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An Investigation of Teacher Understanding and Perceptions of the Effectiveness of the Use of Learning Targets in the Classroom

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by

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Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

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Abstract

Conflicting opinions and stances concerning standardization of curriculum in the United States education system are evidenced throughout the nation in the format of debates about the purpose of education and the curriculum. In 1892, nationally recognized American educators met as a Committee of Ten (National Education Association [NEA], 1893) to determine what subject matter should be contained in a formalized system of education, thus establishing the roots of the modern American school system. The results from the meeting were not accepted by all educational entities within the United States and curriculum content continued to be a matter of social and political debate resulting in legislative mandates designed to transform educational policy and practice. Leaders on the local, state, and national levels continue to pass new laws establishing and regulating educational standards and measurements for accountability, while classroom teachers are directed to adhere to many new directives and to become adept at a myriad of strategies and requirements to avoid being judged as inept and ultimately removed from the classroom. This action research study investigated the effectiveness of the use of Learning Targets throughout classroom curriculum by teachers as they promote instructional alignment to ensure student learning. This study explored how teachers develop, deliver, and assess student learning based on the processes and strategies contained within the Learning Target Theory of Action. It determined the perceptions about the processes involved and effectiveness of the Learning Target theory in the classroom. Finally, it placed emphases on ascertaining how students perceive the effectiveness of Learning Targets to their success in learning.

Table of Contents

List of Tables

List of Figures

Chapter One: Introduction

Moss and Brookhart (2012), in their research claimed, "The most effective teaching and the most meaningful student learning happen when teachers design the right learning target for today's lesson and use it along with their students to aim for and assess understanding" (p. 2). Their Learning Target Theory of Action (LTTA) portrayed in their book *Learning Targets: Helping Students Aim for Understanding in Today's Lesson*, described detailed strategies for effective utilization of learning targets, from lesson design to processes of delivery, and finally to assessment of understanding. The researcher's attempts to study the learning target theory of Moss and Brookhart, which the authors' contended makes teaching and learning meaningful to both teachers and students, revealed an in-depth analysis of formative assessment practices. Learning targets transform the processes of formative assessment by transferring the responsibility for learning from the teacher to the student (Expeditionary Learning, 2011). The researcher specifically focused on studying the effects of the use of learning targets on children's academic achievement of lesson design, instructional delivery, and assessment of K-5 Common Core State Standards' (CCSS) curriculum when aligned with Moss and Brookhart's Learning Target Theory of Action.

This action research study, which utilized an investigative inquiry, was prompted by the adoption of the CCSS, scheduled to go into effect at the beginning of the 2014-2015 school year (Missouri Department of Elementary and Secondary Education [MODESE], 2013). The advent of CCSS provided a base for establishing a common framework for teaching English Language Arts and mathematics in United States classrooms. The mission of the CCSS was to:

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. (Kendall, 2011, p. 11)

The CCSS directed teachers to replace teaching objectives with shared states' standards,

thus causing them to redesign their instructional practices to accommodate rigorous

content and application of knowledge gained through higher-order skills, which require

evidence of effective use (Shaver, 2010). Systems for teacher evaluation changed to

reflect the focus of the CCSS on student achievement, as related to the collection of

tangible evidence that supports the learners' progress and achievement. To assist this

transition, "School districts must support teachers by assisting in their understanding of

the instructional practices that enable students to master CCSS, in improving their

classroom instructional skills, and ensuring teacher evaluation requirements reflect new

expectations" (National Institute for Excellence in Teaching [NIET], 2013, p. 2).

To meet the needs of students living in the 21st century, educators must teach

students to understand conceptual knowledge on a deeper level. "It means a new way of

understanding the concept of knowledge, a new definition of the educated person, and a

new way of designing and delivering the curriculum" (Coalition for 21st Century

Schools, 2010, p. 3). However, acknowledging the need and designing, implementing,

and revolutionizing educational practices are two different actions. It appeared that

almost four decades later, Americans were still eager to know the answers to two

questions uttered first by Bruner (1977) in 1970, "What shall we teach and to what end?"

(p. 1).

Background of the Problem

The research questions, which served to organize the content of this study,

focused on how the use of learning targets in designing and delivering classroom

curriculum may be effective in promoting alignment of curriculum, consistency of

instructional methods, and ensuring student learning. Marzano (2013) claimed that

learning targets helped teachers and students see a task more clearly. He declared, "Any

system that organizes statements of what students are expected to know and be able to do

enhances student learning, because it provides clarity to students and teachers alike" (p.

83). Moss and Brookhart (2012) explained how learning targets were useful for both

students and teachers:

> Learning targets are student-friendly descriptors – via words, pictures, actions, or
>
> some combination of the three – of what you intend students to learn or
>
> accomplish in a given lesson. When shared meaningfully, they become actual
>
> targets that students can see and direct their efforts toward. They also serve as
>
> targets for the adults in the school whose responsibility it is to plan, monitor,
>
> assess, and improve the quality of learning opportunities. (p. 9)

Learning targets clarify for both teachers and students the surplus of curricular

components, which hinders, at times, effective instruction and thorough coverage (Moss

& Brookhart, 2012).

Since the beginning of the school reform movement in the United States,

following publication of *A Nation at Risk* in 1983 (National Commission on Excellence

in Education, 1983), processes involved with design of classroom curriculum shifted to

show emphasis on assessment of student learning as vital to the learning process

(Stiggins & Chappuis, 2005). Herman, Aschbacher, and Winters (1992) referred to the

process of assessment as "a cornerstone of the educational reform movement in the last

part of the 20th century" (p. 4). The literature recognized assessment as a key to raising

student achievement. Despite these findings, many educators adhered to the premise that

assessments followed instruction; therefore regarded as summative, a conclusion, or a

closing judgment about the quality of work, rather than continual feedback for

improvement (Costa & Kallik, 1995). Summative assessments infer that student learning

has ended (Calfee, 1994). Wiggins (1993) declared,

> Exclusive utilization of summative assessments substantiates a one-shot chance
>
> mentality, disregard for mastery, and higher depths of knowledge, which can
>
> often promote forced responses by students. Students are tested not only on the
>
> way they use, extend, or criticize knowledge, but also on their ability to generate a
>
> superficially correct response on cue. They have only one chance, and for their
>
> efforts, receive and are judged by a single numerical score that tells them little or
>
> nothing about their current level of progress and gives them no help in improving.
>
> Assessment is reduced to testing and testing is seen as separate from learning.
>
> Tests are intrinsically prone to sacrifice validity to achieve reliability and to
>
> sacrifice the students' interests for the test-makers. A preponderance of testing (as
>
> opposed to assessment) is never in the students' best interests, whether we use
>
> multiple choice or performance-based tests. Because a test, by its design, is an

artifice, whose audience is an outsider, purpose in ranking, and whose methods

are reductionists and insensitive. (p. 7)

Rather than relying on students' summative test scores to define overall achievement,

Wiggins (1993), suggested students' scores should reflect a series of incrementally-based

judgments reflective of students' progress in the obtainment of knowledge and skills, as

deemed necessary through local and national standards.

Stiggins (2007a) made a crucial distinction, however, on two very different types

of assessments: assessments to rate the quality of learning (testing) and assessments to

stimulate better learning (feedback). Popham (2008) substantiated the imperative for the

use of formative assessment and claimed, "Formative assessment is a potentially

transformative instructional tool that, if clearly understood and adroitly employed, can

benefit both educators and their students" (p. 3). Popham's (2006) professional

involvement with formative assessment began in 2006 when he was asked to join

Formative Assessment for Students and Teachers (FAST) State Collaborative on

Assessment and Student Standards (SCASS), a newly developed consortium focused

solely on formative assessment. FAST SCASS originally assembled to advance the

benefits of formative assessment in the classroom determined beneficial by two British

researchers, Black and Wiliam (Popham, 2006). Their Black Box meta-analysis closely

examined the exchange of information between students and teachers, stirred a debate

about classroom application of formative assessment techniques, and proclaimed

formative assessment could advance students' learning as well as enhance students'

scores on high-stakes accountability tests (Black & Wiliam, 2001). Since the release of

Black and Wiliam's (1998) report, many districts implemented and regularly employed

common formative assessments to ascertain students' advancement in learning. Popham

(2006) concluded, "The benefits of team developed common assessments used for

formative purposes are so powerful that no team of teachers should be without them" (p.

76).

Grebe (1989) pointed to the use of assessment in curriculum and instruction as

focusing less on input and more on processes, which occurred at the end of a period of

instruction. The researcher, Grebe, found that lack of continuing assessments throughout

a period of instruction indicated a possible neglect of the learners' needs, since without

data from ongoing assessment it was impossible to use it to improve curriculum design

and instructional delivery. Therefore, lack of assessments neglected the learner's needs

and prevented the usage of data for making instructional improvements. Costa and

Kallick (1995) discovered, "Few school districts and the schools within them have a

curriculum that has clearly aligned assessments . . . which makes it less likely that

schools will have developed accurate techniques to assess student learning" (p. 86).

Assessments, aligned to specific learning goals, provided crucial data to teachers,

which was necessary for making instructional adjustments aligned with individual

student's needs (Popham, 2008). Therefore, teachers who assessed well and made

adjustments accordingly were better teachers (Popham, 2005; 2008; 2011). Wiggins

(1993) noted, "Many educators still do not understand the function of assessment" (p.

276). They relied on a traditional understanding of teaching then testing, and with that,

they continued "to teach what they know and like on a relatively fixed schedule,

irrespective of the learning that does or does not ensue" (p. 276). This argument made no

sense if the aggregate final achievement of all students was the measurement. Simmons'

and Kame'enui's (1996) research found that the outcome of teaching without assessing

was that too many students failed to achieve with the traditional methods of designing

curriculum, delivering instruction, and assessment processes.

