the administrator’s role during the Formative Assessment Academy initiative, and not the administrator’s current role.

Table 2

*Demographic information for teacher participants’ supervising administrators.*

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Administrator	Relevant Role	Years in Education	Years in Admin.	Years in Role
Violet Benedetto	Curr. Spec.	27	7	6
Jennifer Brewer	Principal	11	6	2
Tyrone Ketcher	Asst. Principal	10	3	2
Clinton Schull	Superintendent	22	17	8

Table 3 demonstrates relevant teacher demographic information of the Formative Assessment Academy participants' colleagues who agreed to be part of this study.

Table 3

*Demographic information for teacher participants' colleagues who did not participate in the Formative Assessment Academy.*

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Teacher	Grade Level(s)	Subject Area	Years of Experience
Sheryl Banta	7	Special Education	5
Hugh Brown	7	Social Studies	3
Max Chaffins	8	Social Studies	1
Lonnie Hollin	6	Math	11
Kimberly McCoy	8	Language Arts	15
Harriet Petty	6	Social Studies	2

### **Gaining Entry to the Field**

The researcher submitted the proposed study to the Institutional Review Board of Western Kentucky University in February 2011. The researcher also submitted his Collaborative Institutional Training Initiative (CITI) qualifying scores, verifying ethical research practice cognizance. The researcher did not contact potential participants prior to receipt of approval by the Institutional Review Board; however, after approval, the researcher contacted all potential participants via an introductory email containing a letter

and consent form explaining the purpose of the study, and/or telephone, to gain interest in and approval of participation.

After receiving the signed consent forms, and email or verbal consent, the researcher contacted participants to schedule interviews and to begin the data collection process. The researcher followed the same method for the administrator stakeholder group. The researcher randomly chose non-participant interviews after arriving at the school for other interviews in May 2011 to begin the data collection process.

### **Data Collection**

Busha and Harter (1980) wrote of obtaining historical evidence, “Historians are concerned with *how past events actually occurred* rather than how events should have happened. Historians did not make the past, but they can reconstruct parts of it in narrative form” (p. 99). The researcher approached data collection as a form of historic artifact collection. The researcher collected and recorded perception data as participants articulated them. Data collection consisted of semi-structured interviews with teacher participants, teacher participants’ colleagues, and administration. Administration in this context is defined as former school principal, present school assistant principal, former school curriculum specialist, and school district superintendent. The researcher constructed three sets of interview questions, which were approved by the Institutional Review Board, for use with the three stakeholder groups.

### **Interviews**

The researcher conducted semi-structured interviews with teachers who participated in the initial Formative Assessment Academy. The researcher also interviewed their former principal, and former curriculum specialist. Additionally, the

assistant principal and superintendent of schools granted interviews. The researcher also interviewed six teachers, one from each teaching team in the school, who did not participate in the Formative Assessment Academy.

### **Research Questions**

The researcher used the study's research questions to develop interview protocols.

Framing questions for the study included the following:

1. What role did a professional learning community structure play in shaping participants' perceived effectiveness of a voluntary formative assessment initiative?
2. How did this initiative affect participants' perceptions of their knowledge of formative assessment and differentiation strategies?
3. How did it affect participants' perceptions of their abilities to teach others about formative assessment and differentiated instruction?
4. How did it affect school-wide use of classroom-level formative assessment strategies?

### **Teacher Participant Interview**

To gauge teacher perceptions of their own increased efficacy after participation in the formative assessment initiative, the researcher asked teacher participant subjects the following questions:

#### ***Research Question 1***

1. What is your definition of a *professional learning community* at this school? Probe:  
How did you arrive at that definition?



### ***Research Question 2***

1. How confident are you in assessing your students *for* learning this year? Probe: What evidence supports that?
2. How confident are you in differentiating instruction for your students this year? Probe: What evidence supports that?
3. Do your responses to either question 2 or question 3 indicate changes from last year? Probe: To what do you attribute those changes?

### ***Research Question 3***

1. Have you shared (or have you been given opportunities to share) your knowledge about classroom-level formative assessment? About differentiation of instruction? Probe: If so, what have been the results of this sharing? Probe: If not, are there plans in place to allow sharing, or has informal sharing already taken place? What were the results of this sharing?

### ***Research Question 4***

1. Have you used more formative assessment strategies in your classroom this year?
2. Are your colleagues using more formative assessment strategies in their classrooms this year? Probe: To what do you attribute the increase?

The researcher used a digital audio voice recorder augmented by written notes to transcribe interview responses. The researcher assured confidentiality within limits, as evidenced by Institutional Review Board approval. Pseudonyms were assigned to teacher subject names, the school, and the school district.

## **Teacher Participants' Colleagues Interview**

The researcher asked the following questions to gauge teacher perceptions of the effectiveness of the formative assessment initiative from subjects who did not participate in the original formative assessment initiative:

### ***Research Question 1***

1. What is your definition of a *professional learning community* at this school? Probe:  
How did you arrive at that definition?

### ***Research Questions 2 and 3***

1. Have your colleagues shared (or, to your knowledge, have they been given opportunities to share) classroom-level formative assessment strategies? Strategies for differentiating your instruction? What were the results of this sharing?

### ***Research Question 4***

1. Are you using more formative assessment strategies in your classroom this year?  
Probe: To what would you attribute the increase?

As with teacher participants, colleague informants' identities were protected through the use of pseudonyms. The researcher recorded teacher participant colleagues' interview responses in the same manner as with the teacher participants.

## **Administrator Interview**

To gauge perceptions of administrators who either participated in the original pilot study (e.g., the former school principal – Ms. Jennifer Brewer, the former school curriculum specialist – Ms. Violet Benedetto) or who maintain a supervisory role of the original teacher participants and their colleagues (e.g., the current assistant principal –

Mr. Tyrone Ketcher, the school district superintendent – Mr. Clinton Schull), the researcher asked the following questions:

***Research Question 1***

1. What is your definition of a *professional learning community* at this school? Probe:  
How did you arrive at that definition?

***Research Question 2***

1. How confident are the formative assessment academy participants in assessing their students *for* learning this year? Probe: What evidence supports that?
2. How confident are the formative assessment academy participants in differentiating instruction for their students this year? Probe: What evidence supports that?

***Research Question 3***

1. Have the original formative assessment academy participants shared (or have they been given opportunities to share) their knowledge about classroom-level formative assessment? About differentiation of instruction? Probe: If so, what have been the results of this sharing? Probe: If not, are there plans in place to allow sharing, or do you perceive that informal sharing has already taken place? Probe: What evidence supports that?

***Research Question 4***

1. Have you measured an increased use of classroom-level formative assessment strategies in this school this year? Probe: By whom? Probe: What evidence supports that?

As in teacher participant and colleague interviews, the researcher assured administrator participants of striving for anonymity by again assigning pseudonyms to

these subjects. The researcher also chronicled administrators' responses with an audio recorder supplemented by written notes.

The researcher assured all participants that the research records that are reviewed, stored, and analyzed at Western Kentucky University would be kept in a locked, secured area. The researcher also apprised all subjects that, in the event of any publication or presentation resulting from the research, no personally identifiable information would be shared. The researcher informed teacher participants, teacher participants' colleagues, and school and district administrators who consented to interviews that their participation in this research study would be kept confidential to the extent permitted by law.

### **Data Analysis**

Thematic patterns emerged from transcribed interview responses. The researcher utilized *naturalistic inquiry* and followed advice set forth by Lincoln and Guba (1985):

Data analysis is open-ended and inductive for the naturalist, in contrast to the focused and deductive analysis common in conventional inquiry. Since the form of the data that will ultimately be produced by the human instrument is unknown in advance, the data cannot be specified at the beginning of the inquiry. Further there are no *a priori* questions or hypotheses that can preordinately guide data-analysis decisions; these must be made as the inquiry proceeds. Since the data from a naturalistic inquiry are likely to be qualitative, statistical manipulations have little if any relevance; questions of fit to underlying assumptions and relative power are not at issue. What is at issue is the best means to "make sense" of the data in ways that will, first, facilitate the continuing unfolding of the inquiry, and,

second, lead to a maximal understanding ... of the phenomenon being studied in its context. (pp. 224-225)

The researcher followed an interview protocol. However, the results of the protocol, while predicted, were not guaranteed. The researcher's primary goal was to allow the data to speak first for themselves. The researcher then detected emerging data patterns.

The researcher assigned pseudonyms and codes to respondents and responses to aid in this pattern detection. Saldaña (2009) noted, "The act of coding requires that you wear your researcher's analytic lens. But how you perceive and interpret what is happening in the data depends on what type of filter covers that lens" (p. 6). Thus, another reason for coding was to lend credibility to the qualitative narrative. The researcher sought to support this study with multiple necessary means.

Interview data were coded using constant comparative analysis (Glaser & Strauss, 1967). The researcher examined and categorized each interview response. However, the process was recursive. Previous categories were reviewed each time a datum was coded and categorized. This procedure allowed the researcher to be cognizant of emerging patterns in the data not at first evident.

The researcher also utilized tables and data displays to convey results. According to Miles and Huberman (1994), "Our experience tells us that extended, unreduced text alone is a weak and cumbersome form of display. It is hard on analysts because it is dispersed over many pages and is not easy to see as a whole" (p. 91). Therefore, the researcher combined results in tables and data displays with a narrative of thick, rich description to increase reader accessibility.

## **Trustworthiness of Data**

Trustworthiness in qualitative research is important. According to Lincoln and Guba (1985), trustworthiness is the researcher's method of getting the reader to pay attention to results, and to believe that the results matter. Lincoln and Guba identified "truth value, applicability, consistency, and neutrality" (p. 290) as elements of a study's trustworthiness. Three principal methods helped ensure the trustworthiness of this study.

### ***Member Checks***

The researcher achieved trustworthiness of data gleaned from subject interviews through the member checks process. Lincoln and Guba (1985) identify member checks as the most important way to establish researcher credibility. Lincoln and Guba (1985) also noted the importance of allowing subjects opportunities to react to data gathered from them. Glesne and Peshkin (1992) encouraged researchers to make sense of subjects' personal stories and the ways in which they interacted. Story interaction in the form of interview responses was an important element of this study; therefore, the researcher strived to ensure that the collected data was accurate and trustworthy. The researcher was transparent and forthcoming with subjects regarding their own interview responses. Recorded transcripts of responses were openly shared with all interview subjects from the three stakeholder groups to check for accuracy of perceptions. The researcher sent copies of transcribed interviews to all research subjects, and requested clarification of any perceived misrepresentations. Since the researcher was primarily checking, documenting, and analyzing subjects' perceptions, this was an integrally important step. This step was necessary to gain the trustworthiness of data, in addition to countering the researcher's own perceptions and, albeit subconscious, but possible, bias.

### ***Thick, Rich Description***

Geertz (1973) identified thick description as an effective way to convey subject behavior and its context to the reader. Thick, rich description allows the reader to relate to the reported data. Interview results were grouped and narrated in a rich, descriptive manner.

### ***Triangulation***

According to Denzin and Lincoln (2008), triangulation helps the researcher gather “multiple perceptions to clarify meaning” (p. 133). To hear multiple perspectives on the Formative Assessment Academy’s effects, the researcher interviewed three stakeholder groups: teachers and administrators who participated in the formative assessment initiative, teachers’ colleagues who did not participate in the initiative, and other supervising administrators who did not directly participate. The researcher gathered interview data from three perspectives, achieving partial triangulation.

### **Limitations**

One limitation of this study was the small number of subjects who participated. This reflected the very nature of such purposeful sampling. However, the researcher’s personal investment of time in conceiving the original Formative Assessment Academy was the primary limitation. Another related limitation of the study was the researcher’s professional relationships with all research subjects.

To somewhat respond to questions of relational bias, the researcher offers the following: while employed by the school district, the researcher worked closely with teachers and administrators regarding curricular and instructional issues. Additionally, the researcher worked at length with teachers and administrators to foster a positive,

open, collegial way of working and communicating with one another through the aid of Contemplative Leadership principles (The Merton Institute for Contemplative Living, 2010) and Enneagram personality-typing models (Lapid-Bogda, 2004, 2007, 2009; Naranjo, 1991; Riso, 1987; Riso & Hudson, 1999; Wagner, 2010). The researcher is confident that issues of relational bias, either on the part of the researcher or on the parts of the research participants, were moot during the interview process, and during the subsequent analysis and reporting of data.

### **Conclusion**

In conclusion, the researcher employed a qualitative single-case study approach, utilizing purposeful sampling, to gauge perceptions of increased pedagogy after initiation of the Formative Assessment Academy series of teacher workshops. For the purposes of this study, increased pedagogy referred to greater knowledge and practice of classroom-level formative assessment strategies by participants in a voluntary formative assessment initiative in one Kentucky public middle school. Increased pedagogy also referred to an increase in self-efficacy and a perceived or actual willingness to train others in the Formative Assessment Academy model.



## CHAPTER IV: RESULTS

The following chapter reveals patterns that resulted from analyzed data.

Interview transcriptions and researcher notes comprised the study's data. Subjects perceived a link between the Formative Assessment Academy's effectiveness and its Professional Learning Community structure. Participants said their understanding and use of formative assessment strategies had increased as a result of participating in the Formative Assessment Academy and were actively sharing their new knowledge with colleagues. While participants reported that their knowledge of differentiation also increased, teachers believed this remained a significant growth area for their instructional practice. Administrators, however, believe the teachers were differentiating more than they realized.

Nineteen educators served as research subjects for this study. Nine research subjects were teacher participants in a formative assessment initiative at the center of this study. Six research subjects were teaching colleagues of the teacher initiative participants. Four administrators comprised the remaining research subject group – the former principal and former curriculum specialist, who participated in the formative assessment initiative, as well as the school district superintendent and the current school assistant principal who did not participate in the initiative. Table 4 illustrates research subjects' names and professional roles in the study. Research subject names and the name of the school and district (Worthe Valley Middle School; Worthe Valley School District) are pseudonyms. These pseudonyms will be used throughout the study to maintain research subject, school, and public school district anonymity.