Marzano (2006) proclaimed, "Formative assessments are one of the most

powerful weapons in a teacher's arsenal" (p. 4). Through formative assessment practices,

teachers could modify and enhance instructional strategies to provide instruction based

on students' understanding. Assessments throughout the process of learning, thereby

collecting both formal and informal data deemed "to support both teaching and learning"

(Darling-Hammond & Falk, 1997, p. 32). Marzano (2006) declared, "An effective

standards-based, formative assessment program can dramatically enhance student

achievement throughout the K – 12 system" (back cover). Wiggins and McTighe (2005a)

purported, "A great shift requires us to be aggressive in assessing as we teach, uncovering

the learners' understanding and misunderstanding along the way" (p. 247) and using

results oriented data to improve instruction, thereby improving learning (Black &

Wiliam, 1998; Chappuis & Stiggins, 2002; Darling-Hammond & Falk, 1997; Wiggins &

McTighe, 2005a).

Chappuis and Stiggins (2002) in their journal publication, *Classroom Assessment*

for Learning, emphasized the importance of helping students make a connection between

assessments and instruction. However, crucial to this effect, purported by Chappuis and

Stiggins, was "effective teacher feedback" which was classified as "feedback for

learning" (p. 2). Feedback for learning was more than an overall judgment on students'

performance which was often indicated through evaluative comments or grades on

students' work; for example, great work, you're getting there, keep trying or A-, 86%, or

F (Chappuis & Stiggins, 2002). Idle statements or marks rating students' work simply

informed students of their teachers' approval or disapproval of their work, which limited

the potential of future improvements. Rather, comments deemed as effective feedback

should focus on the qualities of student work, rather than characteristics of students

(Chappuis & Stiggins, 2002). According to Chappuis and Stiggins, feedback that

advanced learning explained for students why an answer was right or wrong, in language

students could understand, and made specific suggestions for better performance. Black

and Wiliam (1998) classified effective feedback, which advanced student learning as that

which was "descriptive, specific, and immediate," rather than judgmental, and "it

concentrates on specific problems with their work giving students both a clear

understanding of what is wrong and achievable targets for putting it right" (p. 6).

Stiggins (2001) favored assessments to support student learning when used as a

tool for improvement or as a compass providing direction. According to Stiggins (2007a),

assessment for learning began with teachers' articulation of clear learning targets

accompanied by exemplars of quality student performance to promote students' abilities

to self-assess. Chappuis and Stiggins (2002) explained the compass-guided feedback as

telling students "where they are now relative to the defined learning targets – and where

teachers ultimately want them to be" (p. 42). Purportedly, teachers could close the

achievement gap by helping students develop strategies for improvements to their work

by modeling a variety of strategies to achieve the desired goal (Chappuis & Stiggins,

2002). Chappuis and Stiggins asserted a primary goal for teaching should be to instill in

students an ability to self-assess thereby "directing their own learning" (p. 42). Students

skilled in self-assessment strategies were receptive to feedback from teachers and peers

and knew how to use this feedback to advance their work (Chappuis & Stiggins, 2002).

Stiggins (2002) discerned that most teachers were ill prepared to adapt to a

standards-based framework for teaching, due to inadequate preparation and an

opportunity to do so. In relation to the background of the problem, considered will be

curriculum and assessment. The third component, instruction, focused the teachers'

abilities to adapt to a standards-based process with training; for example, professional

development provided on-site within the school setting. Stiggins (2002) postulated:

> We understand what teachers need to know and the proficiencies that they need to
>
> develop in order to be able to establish and maintain productive assessment
>
> environments. The challenge we face is to provide the opportunity for teachers to
>
> master those essential classroom assessment competencies. The depth of this
>
> challenge becomes clear when we realize that we must provide opportunities for
>
> both new teachers to gain these competencies before they enter the classroom and
>
> for experienced teachers who had no chance to master them during their training
>
> to gain them as well. (p. 36)

Guskey's (1986) work revealed, historically, teacher development was "characterized

primarily by disorder, conflict, and criticism" (p. 5). Guskey (1986) blamed this state of

affairs on the inability of staff developers to deliver training on effective research-based

practices, the techniques they employed for motivating teacher engagement, along with

an absence of a culture of change within the workplace. Guskey (1986) criticized

contemporary staff development, or teacher in-service training as "the slum of American

education – disadvantaged, isolated, riddled with exploitation, broken promises and

conflict" (p. 38). He contended that teachers seldom acquired usable techniques and ideas

for improving learning outcomes in the classroom (Guskey, 1986; 2007). Guskey (1986)

viewed professional development as ineffective based on a lack of criteria for success,

and neglectful of meaningful targets. Teachers were encouraged to "work smarter and

hurry up about it" (Lewis, 1995, p. 37). However, without proper training, they believed

"working smarter, in today's terms, means knowing how to improve students'

standardized test scores and nothing more" (Lewis, 1995, p. 37). Lewis (1995) suggested

effective in-service training required teachers knowing their subject matter content and

knowing how to deliver it consistently to all students.

Gandal and Vranek (2001) upheld that a primary challenge in advancing

standards-based reform was "providing teachers with the training tools and supports they

need to help all students reach high standards" (p. 12). But, Sparks (2001) interjected, "At

a time when experts believe staff development is essential in school reform, most staff

development and school improvement activities continue to leave teachers' knowledge

and skills essentially untouched" (p. 2-4). Many teachers considered professional

development to be "demeaning and mind-numbing" as they "sit and get the wisdom of

experts" (Sparks, 2001, p. 2-3). The success of standards-based reform was largely

dependent on the quality of teaching (Hirsh, 2001). Therefore, school leaders attempted

to improve instructional methodology through short, one-shot in-service meetings,

possible short-lived action research, and curriculum development. However, these

measures were simply not enough to change practice and significantly contributed to

student achievement (Sparks, 2001). Teacher development needed to directly link to core

standards, and producing frameworks for curriculum tied to them (Gandal & Vranek,

2001). Sparks speculated:

> It is clear that large-group 'batch-processing' of teachers who are 'talked at' in the
>
> name of 'exposing' them to a new idea is ineffective and squanders teachers'
>
> good will regarding professional development. More often than not, staff
>
> development for teachers is fragmented and incoherent, lacks intellectual rigor,
>
> fails to build on existing knowledge and skills, and does little to assist them with
>
> the day-to-day challenges of improving student learning. (p. 9-1)

Sparks further contended, "Every system is designed to produce the results it gets" (p. 4-

2). This may seem contradictory in an age where conceptual understanding was

evidenced though qualitative thinking and production.

To better comprehend teachers' instructional practices and the perceived to be

dated curricula in America's educational system, it may be helpful to discuss how the

state of U.S. education evolved to this point. The National Education Association (NEA,

1893) first formalized education in American schools in 1892. A scholarly 'Committee of

Ten', headed by Harvard University's president, created the Historical Dictionary of

American Education (NEA, 1893). They developed a classical standard for educating

students, devising curriculum, and employing teachers to stand and deliver curricular

content. At that time, the purpose of education was either to prepare graduates for factory

positions or to prepare the elite for more formalized training at the university level.

Traditionally, students learned knowledge in both curriculum and citizenship; they were

well prepared for a productive life in the era of the industrial age (NEA, 1893).

Jacobs (2010) pointed out the need for changes within the structural framework of the American educational system, and explained America's resistance to change as the impediment of progress. As regulated by the Committee of Ten, America's youth would attend school 180 days per school year for 12 consecutive years. Each six-hour day would include eight different subjects. The school year would follow an agrarian calendar to allow time off for the harvesting of crops. Subjects developed based upon industry and factory model organizations. Academics would be the same for all high school students, and included English, history, mathematics, biology, physics, and chemistry. After a few years of basic skills, elementary students prepared for making a smooth transition (Jacobs, 2010). With the exception of a few minor adjustments, such as the addition of kindergarten as a prerequisite for first graders and middle school as interim between elementary and high school, this system continued to "hold children, teachers, and communities in a fierce grip" (Jacobs, 2010, p. 9). Even though a continuous wave of educational reforms in the United States revised instructional practices or mandated stronger accountability measures, the committee's operational framework regulating the functionality of American schools continued to reign. Jacobs contended, "The concept of what a school is does not need reform – it needs new forms" (Jacobs, 2010, p. 9).

The committee's choices of subjects offered were befitting an industrial society, but Americans no longer lived in a world based on factory model organization. Furthermore, the school calendar derived in consideration of harvest time was ludicrous when research proved the extended summer break was detrimental to learning, not to mention the wasted first quarter of every school year preoccupied by a lengthy review of last year's concepts (Jacobs, 2010). According to Jacobs (2010), students continued to

follow the same operational system derived in the 1800s, yet the demands and societal expectations for contemporary living indicated the necessity for adjustments. Jacobs proposed,

> Bold reconsideration of 'the place called school' . . . New essential curriculum will need revision – actual replacements of dated content, skills, and assessments with more timely choices…structures affecting curriculum: the schedule, the way we group learners, personal configurations, and the use of space. (p. 13)

In 1983, speculation began to surface in regards to the quality of American education and its ability to prepare students for college. President Reagan commissioned a task force to investigate allegations of neglect and additional insufficiencies within American schools. After an 18-month investigative inquiry, the report was complete and titled, *A Nation at Risk: The Imperative for Educational Reform* (National Commission on Excellence in Education, 1983). The results of the investigation created national awareness of the multiple deficiencies within America's educational sector. The report announced the following discoveries: (a) significantly low performance on standardized test scores when compared to students' scores in other countries; (b) a significant drop in graduation rates; (c) increased enrollment in remedial college courses to supplement subject-content; (d) reduced requirements for reading and math development; (e) a rise in functional illiteracy; and (f) a rise in school truancy and tardiness (National Commission on Excellence in Education, 1983, pp. 17-24). Other findings showed less time on core subjects, less emphasis on homework, and more time allocated to fine arts and extracurricular activities. The report created national concern by alleging impending

economic disparity for America's future generations (National Commission on

Excellence in Education, 1983).

Marzano and Kendall's (1996) study determined that *A Nation at Risk* exposed

major problems with American education. Educators regarded its publication in 1983 as

the impetus behind initiation of the modern standards movement. The report continued,

"We have been committing an act of unthinking unilateral educational disarmament"

(National Commission on Excellence in Education, as cited in Marzano & Kendall, 1996,

p. 5). *A Nation at Risk* contained an imperative for educational reform by recommending

tougher graduation requirements, higher university standards, a longer school day and

year, merit pay for teachers, more citizen participation in the educational process

(Edwards & Allred, 1993; Orlich, 2000) and the impetus for every state in the union to

mandate towards excellence in its schools (Kelly, 1999). Jehlen (2001) emphasized from

the report that a rising tide of mediocrity was threatening the nation's socioeconomic

future, while questioning such a blanket statement as descriptive of a much more

complicated reality. Others questioned the fallout from the report, which centered on the

nation's failing schools and the decay of modern education (Jehlen, 2001).