Table 4

*Research subject names and roles at the time of the Formative Assessment Academy.*

<u>Research Subject</u>	<u>Research Subject's Role</u>
Sheryl Banta	Colleague
Hugh Brown	Colleague
Violet Benedetto	Administrator – Curriculum Specialist
Jennifer Brewer	Administrator – Principal
Max Chaffins	Colleague
Debra Darden	Teacher Participant
Naomi Davison	Teacher Participant
Eric Deegan	Teacher Participant
Sharon Farrante	Teacher Participant
Lonnie Hollin	Colleague
Tyrone Ketcher	Administrator – Assistant Principal
Sabrina Leverett	Teacher Participant
Kimberly McCoy	Colleague
Harriet Petty	Colleague
Cody Rossow	Teacher Participant
Clinton Schull	Administrator - Superintendent
Kay Smyth	Teacher Participant
Michelle Sutphin	Teacher Participant
Mattie Wesley	Teacher Participant

The researcher collected data by means of semi-structured interviews with each research subject. Written notes augmented digitally recorded interview data. The researcher achieved partial triangulation of interview data by gathering multiple stakeholder perspectives. The researcher used constant comparative analysis to make sense of data patterns that corresponded to the following four research questions:

1. What role did a professional learning community structure play in shaping participants' perceived effectiveness of a voluntary formative assessment initiative?
2. How did this initiative affect participants' perceptions of their knowledge of formative assessment and differentiation strategies?
3. How did it affect participants' perceptions of their abilities to teach others about formative assessment and differentiated instruction?
4. How did it affect school-wide use of classroom-level formative assessment strategies?

The following sections include patterns and prevalent themes in response to each of the research questions. The sections will include patterns and themes in narrative form, as well as figures, tables, and data displays.

### **Research Question 1: The Role of the Professional Learning Community Structure**

Four patterns emerged from the data analysis for Research Question 1: administrators and teachers share a common language to describe their PLC work; newer staff members arrived at their concept of PLCs by working closely with their colleagues; the PLC structure fostered teacher instructional leadership, collegial support, and teacher participant ownership in the initiative; and the PLC structure facilitated intentional administrator leadership support. Professional Learning Community dimensions

discussed by each research subject suggested a link between the PLC structure and the initiative's effectiveness.

### *Common Language*

Jennifer Brewer is the former principal of Worthe Valley Middle School (WVMS; pseudonyms used throughout the study). Ms. Brewer now serves as a district administrator; however, she still works closely with the administrative team and teachers at WVMS. Additionally, Ms. Brewer participated in and supported the implementation of the Formative Assessment Academy. Ms. Brewer articulated the first pattern evident from data collected for Research Question 1: administration and teaching staff share a common definition of collegial learning in a Professional Learning Community. They can name qualities of true PLCs.

According to Jennifer Brewer,

We were first and foremost a community. We believe in collaboration and know we can't work in isolation in this day and age. [A PLC is] individuals with similar characteristics getting together and looking at what drives student achievement: instruction, curriculum, and assessment. We tried to keep those things at the heart of our conversation. Not that talking about student discipline and other things aren't important – they are. But we set norms as to the time and place for those things. Also, we set norms for how often they were going to meet – everything from logistics to subject matter. And we decided we'd make team meetings the time and place for those other subjects. I think all along I knew that the climate and culture of that school creates the community atmosphere. But we'd had some presenters say we were chatty and not focused, and those teachers

love each other, so creating and adhering to the group norms to guide our meetings helped us get everything in line and stay focused. (JB, 5/20)

Violet Benedetto, Ms. Brewer's former curriculum specialist at WVMS, echoed a theme in this pattern: "A PLC at WVMS is a group of teachers working together for a common goal centering on curriculum, instruction, or assessment. I'd say the time was set for specific goals in each of these areas" (VB, 5/20).

Clinton Schull is the superintendent of the Worthe Valley Public School District. Mr. Schull did not participate in the Formative Assessment Academy; however, his vision contributed to its inception. Mr. Schull stated the following about PLCs:

The instructional leadership team in this district studied the DuFours' work, and it ultimately felt as if there was good, general buy-in from the leadership, including school level leadership at Worthe Valley Middle. I think a Professional Learning Community there, and hopefully anywhere in the Worthe Valley School District, is where educators come together in a group to learn, collaborate, and ultimately solve problems of practice that will help us do a better job educating to standard more and more kids at school. I'm sure there are things that a PLC is not, and even if they're doing a traditional professional development activity as a whole staff and they're calling that a PLC, I don't think that necessarily is. I think the most powerful part of a PLC is when you hone in on solving real problems and those solutions work their ways down to the student desk level, so to speak. (CS, 5/26)

Teachers in the school, both participants in the Formative Assessment Academy and their colleagues, used a common language to describe the work of PLCs at Worthe

Valley Middle School. Teacher participant Debra Darden said, “Within that community, we are figuring out how to help students learn better” (DD, 5/27). Participant colleague Harriet Petty used words such as “working with others,” “collaborate,” and “improve practice” in her definition (HP/5/26). According to teacher participant Cody Rossow,

When I look at a Professional Learning Community, I think of coming together for a common purpose, in particular here at Worthe Valley Middle – looking at curriculum, instruction, and assessment. That’s my definition of a PLC, and there are probably thousands of *different* definitions. But having that common vision and working together as a group – that’s what makes a true PLC happen. (CR, 5/27)

Similarly, the current assistant principal of WVMS, Tyrone Ketcher, contributed, “A Professional Learning Community is a group, or many groups, of teacher leaders who are involved in the curriculum and decision-making processes of the school” (TK, 5/27). Additionally, Mr. Ketcher added comments that contributed to this research question’s second pattern discussed in the next section – experienced staff members’ instinctive, collegial transfer of PLC concepts to newer ones.

### ***Collegial Transference of PLC Principles***

Mr. Ketcher also articulated the second emergent pattern in data collected for Research Question 1: Newer members of the Worthe Valley Middle School staff arrived at their own concepts of Professional Learning Communities by observing and collaborating with experienced colleagues. Research subjects did not report teaching newer colleagues the tenets of Professional Learning Communities at WVMS. However, some more experienced staff members reported forming their PLC concepts by means of

an intentional process, whereas newer staff members appeared to learn about PLCs by immersing themselves in the school's culture.

Mr. Ketcher is completing his second year as an administrator at Worthe Valley Middle School. He taught in a neighboring school district before he accepted the assistant principal position. When asked how he arrived at his definition of "Professional Learning Community," he replied as follows:

Really, I just arrived at it by watching what they did at Worthe Valley Middle when I got here and how we utilized certified staff members' skills in the building. This last year I really made a concerted effort to make teachers part of the larger community. We tried not only to get together in content areas or interdisciplinary teams, but also to let everyone have a part in school improvement planning, SACS [Southern Association of Colleges and Schools] Accreditation Review committees, and program review creation – those types of things. (TK, 5/27)

Max Chaffins is a first-year teacher at WVMS. Mr. Chaffins articulated a typical definition of "Professional Learning Community" that included common verbiage, but when asked how he arrived at it he stated,

I really ... now, I don't know if it was ever – I knew what it stood for, and all – I guess I got it through observation and doing the work; taking part. I guess just through observation and experience is where I get that definition. (MC, 5/26)

Kay Smyth and Harriet Petty responded in similar manners. Ms. Smyth, a second-year teacher, stated, "I arrived at the definition by experience – that's just what we do at our school" (KS, 5/26). Ms. Petty, another second-year teacher, said, "That's

my own definition – just from seeing what we do at Worthe Valley Middle” (HP, 5/26). Likewise, Hugh Brown, a third-year teaching veteran just completing his first teaching year at WVMS, responded that he arrived at his definition “after being here and seeing what they were all about” (HB, 5/27).

Alternately, 10 more experienced research subjects (8 teachers and 2 administrators) reported an intentional formation process of Professional Learning Communities at Worthe Valley Middle School during which administrators and teachers attended PLC workshops and conducted PLC-specific school-based training sessions. Six-year veteran teacher participant Michelle Sutphin said an intentional process was necessary “because I think one year we tried, and we called them ‘PLCs,’ but I don’t know if they would have been *real* PLCs” (MS, 5/26). According to teacher participant Mattie Wesley, “Our principal at the time came up with the idea to develop ground rules for conducting PLC meetings” (MW, 5/26). Ms. Wesley also has six years’ teaching experience at WVMS. Naomi Davison concurred, “I think initially when we started the PLC work they gave us a definition” (ND, 5/27). Ms. Davison has been teaching at Worthe Valley Middle for five years. Cody Rossow, a seven-year veteran, reported, “I arrived at that definition by attending early PLC trainings” (CR, 5/27). Similarly, when the researcher asked Eric Deegan, a teacher of 11 years, how he arrived at his concept of a Professional Learning Community, Mr. Deegan said,

Well, the opportunity to go to some of the initial [PLC] trainings helped. I think, in particular, when a local university hosted the schools at their campus and they had a gentleman come in and speak about what PLCs were and how they’ve been established in schools that had adopted that paradigm for long periods of time – I



think that experience really shaped my textbook definition. And then I think coming back and kind of molding small groups in our own school and setting a focus – that helped. (ED, 7/14)

Research subjects who had been at Worthe Valley Middle School longer than four years, then, reported an intentional process of Professional Learning Community formation. However, subjects who had been at WVMS fewer than two years reported learning about PLCs through collaboration and observation. As second-year participant Kay Smyth said, “That’s just what we do at Worthe Valley Middle School” (KS, 5/26).

Professional Learning Communities, then, are familiar structures at WVMS. The previous two themes illustrate how teachers and administrators share common definitions of PLCs, no matter how those definitions formed. Teachers and administrators can isolate components of true PLCs, and articulate why true PLCs are effective. Teachers and administrators also consistently attributed the Formative Assessment Academy’s effectiveness to its Professional Learning Community Structure.

### ***Teacher Leadership, Collegial Support, and Ownership***

The Professional Learning Community structure contributed to the Formative Assessment Academy’s perceived effectiveness and sustainability by fostering evidence of teacher leadership and teacher ownership in the initiative. Teacher participants expressed obligations to share their knowledge and support their colleagues by being active learning community participants because of their PLC involvement and Formative Assessment Academy commitment.

Administrator Jennifer Brewer cited the PLC-based Academy’s power of building teacher leadership when talking about teacher participants’ growth: “They are certainly

sharing their knowledge. And that speaks to their confidence levels – they’re willing to get up in front of their peers and talk about their practice to help others improve” (JB, 5/20). Similarly, Assistant Principal Tyrone Ketcher noted other areas of teacher instructional planning involvement, stating, “I really feel like teachers have enjoyed the opportunities to *get in and do* those types of things” (TK, 5/27). And Superintendent Clinton Schull noted that all PLC participants, including teacher participants, collaborated to “solve problems of practice” to help their schools meet instructional goals.

Teacher participant colleagues Kimberly McCoy and Hugh Brown discussed the power of the Professional Learning Community structure in receiving the participants’ formative assessment knowledge. Mr. Brown noted that the PLC structure allowed an “opportunity for some experienced teachers to educate or give knowledge they’ve gained ... to [other] teachers here to help them be better in classrooms” (HB, 5/27). Primarily, though, teacher participants expressed their own ownership and growth.

Participant Naomi Davison stated that she had grown more comfortable assessing her students for learning this year because she had learned to be more intentional about the process and “because we were having those PLC meetings. Every so often I had to make sure I had what I needed. It was a *priority*. And then it became a *habit*” (ND, 5/27). She further explained how a commitment to her PLC colleagues contributed to her own professional growth:

I was thinking, ‘I’ve got to do this or I’m not going to have anything to talk about and share.’ I knew I wasn’t going to get in trouble, but at the same time I wanted

to be able to help everybody grow. Why do something if it's not going to be meaningful? (ND, 5/27)

Ms. Davison added that her colleagues' support was an important component of her own learning: "It's not 'sit and get,' but it's more, 'Sit, and let's learn together – and *do*'" (ND, 5/27).

Participant Mattie Wesley also focused on the collegial, supportive power of the PLC structure:

What I like [about PLC structures] is that they're positive. [We focus on] what we can do to make things better. I like it because it's open and it's very collegial. We share ideas and nobody's are shot down as too big or too out of the ordinary. We get lots of good ideas just hearing people talk and share. (MW, 5/26)

Participants Cody Rossow and Kay Smith responded similarly but more succinctly. Ms. Smith stated about the Academy's structure, "I think it's all just [collaborative] experience – from the Professional Learning Community – discussing with other teachers what they're doing and what needs to be done" (KS, 5/26). When asked why he felt his practice had changed, Mr. Rossow replied, "I really would attribute those changes in practice to the Academy" (CR, 5/27).

### ***Administrative Leadership Support***

Research subjects also articulated the Formative Assessment Academy's administrative participation and support as integral to its effectiveness. Debra Darden contrasted Professional Learning Communities in her former district to the Formative Assessment Academy PLC at Worthe Valley Middle. She partly attributed its effectiveness to administrator participation:

The first time I ran into a PLC was in my previous district. It was a board initiative. It was something we all had to do. It was dictated to us. Here, this PLC was very different. It's what I think it was meant to be. Part of that was probably just a general resistance to the central office administration in my previous district. Here, there's buy-in. Administrators participate and give reasons why you're doing what you're doing. (DD, 5/27)

When asked why he felt the formative assessment initiative had been personally effective, teacher participant Eric Deegan replied in terms of PLC structure support, administrative leadership support, and opportunities granted by administrators:

Experiences. Having people give me opportunities to be involved in the Academy, the PLC, the formative assessment work. Opportunities that are presented. Without the chance to try it out – and without the support of administrators and peers who were also interested – it just wouldn't happen. I'd have to attribute the changes in my practice to all those things. Getting to participate, being supported – and the follow-up. That initiative was never let go. A lot of times you'd go to something really cool, and be very gung-ho, and then have no follow-up. And then lose it. That follow-up made a big difference. (ED, 7/14)

In summary, teachers and administrators at Worthe Valley described numerous features of a professional learning community emerging as a result of their participation in the Formative Assessment Academy, suggesting that the PLC structure contributed to the initiative's effectiveness in enhancing teacher knowledge and use of formative

assessment strategies. Table 5 illustrates evident patterns articulated by all research subjects.

### **Research Question 2: Participants' Perceptions of Increased Knowledge**

Research Question 2 asked how the Formative Assessment Academy affected participants' perceptions of their increased levels of formative assessment and differentiation knowledge. Two subsections organize this section: formative assessment and differentiation of instruction. In the first subsection, administrators and teacher participants articulate the increased use of formative assessment strategies, which led to increased levels of understanding and confidence about utilizing the formative assessment process in classrooms. These confidence levels suggested increased perceived knowledge about formative assessment strategies and the formative assessment process. In the second subsection, teacher participants discuss increased pedagogical knowledge of differentiation of instruction principles. However, teacher participants consistently identified differentiation of instruction as an area for continued professional growth. Two administrators stated that teacher participants knew more about differentiation than they realized, and that they were, in fact, already differentiating their instruction. One administrator mirrored teacher participants' perceptions about differentiation of instruction ability levels.

Table 5

*Research subjects' articulation of patterns found in analyzed Research Question 1 data.*

<u>Research Subject</u>	<u>Common Language</u>	<u>PLC Principles</u>	<u>Teacher Ldrshp.</u>	<u>Admin. Support</u>
Sheryl Banta	X	X	X	
Hugh Brown	X	X	X	X
Violet Benedetto	X			
Jennifer Brewer	X	X	X	X
Max Chaffins	X	X	X	X
Debra Darden	X		X	X
Naomi Davison	X	X	X	
Eric Deegan	X	X	X	X
Sharon Farrante	X			
Lonnie Hollin	X			
Tyrone Ketcher	X	X	X	X
Sabrina Leverett	X	X		
Kimberly McCoy	X	X	X	
Harriet Petty	X	X		X
Cody Rossow	X	X	X	
Clinton Schull	X	X	X	X
Kay Smyth	X	X	X	
Michelle Sutphin	X	X	X	
Mattie Wesley	X	X	X	X

*Note.* X = Pattern articulation.

### *Formative Assessment*

All teacher participants affirmed that they were more confident formatively assessing their students after having participated in the Formative Assessment Academy. Naomi Davison stated, “I’m much more confident. Before the Academy I knew formative assessment was good. I got background in [an educational cooperative’s initiative] but I still didn’t know how to use it” (ND, 5/27). Mattie Wesley agreed, “Nobody ever told us what to do with it before – I gained an understanding of what to do with the information and how you move on” (MW, 5/26).

Overall, their administrators concurred that the participants’ knowledge about classroom-level formative assessment had increased. Administrators based this judgment on classroom observations. Tyrone Ketcher gave specific evidence of how formative assessment manifested in teacher planning:

I don’t think they would call themselves experts, but I think they feel comfortable doing it. I can see in their unit plans where they’re talking about different strategies they are using. When we reflect in our discussions with each other, you can tell that they’re using the data to figure out where their kids are along the way” (TK, 5/27).

Jennifer Brewer said teachers’ capacity to measure individual student progress toward learning targets had grown. Ms. Brewer stated that the participants’ levels of knowledge had grown by

leaps and bounds. Now they know exactly where their kids are at that minute. And where they need to go. That’s the biggest thing. I think they’ve had a

ton of strategies and activities, but I don't think they've known where to go from there. Now they do" (JB, 5/20).

Additionally, Superintendent Clinton Schull recounted observing teacher participant Naomi Davison adjust her instruction as a result of formatively assessing her students' progress:

I definitely think they're further down the road. I guess it's been a couple of years now since they started that work, and I do think they're further along. I see evidence in classrooms. It's not unusual to walk into a classroom and see students with the [electronic student responding devices], for example, and the teachers using [data derived from] them to do a little pre-assessment to check for understanding. And I can think of time when I was in Naomi Davison's classroom and she realized they didn't understand something. She'd recognized through formative assessment that they weren't getting the concept. I think that was a good example of a teacher using formative assessment to guide what she needed to do next instead of being tied to that lesson plan she may have already laid out. (CS, 5/26).

Superintendent Schull's comments reflected other teacher participants' articulated evidence. This evidence suggested teacher participants' increased knowledge of formative assessment strategies and the formative assessment process. Teacher participants widely agreed that their understandings of the formative assessment process increased as a result of Formative Assessment Academy participation. Participants expressed this increased understanding in terms of classroom-level formative assessment strategy use and in implementing components



of the formative assessment process (e.g., changing grading practices, adjusting instruction, involving students as equal stakeholders in the formative assessment process).

The researcher asked participants for evidence when they reported increases in professional growth and knowledge of formative assessment. Cody Rossow replied, “I’ve used the strategies – I’ve modified them, too. You could see them in unit plans – maybe not every day, but two to three times a week you could probably see formative assessment strategies being used in my classroom” (CR, 5/27). However, Mr. Rossow added that he is also implementing ideas about positive descriptive feedback discussed in Academy sessions. Sabrina Leverett discussed types of assessment strategies as activities: “I try to use a lot of formative assessments” (SL, 5/26). She also discussed, though, tracking results in her grade book and on spreadsheets to denote which students had mastered learning targets.

Sharon Farrante explicitly identified the instructional adjustments resulting from the formative assessment process:

I definitely think having the Academy last year helped me grow because I was a first-year teacher. Coming in here was a little intimidating, trying to put everything into practice that they teach you in college. So being able to have those concrete examples of formative assessment strategies was very beneficial. Continuing this year, I’m much more confident in using them, but also being able to take that data at the end of the lesson or the end of the day – it *guides* what I do from day to day. (SF, 5/26)

Eric Deegan added,

It was helpful when we started having some of the formative assessment examples, and meeting regularly and discussing some strategies to try out that I'm the type of person who has to see it, or have a vehicle to get there. And those strategies gave me a vehicle to put into action what I was hearing and reading about. (ED, 7/14)

Some teacher participants talked passionately about reflecting on their own practice and coming to new understandings of the formative assessment process. Debra Darden articulated not only her perspective change but also her changes in grading practices as follows:

Oh, my goodness – it really has been day and night. I thought I was good before, but I was clueless. One of the things I loved about that [Formative Assessment Academy] was actually the different disciplines coming together and hearing different perspectives. Our focus in that learning community was formative assessment, not content. It was neat to bounce ideas off each other. I am much more confident now, and I feel like my students have learned a lot more because of that. I don't score everything, but I'm confident in knowing where students are. Every class period is different. I'm much more confident in assessing them. I put a lot less weight, honestly, on many things that are scored because my focus has really shifted. I've wanted this focus for a long time. I used to get to the end-of-unit test and be so frustrated if students didn't do well. Now, my focus is completely off of that. It's centered on their understanding. We talk about their work, and their strengths and growth

areas. I give specific feedback. You'd see kids confident enough to self-assess, and you'd see me stop right then and there and address it instead of going on to the unit test. Obviously, there's data because I do take things up, but some of the data is anecdotal. Every discussion in every class is different because I'm formatively assessing each class. (DD, 5/27).

Ms. Darden noted that her practice changed as evidenced by her continuous classroom instructional adjustments "a lot. The changes would be marked by greater student understanding. I can intervene a lot quicker" (DD, 5/27).

Eric Deegan echoed this change in instructional practice, also adding an emphasis on shifting grading practices:

For me, I was just so reliant on scores, which to me were the results of all of the summative assessment items. And most of my assessments *were* summative. So when I didn't see a score I wanted I had a harder time figuring out why they didn't get that score. But the biggest change I've noticed since the Academy was within my everyday instruction. It's now this: engage my students, give them time to work together, pull them back in, and do something to see if they understand it before I just say, 'Class is over. See you tomorrow. We'll pick up where we left off.' Prior to learning some of the things we did in the Academy, I would have done just that. Now, I'm practicing understanding checks throughout a class period. Another area that has really changed for me is my grading – now, my grades are all based on the ending summative results. But there's a whole lot of formative things that I do that allow me to measure students' understanding that don't end up as a

number. That's difficult for parents to comprehend because it allows students to have failure without the fear of *failing*. So that has been kind of nice because they see class activities and homework as non-threatening now, and there's more engagement because of that. You may still have one percent who are resistant – but they're resistant to the system, not the class or teacher or subject. The majority of my students have enjoyed the fact that not everything is graded, and if they show they understand a concept then they don't have to do all of the work around it. In the end, my grade is flexible. If students don't do well then they have chances to do something about it. That has been the most rewarding for me. (ED, 7/14).

Michelle Sutphin agreed, "I just know there's a change in me. When I first started teaching I thought the purpose of a test or quiz was for a grade" (MS, 5/26).

Teacher participants also emphasized the value and importance of *student understanding* as a product of their Academy participation. Kay Smyth stated, "This year, when I realize from an assessment that my students don't understand something, I take more time with the concept rather than going on to the next thing" (KS, 5/26).

Michelle Sutphin agreed, "I feel like I've become a lot better about using test data, quiz data, and observations to say, 'I'm not going to finish this lesson in the time I'd planned, but that's okay because students need to [understand] it'" (MS, 5/26).

Finally, teacher participants explicitly discussed how their increased understanding of the formative assessment process now allowed students in their classrooms to be equal stakeholders in the learning process. Naomi Davison revealed, "Before the Academy, I would use formative assessment for myself, but the

kids never knew the results. Now I include students in the formative assessment process. They understand where they are and where they're going" (ND, 5/27). Debra Darden stated, "Students have ownership in this process. They *love* having that ownership. They participate a lot more" (DD, 5/27). And Mattie Wesley stated the following about deciding to include her students in the formative assessment process: "I think we achieved a whole new level of mutual respect" (MW, 5/26).

In summary, this subsection discussed administrator and teacher participant perceptions of increased formative assessment pedagogical knowledge. Administrators and participants perceived positive changes in instructional practice. They attributed those changes to participation in the Formative Assessment Academy. As Mattie Wesley stated, "Now, I'm actually formatively assessing instead of assessing for no reason" (MW, 5/26). All teacher participants agreed that their practice has improved. Figure 3 illustrates administrator and teacher perceptions of these changes in practice stemming from Academy participation.

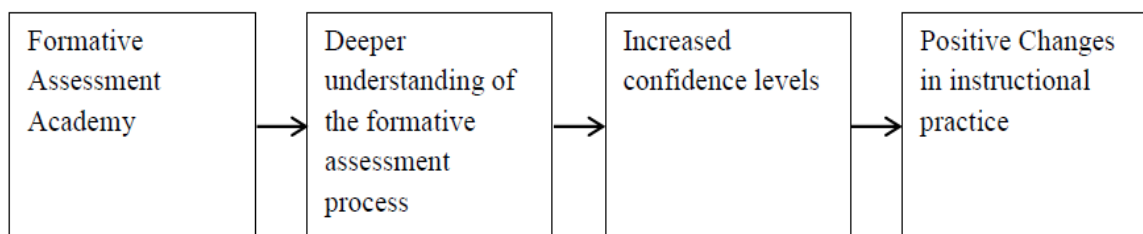


Figure 3. Administrators and teacher participants perceived that participation in the Formative Assessment Academy ultimately lead to positive changes in instructional practice.

The next subsection will discuss administrator and teacher perceptions of increased pedagogical knowledge of differentiated instruction strategies and principles.

### *Differentiation of Instruction*

Part of Academy participants' time focused on learning about differentiation strategies and on principles of differentiated instruction. The researcher included a differentiated instruction component in the Formative Assessment Academy because differentiation was a necessary component of the formative assessment process. After teachers formatively assessed their students, they would then have to adjust instruction. Differentiation *was* adjusted instruction. Teachers differentiated, or adjusted, their instruction as a result of formative assessment data. Teachers had to be ready to differentiate instruction when assessment results revealed multiple levels of student understanding and readiness.

Data analysis for this subsection revealed two divergent patterns for this portion of Research Question 2: teacher participant perceptions and administrator perceptions. Overall, teacher participants consistently articulated differentiation of instruction as an area of continued professional growth. While most participants stated that their knowledge levels of differentiation principles had increased, most also expressed feelings of inadequacy in effectively differentiating their classroom instruction.

Michelle Sutphin responded succinctly when asked about increased knowledge of differentiation strategies and principles, "Differentiating instruction – that one I haven't changed much this year" (MS, 5/26). Sharon Farrante stated, "I still feel like that is an area I can improve on" (SF, 5/26). Michelle Sutphin admitted, "I feel like I could do it. I just don't feel confident that I could do it well" (MS, 5/26), while Cody Rossow said, "I feel more comfortable with formative assessment. I need

more focus with differentiation. I'm still getting my feet wet" (CR, 5/27). According to Naomi Davison, "I know how to differentiate instruction, but for sure I can get better" (ND, 5/27). Additionally, Eric Deegan reflected,

Well, on a personal level I feel like I can explain and do things to accommodate students at all levels. But I don't feel like I'm intentionally differentiating. I guess I struggle to make a concept in [my content area] easier to understand. It is what it is. They're just such concrete concepts. I struggle with how to make that idea easier for some students and more challenging for others when the idea is what it is. Conceptually, I guess, I'm struggling. Not that I'm not confident in knowing what I want to do, but it goes back to before when you had given us formative assessment examples. I guess that's where I am right now: give me more time and feedback and examples of what differentiation looks like conceptually in my classroom. That's where I feel like I'm a little unsure. (ED, 7/14)

Two administrators contradicted teacher participants' perceptions that they did not learn more differentiation strategies and principles and were not differentiating instruction after Academy participation. These administrators articulated parallel ideas that teacher participants would downplay their growth in the area of differentiating instruction. According to Tyrone Ketcher and Jennifer Brewer, if teachers were engaging in the formative assessment *process*, then they would have to differentiate instruction as a result of data derived from formatively assessing their students. Ketcher and Brewer suggested that when teachers adjusted their instruction

as part of the formative assessment process, they were differentiating instruction, albeit informally and unintentionally. Tyrone Ketcher stated:

I think that they have done it more than they believe that they have done it. I would say they would tell you that they are not confident at all in differentiating instruction. I think they do it, but they don't pay attention – you know, sometimes their questioning naturally leads them there. I think they do a lot more than they give themselves credit for, but I would say they would tell you they're not confident at all. (TK, 5/27)

Additionally, Jennifer Brewer explained,

I'll be honest: I think they're a lot more confident, but again, they're *comparatively* more confident. They're coming from a level of not really doing it that often. But I think they will still tell you that [differentiation] is the area where they want to grow. Understand, too, some of those teachers are sitting in classrooms of 32 kids with one adult. And they know there is no way that all of their kids are at the same place instructionally. They know this is the next step. Would they tell you they're confident? Probably not. But as an administrator looking in I can tell the confidence level has risen. They're ready for it, and they're trying it more than they'll say are. (JB, 5/20)

Alternately, one administrator agreed with teacher participants. According to Superintendent Clinton Schull,

I still think we've got a lot to do on that. I think there are *efforts* to differentiate. I think still figuring out how to do that well is something that we've got to continue supporting and looking at. You know, I see from time



to time center-based activities, but typically all the kids in class do all those things. They may have some level of choice how they do this or that, or they may have different group roles, but I still believe we are trying to figure it out – and I think as a learning organization we are trying to figure out what it is and what its role is in the instructional program. We ultimately have to figure out how to make it doable. (CS, 5/26).