The initial response from the federal government was to begin planning for

assignment of reform mandates to each of the 50 states, especially in the areas of

compensatory and special education (Kelly, 1999). A flurry of federal, state, and local

programs and initiatives resulted from the report's release, including the Carl S. Perkins

Vocational and Applied Technology Act (U.S. Department of Education, 2002). Many

educators viewed government response to the report as paperwork mandates designed to

force compliance with demands that were difficult to fully meet, if not impossible. Kelly

(1999) noted:

> In my work as an educational trainer, I've asked the following question of
>
> thousands of educators, parents, and students: 'What do you do when someone
>
> tries to make you do something that you don't want to do and tries to force you to
>
> do what they want?' The answers always the same: 'I resist.' Not only do we
>
> resist coercion, we also resist its source. Coercion breeds hostility and defiance. If
>
> the coercer is strong enough, we will give as much compliance as necessary to
>
> avoid harm, but we will not commit ourselves to the goal of the coercion. We will
>
> always try, at least covertly to subvert the efforts of the coercer. (p. 543)

Resistance, whether passive or aggressive, to mandates resulted in stagnation and even

failure to succeed in meeting these mandates in all 50 states. Kelly (1999) proposed that

this should have resulted in a look at "chronic structural problems in education" (p. 543).

However, rather than examining structural problems in our educational system,

administrators in every state followed the lead of the report in dealing with

recommendations to increase school time, improve preparation of teachers, and

strengthen state and local high school requirements (Edwards & Allred, 1983).

Enforcement of expectations from the federal government was limited:

> Because of the tradition of local control of schools, and the reluctance of states to
>
> disrupt that tradition, little leadership from the federal government or the states is
>
> ordinarily manifested at the local level…there is little evidence that states initiated
>
> little changes in response to the recommendation of the commission. (Edwards &
>
> Allred, 1983, p. 85)

In October 1989, the National Governor's Conference provided impetus for the advent of educational standards (Common Core State Standards Initiative, 2010).

Wiggins (1992) stated, "A standard is an exemplary performance serving as a benchmark" (p. 19). Standards set the model for output. They allowed a judgment on the quality of all student output. "A standard offers an objective ideal, serving as a worthy and tangible goal for everyone – even if, at this point in time for whatever reason, some cannot yet reach it" (p. 18). Herman et al. (1992) referred to standards as the criteria for adequate performance and a valuable tool for successful completion of a task.

Content standards provided the frameworks for curriculum and included the essential knowledge, skills, and habits of mind for schools to teach. Essential knowledge included the most important and enduring ideas, issues, dilemmas, principles, and concepts from the disciplines. Process standards or skills were ways of thinking working, communicating, and investigating. Content standards, represented what students should know, and process standards represented what students should be able to do, were grouped under performance standards, which defined the levels of learning considered satisfactory (Herman et al., 1992). Performance standards placed the focus on students applying and demonstrating what they knew (Lewis, 1995). Lewis (1995) made a case for the existence of standards:

> Beware of those who say that standards will save public education, but be equally skeptical of those who claim the standards will nationalize the curriculum. The current debate is about much higher standards. It is driven by what we have learned about children's cognitive growth. (p. 71)

Standards were specific in guiding pictures of worthy goals, which "enable all performers

to understand their daily work in terms of specific exemplars for the work in progress,

and thus how to monitor and raise their standards" (Wiggins & McTighe, 1998, p. 20).

Changing to a standards-based system provided an opportunity to reexamine the

organizational elements of a school system. Standards presented an opportunity to

examine and clarify the fundamental purposes, principles, policies, processes, practices,

programs and procedures of school systems and could do more to help schools in their

communities to reestablish trust in public education (Reeves, 1996). Proponents and

critics had differing views of the standards movement. The former believed that standards

contained the greatest hope for significantly improving student achievement, particularly

since the policy mandates of the first wave of reform failed (Scherer, 2001). The latter

believed that the movement toward national standards revealed the weakness of a reform

movement that promised quick and easy solutions to a complicated schooling process

(Berube, 1996).

In October 1989, President George Bush set the national reform agenda for the

1990s, with the announcement of *America 2000: An Education Strategy* (Orlich, 2000).

To bring American education into the 21st century, six major national goals were

endorsed in 1991. These goals were to be achieved by the year 2000 and included the

following: (a) all students would begin school ready to learn which included

disadvantaged and disabled individuals, preschool students, and students suffering from

malnutrition; (b) the high school graduate rate would increase to a minimum of 90%; (c)

students in grades 4, 8, and 12 would demonstrate proficiency in all subjects on a

competency-based assessment; (d) American students would become dominant in science

and mathematics as compared to other nations; (e) every adult would be literate and

possess the necessary knowledge and skills to contend in a globalized society; and (f) all

school would be safe and drug-free (Orlich, 2000, pp. 469-471). In 1994, the U.S.

expanded the list to eight under the *Goals 2000: Educate America Act*. The act

amendment included the following additions: g) programs to increase teachers'

knowledge and skills; and h) partnerships between school, home, and community (Orlich,

2000).

Standards followed goals, as evidenced by the efforts of federal and state

legislators to make these a reality (Marzano & Kendall, 1996). Many educators saw *A

Nation at Risk* (National Commission on Excellence in Education, 1983) as the initiating

event of the modern standards movement. Marzano and Kendall (1996) noted that, "after

this highly damaging expose on public education, educators set out to change what they

could through new policies . . . When these efforts produced disappointing results

educators turned to national goals and standards" (p. 49).

National goals for education were established in 1994 when congress passed, and

President Clinton signed the *Goals 2000 Educate America Act*, which authorized federal

support to the states for plans to improve schools by the turn of the century (Home

School Legal Defense Association, [HSLDA], 2000). Participation was voluntary, and

states seeking a *Goals 200*0 grant agreed to develop and implement higher standards

(Lewis, 1995) on a contingency to meet proficiency standards. Initially, *Goals 2000*

seemed 'unobjectionable' due to voluntary participation, but states opting out lost federal

funding awarded to participants (HSLDA, 2000). In addition, the fine print of affiliation

revealed hidden mandates and unconstitutionally shifted control of the school district

from local stakeholders to Washington, D.C. (HSLDA, 2002), Families opting to home

school and private institutions strongly opposed the *Act* for fear of possible regulations to

come (HSLDA, 2000).

At the turn of the century, the emphasis on educational standards and

accountability grew. In 2001, President George Bush replaced the *Goals 2000 Act* with

the enactment of *No Child Left Behind (NCLB)* in efforts to reduce two types of

achievement gaps believed to exist in American society (Zhao, 2009). The first gap

existed within American boundaries between population subgroups, and the other gap

was in the disparity between America and other countries. Although the achievement gap

between various segments of the population was a central focus behind educational

reform movements, closing the gap between America's youth and youth in foreign

nations warranted reproach because it pertained to the outlook of the economy in the U.S.

(Zhao, 2009). Zhao (2009) asserted, "The sense of an economic threat from other

countries has long been associated with the sense that the American education system is

much inferior to those of its foreign competitors" (p. 8).

NCLB mandated evidence of comprehensive, unilateral proficiency for all

students in the subjects of reading and mathematics. Participation was mandatory, and

both teachers and students were accountable for meeting high standards evidenced by

Adequate Yearly Progress (AYP) (Burke, 2012). Standardized test scores measured

student success, thereby reflecting teacher performance (Zhao, 2009). Penalties for non-

compliance ranged from restructuring district personnel, fiscal disbursement, and state

sanctioned authority (Burke, 2012). Districts in fear of sanctions began implementing

new policies affecting teacher positions, benefits, and salaries. Pressed to raise test

scores, teachers began teaching to the test. Teachers prepared lessons on reviewing and

preparing for tests, memorizing facts, and learning strategies to promote test performance

(Doherty, 2001). Taking corrective action to meet the provisions set forth through *NCLB*,

school districts across the nation implemented school improvement plans adopting new

policies, teaching practices, intervention programs, and many districts adopted the

principles of a Professional Learning Community (PLC).

A PLC in the educational setting can be defined as a collaborative team of

educators committed to helping all students learn and reach their fullest potential

(DuFour, 2004). To achieve this goal, members of a PLC engaged in a systematic process

to collect evidence on students' current levels of understanding, develop and implement

strategies to advance students' strengths and weaknesses, reanalyze students'

understandings, and present new information in a cyclical process (DuFour, DuFour, R.,

Eaker, R., & Many, T., 2006). DuFour (2004) described the primary benefit of an

effective PLC as its ability to advance learning for struggling students by providing them

the extra support they needed through timely interventions developed and exclusively

focused on bridging the gap between the student's understanding and the desired outcome

for learning.

DuFour, a former principal and superintendent, was an expert on PLCs, due to his

instructional leadership skills evidenced by outstanding achievement gained during his

leadership at Adlai Stevenson High School in the Chicago, IL, area (Schmoker, 2001).

According to DuFour (2004), three questions guided the PLC members' advancement of

learning: "What do we want each student to learn? How will we know when each student

has learned it? How will we respond when a student experiences difficulty in learning?"

(p. 7). DuFour (2004) pointed to the last question as the delineating factor between traditional schools and PLCs. Popham (2008) defined a PLC as a group of educators who work together to learn more about a topic or to refine specific skills. Regardless of the specific use within an organization, the essence of a PLC was to ensure student learning (DuFour et al., 2006).