To summarize, teacher participants and one administrator viewed differentiation as a continued growth area. Two administrators explicitly perceived that teacher participants were better at differentiating than they would admit. Figure 4 illustrates teacher participants’ and one administrator’s perceptions of the Formative Assessment Academy’s effect on their abilities to differentiate instruction.

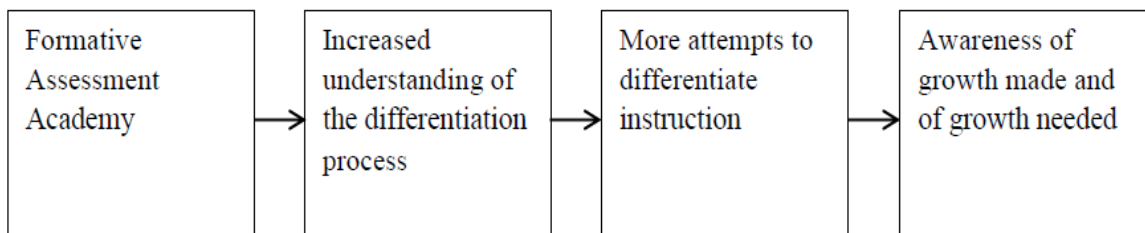


Figure 4. Teacher participants and one administrator perceived they needed more growth in the area of differentiation of instruction after Formative Assessment Academy participation.

Figure 5 demonstrates two administrators’ perceptions of the Formative Assessment Academy’s effect on teacher participants’ abilities to differentiate instruction.

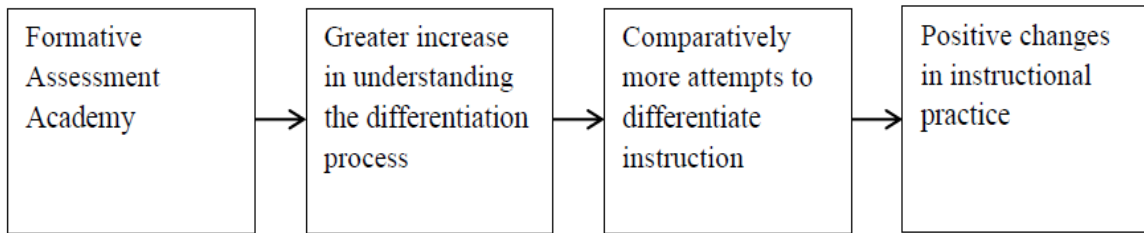


Figure 5. Two administrators perceived teacher participants grew more than they admitted in the area of differentiating classroom instruction after they participated in the Formative Assessment Academy.

Table 6 demonstrates analyzed teacher participant data from Research Question 2. In summary, teachers and administrators perceived increases in formative assessment knowledge as a result of Formative Assessment Academy participation. Some teachers cited an increased use of classroom-level formative assessment strategies as evidence of their new knowledge. Other teachers cited classroom implementation of formative assessment process components. Alternately, while some teacher participants expressed personal knowledge increases of differentiation principles and strategies, they also articulated hesitancy to fully implement differentiated instruction in their classrooms because of feelings of inadequacy, perceptions of additional professional learning and growth remaining, or lacking confidence in differentiation abilities. Michelle Sutphin stated she felt more confident beginning to differentiate her instruction, but also that she didn't "feel confident in doing it really well" (MS, 5/26). Eric Deegan said that he now knew what he wanted to do when differentiating instruction, but admitted to "struggling" and being "unsure" about the process (ED, 5/26). Debra Darden expressed being more confident about the differentiated instruction concept, but that she had devoted the past school year to "pushing [myself] toward understanding" differentiation

better. Some administrators disagreed with teacher participants and perceived that more teachers were differentiating their instruction than the participants realized.

One administrator agreed with teacher participants.

These perceptions of increased knowledge, maintained levels of understanding, or areas of continued professional growth informed patterns discovered in Research Question 3's analyzed data.

### **Research Question 3: Participants' Perceptions of Abilities to Teach Colleagues**

An analysis of data for Research Question 3 revealed a consistent pattern. This section highlights perceptions of enhanced efficacy as a result of Formative Assessment Academy participation. Interview protocol questions for Research Question 3 asked participants, participants' colleagues, and administrators about opportunities to share formative assessment and differentiation strategies and principles. Increased opportunities to share, as well as evidence of participants' willingness to share, implied perceptions of increased abilities to teach non-participant colleagues about formative assessment or differentiated instruction. The researcher facilitated the Academy primarily to positively affect classroom practice. Since every teacher in the school did not participate, Academy participants were to become trainers of their colleagues.

Table 6

*Research subjects' articulation of patterns found in analyzed Research Question 2 data.*

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Research Subject	More Confident with FA	More FA Strategies	Implements FA Components	Experienced Diff. Inst. Growth	Remains Hesitant to Diff. Inst.
Debra Darden	X	X	X	X	X
Naomi Davison	X	X	X	X	X
Eric Deegan	X	X	X	X	X
Sharon Farrante	X	X	X	X	
Sabrina Leverett	X	X	X	X	
Cody Rossow	X	X	X	X	X
Kay Smyth	X	X	X	X	X
Michelle Sutphin	X	X	X	X	X
Mattie Wesley	X	X	X	X	

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*Note.* X = Pattern articulation. FA = Formative assessment.

Administrators, teacher participants, and teacher participant colleagues agreed that some formative assessment strategy sharing had occurred and that this sharing resulted in positive effects. This strategy sharing suggests an increased perceived participant ability to share formative assessment knowledge with their colleagues. However, all research subjects also agreed that little differentiation of instruction principle sharing had occurred. This lack of sharing implied no perceived increase in participants' abilities to share differentiated instruction principles with their colleagues. Data revealed that teacher participant colleagues made no connection to their peers' participation in the Formative Assessment Academy and dissemination of knowledge about differentiation principles.

Assistant Principal Tyrone Ketcher summarized some knowledge sharing that had occurred in the form of a "carousel walk" activity during school-based professional development day:

Other teachers who didn't participate in the Academy rotated into participants' classrooms to learn about formative assessment strategies that they used. The participants were taking what they learned in the Formative Assessment Academy and teaching others, *and* giving student work samples so teachers could see how [a strategy] was used. They talked about record-keeping, too. (TK, 5/27).

When asked about differentiation of instruction, Mr. Ketcher replied, "Differentiation? They haven't done a lot of sharing with that" (TK, 5/27). Teacher participants had not yet formally shared differentiation principles with their colleagues.

Likewise, while Superintendent Clinton Schull stated that he had not personally recorded evidence of sharing, he did *recall* teacher participants sharing formative

assessment strategies to Worthe Valley School District's cadre of incoming teachers during their New Teacher Institute the previous summer. "I recall discussing plans to expand the initiative with Mr. Ketcher during a school site visit, but I don't remember specifics" (CS, 5/26).

Every teacher participant and every colleague interviewed consistently noted positive effects of sharing formative assessment strategies on Worthe Valley Middle School's professional development day. Debra Darden noted, "The other teachers were very receptive to hearing how an individual teacher put formative assessment to use. That really made me think and evaluate, too. It allowed me to reflect on changes in my instruction" (DD, 5/27). Ms. Darden also noted an unintentional discussion of differentiation during her professional development session, "I got to teach [formative assessment] on that professional development day. Looking back, I did talk about differentiation then, but a lot of that [resulted from] questions teachers asked. It wasn't planned" (DD, 5/27).

However, most teacher participants and colleagues noted a lack of opportunity to share knowledge of and learn more about differentiated instruction. Michelle Sutphin stated she had shared her own insights about differentiation "with my student teacher, but not with the whole school" (MS, 5/26). Kay Smyth was unsure about any school-wide sharing of differentiated instruction principles: "I'm pretty confident that some of the sessions during that professional development day focused on differentiation, but I can't say for sure" (KS, 5/26). When the researcher asked Sabrina Leverett if any sharing of differentiation strategies or principles had occurred, she replied, "No. Not really" (SL, 5/26).

Most participant colleagues noted positive effects of formative assessment strategy sharing, which implied participant sharing effectiveness. Hugh Brown said, “Before that professional development, I didn’t use near the amount of formative assessment strategies. I thought it was very beneficial” (HB, 5/27). Lonnie Hollin and Harriet Petty both described receiving formative assessment strategies from teacher participants during the “carousel walk” professional development activity at WVMS. Max Chaffins also noted receiving formative assessment strategies on this professional development day, as well as receiving more strategies and assistance from teacher participant Cody Rossow.

When asked about differentiation of instruction, however, participant colleagues echoed participants’ comments. Hugh Brown replied, “Differentiating. I’ve not gotten that. It’s still unclear to me, but I know the goal is to reach all learners. It’s tougher. Maybe not as clear to people not in the Academy” (HB, 5/27). Kimberly McCoy stated, “I haven’t done much – well, maybe anything – where I’ve taken pretest data and broken down which students need to focus on what” (KM, 5/26). And according to Max Chaffins,

Yeah. I know I have a hard time with differentiation. It’s on my growth plan, though. I guess I haven’t felt comfortable enough to give up that control to the student. I know we’ve talked about it, but as far as specific examples of participants sharing differentiation strategies, I don’t know of any. (MC, 5/26)

In summary, this section discussed teacher participants’ perspectives of their confidence in disseminating knowledge about formative assessment and differentiation of instruction. Increased levels of confidence to train others were inferred when teacher

participants discussed opportunities to share and suggested a willingness to share (e.g., formative assessment). Likewise, *no* increased levels of confidence to train others were inferred when teacher participants revealed that no opportunities to share had been available or had been pursued (e.g., differentiation of instruction). This section also highlighted administrators' and the participants' colleagues' perspectives. According to all research subjects, formative assessment strategy practice increased as a result of the Formative Assessment Academy participants' ability to share their knowledge; however, all teachers and some administrators at Worthe Valley Middle School consistently noted differentiation of instruction as an area of continued professional growth.

Research subjects' assumptions about the dissemination of formative assessment knowledge led to conclusions drawn about the data derived from the last research question. The next section will discuss patterns revealed by analyzing data for Research Question 4.

#### **Research Question 4: School-wide Use of Strategies**

Research Question 4 asked about the Formative Assessment Academy's effect on the school-wide use of formative assessment strategies. Four subsections organize analyzed data that emerged from the research question: 1) teacher participants' increased perceived use of strategies; 2) participant colleagues' perceptions of their own use of strategies; 3) teacher participants' perceptions of their colleagues' use of strategies; and 4) administrators' perceptions of increased school-wide use of strategies. Subsection 3 illustrates a deficiency in monitoring and follow-up of strategy sharing.



### ***Teacher Participants' Self-Perceptions of Increased Strategy Use***

All teacher participants reported increases in their own formative assessment strategy practice. Most of the participants simply affirmatively responded. Others were more enthusiastic. Debra Darden replied, "Oh, yeah. Definitely. More than double this year. This year I have *mindfully* integrated a lot more" (DD, 5/27). Naomi Davision agreed, "Definitely. I try to include formative assessment in *every* section or unit I teach" (ND, 5/27). And according to Eric Deegan, "I would say *absolutely*" (ED, 7/14).

Most were equally sure of their colleagues' uses of strategies. Some articulated anecdotal evidence of their colleagues' use of formative assessment. Others stated that they had not quantified any perceived increased use of formative assessment strategies.

### ***Teacher Colleagues' Self-Perceptions of Strategy Use***

Most teacher participant colleagues reported increased uses of formative assessment strategies. They attributed these increases to collaboration with Formative Assessment Academy teacher participants or attendance at the professional development day.

Max Chaffins, a first year teacher, noted a personal increased use of formative assessment strategies and increased understanding of formative assessment process knowledge when compared to his student teaching experience and his teacher preparation program. Hugh Brown reported that he used formative assessment strategies "a whole lot more. I definitely have, and I know other teachers have, too. Those formative assessment professional development days have been the most benefit to me as a teacher this year" (HB, 5/27). Harriet Petty reported an increased use of strategies, too. Teacher

participant Michelle Sutphin teaches in the classroom next to Ms. Petty. Additionally, teacher participant Sharon Farrante is her friend. Ms. Petty stated,

Definitely more. I used some last year, but I don't think I assessed and analyzed the results to change what I was doing. This year I'm still not great at that – I still struggle with that component – but I'm much better. Ms. Sutphin participated in the Academy – she teaches right next door. She has more experience than I do – I can learn a lot from her. Also, Sharon Farrante did the Academy. Mainly there are people I'm close to who I've gotten strategies and advice from. I've heard about a lot of people using formative assessment strategies this year. (HP, 5/26)

Sheryl Banta is a collaborative exceptional education teacher on participant Naomi Davison's teaching team. The researcher asked Ms. Banta if she had noted an increase in her own use of formative assessment strategies. Ms. Banta replied, "Well, my classroom is the regular education teacher's classroom so I'm using those along with her. I am definitely using those formative assessment strategies along with Ms. Davison and other teachers" (SB, 5/26).

Lonnie Hollin is an eleven-year Worthe Valley School District teaching veteran completing his first year at Worthe Valley Middle School. When the researcher asked if he had increased his own use of formative assessment strategies he replied as follows:

I would say it has probably been about the same over the past few years. I began to implement some things several years ago and I can't say that my use of formative assessment is more this year than in the past. I was familiar with it when I got here. I knew it was a recent initiative here, but I had some previous knowledge of formative assessment before I came here. (LH, 5/26)

Participant Debra Darden is Kimberly McCoy's teaching team leader. Ms. McCoy, a fifteen-year teaching veteran, reflected on her perceived increase as follows:

There has definitely been an emphasis on more formative and summative assessment – maybe just in the last two years. It's something that we talk about on professional development days. Not every day, but now and then there are some people on my team who participated in the Academy and that has impacted our team meeting conversations. I didn't participate in the Academy, and neither did another one of my teammates, but Debra Darden is my team leader. I don't mean to give the impression that we talk about formative assessment every day, but we do talk about it. I also served on the interview committee for next school year's new language arts teachers, and formative assessment was the subject of one of our interview questions. We had lots of really good applicants. The people straight out of college did great – no problem. We had some applicants who have *some* experience in the classroom – great, no problem. They were all fantastic. Then we had some people who were even more experienced, and from them we had a couple of blank stares, or 'Help me with the terminology' type reactions when we asked them about formative assessment. I thought it was interesting that the people who blanked out on formative assessment were the ones who probably went through school when I did. And I don't remember discussing it in my teacher preparation coursework fifteen or so years ago.

All teacher participant colleagues articulated the school-wide use of classroom level formative assessment strategies at Worthe Valley Middle School this school year.

Five of the colleagues noted a personal increased use of formative assessment in their classrooms.

### *Teacher Participants' Perceptions of Colleagues' Strategy Use*

Teacher participants consistently reported increased formative assessment strategy use by their colleagues. When the researcher asked for evidence of data to support the increase, teacher participants gave primarily assumptions as evidence. Teacher participants suggested that, while they believed their colleagues were using more classroom-level formative assessment strategies, they had no evidence to prove that they were.

Sabrina Leverett said, "I believe several of them are using the strategies. There are still some who are hesitant. Some are not quite open to the newness yet, but some outside the Academy are using them" (SL, 5/26). Michelle Sutphin replied, "I would assume they are using more, but I don't have evidence to support that assumption" (MS, 5/26). Additionally, when asked about results of her sharing strategies during the professional development day at WVMS, Ms. Sutphin responded, "I don't know. I mean, there was no follow-up or anything" (MS, 5/26). Sharon Farrante believed more of her colleagues were formatively assessing their students: "I think so. So many Academy participants talk to those other teachers about how they're designing their lessons. Word kind of got around" (SF, 5/26). When asked about results of her sharing, Ms. Farrante responded,

We haven't really discussed that as a whole, but I know I've shared something with the language arts teacher on this team and she really liked it so I know she's

using it. I think they were very open to the strategies and things that we were talking about. (SF, 5/26)

Naomi Davison stated the following about her colleagues' use of strategies:

I would probably think yes – more so than before, anyway. Probably not as much as the people who did participate [in the Formative Assessment Academy], but people have asked to borrow my training binder [of research and strategies]. I think they're probably using [formative assessment strategies] more than in times past, but I don't know if it's as frequent as the participants. I know I've had some teachers tell me that the strategies worked in their classrooms. I never followed up, exactly, but I've heard some teachers talk about how they used them. I think it has somewhat worked. (ND, 5/27)

Finally, Kay Smyth replied, “We didn't follow up to see if anybody had used any of the strategies, but they were very interested” (KS, 5/26).

Teacher participants sensed that their colleagues were utilizing more formative assessment strategies than before. The participants did not produce quantitative data to support their assumptions. However, one teacher participant, Sabrina Leverett, offered the following:

I was finishing my Master's Degree this semester so one of the components of my professional portfolio was a section on my participation in the Formative Assessment Academy. I sent out a survey to the staff and asked about the “carousel walk” activity on the professional development day. Everyone who responded said they would use at least one of the activities we shared that day. (SL, 5/26)

Additionally, all teacher participants reported sharing strategies with their colleagues formally (e.g., during the professional development day at WVMS, at the district's New Teacher Institute) or informally (e.g., with student teachers, with intern teachers, with teaching team colleagues during team meetings).

Table 7 illustrates findings from the first three subsections. All teacher participants and most of their colleagues perceived increases in formative assessment strategy use. However, teacher participants also reported that little follow-up and monitoring had occurred to ensure the sustainability of formative assessment strategy use.

#### ***Administrator Perceptions of Strategy Use***

Every administrator research subject articulated evidence of school-wide use of formative assessment classroom level strategies. Most administrators also noted *increases* in formative assessment strategy use after teachers participated in the Formative Assessment Academy.

Violet Benedetto's observation of strategy use was primarily limited to teacher participant classroom observations: "I can vividly remember their sharing with *students*" (VB, 5/20). Superintendent Clinton Schull noted that, while he was not aware of any data demonstrating a pre/post measure of strategy use, "I'll say *anecdotally* it's not unusual to see those formative assessment strategies being used at WVMS. I see that routinely in classrooms over there. I think there's more awareness about formative assessment now and how to use it" (CS, 5/26).

Table 7

*Teacher participants' and colleagues' articulation of analyzed Research Question 4 data.*

Research Subject	P/C	Participant Increased FA Strategy Use	Colleague Increased FA Strategy Use	Participant Reported Colleagues' Increased Strategy Use	Participant Produced Quantifiable Evidence of Monitoring/Follow-up
Sheryl Banta	C		X		
Hugh Brown	C		X		
Max Chaffins	C		X		
Debra Darden	P	X		X	
Naomi Davison	P	X		X	
Eric Deegan	P	X		X	
Sharon Farrante	P	X		X	
Lonnie Hollin	C				
Sabrina Leverett	P	X		X	
Kimberly McCoy	C		X		
Harriet Petty	C		X		
Cody Rossow	P	X		X	
Kay Smyth	P	X		X	
Michelle Sutphin	P	X		X	
Mattie Wesley	P	X		X	

*Note.* X = Affirmative response. (P)=Teacher participant. (C)=Teacher participant colleague. FA = Formative assessment

The researcher asked former principal and current district administrator Jennifer Brewer about increased use of formative assessment strategies at Worthe Valley Middle School. She responded affirmatively and added,

It's not simply the teacher participants – the ones who went through the Formative Assessment Academy – but all teachers because the participants have been sharing. I've seen those strategies being used when I've observed classrooms during instructional rounds, or during informal and formal teacher observations when I'm supporting specific teachers or just checking in with them. I can't say that only the Academy participants are using formative assessment strategies. It's certainly not the case – it's the whole school. (JB, 5/20)

Tyrone Ketcher, current assistant principal of WVMS, agreed that he had measured an increased strategy use since the formative assessment initiative:

Yes, particularly by the participants in the Academy. They really want to utilize those strategies, and they have been very intentional about doing so. And their enthusiasm is starting to spread out to others. I'd say definitely there has been an increased use. Also, I have seen teachers outside the Academy using some techniques shared with them. I see other evidence in unit plans. Periodically we've done some common assessments – there's evidence in that process, too. And then in professional growth plans (PGPs) – I have talked to some teachers about using formative assessment in their goals, particularly effectively using pre-test results. So I am starting to see formative assessment use show up in some PGPs, too. (TK, 5/27)



Table 8 illustrates administrator assumptions regarding the school-wide use of formative assessment strategies. For the purposes of this table, “specific evidence” refers to quantifiable evidence (e.g., found in lesson plans, recorded observation data), and “anecdotal evidence” refers to recalled evidence.

Table 8

*Administrator Perceptions of Formative Assessment Strategy Use at Worthe Valley Middle School.*

Administrator	Increased Strategy Use	Specific Evidence	Anecdotal Evidence
Violet Benedetto			X
Jennifer Brewer	X	X	X
Tyrone Ketcher	X	X	X
Clinton Schull	X		X

*Note.* X = Affirmative response.

### **Conclusion**

In summary, multiple patterns emerged from an analysis of collected data for each research question. For Research Question 1, the data revealed four patterns. First, the administrators and teachers at Worthe Valley Middle School shared a common language that they used to describe their collaborative work within a Professional Learning Community structure. Additionally, data showed that the newer staff members at Worthe Valley Middle – both new teachers and teachers and administrators who had prior

experience but were comparatively new to the school – did not receive formal training in the PLC model that the school used. Instead, these newer staff members arrived at their concepts of PLCs through close collaboration with their colleagues. Newer staff members’ concepts of Professional Learning Communities mirrored their colleagues. Also, subjects suggested the PLC structure fostered teacher leadership, collegial support, and participant ownership in the initiative. Finally, data revealed the PLC structure fostered intentional administrative leadership support.

Two subsections organized analyzed data from Research Question 2: formative assessment and differentiation of instruction. Administrators and teachers perceived increases in classroom-level formative assessment strategies. This increased use led to increased levels of understanding and confidence in implementing the formative assessment *process*. Teacher participants did not express increased confidence in their abilities to effectively differentiate instruction; however, two of their administrators believed the teachers’ differentiation ability levels were greater than they realized.

Similarly, for Research Question 3, data suggested teacher participants’ confidence levels regarding formative assessment and differentiation of instruction partly resulted in their willingness to share or not share knowledge with colleagues. Teacher participants, administrators, and colleagues consistently reported sharing or receiving new formative assessment strategies during professional development opportunities. Participant and colleague data suggested that participants felt confident sharing formative assessment classroom-level strategies. However, participant and colleague data also revealed a comparatively lower level of confidence in sharing methods to differentiate

instruction. Additionally, few opportunities to share differentiation principles were reported.

Finally, for Research Question 4, four subsections organized the analyzed data: 1) teacher participants' increased perceived use of strategies; 2) colleagues' self-perceptions of their own formative assessment strategy use; 3) teacher participants' perceptions of their colleagues' formative assessment strategy use; and 4) administrators' perceptions of school-wide formative assessment strategy use. With the exception of one teacher participant colleague, all research subjects perceived an increased formative assessment classroom-level strategy use at Worthe Valley Middle School; however, a deficiency in follow-up and monitoring was also noted.

## CHAPTER V: SUMMARY, CONCLUSIONS, AND IMPLICATIONS

### Introduction

Research suggests the positive instructional implications of effectively utilized classroom-level formative assessment (Black & Wiliam, 1998; Crooks, 1988; Fuchs & Fuchs, 1986; Sadler, 1983). However, researchers and authors also note the lack of meaningful formative assessment training that teachers have historically received (Black & Wiliam, 1998, 2003; Chappuis, 2009; Stiggins & Chappuis, 2005). Therefore, school district administrators must begin to include formative assessment training components in their professional development offerings. They should also adhere to principles of adult learning and true Professional Learning Communities for the purpose of meaningful and lasting formative assessment implementation (Drago-Severson, 2008; DuFour & Eaker, 1998; Knowles, 1968; Merriam, 2008).

This study examined perceived effects of a formative assessment initiative that operated according to adult learning theory and principles. The researcher designed and facilitated a voluntary *Formative Assessment Academy* in a Kentucky public middle school. Participants in the Academy adhered to principles of high-functioning Professional Learning Communities in an attempt to positively change classroom practice. Participants studied and implemented formative assessment research and processes over a period of five months, and augmented their implementation with collegial inquiry and job-embedded support.

In this chapter, the researcher discusses a summary of research results that examined the effectiveness of the Professional Learning Community structure (Research Question 1), effects on teacher participants' pedagogy (Research Question 2), any effects

on teacher non-participants (Research Question 3), and effects on the school-wide use of formative assessment strategies (Research Question 4). This section also embeds linkages from this study's findings to previous literature. Finally, the researcher discusses this study's implications for future research.

### **Summary of Results**

The researcher analyzed data resulting from semi-structured interviews with members of three relevant stakeholder groups (teacher participants, supervising administrators, teacher participants' colleagues) to address four research questions. This section discusses a summary of the findings.

#### ***Research Question 1***

The Professional Learning Community structure played an important role in the conception and sustainability of the Formative Assessment Academy professional development model. Research Question 1 examines the structure's effectiveness. The researcher's findings suggest connections between participants' perceptions of the PLC's effectiveness, adult learning theory, and previous literature. If participants responded affirmatively to the Academy's effectiveness, the researcher asked participants to what they attributed its success. Consistently, participants explicitly referenced the Professional Learning Community structure, implicitly noted principles of high-functioning PLCs (e.g., collaboration), or both. Table 9 illustrates Formative Assessment Academy participants' (teachers and administrators) responses.

Table 9

*Participants' explicit and/or implicit PLC references.*

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Research Subject	Explicit PLC Reference	Implicit PLC Reference
Violet Benedetto		X
Jennifer Brewer	X	X
Debra Darden	X	X
Naomi Davison	X	X
Eric Deegan		X
Sharon Farrante		X
Sabrina Leverett	X	
Cody Rossow	X	
Kay Smyth	X	X
Michelle Sutphin	X	X
Mattie Wesley	X	X

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*Note.* X = Affirmative response.

Principal Jennifer Barnes explicitly connected the *implicitly* collegial nature of the Formative Assessment Academy PLC to increased student achievement at Worthe Valley Middle School:

Grades have improved. You walk into the classrooms and the learning environment has been adjusted to match teaching and learning styles. The collegial talk you hear – the discussions – they [WVMS teachers] feel like the students have been more successful. And they feel as if they have helped *all* students, and not just those who come to their classrooms eager to learn.

(JB, 5/20)

Ms. Brewer's comments echoed previous researchers and authors' findings on true PLCs (Black et al, 2004; DuFour & Eaker, 1998; Jackson & Street, 2005; Reeves, 2009) and principles of more effective adult learning (Drago-Severson, 2008).

Figure 6 isolates six of the eight components in the researcher's Formative Assessment Academy conceptual model. These six inner components demonstrate the Professional Learning Community tenets and adult learning principles' integral connection to the Formative Assessment Academy's effectiveness. Figure 8 demonstrates how the researcher provided job-embedded formative assessment professional development teacher workshops in collegial learning groups known as Professional Learning Communities. Teachers practiced collegial inquiry to implement and refine strategy implementation over time. The researcher and other colleagues provided leadership support. Arrows demonstrate these six components' interconnected nature.

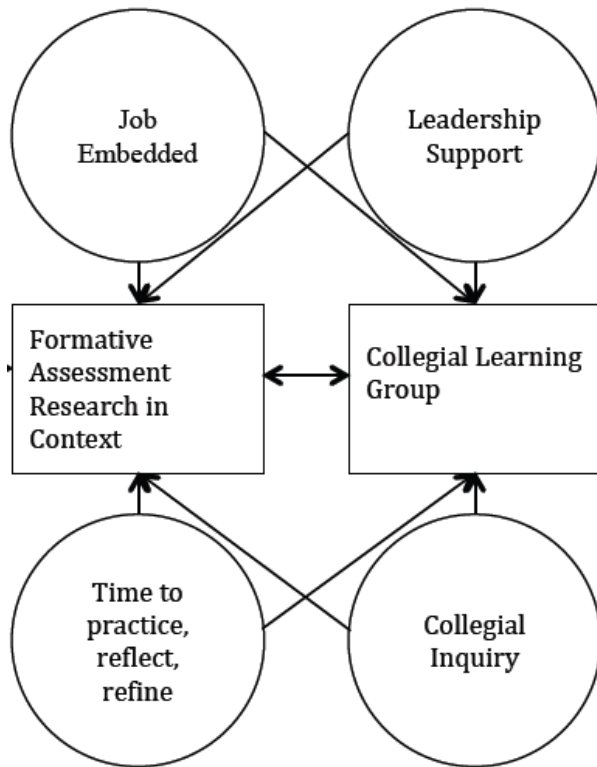


Figure 6. Professional Learning Community and adult learning principles translate to more meaningful professional development opportunities for teachers.