Despite the application of PLCs and other innovative efforts initiated to meet the requirements of *NCLB*, inflexible guidelines threatened to fail four out of five schools, nation-wide (Dillon, 2011). Perceived unrealistic demands required modifications to the law; perceived as flawed for a one-size fits all mentality. In 2011, the United States Department of Education offered state departments of education flexibility to work within provisions of the law (Obama, 2011). States wishing to qualify under these terms, thereby escaping impending sanctions, had to agree to the following stipulations:

> States must adopt and have a strong plan to implement college- and career-ready standards. States must also create comprehensive systems of teacher and principal development, evaluation and support that include factors beyond test scores, such as principal observation, peer review, student work, or parent and student feedback. States receiving waivers must set new performance targets to improve student achievement and close achievement gaps. (The White House, n.d.b., para. 6)

President Obama (2011) justified the modifications to NCLB in a press release, "In the 21st century, it's not enough to leave no child behind. We need to help every child get ahead. We need to get every child on a path to academic excellence" (para. 5). In addition to offering flexibility waivers, the Obama administration also initiated *Race to the Top*

(RTT). To improve both teaching and learning, RTT focused on four main areas: (a) enhanced standards and assessments, (b) improved data systems to reflect students' progress, (c) more support for teachers and principals, and (d) increased emphasis on interventions to advance low-performing schools (The White House, n.d.a.).

Pressure to catch up, essentially closing the achievement gap, resulted in attempts to reinvent an educational system in the United States that could prepare students to compete on a global scale (Stewart, 2010). The U.S. Department of Education issued a statement acknowledging a direct link between America's economic stability and the preparation of students for college or work, and considered this imperative (The White House, n.d.a.). "The President has articulated a goal for America to once again lead the world in college completion by the year 2020, and all of President Obama's education efforts aim toward this overarching objective" (The White House, n.d.a., para. 1).

Jacobs (2010) proclaimed, "In the United States, one dominant influence in schools during the first decade of the twenty-first century has been the focus on standards for learning" (p. 9). Such targets may be defined as more than meeting proficiency on standardized tests, which use varying criteria to evaluate student achievement (Wiggins, 1992). Wiggins (1992) contended that America's educational system must agree on "Standards not Standardization: Evoking Quality for Student Work" (p. 1). Growing concerns about inconsistencies in educational standards resulted in the "establishment of clearly delineated standards as a means of setting high learning targets" (Wiggins, 1992, p. 9). However, Jacobs (2010) continued, "the implication is that teachers need latitude to help individual learners reach proficiency targets" (p. 9). In addition to latitude enabling teachers to make instructional adjustments, they must continuously participate in training

to provide newly developed adjustment strategies, often coined as 'best practices' (Popham, 2008).

Authors and researchers held varying views on educational standards. Some viewed national standards as a menace, contrary to the historic American system of education, and destructive of growth on individual schools. Others viewed national standards as the only solution to America's educational problems. Those in favor of national standards stated that America needed to be competitive educationally with other countries, that standards would encourage school improvement, and that they would replace presently loose standards in an age of mobility of population. Those opposed stated that standards would limit the creativity of local schools, were likely to be minimal standards, and would be limited to core disciplines (Oliva, 2005). Newmann, Secada, and Wehlage (1995) viewed the challenge as "Defining standards for high intellectual quality, with standards that speak directly to the issue of quality . . . enabling teachers to craft diverse teaching practices that actually educate children, instead of merely engaging them in school activities" (p. 4).

Purpose of the Study

The purpose of this study was to determine teacher understanding of learning targets in the curriculum, and their perception as to the effectiveness of these as learning strategies to assist students in improving their academic achievement. According to Wiggins and McTighe (2005b), when teachers designed targeted learning, these targets were determined before the designing of activities or tasks. A learning target was not an instructional objective. A learning target provided a common focus for the decisions that schools made about what works, what does not work, and what would work better. A

learning target guided learning. It described in student language the lesson-sized chunks

of information, skills, and reasoning processes that students would use to guide their own

learning (Moss & Brookhart, 2012).

School districts within the state of Missouri were presented with the directive to

adapt curriculum to meet requirements within the Common Core State Standards (CCSS)

initiative. The standards for English Language Arts and mathematics, released June 2,

2010, were developed in collaboration with teachers, school administrators, and

curriculum consultants (Kendall, 2011). Because of the adoption of these standards,

school districts were revising curriculum to promote student achievement with particular

attention to designing lessons that included rigorous content and application of

knowledge through higher-order skills, which were evidence-based (Shaver, 2010).

Rationale

Aseltine, Farigniaro, and Rigazzio (2006) identified from their research certain

impediments to proper implementation of target-based learning mandated through the

CCSS initiative. These included: (a) lack of understanding of learning targets by teachers

and administrators, (b) little or no collegial networking and collaborative teamwork in

school settings, (c) existence of too many professional development activities which were

not focused on targeted instruction and learning and which lacked follow-through and

administrative support, (d) lack of observation of targeted-based teaching, and (e)

absence of coaching for teachers throughout the process of developing target-based

curriculum and instruction.

The researcher intended to identify and address these impediments, as they may

exist in the study school, by focusing on the essential components of targeted instruction

and learning and the processes and strategies in place for its implementation. The data

gathered may provide a clear picture of teacher and administrator understanding and

perception of the effectiveness of target-based curriculum and instruction. Further, the

results may help guide future decisions regarding professional development in the study

school.

Research Questions and Hypotheses

Question 1: How do teachers in one school within the study district evidence their

understanding of the use of learning targets in their curriculum and instructional

practices?

> *Alternative Hypothesis 1:* Teachers will indicate via survey responses their
>
> understanding of the purpose(s) of learning targets in their curriculum and
>
> instructional strategies.

Question 2: How do teachers in one school perceive the effectiveness of using learning

targets to increase student engagement, comprehension of subject matter, and their

academic achievement?

> *Alternative Hypothesis 2:* Teachers surveyed will perceive a difference in student
>
> classroom engagement, comprehension, and achievement, as a result of using
>
> learning targets in their curriculum and instructional strategies.

Limitations to the Study

Although this research served its purpose, there were several limitations. These

included:

(a) The study was restricted to one elementary school in one district and may not

be replicated since the participants were specific to one setting and may not share

the same character traits.

(b) Therefore, the sample was purposive and convenient rather than random.

(c) Multiple teachers, each with a different style of teaching, applied learning

targets in their classroom curriculum and instruction.

(d) The time-frame of the study was limited to one semester and may not have

been enough time for authentic teacher attitudes about learning targets to surface.

(e) Teacher attitudes towards, interest in, and commitment to using learning

targets in their classroom curriculum and instruction may have varied, thus

affecting the results of the survey.

(f) The researcher designed the final teacher survey to measure teacher

perceptions toward the effects of learning targets, but may not have provided

sufficient evidence of teachers' actual usage of learning targets in alignment with

classroom curriculum and instruction.

(g) The researcher was directly involved in the design and implementation of the

pre- and post-tests used, in addition to the training in use of learning targets,

which may result in a degree of subjectivity when interpreting results.

(h) Different learning styles of the students in the study classroom(s) may have

affected the results.

(i) Different ability levels of each student may have varied.

(j) Professional development in the form of in-service training within the school

may have been internalized by the teachers at different levels and rates, depending

on each teacher's background and attitude.

Definition of Terms

For the purposes of this study, the researcher used these definitions of terms:

Assessment. Refers not only to tests, but also to all actions designed to evaluate

how well students understand a concept or are able to apply a skill to new situations

(Wiggins & McTighe, 2005b).

Assessment for Learning. A collection of instructional practices revealed

through feedback by students, as necessary to the advancement of learning (Chappuis,

Stiggins, Chappuis, & Arter, 2012).

Authentic Assessment. A performance assessment presenting tasks to students

that resemble real-life tasks (Popham, 2011).

Authentic Task. A school assignment that has real-world application and

resembles the type of problem found in the respective field of study (Wiggins &

McTighe, 2005b).

Benchmark. Statement that provides a description of student knowledge expected

at specific grades, ages, or developmental levels. Benchmarks often were used in

conjunction with standards (Wiggins & McTighe, 2005b).

Big Idea. This was the central concept to be learned or understood; the focal point

of a unit of study (Wiggins & McTighe, 2005b).

Critical Thinking. Logical thinking that is reflective and draws conclusions

based on facts (Brookhart, 2008).

Curriculum. A plan of instruction that details what students are to know, how they are to learn it, what the teacher's role is, and the context in which learning and teaching will take place. It includes more than simply a list of concepts and skills that should be addressed within a course. It includes also assessments and lessons designed to reach those concepts and skills (Wiggins & McTighe, 2005b).

Essential Question. These are derived from what students must know and be able to do. They are generated through purposeful task analysis. Essential questions frame and focus a curriculum (Wiggins & McTighe, 2005b).

Feedback that Feeds Forward. Feedback that is aligned to the learning target feeds learning forward when it acknowledges students' strengths, advises next steps for improvement, and gives strategies to help students achieve the target (Moss & Brookhart, 2012).

Formative Assessment. This includes all processes both formal and informal that generate evidence of students' knowledge about the concept to be learned; such evidence is used by teachers to make necessary adjustments for purposes of improved learning (Black & Wiliam, 1998).

Higher-Order Thinking Skills. Through repetition and guided practice, this is the retention and transferability of skills in order to solve complex, real-world problems (Brookhart, 2008).

Inquiry. A process in which students investigate a problem, devise and work through a plan to solve the problem, and propose a solution to the problem (Cody, 2013).

Learning Target. A learning target is the skill or concept to be learned during a single lesson. It is written for students in language that they can understand so they can use it to guide their own learning (Moss & Brookhart, 2012).

Mastery. Reaching a level of learning that allows for transferability of knowledge (Guskey & Anderson, 2013/2014).

Performance Assessment. An assessment that ranks students' performances based on pre-established criteria. Students are assessed on the result as well as the process engaged in a complex task or creation of a product (Wiggins & McTighe, 2005b).

Performance Task. An assessment exercise that is goal directed. The exercise is developed to elicit students' application of a wide range of skills and knowledge to solve complex problems (Wiggins & McTighe, 2005b)

Problem Solving. The ability to understand a problem, overcome obstacles, and though these steps, attain appropriate solutions (Brookhart, 2008).

Self-Regulation. This is a student's ability to approach work with confidence, plan learning tactics, and use success criteria to adjust his or her performance (Moss & Brookhart, 2012).

Standards. Statements of what students should know and be able to demonstrate; the expected learning to be accomplished (Chappuis et al., 2012).

Student Self-Efficacy. A student's confidence in his or her ability to approach a learning target, work through adversity, and achieve mastery (Moss & Brookhart, 2012).

Student Look-Fors. The success criteria for the learning target in today's lesson; student look-fors promote self-regulation by scaffolding learning in the appropriate channels thus enhancing students' abilities to stay on course (Moss & Brookhart, 2012).

Success Criteria. Descriptions of the quality of work to be completed in the day's lesson; success criteria is necessary to support self-regulated learning by students (Moss & Brookhart, 2012).

Systemic Reform. Change that occurs in all aspects and levels of the educational processes and that impacts all stakeholders within the process – students, teachers, parents, administrators, and community members – with implications for all components (O'Neil, 1993).

Tacit Knowledge. The acquisition of knowledge that logically develops through experiential activities; the opposite of recondite knowledge which is built by obscure facts and must be memorized (Clark, 2012).

Teaching for Understanding. This teaching strategy focuses on the process of understanding as the tool of learning rather than simply the development of specific skills. It focuses on forming connections and seeing relationships among facts, procedures, concepts, and principles, and between prior and new knowledge (Wiggins & McTighe, 2005b).

Understanding. A primary target for teaching is to foster deep understanding of and about the content to be learned. This preceded teachers' understanding of standards, which is essential for effective design of learning activities and assessments that will enhance students' learning (Wiggins & McTighe, 2005b).

Summary

Since the publication of the work titled *A Nation at Risk* in 1983, which raised serious questions concerning the effects of what was happening in American classrooms on positive academic achievement by students, multiple reforms were proposed,

designed, implemented and replaced with others. Some of the reform initiatives left a positive mark on efforts to transforming American education. Increased educational funding, spearheaded by federal government programs, financed multiple theories of educational advancement and restructuring of the principles underlying the purposes for education, thus paving the way for emergence of new concepts, which offered hope for progress in the American education system.

The United States education system faced continued pressure to use educational standards to increase students' academic achievement. Successful attainment of these educational standards was supported by an emphasis in curriculum and instruction on the use of essential questions (which go to the heart of what was to be understood) to guide teacher and students to focus on achieving outcomes through student performance and production in the classroom. Learning targets served to focus both teachers and students on conceptualizing the standards to provide a framework for preparing lessons and instructional strategies. Therefore, United States' classrooms should focus on teaching for student understanding by designing authentic learning experiences, which cause students to apply what they are learning throughout the process of learning. Learning targets focused educators and students on what was important and allowed for alignment of curriculum to best meet the needs of American students.

The researcher intended to find the understanding of teachers in a specific setting of clear performance targets and the extent of their use in the classroom. She provided in-service professional development to teachers involved with the study in understanding the importance of using learning targets in classroom curriculum and instruction. She assessed teacher understanding of learning targets after a period of training and

determined, based on that understanding if the perceptions of the teachers as to the effectiveness of learning targets, what additional training was necessary.

The researcher determined from her findings that if the educational goals established through our state and federal governments were to be achieved, then educators must seek best practices, which already exist in the nation's classrooms; determine what is important for students to understand and to be able to do; implement change with the cooperation of all constituents affected; execute change based on continuous leadership support; and follow through to ensure that change is lasting. The purpose for this study was to ascertain teachers' understanding of and perceptions about the effectiveness of learning targets in classroom curriculum and instruction. Chapter Two contains the results of a review of the literature surrounding the concepts of essential content, effective instruction, and meaningful learning, as proposed and supported by the Learning Target Theory of Action from Moss and Brookhart (2012).

Chapter Two: The Literature Review

Moss and Brookhart (2012) defined a learning target as a simplified version of an educational objective, which is teacher-designed in student friendly language. Often posed as 'I Can' statements, it identifies for students what they should know and be able to do. The researchers pointed to a curriculum initiative, which incorporated learning targets as the prime component. The purpose of this study was to determine, after a period of in-service training, the abilities of teachers to effectively incorporate learning targets into their curriculum and instructional practices and to ascertain their perceptions of the effectiveness of the use of learning targets on students' understanding of content, engagement during instruction, and academic success. A Learning Target Theory of Action developed by researchers Moss and Brookhart served as the framework for conceptual understanding behind this study. Chapter Two contains a review of the literature relating to essential content within classroom curriculum, effective instructional strategies, and meaningful or authentic learning, which is the embodiment of a Learning Target Theory of Action. This is preceded by research supporting the use of formative assessments, also referred to as assessment for learning as opposed to summative assessment, which is referred to as assessment of learning (Clark, 2012). Multiple studies on formative assessment defined formative assessment as essentially everything a teacher does in the classroom during a process of planning and delivering essential content to advance student learning (Black & Wiliam, 1998; Clark, 2012; Marzano, 2006; Moss & Brookhart, 2012). Integration of the principles of formative assessment with learning targets in the curriculum constituted the basis for this literature review. Further, this review focused on providing research to address the following questions: (1) Why do

teachers hesitate to design lessons and units based on what students should know and be able to do in favor of covering what is within the curriculum? (2) How does the system of curriculum and instructional development actually encourage teachers to simply teach what they like to teach and are familiar with? (3) How does the teacher know what influence or effect his curriculum design and delivery has on student achievement? (4) How does standards-based curriculum design permit teachers to determine exactly what students need to learn, what to teach, and what to work on as they engage in designing and teaching activities best performed in conjunction with colleagues? (5) What are the roles of focus and coherence in curriculum design and development? and (6) How do learning targets in standards-based curriculum design allow teachers to decrease the amount of content to be taught?

Research reported in this chapter concentrated on (a) making sense of curriculum design, (b) the power of learning targets in curriculum design with regard to achieving focus and coherence, (c) seeing the big ideas or the big picture through essential questions, (d) purposeful task analysis based on learning targets, (e) using assessment as an instructional technique to promote students' learning, and (f) the gap between theory and implementation of targeted-based instruction. This evidence should prove useful to teachers as they work to incorporate learning targets in their curriculum.

Essential Content

One of the research questions guiding this study addressed how curriculum should design should reflect opportunities for teachers to assess student understanding of and progress towards attainment of learning targets. The answer to this question is contained in studying both a past and present conceptualized view of curriculum change as our

society moved into the 21st century. Schoolteachers were charged with designing and

redesigning curriculum and learning experiences to meet, not only the needs of students,

but also state mandates in the form of educational standards. Curriculum, defined loosely

as the course of study in schools, was receiving new attention that focused on design of

learning as a variable to be manipulated by teachers to ensure increased student

understanding and achievement. Manipulation was defined as the teacher making

decisions on what to teach to students, with the result that students meet state standards

for skills and knowledge. An emerging problem was the teacher's freedom to make

curriculum decisions when confronted with standards to be addressed as mandates from a

governing authority. Another problem was lack of teacher expertise and experience with

planning and design of curriculum for students (Wiggins & McTighe, 1998). Wiggins

and McTighe (1998) pointed out, "Historically, U.S. education has minimized the role of

planning and design in teaching" (p. 158). Educators, due to school schedules and duties,

rarely had opportunities to engage in substantive curriculum planning (Wiggins &

McTighe, 1998, 2005b). Grebe (1989) defined learning as a "behavioral activity that

takes place in both students and teachers as a result of activities pursued" (p. 103). He

determined that teachers could directly affect student learning by building learning

activities around curriculum 'pegs' based on their observations of students (Grebe, 1989).

Teachers, when asked about planning for curriculum development, indicated this as

something they must trust to the curriculum guides prepared within or for the school

district. They did not have the time to design, or even redesign, what they were teaching,

since they were responsible for covering the curriculum as it was written (Grebe, 1989).

Tyler (2013) stated, "Education is a process of changing the behavior patterns of people" (p. 5). The teacher designer of curriculum was asked, "What can your subject contribute to the education of young people who are not going to be specialists in your field; what can your subject contribute to the layman, the garden variety of citizens?" (p. 27). Tyler's curriculum contained objectives that promoted changes to take place in students; and it was a challenge to the teacher to make sure that what he was teaching was relevant to the needs of students. Goodlad (1983) took the position that schools, for all the demands of the society in which they functioned, were never exclusively educational. Rather, they were continually taking on more and more of society's non-educational purposes. The classroom teacher bore ultimate responsibility for ensuring to meet society's demands. In effect, the vitality of schools was dependent on them doing a much better job of educating. The teacher's role as designer of curriculum was often undeveloped, and minimized due to the focus on state-mandated precisely defined, minimizing competencies for school progress and high school graduation (Goodlad, 1983). As long ago as 1912, Dewey (1933) lamented that the center of education was "outside the child" (p. 34). According to Dewey (1933), the teacher, the textbook, and anything else was at the center of education, not the child. Beane (1995b) stated,

> Could it be that we ourselves cannot summon a reasonable explanation for what we ask young people to do in the curriculum? Is it possible that we ourselves are unclear or do not know, apart from institutional timelines, what it is that the curriculum is all about? (p. 2)

Prior to 1900, the prevailing practice in education was organizing the course of study around the traditional disciplines of knowledge; a curriculum completely focused

on core academic areas. Spencer's famous 1859 essay, *What Knowledge is of Most Worth*, "Challenged the prevailing doctrine of liberal education and promoted in its place a more utilitarian brand of schooling" (as cited in Frankeling, 1999, p. 459). Spencer led a reform movement against an academically oriented curriculum organized around the traditional disciplines of knowledge, deemed too remote from the lives of most American children. Prior to Spencer, and as early as 1802, Herbart concentrated specifically on how people learned anything. Herbart was searching for connections (Burke, 1997), and he emphasized the importance of relating new concepts to the experience of the learner.

In the latter part of the 19th century, Progressivism moved throughout the educational sector of America. Opposing the theories of Essentialists, Progressives gave credence to and considered the needs and wellbeing of the learners when formulating the course of study (Oliva, 2005). Dewey (1915), often called the father of the progressive education movement, believed that students learned best by doing. He continued to value subject matter regarding the 3R's, reading, writing, and arithmetic (derived phonetically), but resisted traditional methodology and rote memorization. Dewey (1915) supported active participation and described education as the "participation of the individual in the social consciousness of the race" (p. 1). Dewey (1915) held strong convictions about curricular intentions in school. He asserted, "The curriculum in schools should reflect that of society" (p.1).