### *Research Question 2*

Teacher participants reported increased uses of classroom-level formative assessment strategies. Participants also primarily attributed the increased uses to their participation in the Formative Assessment Academy. However, all teacher participants agreed that differentiation of instruction remained an area for continued professional growth. One administrator, Superintendent Clinton Schull, agreed that teachers needed more training to effectively differentiate instruction. Former curriculum specialist Violet Benedetto felt that teachers' differentiation abilities went “across a continuum” (VB, 5/20). In contrast, two administrators, Jennifer Brewer and Tyrone Ketcher, felt that teacher participants grew more in the area of differentiation of instruction than they realized or would admit. Participants consistently used qualifying language to articulate



their hesitancy to claim any differentiation of instruction expertise. Michelle Sutphin stated, “I feel like I could do it. I just don’t feel confident in doing it really well” (MS, 5/26). Cody Rossow said, “I’m still getting my feet wet” (CR, 5/27). Naomi Davison agreed, “Well, I know how to differentiate instruction. I think I could always get better” (ND, 5/27). Two teacher participants, Eric Deegan and Michelle Sutphin, reported that they would feel more confident differentiating instruction if effective logistical models existed from which they could pattern their own differentiated classrooms. However, teacher participant Naomi Davison pointed out that new state curricular standard implementation would make differentiation a necessity:

When we implement the new standards, we’re going to see [learning] gaps in our students [from *Kentucky’s Core Content for Assessment 4.1* to *Kentucky’s Core Academic Standards*] and we are all going to have to differentiate. Those standards are naturally going to force us to get better at differentiation in order to accomplish what we need to do. I predict there are going to be some major gaps. (ND, 5/27)

Data for this research question also revealed some teacher participants’ perceptions about their abilities to differentiate for all levels of student readiness in their classrooms. Kay Smyth stated, “I feel like I do a better job differentiating for my lower level students this year. But I don’t feel very confident differentiating for accelerated students” (KS, 5/26). Sabrina Leverett agreed, “I don’t feel as if I do a good job pushing students who need to be accelerated” (SL, 5/26).

The researcher designed the Formative Assessment Academy to change classroom practice. Formative assessment strategy use increased. Participants and

colleagues developed new and growing understandings of formative assessment as a *process*. However, the researcher did not observe the formative assessment process. Additionally, participants and colleagues still did not feel confident enough to effectively differentiate their instruction. Although the Formative Assessment Academy included a differentiated instruction component, the researcher spent comparatively less time on the differentiation component than on the formative assessment strategy and process components. Some teacher participants and administrators rightfully recognized that learning and growth remained in the area of differentiated instruction.

### ***Research Question 3***

Results of data analysis for Research Question 3 revealed levels of sharing formative assessment strategies and differentiation methods, which then implied participants' confidence levels and *willingness* to share their new knowledge. The researcher asked participants, participants' teaching colleagues, and administrators about opportunities sharing strategies and methods since the Formative Assessment Academy's secondary goal was dissemination of pedagogy to teacher non-participants. All stakeholder group members proclaimed the benefits of teacher participants' sharing formative assessment strategies in professional development workshops or during the school district's New Teacher Institute. Again, stakeholder groups noted differentiation of instruction as an area for more work. Assistant Principal Tyrone Ketcher stated, "Teacher participants have not done a lot of sharing [methods for differentiating instruction], but I have already decided that will be the focus of one of our professional development days this summer" to begin to respond to this growth area (TK, 5/27).

Although analyzed data from this research question *implied* a response about teacher participants' willingness to share knowledge, the data did not demonstrate an *explicit* response. In future studies, the researcher would revise the interview protocol to elicit explicit responses.

#### ***Research Question 4***

Finally, an analysis of data for Research Question 4 revealed perceptions of the school-wide use classroom-level formative assessment strategies. Consistently, teacher participants and administrators agreed that participation in the Formative Assessment Academy resulted in increases of strategy use in their classrooms. Also, all but one non-participant colleague said that their own classroom-level formative assessment strategy use increased because of the Academy participants' sharing. Research subjects gave primarily anecdotal evidence; however, some teachers mentioned classroom data, and some administrators noted formal and informal classroom observation evidence. Again, the researcher's interview protocol could be revised to gain direct answers to remaining questions.

#### **Conclusions**

This study contributes to literature supporting formative assessment's positive instructional implications. However, this study primarily contributes to literature that suggests adult learners have different and varying needs. High-functioning Professional Learning Communities that allow adults job embedded opportunities to collegially practice and reflect upon new concepts are effective structures to support learning.

School leaders should temper their desire for instant school change efforts that offer temporary solutions to instructional issues with contemplative, collegial learning

community implementations that could translate to deeper and longer-lasting school reform. Leaders should carefully consider their own and others' leadership styles and communication styles when planning PLC-based professional development initiatives. They should reflect on their willingness to facilitate or participate in these learning communities. Leader participation communicates an initiative's importance to other stakeholders; however, leaders should be willing to foster open discussions of shortcomings and struggles among participants during an initiative's implementation. Initiative participants should feel free to seek help from colleagues in front of leaders without fear of retribution. Meaningful collegial inquiry and professional growth take place when school leaders and district administrators are reflective enough to support true Professional Learning Communities.

### **Implications for Stakeholders and Future Researchers**

This chapter concludes with the study's uses for stakeholders. This section also includes implications and suggestions for future researchers.

#### ***Suggestions for Schools and School Districts***

Principals and central office administrators should evaluate recent professional development offerings' effectiveness and consider implementing learning opportunities modeled from the Formative Assessment Academy approach. School and district leaders should support implementing more collegial inquiry groups, or Professional Learning Communities, as structures for meaningful teacher professional growth. Schools and school districts should also continue to address the need for assessment literacy (Stiggins, 2004). Central office administrators should offer mandatory and ongoing formative assessment learning for cadres of new teachers, whereas principals and curriculum

specialists should offer voluntary Formative Assessment Academy sessions to groups of volunteers within their schools. If schools such as Worthe Valley Middle School do not offer continuous school wide Professional Learning Community training to their incoming staff members, then formative assessment training should be mandatory for all new teachers and administrators. However, once staff members become part of the school's culture, a voluntary, train-the-trainer model could be favorable. When adult learners volunteer to participate in professional development initiatives, rather than have their participation forced, deeper learning takes place (Knowles et al., 1998). Leaders should also offer Advanced Formative Assessment Academies for participants to deeply explore data use to inform instruction, student self-reflection, and grading implications. Advanced Formative Assessment Academies should primarily focus on formative assessment as a *process* (Popham, 2011).

Additionally, school districts should offer leadership academies for school and central office administrators, to include a contemplative leadership component. Informed by the work of The Merton Institute for Contemplative Living (2004) the researcher described leading contemplatively as leading with a combination of boldness and compassion. Too often school administrators do not show their compassionate sides for fear of being deemed ineffective or “weak.” The researcher contends that compassion, not to be confused with weakness or naiveté, is another integral adult learning principle. Contemplative leadership informed all elements of the researcher's work as a school district supervisor of instruction, including facilitating the Formative Assessment Academy. Formative Assessment Academy participants noted administrative leadership support and follow-up as reasons for their own buy-in. The researcher and another

administrator colleague utilized adult learning principles (Knowles, 1968; Drago-Severson, 2008) and contemplative leadership principles (Merton, 1961; The Merton Institute for Contemplative Living, 2004) to effectively support teacher participants. Principals and central office administrators should study and reflect on formative assessment, meaningful adult learning principles, communication styles, and contemplative leadership. After this study, if the capacity to support meaningful collegial inquiry groups still does not exist because of a lack of administrative leadership engagement in or support of adult learning principles and contemplative leadership, then district leaders should seek assistance from outside consultants.

Finally, schools and districts should continue formative assessment work, but also begin similar levels of work in differentiated instruction. Differentiation of instruction was only a secondary focus of the Formative Assessment Academy. School leaders should create Differentiated Instruction Academies modeled on the Formative Assessment Academy structure, during which differentiation of instruction would be the primary focus. School and district leaders could research, create, pilot test, and then share logistical models of effective differentiated classroom instruction. Leaders should address teacher perceptions of students who need differentiated instruction. Some study participants commented on their abilities to differentiate for “lower level” students, but lamented their abilities to accelerate their “gifted students”; however, all students need differentiated instruction because of students’ levels of readiness toward a given curricular standard (Tomlinson, 1999; 2001).

### ***Suggestions for Teacher Leader and Principal Preparation Programs***

Houchens (2008) suggested the need for increased university recruitment of principal candidates with tendencies toward self-reflection. Data from the current study suggested a PLC-based initiative, such as the Formative Assessment Academy, could foster self-reflection by allowing opportunities for meaningful collegial inquiry. University teacher leader and principal preparation programs should review their course offering requirements for formative assessment, differentiated instruction, and adult learning principles. Both principal preparation and teacher leader preparation programs should continue to foster reflection in their course offerings. Higher education authorities should offer courses on effective leadership and communication styles in order to foster meaningful collegial inquiry groups resulting in true school reform. Teacher leader preparation programs should include adult learning research components, and should regularly reinforce effective professional development principles. Finally, university teacher leader and principal preparation programs should consider embedding contemplative leadership principles in their course offerings.

### ***Suggestions for Other Stakeholders***

A collegial learning group was an effective structure to support a school's professional development initiative. Schools and districts frequently use Professional Learning Communities to disseminate and deeply implement new knowledge. Industries could also utilize this extended training model for deep, lasting change.

### ***Suggestions for Future Researchers***

While this study contributes to literature on effective formative assessment, adult learning principles, and Professional Learning Communities, its results offer suggestions

to future researchers. The Formative Assessment Academy model has since been utilized in three other Worthe Valley schools. In two of the schools, participation was mandatory instead of voluntary. This study's single-case study research design could be expanded to a multi-case study to examine the comparative results of mandatory participation in the Formative Assessment Academy. The researcher perceived a greater willingness among volunteer participants to practice new strategies, as well as more opportunities for collegial inquiry among volunteer cadres than in cadres with mandated participation. Also, within those opportunities for collegial inquiry, volunteer participants displayed a greater willingness to be *vulnerable* and ask for their colleagues' and their supervising administrators' assistance to overcome obstacles.

Additionally, two neighboring school districts have implemented the researcher's Formative Assessment Academy model with district-wide cadres of volunteers. Researchers could examine the effects of district-wide voluntary participation compared to school-wide voluntary participation in the Formative Assessment Academy. Researchers could study the effectiveness of school-wide dissemination of new knowledge in both scenarios.

Also, veteran Worthe Valley teachers and administrators articulated an intentional process of developing Professional Learning Communities, while newer staff members conceptualized PLCs through informal collaboration and observation. Future research should be done to measure this PLC-immersion method's long-term impact on school culture. Researchers should examine the effectiveness and sustainability of PLC-based initiatives in schools that no longer intentionally train new staff members on PLC principles.



Finally, the researcher strived for trustworthiness of data; however, the researcher's professional relationship with research subjects limited the study. Additionally, the researcher's interview protocol limited subjects' responses. Future researchers could replicate this study in other schools utilizing revised interview protocols to elicit specific examples of strategy use and willingness to share new knowledge, as well as to glean more explicit links between the initiative's effectiveness and its PLC structure. Also, future studies could utilize a mixed-methods design and quantify some research subject responses with a pre- and post- measure of perceptions. Researchers could also quantify data demonstrating teacher use of classroom-level formative assessment strategies. These researchers could engage in classroom walkthrough observations or instructional rounds visits to determine levels of initiative implementation. Focus group interviews could add to the richness of the study's narrative.

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# APPENDICES

## Appendix A: IRB Approval



A LEADING AMERICAN UNIVERSITY WITH INTERNATIONAL REACH  
HUMAN SUBJECTS REVIEW BOARD

In future correspondence, please refer to HS11-170, April 28, 2011

Thomas A. Stewart  
c/o Dr. Wagner  
Educational Leadership  
WKU

Thomas A. Stewart:


Your research project, *Effects of Implementing a Formative Assessment Initiative*, was reviewed by the IRB and it has been determined that risks to subjects are: (1) minimized and reasonable; and that (2) research procedures are consistent with a sound research design and do not expose the subjects to unnecessary risk. Reviewers determined that: (1) benefits to subjects are considered along with the importance of the topic and that outcomes are reasonable; (2) selection of subjects is equitable; and (3) the purposes of the research and the research setting is amenable to subjects' welfare and producing desired outcomes; that indications of coercion or prejudice are absent, and that participation is clearly voluntary.

1. In addition, the IRB found that you need to orient participants as follows: (1) signed informed consent is required; (2) Provision is made for collecting, using and storing data in a manner that protects the safety and privacy of the subjects and the confidentiality of the data. (3) Appropriate safeguards are included to protect the rights and welfare of the subjects.

**This project is therefore approved at the Expedited Review Level until December 31, 2011.**

2. Please note that the institution is not responsible for any actions regarding this protocol before approval. If you expand the project at a later date to use other instruments please re-apply. Copies of your request for human subjects review, your application, and this approval, are maintained in the Office of Sponsored Programs at the above address. Please report any changes to this approved protocol to this office. A Continuing Review protocol will be sent to you in the future to determine the status of the project. Also, please use the stamped approval forms to assure participants of compliance with The Office of Human Research Protections regulations.

Sincerely,

  
Paul J. Mooney, M.S.T.M.  
Compliance Manager  
Office of Research  
Western Kentucky University



IRB APPLICATION # 11-170  
APPROVED 4/28/11 to 12/31/11  
EXEMPT EXPEDITED FULLBOARD  
DATE APPROVED 4/28/11

cc: HS file number Thomas HS11-170

*The Spirit Makes the Master*

Office of Sponsored Programs | Western Kentucky University | 1906 College Heights Blvd. #11026 | Bowling Green, KY 42101-1026  
phone: 270.745.4652 | fax: 270.745.4211 | email: paul.mooney@wku.edu | web: <http://www.wku.edu/Dept/Support/SponsPrg/grants/index.php?page=research-compliance>  
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## Informed Consent Form

Western Kentucky University

Title of Project:  
Effects of Implementing a Formative Assessment Initiative

Investigator:  
Thomas A. Stewart, Doctoral Candidate, Western Kentucky University



You are being asked to participate in a project conducted through Western Kentucky University. The University requires that you give your signed agreement to participate in this project.

This investigator will explain to you in detail the purpose of the project, the procedures to be used, and the potential benefits and possible risks of participation. You may ask him any questions you have to help you understand the project. A basic explanation of the project is written below. Please read this explanation and discuss with the researcher any questions you may have.

If you then decide to participate in the project, please sign on the last page of this form in the presence of the person who explained the project to you. You should be given a copy of this form to keep.