Oliva (2005) emphasized the replacement of Essentialism with Progressivism in the educational structure of America throughout the early 20th century. Needs and interests of learners changed education from a product to be learned to a process that continued as long as one lives. Progressivists, followed by Experimentalists, Gestaltists,

and Constructivists, encouraged the active involvement of the learner in the education process, advised teachers to organize subject matter in such a way that learners could see the relationships among the various parts, and described the teacher as a facilitator of learning who teaches students to take responsibility for their own learning in authentic situations (Jenett, 2000; Oliva, 2005).

What is curriculum and how can it be designed by the teacher to increase student achievement? Oliva (2005) proposed that curriculum could be conceived in a narrow way, as subjects taught, or in a broad way, as all the experiences of learners both in school and out, directed by the school. Gagne promoted curriculum as a structured series of extended learning outcomes (as cited in Oliva, 2005). Tyler viewed curriculum as a unified, coherent experience, which provided a unified, effective experience (as cited in Beane, 1995b). Oliva saw curriculum as a process of limiting subject matter that increased explosively and continuously. Dewey (1933) saw curriculum as imparting life experiences. He proposed:

> The imagination is the medium in which the child lives. To him there is everywhere and in everything, which occupies his mind and activity at all, a surplusage of value and significance. The question of the relation to the school to the child's life is at bottom simply this: Shall we ignore this native setting and tendency, dealing not with the living child at all, but with the dead image, we have erected, or shall we give it play and satisfaction? . . . Where we now see only the outward doing and the outward product, there, behind all visible results, is the readjustment of mental attitude, the enlarged and sympathetic vision, the sense of

> growing power, and the willing ability to identify both insight and capacity with
>
> the interests of the world and man. (p. 61)

Dewey (1933) emphasized the necessity of reducing and removing curriculum isolation

through connecting all parts. He favored integration of the curriculum and learning

through experience-based activities, as opposed to learning conceptual information

through books based on generalizations and abstract things. Dewey (1933) emphasized

curriculum as supporting the child's life experiences.

Almost a century after Dewey's (1933) work on *The Child and Curriculum*,

Newman et al. (1995) observed that curriculum was not meaningful in its content, and

schools appeared to be dedicated to promoting non-authentic kinds of mastery. They

asserted:

> The problem can be attributed to many sources: a curriculum consisting largely of
>
> superficial exposure to hundreds of isolated pieces of knowledge, which is
>
> reinforced by teacher training institutions, textbook publishers, testing agencies,
>
> and universities: teaching loads and school schedules that exacerbate problems of
>
> classroom management, making it difficult for teachers to concentrate on
>
> individual students using their minds well; and students' isolation from adults in
>
> the community beyond school who have made significant achievements.
>
> (Newman et al., 1995, p. 7)

At the time of this writing, educators, faced with an explosion in the amount of

curriculum and external pressure to raise student achievement based on teaching to

content (knowledge) and process (skills) standards, are faced with an almost

insurmountable task. Wood (1992) stated that both textbooks and standardized testing

were the driving force behind school curriculum. Calfee (1994) regarded the public

demand for emphasizing teaching of basic skills as impeding development of curriculum

that was ripe with opportunities for problem solving and experiences directly related to

everyday life.

Subject-centered curriculum dominated most school offerings and muscled out

initiatives to integrate curriculum, which was at least partially the result of the place the

schools assumed in maximizing production of high stakes knowledge. Dewey speculated

that it would be impossible to overestimate the educational importance of arriving at

concepts, without which nothing could be gained that could be carried over to better

understanding of new experiences (as cited in Miettinen, 2000). If subject matter was

simply factual, without concepts, then the student was not taught how to manage

learning, that is, how to transfer conceptual understanding from one situation to another.

There was no understanding without application of content and skills. Wiggins (1993)

emphasized that "We do not understand things in general, we understand (or

misunderstand) a person or an answer in context" (p. 242).

Not all students need to learn the same things. In fact, "there is simply too much

for anyone of us to know" (Wiggins, 1989, p. 58). Yet, the curriculum was often a jigsaw

for educators and students. Beane (1995b) purported that students experienced

curriculum in too many schools moving from once class to another, from one book to

another, confronted by disconnected, fragmented pieces of information or skills.

However, Beane (1995b) reasoned that the problem of incoherence did not reside

exclusively within middle and high schools. Elementary schools offered their own

versions of such problems. Self-contained classrooms in many elementary schools only

thinly disguised a day divided into subject matter or skill time slots, instruction in a long

variety of sub-skills, and specialized instruction in nonacademic subjects. Some

elementary schools were even departmentalized.

Wiggins (1989) described teaching the curricula as being "reduced to the written

equivalent of TV news sound bytes" (p. 45). He continued:

> The inescapable dilemma at the heart of curriculum and instruction must, once
>
> and for all, be made clear: either teaching everything of importance reduces it to
>
> trivial forgettable verbalisms or lists; or schooling is a necessarily inadequate
>
> apprenticeship where preparation means something quite humble: learning to
>
> know and do a few important things well and leaving out much of importance. (p.
>
> 45)

A pre-modern, or medieval, curriculum supposed that everything of importance could be

learned, and the role of the classroom teacher was to deliver this knowledge. McDonald

(1999) internalized curriculum not as something revealed to students; instead, it was a

sharing of resources supportive of a value-set belief system and contributed to one's

knowledge having a lasting impact in one's life.

The advent of the standards movement brought definitions of skills that students

needed to know "to be considered knowledgeable in certain subject areas . . . and the

level of knowledge and skills that all students must achieve" (Scherer, 2001, p. 17).

Standards were considered a result of national curricular chaos (Schmoker, 1999).

However, they represented learning benchmarks that made sense. Standards could

decrease the amount of content teachers felt obligated to cover by establishing important

knowledge, a more manageable number of essential topics to be taught, and focusing

curriculum and teaching on big ideas translated to students as learning targets. Wiggins (1993) viewed as vital that students understand the limits and boundaries of ideas, theories, and systems. "Understanding is not displayed by correct answers to questions and problems out of context; on the contrary, misunderstanding is easily hidden behind thoughtless recall" (p. 47).

Ausubel's (as cited in Ivie, 1998) learning theory promoted establishment of a cognitive structure to what is being taught. New information, in order to be successfully stored and retrieved, must be subsumed; that is, anchored to a larger subsuming concept (Ivie, 1998). Because rote learning of disconnected facts was not anchored to existing concepts, it was more easily forgotten. Perrone (1991) advanced that classrooms must become the starting points for linking learning to large educational purposes. Iannone (1995) proposed curriculum attractors or generative themes or goals to ensure student understanding. Wiggins (1998) said that the only evidence of real knowledge was what it was that we wanted students to be able to do as a result of schooling. We must, according to Wiggins (1993), "test those capacities and habits we think are essential, and test them in context" (p. 84). Teachers, as designers and administrators of curriculum would do well to ask themselves two essential questions: What must my students know and what must my students be able to do? The teacher-designer's thoughtful answers to these questions establish the essential concepts, the big ideas to be addressed in the classroom.

The Power of Big Ideas

When everything is important; then nothing is actually important. This sentence is descriptive of many efforts toward design of curriculum that is knowledge-based, unfocused, and incoherent. The appropriate curriculum design questions should focus on

what students should know and be able to do. Curriculum frameworks, published in the

state of Missouri, aligned Missouri's grade level expectations to the Common Core State

Standards and specifically identified the answers to both questions. However, educators

still made tough choices about what kids should learn (Gandal & Vranek, 2001).

Big ideas were main ideas, derived from the teacher's definition of "a set of ideas,

a theme, or a particular event they say they genuinely understand, not just know about"

(Perrone, 1994, p. 11). Perrone (1994) called big ideas "formulations of generative

topics" (p. 12). He proposed that they could serve to engage students in working

independently under the teacher's guidance to yield deeper learning through the inquiry

of research. Big ideas as generative topics were also recurring, since they connected to

aspects of a culture (Perrone, 1994). Big ideas were the key to understanding. They were,

as described by Hannel and Hannel (1998), "broad, generally able objectives that

generate an interest in students to become engaged in the lesson to come" (p. 17). The big

or main idea could be connected by the student to experiences, thus encouraging them to

engage in thinking by questioning their places and relationships. Students were engaged

and interested in what they were about to learn (Hannel & Hannel, 1998). Willis (2002)

asserted that with curriculum and teaching designed through big ideas, "teachers can say

to students, here's the challenge" (p. 49). Students could be directed through inquiry into

big ideas to relate content to a context that defined clear meaning. Big ideas facilitated

efficient and broad acquisition of knowledge across a range of examples in a domain

(Simmons, 1996). Wood (1992), in his publication *Schools that Work*, provided emphasis

to the cause of employing big ideas as an organizing concept:

If we want students to leave school able to make sense of a complex world and

not content to settle for simplistic explorations, we need to bring them into the

world directly. To assume that teaching them a fragmented curriculum will lead

them to a unified sense of place and person is unrealistic. Instead, they will leave

unsure of themselves, believing themselves incapable of careful consideration of

complex questions, and they will be willing to defer judgment to the experts. With

only bits of information themselves, they will lack the confidence that democratic

citizens require if they are able to make their own decisions and order their own

lives, but when schools tie learning together, pull in multiple perspectives on

issues, show young people how to ask the right questions and how to find out the

needed information, we gain the type of citizens our republic needs. (p. 181)

Empowered with big ideas, "a student can always know that she has some organizing

ideas for beginning to understand anything" (Caine & Caine, 1997, p. 201).

Glatthorn (1995) proposed that the essential learning for all students included the

major concepts, principles, ideas, and skills of any subject. He illustrated this by stating

that "Knowing the causes of the Civil War would seem to be important for all students:

knowing the details of one of the minor skirmishes would seem to have low importance"

(p. 27). Jensen (1998) stressed that teachers reveal their own thinking models to students

to elicit student thinking. He wanted teachers to "ask students how they know what they

know through the use of 'how' questions: How does democracy work? How does

weather change? How does our body digest foods? How do you go about solving

problems?" (p. 97). The Common Core State Standards called for teaching students how

to discover patterns and relationships in information and to organize that information into

meaning for better student understanding (Common Core State Standards Initiative, 2010). Students learned material best and remembered it when it was anchored, structured, and meaningful. Jensen emphasized that "wholes taught before parts are recalled better . . . our mind recalls best with context, a global understanding, and complete pictures to remember" (p. 110). The power of big ideas in curriculum design and instruction resulted in teachers and students focusing on essential learning outcomes; capturing the rich relationships among content within and outside of specific areas; involving ideas, concepts, principles, and rules central and fundamental to higher-order learning; and forming the basis for generalization and expansion of student learning (Simmons, 1996; Wiggins, 1993).