### Section 1. Nature and Purpose of the Research

The purpose for this research study is twofold. First, as has been proven by foundational research, assessment for learning, or formative assessment, helps students learn. Black and Wiliam (1998), though, pronounced a *poverty of practice*. In other words, teachers could not effectively practice in what they were not versed. While Black and Wiliam first noted this deficiency, Chappuis, Commodore, and Stiggins (2010) placed the onus of responsibility for it on school and district-level administrators and higher education authorities.

Second, as you are probably aware, many states are currently undergoing a curricular standards revision, Kentucky among them. In February 2010, Kentucky became the first state to adopt the *Common Core State Standards* in English/language arts and mathematics (Common Core State Standards Initiative, 2010). The adoption of these standards partially answered requirements of Kentucky's *Senate Bill 1* (SB1); however, it did not fulfill all of the requirements. When Kentucky's governor signed SB1 on March 25, 2009, it contained a definition of *formative assessment* and a call for districts across the state to institute *balanced assessment systems* – systems of equitable uses of classroom-level formative, interim/benchmark, and summative assessments ("Dr. Terry Holliday," 2010).

The overarching purpose of the current study, then, is to provide school leaders who are seeking to build capacity among their teachers, and who are seeking to meet the letter of the law, an implementation process to follow.

### Section 2. Procedures

The study will involve a researcher interviewing you on one or more occasions.

### Section 3. Time Duration of the Procedures and Study

If you agree to take part in this study, your time commitment and involvement will last approximately one to two hours. You will be interviewed once and you *might* be asked to participate in one follow-up interview. Each interview will take approximately 60 minutes.

### Section 4. Discomforts and Risks

While participating in this research study you are not at risk for any side effects. There are no foreseeable risks to participating in this study, though there may be unforeseen risks.

IRB APPLICATION # 11-170  
APPROVED 4/28/11 to 12/31/11  
EXEMPT EXPEDITED FULLBOARD  
DATE APPROVED 4/28/11

**Section 5. Potential Benefits**

Presented with many programmatic options for implementing school-wide and district-wide formative assessment initiatives, school administrators must carefully discern the value and predicted effectiveness of each. However, when these options are combined with imposed senses of urgency from state departments of education and local boards of education, leaders sometimes neglect the reflection necessary for making sound decisions. The following proposal is for a study designed to assist school leaders who find themselves in a situation of indecision. This researcher designed and led an implementation of a formative assessment initiative. The proposed study will present a modified case study of the implementation, to include participants' perceptions of professional growth and augmented pedagogy, the goal of which is to provide a model for others.

**Section 6. Statement of Confidentiality**

Pseudonyms will be used for all research subjects, informants, and their schools. Total privacy cannot be guaranteed. Your privacy will be protected to the extent permitted by law. If the results from this study are published, your name will not be made public. While unlikely, the Office of Sponsored Programs of Western Kentucky University may look at the study records. Transcripts will be stored in a secured area in the Educational Leadership Office of Doctoral Studies, Western Kentucky University.

**Section 7. Voluntary Participation**

Taking part in this study is voluntary. You may choose not to take part at all. If you decide to be in this study you may stop taking part at any time. If you decide not to be in this study or if you stop taking part at any time, you will not lose any benefits for which you may qualify. Refusal to participate in this study will have no effect on any future services you may be entitled to from the University. Anyone who agrees to participate in this study is free to withdraw from the study at any time with no penalty.

*You understand also that it is not possible to identify all potential risks in an experimental procedure, and you believe that reasonable safeguards have been taken to minimize both the known and potential but unknown risks.*

_____	_____
Signature of Participant	Date
_____	_____
Witness	Date

THE DATED APPROVAL ON THIS CONSENT FORM INDICATES THAT THIS PROJECT HAS BEEN REVIEWED AND APPROVED BY THE WESTERN KENTUCKY UNIVERSITY INSTITUTIONAL REVIEW BOARD  
Paul Mooney, Human Protections Administrator  
TELEPHONE: (270) 745-4652



IRB APPLICATION # 11-170  
APPROVED 8/28/11 to 12/31/11  
EXEMPT EXPEDITED FULLBOARD  
DATE APPROVED 8/28/11

**Appendix B: Superintendent Letter of Cooperation**



[redacted] BOARD OF EDUCATION  
POST OFFICE BOX [redacted] • Telephone ([redacted]) [redacted] • Fax ([redacted]) [redacted]  
[redacted] KENTUCKY [redacted]

[redacted]  
SUPERINTENDENT

April 26, 2011

Mr. Paul Mooney, Human Protections Administrator  
Office of Research  
Western Kentucky University  
1906 College Heights Blvd. #11026  
Bowling Green, Kentucky 42101-1026

Dear Mr. Mooney:

Thomas A. Stewart has requested permission to collect research data from employees of the [redacted] Schools to gauge the perceived effects of a voluntary formative assessment initiative. I have been informed of the purposes of the study and the nature of the research procedures. I have also been given an opportunity to ask questions of the researcher about the nature of the perceived impact and effectiveness regarding a formative assessment of [redacted] School faculty and personnel.

As a representative of the [redacted] Schools, I am authorized to grant permission to have the researcher recruit research participants from our school district. Thomas A. Stewart is also permitted to collect research data during school/office hours.

If you have any questions, please contact me at [redacted]

Sincerely,

[redacted]  
[redacted] Superintendent

[redacted] PROVIDES EQUAL EDUCATIONAL AND EMPLOYMENT OPPORTUNITIES

## Appendix C: Informed Consent Form

### Informed Consent Form

#### Western Kentucky University

Title of Project:

Effects of Implementing a Formative Assessment Initiative

Investigator:

Thomas A. Stewart, Doctoral Candidate, Western Kentucky University

You are being asked to participate in a project conducted through Western Kentucky University. The University requires that you give your signed agreement to participate in this project.

This investigator will explain to you in detail the purpose of the project, the procedures to be used, and the potential benefits and possible risks of participation. You may ask him any questions you have to help you understand the project. A basic explanation of the project is written below. Please read this explanation and discuss with the researcher any questions you may have.

If you then decide to participate in the project, please sign on the last page of this form in the presence of the person who explained the project to you. You should be given a copy of this form to keep.

#### Section 1. Nature and Purpose of the Research

The purpose for this research study is twofold. First, as has been proven by foundational research, assessment for learning, or formative assessment, helps students learn. Black and Wiliam (1998), though, pronounced a *poverty of practice*. In other words, teachers could not effectively practice in what they were not versed. While Black and Wiliam first noted this deficiency, Chappuis, Commodore, and Stiggins (2010) placed the onus of responsibility for it on school and district-level administrators and higher education authorities.

Second, as you are probably aware, many states are currently undergoing a curricular standards revision, Kentucky among them. In February 2010, Kentucky became the first state to adopt the *Common Core State Standards* in English/language arts and mathematics (Common Core State Standards Initiative, 2010). The adoption of these standards partially answered requirements of Kentucky's *Senate Bill 1* (SB1); however, it did not fulfill all of the requirements. When Kentucky's governor signed SB1 on March 25, 2009, it contained a definition of *formative assessment* and a call for districts across the state to institute *balanced assessment systems* – systems of equitable uses of classroom-level formative, interim/benchmark, and summative assessments (“Dr. Terry Holliday,” 2010).



The overarching purpose of the current study, then, is to provide school leaders who are seeking to build capacity among their teachers, and who are seeking to meet the letter of the law, an implementation process to follow.

## **Section 2. Procedures**

The study will involve a researcher interviewing you on one or more occasions.

## **Section 3. Time Duration of the Procedures and Study**

If you agree to take part in this study, your time commitment and involvement will last approximately one to two hours. You will be interviewed once and you *might* be asked to participate in one follow-up interview. Each interview will take approximately 60 minutes.

## **Section 4. Discomforts and Risks**

While participating in this research study you are not at risk for any side effects. There are no foreseeable risks to participating in this study, though there may be unforeseen risks.

## **Section 5. Potential Benefits**

Presented with many programmatic options for implementing school-wide and district-wide formative assessment initiatives, school administrators must carefully discern the value and predicted effectiveness of each. However, when these options are combined with imposed senses of urgency from state departments of education and local boards of education, leaders sometimes neglect the reflection necessary for making sound decisions. The following proposal is for a study designed to assist school leaders who find themselves in a situation of indecision. This researcher designed and led an implementation of a formative assessment initiative. The proposed study will present a modified case study of the implementation, to include participants' perceptions of professional growth and augmented pedagogy, the goal of which is to provide a model for others.

## **Section 6. Statement of Confidentiality**

Pseudonyms will be used for all research subjects, informants, and their schools. Total privacy cannot be guaranteed. Your privacy will be protected to the extent permitted by law. If the results from this study are published, your name will not be made public. While unlikely, the Office of Sponsored Programs of Western Kentucky University may look at the study records. Transcripts will be stored in a secured area in the Educational Leadership Office of Doctoral Studies, Western Kentucky University.

**Section 7. Voluntary Participation**

Taking part in this study is voluntary. You may choose not to take part at all. If you decide to be in this study you may stop taking part at any time. If you decide not to be in this study or if you stop taking part at any time, you will not lose any benefits for which you may qualify. Refusal to participate in this study will have no effect on any future services you may be entitled to from the University. Anyone who agrees to participate in this study is free to withdraw from the study at any time with no penalty.

*You understand also that it is not possible to identify all potential risks in an experimental procedure, and you believe that reasonable safeguards have been taken to minimize both the known and potential but unknown risks.*

\_\_\_\_\_  
Signature of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Date

## **Appendix D: Sample Email Communication to Teacher Participants**

**From:** Stewart, Thomas  
**Sent:** Monday, May 02, 2011 3:41 PM  
**To:** [Teacher Participant]  
**Subject:** Research Study Request

Dear [Teacher Participant Name] –

I have gotten approval from WKU and [School District Superintendent] to proceed with my research study, and I am hoping you will participate. As one of the members of the original Formative Assessment Academy at [Worthe Valley Middle School], your and your colleagues' are perspectives that I really need for any of the research to be meaningful.

I have attached an informed consent form that I will ask that you sign if you agree to participate. The form gives an overview of my research, but to very generally summarize it, I am attempting to measure any effects of the Formative Assessment Academy work. I'll do that by interviewing as many of the participants as agree, as well as some of your administrators, and some of your colleagues who, for whatever reason, chose not to participate.

Speaking of interviews, would a day during the week of May 23 work for my visit? If you don't mind, I could visit [WVMS] during your planning period – the interview should last approximately 30 minutes. If you agree to participate, I will get you to sign the consent form on the date we confirm for your interview. In the meantime, please let me know if you have any questions about participation in the study

Thanks – I look forward to hearing from you,  
Tom

**Tom A. Stewart**

Secondary Instructional Supervisor/Director of Assessment & Personnel  
Logan County Schools  
P.O. Box 417  
2222 Bowling Green Road  
Russellville, Kentucky 42276  
(270) 726-2436 Phone/(270)726-8892 Fax

## **Appendix E: Sample Email Communication to Research Subjects Regarding Member Checks Process**

**From:** Stewart, Thomas  
**Sent:** Wednesday, July 13, 2011 3:20 PM  
**To:** [Research Subject Name]  
**Subject:** Interview Transcript

Greetings, [Research Subject Name] –

Attached is a transcript of our interview for my dissertation study. Please review it when you have an opportunity. As we discussed, a component of my research method is *member checks* for trustworthiness of data. To that effect, if there's anything in the transcript that you feel misrepresents what you said, please just let me know.

I have also mailed you a hard copy of your signed consent form for your records.

Thanks,  
Tom

**Tom A. Stewart**  
Secondary Instructional Supervisor/Director of Assessment & Personnel  
Logan County Schools  
P.O. Box 417  
2222 Bowling Green Road  
Russellville, Kentucky 42276  
(270) 726-2436 Phone/(270)726-8892 Fax

# THOMAS A. STEWART

## CURRICULUM VITAE

### EDUCATION

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*Western Kentucky University*

**Doctor of Education, December 2011**

- Research Interests: Implementing meaningful school change initiatives that build teacher leaders and operate according to adult learning principles; using learning targets and learning progressions to guide instruction, inform classroom-level formative assessment and gauge and enhance teacher efficacy; employing the Enneagram to improve communication and build higher-performing school leadership teams; employing the Enneagram to differentiate classroom instruction and foster a positive classroom culture; utilizing tenets of contemplative leadership in schools and classrooms.
- Dissertation: *Effects of Implementing a Formative Assessment Initiative.*

*University of Kentucky*

**Highly Skilled Educator Certification Program, June 2008**

- Superintendent Certification

*Western Kentucky University*

**Master of Arts in Education, May 1998**

- Major area of Specialization: Middle Grades Education
- Minor area of Emphasis: English
- Grade Point Average: 4.0
- Level II Supervisor of Instruction Certification
- Level I Principal Certification
- Director of Pupil Personnel Certification

**Bachelor of Arts in English Literature, May 1990**

- Minor: Computer Information Systems

### PROFESSIONAL EXPERIENCE

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*Logan County Schools, Russellville, Kentucky (February 2011 to present)*

**Secondary Instructional Supervisor/Director of Assessment and Personnel**

- Advise the superintendent, high school administrators, and high school teachers on instructional and leadership development decisions on the secondary level.
- Apprise all teachers and administrators of current relevant research.
- Support and mentor new high school teachers.
- Support all student teachers in the district.
- Design and facilitate professional development opportunities at the school and district levels.
- Oversee state and district-level assessment systems at every school in the district.
- Oversee personnel, certified and classified employee evaluation, and teacher certification at the district and school levels.

*Simpson County Schools, Franklin, Kentucky (July 2010 to February 2011)*

**Teacher Quality and Leadership Development Coordinator**

- Organized and facilitated yearly *New Teacher Institute*
- Mentored all new teachers in the district.
- Planned and facilitated *New Teacher Institute* update sessions throughout the year.
- Operated as district liaison to Western Kentucky University to organize and co-facilitate monthly meetings for National Board Certification and Take One candidates.
- Advised the superintendent of instructional and leadership development decisions at the school and district level.
- Served as the primary contact and organizer/disseminator of information for all stakeholders regarding the Common Core State Standards rollout process.
- Oversaw the implementation of *Formative Assessment Academies* in all schools.
- Initiated and facilitated a teacher and administrator leadership development program on balanced assessment systems centered on Stiggins' and Popham's formative assessment work.
- Planned, designed and facilitated a leadership development program on employing the Enneagram personality typing model to enhance communication and inform instruction for teachers and administrators.
- Planned and facilitated monthly instructional leadership team meetings for district and school level administrative team.

*Simpson County Schools, Franklin, Kentucky (August 2008 to July 2010)*

**Instructional Programs Coordinator**

- Guided curricular and instructional decisions for six district schools.
- Developed and implemented strategies for curriculum mapping and alignment for district teachers and administrators using an original protocol for unpacking standards and writing student-friendly learning targets.
- Initiated a leadership development program employing the Enneagram personality-typing system to improve authentic communication for the purpose of building higher-performing teams.
- Initiated and facilitated *Formative Assessment Academies* to assist teachers in implementing student formative assessment strategies and differentiation strategies at the classroom level.
- Planned and facilitated the first ever *Contemplative Leadership Academy* for school-level and district-level administrators.
- Served as the primary resource for School Based Decision Making Councils as district SBDM Coordinator.
- Facilitated and lead revision of the Comprehensive District Improvement Plan (CDIP) by organizing and leading focus group sessions with students, parents, staff members, district and school administrators and board members; revised and edited the plan.

- Served as Measures of Academic Progress (MAP) Assessment Coordinator and Educational Planning and Assessment System (EPAS) Coordinator to guide the use of data to inform instructional decision making.
- Supervised community education programming and the Community Education Director.
- Supervised Curriculum, Instruction and Assessment Specialists at five schools.
- Advised the superintendent and principals on the instructional program at the school and district levels.

*Western Kentucky University, Bowling Green, Kentucky (August 2009 to present)*

**Instructor, School of Teacher Education**

- Serve as Adjunct Professor to teach multiple sections of MGE/SEC 475 (*Teaching English/Language Arts in the Middle and Secondary Grades*) using Interactive Video System (IVS) to reach multiple regional campuses.

*Kentucky Department of Education, Frankfort, Kentucky (July 2006 to August 2008)*

**Highly Skilled Educator**

- Responsible for raising standards of rigor and relevance and developing teacher and administrator leadership in assigned schools across the state.
- Modeled best curriculum, instruction, assessment and classroom management practices in order to build teacher and administrator leadership and efficacy.
- Presented professional development sessions to staff members in faculty meetings and on team meetings.
- Presented professional development sessions to other members of the Highly Skilled Educator cadre and Kentucky Department of Education personnel.
- Served as the team leader for all Highly Skilled Educators and District Achievement Gap Coordinators assigned to the Western Kentucky area.
- Supported administration of assigned schools in curriculum, instruction and assessment programming, and school management decision-making.
- Performed and modeled walkthrough observations.
- Modeled planning techniques and monitored lesson plans.
- Assisted in revision of improvement plans.
- Implemented continuous progress monitoring.
- Served on numerous state and district scholastic audit and review teams.
- Aligned, mapped and paced a model middle school reading curriculum.
- Assisted teachers in planning, writing common assessments and conducting learning walks in colleagues' classrooms.

*Richardsville Elementary School, Bowling Green, Kentucky (July 2000 to July 2001; July 2003 to July 2006)*

**Intermediate Teacher**

- Taught sections of language arts and practical living to students in grades 4 and 5.
- Served as a school council member.
- Managed the Comprehensive School Improvement Plan Reading Component.
- Gifted and Talented Committee member.
- Student Leadership Team Sponsor.
- Thoughtful Classroom Instructional Team Leader.

*Drakesboro Elementary School, Drakesboro, Kentucky (July 2001 to July 2003)*

**Intermediate Teacher**

- Taught sections of language arts to students in grades 4, 5 and 6.
- Managed the Comprehensive School Improvement Plan Reading Component.
- Technology Committee member.
- Discipline Committee member.

*Butler County Middle School, Morgantown, Kentucky (July 1995 to July 2000)*

**Seventh and Eighth Grade Teacher**

- Taught sections of middle grades language arts.
- Served as school-level writing portfolio cluster leader.
- Served on Parent-Teacher-Student Organization as the Parent/Teacher Liaison.

*McLean County High School, Calhoun, Kentucky (January 1994 to July 1995)*

**English Teacher**

- Taught sections of freshman, sophomore and junior level English.
- Served as Junior/Senior Class Sponsor.
- Student PRIDE Team Sponsor.

**PUBLICATIONS**

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- Stewart, T. A. (in press). Utilizing the Enneagram to differentiate classroom instruction. *9 Points Magazine*.
- Stewart, T. A., & Houchens, G. W. (2011). Employing the Enneagram in a public school district. *9 Points Magazine*, 2011, Jan. – Mar.
- Stewart, T.A. (2000). Thermometer reading. In L. Baines (Ed.), *Going bohemian: Activities that engage adolescents in the art of writing well*. Newark, DE: International Reading Association.
- Stewart, T. A. (1999). Various young adult book reviews. *The ALAN Review*.



## ACTION RESEARCH

- Stewart, T. A. (2010). Formative assessment academy pilot program: Working on the work to enhance teacher efficacy. Western Kentucky University, 2010.
- Stewart, T. A. (2010). Contemplative leadership: Using the Enneagram and other resources to explore and foster unspoken dimensions of school leadership. Western Kentucky University, 2010.

## RESEARCH

- Houchens, G. W., Hurt, J. C., & Stewart, T. A. (in progress). A group coaching model for enhancing principal instructional leadership through theories of practice.

## CONFERENCE PRESENTATIONS

- “Implementing a Formative Assessment Initiative,” Kentucky Reading Association Annual Conference, Lexington, KY: October 2011.
- “Effects of Implementing a Formative Assessment Initiative,” WKU Writing Project/Kentucky Reading Project/WKU School of Teacher Education, *What’s the Buzz* workshop, Bowling Green, KY: September 2011.
- “Using the Enneagram for Leadership Development,” Learning Forward National Conference for Teacher Leaders and the Administrators Who Support Them, Indianapolis, IN: July 2011.
- “Supporting Formative Assessment Academies,” Learning Forward National Conference for Teacher Leaders and the Administrators Who Support Them, Indianapolis, IN: July 2011.
- “Supporting a Formative Assessment Initiative,” Invited Speaker, Kentucky ASCD Common Core State Standards Symposium Series, South Warren Middle School, Bowling Green, KY: February 2011 and Eastern Kentucky University, Richmond, KY: March 2011.
- “Using the Enneagram as a Tool for Classroom Culture,” Kentucky Council of Teachers of English, Covington, KY: February 2011.
- “Unpacking Standards: An Innovative, Collaborative Protocol,” Featured Session, Kentucky Council of Teachers of English, Louisville, KY: February 2010.
- “The School Data Room: Monitoring Student Progress,” Kentucky Teaching and Learning Conference, Louisville, KY: March 2007.
- “Monitoring Teacher Performance for Rigor and Relevance,” Kentucky Teaching and Learning Conference, Louisville, KY: March 2007.
- “Teacher Tools for Promoting Progress and Improving Instruction,” Kentucky Teaching and Learning Conference, Louisville, KY: March 2007.

## HIGHLIGHTS OF PROFESSIONAL DEVELOPMENT ACTIVITIES

- Learning Forward Summer Conference for Teacher Leaders and the Administrators Who Support Them, Indianapolis, IN, July 2011.
- International Enneagram Association Conference, San Francisco, CA, July 2010.
- Simpson County Schools Instructional Leadership Team, ongoing, monthly professional learning community meetings.

- *Coaching with the Enneagram* certification with Ginger Lapid-Bogda, PhD, Santa Fe, NM, April 2010.
- “Adolescent Literacy Lab: James E. Bazzell Middle School,” Green River Regional Educational Cooperative, March 2010.
- “Student Engagement,” with Jim Garver, Green River Regional Educational Cooperative, January 2010.
- “Introduction to the Enneagram,” with Father Joe Mitchell, Passionist Earth and Spirit Center, Louisville, KY, November 2009.
- “ETS/Assessment Training Institute: Leading Professional Development in Classroom Assessment for Student Learning Workshop,” with Rick Stiggins, Louisville, KY, September 2009.
- “Measures of Academic Progress (MAP) Institute,” Owensboro, KY, June 2009.
- “Align, Assess, Achieve,” Bob Holman presentation on formative assessment, Green River Regional Educational Cooperative, October 2008.
- “Professional Learning Communities,” series of workshops and presentations, Green River Regional Educational Cooperative, 2008-2009.
- “Thoughtful Classroom Institute” Training, based on research of Silver, Strong & Marzano, Green River Regional Educational Cooperative, Bowling Green, KY, 2004-2007.
- CEO Superintendents Network training, “Professional Learning Communities,” with Rick DuFour, Becky DuFour and Rick Stiggins, 2007.
- “Secondary Symposium,” Green River Regional Educational Cooperative, 2007.
- “Closing the Achievement Gap,” with Katie Haycock, 2007.
- “4 Block/Big Blocks Reading,” 2004.
- Western Kentucky University Writing Project X, 1995-1996.

#### PROFESSIONAL ACTIVITIES & SERVICE

- Co-Founder of, and consultant for, *Contemplative Learning Solutions* (CLS) educational consulting company specializing in leading school and district administrators and teachers through processes involving formative assessment, instructional rounds, contemplative leadership, and employing the Enneagram personality-typing system to enhance communication within teams and to facilitate personal growth. CLS has conducted the following recent workshops:
- **Using the Enneagram for Leadership Development and Team Enhancement**, Green River Regional Educational Cooperative (GRREC) Fall Staff Retreat, Bowling Green, KY: September 7-8, 2011.
- **Rediscovering Formative Assessment**, South Warren High School, Bowling Green, KY: August 4, 2011.
- **Formative Assessment Academy**, Butler County Schools, Morgantown, KY: 2011-2012 School Year (August – in progress).
- **Formative Assessment Academy**, Warren County Schools, Bowling Green, KY: 2010-2011 School Year (January – May).
- **Rediscovering Formative Assessment**, Warren County Schools, Bowling Green, KY: 2011
- **Employing the Enneagram to Enhance Group Communication**, Private group consulting session, Bowling Green, KY: February 2011.

- Leader of monthly leadership development sessions for Simpson County Schools' district and school level administrators.
- Guest speaker, "Introduction to the Enneagram: What Makes You Tick," COMM 385, *Interpersonal Communication*, September 2011.
- AdvancEd/Southern Association of Colleges & Schools Quality Assurance Review team member, Briarwood Elementary School, September 2010.
- Guest speaker, "Unpacking State Curricular Standards and Writing Learning Targets," "More Effective Uses of Formative Assessment" and "Employing the Enneagram to Enhance Communication on a School Leadership Team," EDAD 683, *Seminar in Leadership: Curriculum Development*, September – December 2010.
- Guest speaker, "Introduction to the Enneagram," AP Psychology, Franklin-Simpson High School, October 2010.
- Professional Development Session Facilitator in role as Instructional Programs Coordinator at all district schools on topics such as Instructional Rounds, writing higher-level open response and multiple choice questions, Norman Webb's Depth of Knowledge research and model, formative assessment classroom strategies and teacher monitoring tools, using the Professional Learning Community structure for instructional team meetings, using Measures of Academic Progress (MAP) assessment data to inform instruction and Silver, Strong & Marzano's research pertaining to various *Thoughtful Classroom* strategies, Simpson County Schools, 2008-present.
- Coordinator and Facilitator of Simpson County Schools *Formative Assessment Academy*, 2009-2010; 2010-2011.
- Coordinator and Facilitator of Simpson County Schools *Contemplative Leadership Academy*, 2009-2010.
- Co-Presenter, "Using the Enneagram for Communication and Professional Growth," Simpson County Schools, various sessions to groups of school and district administrators, guidance counselors and teachers, 2009-2010.
- Participant in Doctoral Studies Program Director Student Interviews, Department of Educational Administration, Leadership, and Research, Western Kentucky University, April 2010.
- AdvancEd/Southern Association of Colleges & Schools Quality Assurance Review team member, Greenwood High School, November 2009.
- Co-Facilitator, New Teacher Orientation, Simpson County Schools, various sessions to orient new teachers on all components of the district's instructional program, July 2009.
- Co-Presenter, "Using the Enneagram to Build a Higher-Performing Leadership Team," Simpson County Schools District Summer Leadership Retreat, July 2009.
- Co-Presenter, "Unpacking the Standards: A Five-Step protocol," professional development sessions at various Simpson County Schools, June 2009.
- Guest Speaker, "Introduction to Using the Enneagram for Self-Awareness," EDLD 700, *Doctoral Orientation*, Western Kentucky University, June 2009.
- "Unpacking the Standards: A Five-Step Protocol," presentation to Green River Regional Educational Cooperative consultants, February 2009.

- Professional Development Session Coordinator and Facilitator in former role as Highly Skilled Educator to faculty and administration at assigned schools (at the elementary, middle and secondary levels) and to other members of the Highly Skilled Educator cadre and Kentucky Department of Education staff. Topics included open response live scoring, learning walks, curriculum mapping and alignment to *Kentucky's Core Content for Assessment* and *Kentucky's Program of Studies*, teaching the open response method, open response – coaching to proficiency, using more effective *Thoughtful Classroom* strategies, Norman Webb's Depth of Knowledge model, writing higher-level open response and multiple choice questions and using common assessments formatively in student conferences, 2006-2008.
- Professional Development Session Facilitator in former role as classroom teacher in Butler, Muhlenberg and Warren Counties on a variety of curricular and instructional topics, 2000-2006.

#### GRANTS

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- Carl T. Perkins Vocational and Technical Education Grant.  
Simpson County Schools: 2008-2009; 2009-2010  
Logan County Schools: 2011-2012

#### MEMBERSHIPS & PERSONAL ACTIVITIES

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- Member, American Educational Research Association.
- Member, Association of Supervision and Curriculum Development.
- Member, International Enneagram Association.
- Member, Kentucky Association for Assessment Coordinators.
- Member, Kentucky Association of Educational Supervisors.
- Member, Kentucky Council of Teachers of English/Language Arts.
- Member, Kentucky Reading Association.
- Member, Learning Forward (National Staff Development Council).
- Member, Logan County Junior Achievement Advisory Board – Logan County School District Representative.
- Member, South Union Shaker Museum Board of Directors.
- Former Member and Chairperson, Western Kentucky University Writing Advisory Board.
- Former Instructor, Western Kentucky University Gifted and Talented Program's *Super Saturdays*.
- Former Region 2 Writing Portfolio Cluster Leader.
- Freelance copyeditor.
- Member, American Canoe Association.
- Enjoy reading, writing, research, music, homebrewing, and outdoor activities such as hiking, cycling, canoeing and camping.