Seeking Coherence through Design

The search for coherence involved long-standing issues in curriculum design because it must involve decisions about what ideas or themes hold the curriculum together. Glatthorn (1995) emphasized that the big picture should be grasped in curriculum before examining any specific processes in detail, what he termed as "a map of the field of inquiry" (p. 33). Tyler (2013), in *Basic Principles of Curriculum and Instruction*, theorized that it was not enough to have objectives or topics to be dealt with by students, since they alone did not specify what the students were expected to be able to do with them. Rather, Tyler proposed, "it is necessary to specify more definitively the content to which this behavior applies, or the area of life in which such behavior is to be used" (p. 46). Ediger (1994) stated that relevant facts, concepts, and generalizations were salient to learn. He argued against separating knowledge and skills objectives if subject matter was to be acquired. Drake (2001) proposed a learning bridge to:

Connect the subject areas. The bridge makes the know, do, be framework

coherent and, therefore useful. How could we make sense of the content in a

meaningful way? Instead of looking at isolated facts, we asked what was worth

knowing. For us, the big ideas transcended the specific disciplinary content of a

topic. We wanted students to understand concepts and generalizations…Students

needed broad-based interdisciplinary skills, such as communication,

collaboration, information management and problem solving. These skills

transcended any specific content. Students needed to know the content… to

demonstrate the skills. With our learning bridge, we were able to structure the

Middle Ages unit. The know area dealt with concepts …the do area focused on

design and construction, research and inquiry: and presentation, both oral and

written. The be area centered around collaboration, responsibility, and respect. (p.

41)

Standards must fit into bigger ideas to seem vital to curriculum.

Seeing the Big Picture through Essential Questions

Beane (1995b) proposed that "we need not look too far to see that subject-

centered or discipline-focused teaching and learning models that are dominant in schools

today are decontextualized, driven by curriculum objectives, and divorced from learner

outcomes" (p. 98). More often than not, teachers did not make decisions on what students

should know and be able to do. Rather, curriculum frequently manifested itself as

teaching what we know, or what was on the curriculum guide list (Wiggins, 2011). Wood

(1992) wondered why that which was on the list could not be taught in the context of

much larger broader goals for teaching and learning, perhaps a curriculum that was then

officially developed through essential questions where learning and growth were assessed

by kids doing real things.

What is an essential question? Thomason and Thomason (1997) stated that the

essential question was the key idea, the concept to know. It was the question that at the

completion of the lesson or unit the students were expected to be able to answer and to

know. Wood (1992), Thomason and Thomason (1997), and Wiggins and McTighe (1998;

2005a; 2005b) found that essential questions provided a framework to hold material

together and have proven to be an effective way of framing a course or an entire program

of study. Wiggins and McTighe (1998; 2005a; 2005b) viewed essential questions as

effectively establishing priorities in a course of study. Essential questions went to the

heart of a discipline. Essential questions arose from the teacher-designer's answers to

what students should know and be able to do. Curriculum designers could design a course

of study and build tests around recurring essential questions that gave rise to important

theories and stories. The essential outcomes of a course of study were clarified to the

student through essential questions as advanced by DuFour (2002). Grebe (1989) and

Wood (1992) stated that students presented with such essential questions as, "What is

political power? Who has it? How did they get it? How does power change hands? What

gives laws their power? And, how do people respond to being deprived of power?" (p.

111) used the questions to interpret, explore, and to develop better understanding.

Wiggins (1989) stated that the essential questions represented embedded and persistent

problems within organized research. Essential questions guided teaching and engaged

students in uncovering the big ideas at the heart of each subject. Drake (2001) applied

essential questions to framing three particular units: "How did changes in weapon status

and military tactics affect the outcomes of particular wars? In what ways have institutions

improved or regressed over time? And, what are some instances when change occurred

slowly" (p. 39). Fitzpatrick (1992) stated that curriculum should be organized around

essential questions to which the content within the curriculum would represent the

answers, and the assessment or grading of student progress would depend on students

reaching the essential outcomes, or answering successfully the essential questions.

Essential questions represented learning targets for both teachers and students.

Purposeful Task Analysis

Task analysis was simply what to teach and how to teach it. Wiggins (1998)

proposed that the task of all curriculums was to equip students with the ability to keep

questioning and, to demonstrate whether they had a thoughtful as opposed to thoughtless

grasp of the essentials:

The aim of the modern curriculum ought to be to use selected content as a vehicle

for developing in students an unwillingness to accept glib, unwarranted answers

from any source. They must leave school with the passion to question, without

fear of looking foolish, and with the knowledge to learn where and how the facts

can be found. (p. 57)

Ausubel's (as cited in Ivie, 1998) theory assumed a hierarchical structure of knowledge

with general or big ideas at the apex of a pyramid, with specifics and details subsumed

under the big ideas. The task was to organize what to teach around or under one or more

of the inclusive subsuming concepts already existing in the learner's cognitive structure

(Ivie, 1998). Tyler advised designers to identify the organizing threads or elements that

were the basic concepts and skills to be taught (as cited in Oliva, 2005). Thompson,

Kushner-Benson , Pachnoswksi, and Salzman (2001) stressed the most important part of

design was choosing terms for concepts central to understanding the unit and lesson

objectives. Herman et al, (1992) found that focusing on a relatively small number of

important outcomes, each representing a central concept, had general support from many

researchers. Woolfolk (1998) emphasized that we must use concepts to help us organize

vast amounts of information into manageable units.

The Common Core State Standards (CCSS) provided a common basis for

understanding equal connections between what was taught, prior knowledge, and real life

(CCSS Initiative, 2010). They offered teacher-designers a common focus, including

learning targets framed as 'I can' statements, generative topics evidenced through

essential questions, outcomes aligned to appropriate performance assessments, ongoing

assessment, and integration of content. The frameworks provided exemplars of what

students should know and be able to do, so the teacher-designers could know the end of

the game before they started. The role of the frameworks was to provide districts with an

organizing frame for building curricula using the Common Core State Standards as a

foundation. District curriculum guides furnished the interior plan and appropriate

instruction. The frameworks existed to provide teachers with help in designing

curriculum that was coherent, since they were based on creating and maintaining visible

connections between purposes and everyday learning experiences, which would lead

toward these purposes (CCSS Initiative, 2010). Perkins and Blythe (1994) termed these

understanding performances, or performances of understanding. They "must spend the

larger part of their time with activities that ask them to generalize, find new examples,

carry out applications, and work through other understanding performances" (p. 6).

Therefore, young people were faced with the challenge of understanding the larger

purposes of the curriculum; connecting particular learning experiences to those purposes

and, along the way, learning about the pieces themselves. Unger (1994) emphasized his

findings:

> Students should understand the goals for the lesson or unit before it is taught.
>
> Also, it is important for the topic to be meaningful for students so that they may
>
> take a more personal approach to what is being studied. Finally, students should
>
> understand what they are being assessed upon prior to starting a project. (p. 8)
>
> Sizer (1992) stressed the importance of the focus of schools on general

intellectual powers. Wood (1992) agreed, stating that this focus freed teachers from the

demon of coverage and opened up space for genuine teaching and learning. Wood called

purposeful task analysis a hallmark of genuine curricular reform by acknowledging that

not all of the facts that we teach children will stick with them. For example, we might say

that we want our students to have a sense of the world in which they live, so we introduce

statistics to help them understand certain patterns in the world. At every moment in our

work on statistics, we risk disconnecting that work from the real world or, in other words,

making it simply an abstract exercise in mathematics. Wood found that the continuing

challenge of task analysis in the design was to persistently maintain the connection

between the larger purpose and the specific activity. Young people also faced the

simultaneous challenge of learning about statistics, using that learning to broaden their

understanding of the world, and continuously maintaining a sense of the connection

between the activity and its purpose. Responding to those three challenges was, according

to Wood, a crucial aspect of curriculum planning and teaching because it offered the

possibility that young people would have a sense of what the curriculum was about as a whole.

Moving towards a coherent curriculum involved creating contexts that organized and connected learning experiences. Caine and Caine (1997) referred to this as "activating and facilitating the self-directed, pattern finding nature of the brain" (p. 118). When human beings learn, they self-organize. The problem, according to Caine and Caine (1997), was "if teachers cannot see broader connections as relevant, they will not only fail to facilitate broader thinking in students, but they will also not be able to facilitate student-initiated learning tied to personal meaning and purposes" (p. 174). When confronted with a problem or puzzling situation in real life, we hardly stop to think which part is mathematics, which physical education, which science, which thinking, which valuing, and so on. Rather, according to Caine and Caine (1997), we sense the problem or situation and then bring to bear whatever we need to know or do, without regard for the source. In addition, if the problem or situation is compelling enough, we move to get needed knowledge or skills that we do not already have. Beane (1995a) found in his research that, "we need coursework that enables students to sense an emphasis upon ratiocination with a view toward redefining what has been encountered, reshaping it, and reordering it" (p. 107). When students are directed through design of the learning experiences to gain control of concepts through a performance of understanding, depth becomes properly valued over breadth and performance wins over coverage. Students are involved with a curriculum that is coherent because their experiences allow them to discover and verify the importance of big ideas through experience (Beane, 1995a). Beane (1995a) contended that:

When the curriculum offers a sense of purpose, unity, relevance, and pertinence –

when it is coherent – young people are more likely to integrate educational

experiences into their schemes of meaning, which in turn broadens and deepens

their understanding of themselves and the world. In that sense, we might say that

a coherent curriculum is one that offers unforgettable experiences to young

people, lacking such coherence; the curriculum is likely to be little more than a

smorgasbord of superficial, abstract, irrelevant and quickly forgotten pieces. (p.

55).

Sylwester (2003), in his research, pointed to the teacher's task as a designer of

curriculum. He purported that:

Teachers must help students begin to find relationships between the somewhat

random, often trivial fact-filled experiences of everyday life and the fewer

enduring principles that define life – and then to help them create and constantly

test the memory networks that solidify those relationships. (p. 103)

Boyer (1995) advanced his position that truly educated students were taught to make

connections across the disciplines, discover ways to integrate the separate subjects, and

ultimately relate what they learn to life.

Wiggins' (1998) research looked at purposeful task analysis addressing the

question of what major and critical concepts, knowledge, skills and understanding would

be addressed; and what were the essential tasks worth mastering. McTighe's (1996-1997)

research proposed that teachers must establish and communicate clear performance

targets to their students and identify examples of excellent work during instruction to

help students understand the desired elements of quality. Ediger (1994) and Perrone

(1994) found that design of the curriculum by the teacher was critical in terms of the

kinds and types of objectives to be emphasized, which were necessary in order to enable

students to develop significant understandings. Willis (2002) stated that, "educators

shouldn't just ask 'are students learning effectively?' But also, 'Is what they are given

worth learning'?" (p. 5).

The teacher and the students must have the intellectual freedom to go where

essential questions lead. The textbook, instead of being the syllabus outline and content,

would be a reference book for students and teacher questions as they naturally arise, and

the teacher's role would be to help students develop habits of seeking knowledge and

comprehension through essential questions (Wiggins & McTighe, 2013). Wiggins and

McTighe (2013) declared, "The aim of the curriculum is to awaken, not stock or train the

mind" (p. 46). Teachers in graduate classes and during in-service training sessions

frequently complained about being held accountable for student achievement by an

outside agency or state government (Willis, 2002). State standards specified what

students should know and be able to do. Statewide testing was administered annually

during the student's K-12 residency in each grade level and subject area to determine

how the teachers were progressing in teaching to the standards (MODESE, 2013).

Complexity of standards and adjustments in meeting them bred confusion and resentment

among many educators. Educators and administrators were searching for, often finding,

and employing 'quick fixes,' which promised to provide teachers with an educated guess

as to what might be on the next state test (Reeves, 2004). Teachers stated that they are

abandoning normal curriculum and teaching routines in favor of teaching the test. Raising

student achievement scores on these assessment tests was not only a priority; in many

cases, it became an obsession (Scherer, 2000).

State of Teacher Training

The effectiveness of teacher in-service training in understanding and effectively

using the standards received mixed reviews (Reeves, 2004). Programs were in place to

involve teachers in learning how to develop standards-based performance assessments

that concentrated on main concepts or big ideas. However, in many schools and districts

there was a fundamental lack of knowledge, much less understanding, of how to create

curriculum that was standards-based and which taught to the test rather than taught the

test (Reeves, 2004). Thomason and Thomason (1997) found that in-service training in

schools and district was often fragmented. Writing and revising classroom curriculum

was not regarded as a process-involving teacher training. Thomason and Thomason

(1997) emphasized that staff development should focus on continuous improvement of

teaching, yet much of what was termed development was viewed by teachers as

bothersome, repetitive, unfocused, and detrimental to improvement of teaching practices

(Schmoker, 2001). Reeves' (2004) research found that effective staff development

training involved identification of best practices in standards-based teaching and learning

in the teachers' area, and then learning from teachers who developed their own standards-

based classroom activities. Wiggins and McTighe (2005b) maintained that teachers must

be trained to develop their own standards-based assignments and assessments through

understanding the standards and their relationship to overarching concepts and big ideas.

McTighe (1996-1997) indicated that teachers could be taught to use standards to

determine what to teach, based on what students should know and be able to do. Reeves

(2004) called the process of determining the big ideas to be taught, "pulling the weeds before planting the flowers" (p. 19). This involved the teacher in training to understand how to carefully compare every activity in a single day of teaching to the academic standards of the state, district, and the school.

What Students Must Know and Be Able to Do

The standards movement solidified debate about what students should know and be able to do. For the first time in American history, students in the 48 states that had joined the coalition would all follow the same English Language Arts and mathematics curriculum with plans to update and establish consistency in science, social studies, and fine arts in the future. The state of Missouri adopted the CCSS in 2010, with full implementation of core standards scheduled for the 2014-2015 school year (Missouri Learning Standards [MLS], 2014b). Missouri's Department of Elementary and Secondary Education integrated the CCSS with Missouri's Learning Standards (MLS, 2014a), which were established in 1996, and produced a coherent curriculum for Missouri's K-12 students.

MODESE allocated the responsibility to officials in each school district to align Missouri's new learning standards with each district's existing Grade or Course Level Expectations (MODESE, 2014). Throughout the state, curriculum coordinators within each district assembled teams of experienced teachers from each prospective field to decompose the GLEs or CLEs in efforts to formulate an integrated curriculum complete with pacing guides. These guides, although tentative, established continuity throughout a school district and ensured coverage of all standards to be taught within each grade or course level. The five-year acquisition period was used to allow districts and teachers

enough time to transition to the new curriculum and make adjustments, as needed. In accordance with the mission of CCSS, curricular expectations were raised to better prepare America's students for life after high school and to compete in the global economy of the 21st century (Jacobs, 2010).

The Coalition for 21st Century Schools (2010) reported, "The new millennium was ushered in by a dramatic technological revolution; we now live in an increasingly diverse, globalized, and complex, media-saturated society" (p. 1). According to Kellner (1995) at UCLA, "This technological revolution will have a greater impact on society than the transition from an oral to a print culture" (p. 1). Educational policy makers were responsible for creating schools that would prepare American students for successful living in the 21st century, yet it was impossible to predict what the future held five years from now, let alone what life would be like when this year's kindergarten students graduate from high school.

Beane (1995b) stated:

the answer that schools develop to respond to the question 'what do we want our students to know and be able to do?' gives coherence to each function and ensures that the curriculum is a coherent instructional system, not a series of diverse and fragmented activities. (p. 120)

Willis (2002) experienced training with the teachers, which continually verified they were not used to designing backward. He found it difficult to change the mentality from a font-loaded to a back-loaded curriculum design. Willis always asked the same question of teachers who could not separate themselves from the pressure of planning activity after activity to cover as much material as possible. His question was simply, 'How do you

know they understand?' Perkins and Blythe (1994) described understanding as a student's ability to use a topic in different, thought-demanding ways. Perrone (1994) saw student understanding as a mirror of teacher understanding of what they most wanted their children to take away and what the teacher pays attention to all of the time.

Understanding is embodied within the four goals under which the Missouri Show-Me Process Standards were contained (MODESE, 2014). Each goal contained seven to 10 skills/standards under the headings of research, communication, problem-solving, and responsible decision-making. Specific skills of understanding were evidenced as (a) scientific inquiry, (b) comparing and contrasting, (c) organizing ideas and concepts, (d) exchanging information meaningfully, (e) revision, communications, (f) identifying and solving problems, (g) reaching abstract concept through induction and using this understanding to interpret new situations, (h) explaining and justifying reasoning, and (i) setting and reaching goals. The standards within the goals enabled work to be judged against clearly articulated criteria (Unger, 1994). These provided teachers with confidence that how they were teaching students and assessing their work contributed to their achievement (Lewin & Shoemaker, 2011). Wiggins (1998) asked, "What would count as evidence of successful teaching? Before we plan specific learning activities, our question must first be what counts as evidence of understanding" (p. 63). Students must be, according to Wiggins and McTighe (2005b), able to answer the following questions with specificity and confidence as the work develops:

What will I have to understand by units end, and what does that understanding look like? What are my final obligations? What knowledge, skills, tasks, and questions must I master to meet those obligations and demonstrate understanding

and proficiency? What is immediate task? How does it help me meet my

overarching obligations? How does today's work relate to what we did

previously? What is most important about this work? How should I allot my time?

What aspects of this and future assignments demand the most attention? How

should I plan? What should I do next? What has priority in overall scheme of

things? How will my final work be judged? Where is my current performance

strongest and weakest? What can I do to improve? (p. 117)

Can the student explain what she was learning? Can an interpretation of what was being

learned be offered, that is, what it means? Did the student demonstrate the ability to apply

what she learned to new situations? "We will fall back on textbook coverage if our goals

do not clarify what students must be able to do themselves at the end of instruction"

(Wiggins & McTighe, 1998, p. 162). Learning through understanding was a model of

teaching that incorporated key elements for bringing out this result. Rather than teachers,

teaching concept knowledge and students' memorization of said facts, students engaged

in authentic learning assignments and through this process, developed a deeper

understanding of subject content. With deep understanding, students were able to apply

learning to other contextually based ideas and situations.

Bloom created and published the *Taxonomy of Educational Objectives: Cognitive

Domain* in 1956. Bloom (1968) and his colleagues (Bloom, Hastings, & Madaus, 1971)

defined the state of understanding, from their observations in schools, as an ill-defined

objective. They explained,

Some teachers believe their students should 'really understand,' others desire their

students to 'internalize knowledge,' still others want their students to 'grasp the

core or essence.' Do they all mean the same thing? Specifically, what does a

student do who 'really understands' which he does not do when he doesn't

understand? Through reference to the Taxonomy . . . teachers should be able to

define such nebulous terms. (p. 1)

Wiggins and McTighe (2005b) noted that understanding and knowing could be

very different and the concepts were not interchangeable. A student could know but not

understand, whereas a student that understands also knows. Wiggins and McTighe

(2005b) distinguished between the two by explaining, "Understanding is a more complex

form of knowledge" (p. 37). Understanding is being "mindful" about one's stored

knowledge (p. 39). Dewey (1933) defined the meaning of understanding in *How We*

Think. He explained,

> Understanding is the result of facts acquiring meaning for the learner: To grasp
>
> the meaning of a thing, an event, or a situation is to see it in its relations to other
>
> things: to see how it operates or functions, what consequences follow from it,
>
> what causes it, what uses it can be put to. In contrast, what we have called the
>
> brute thing, the thing without meaning to us, is something whose relations are not
>
> grasped . . . The relation of means-consequences is the center and heart of all
>
> understanding. (pp. 137; 146)

Designing Backward for Focus and Coherence

Wiggins and McTighe (2005b) provided introductory vignettes in their book,

Understanding by Design, which described situations in which (a) a teacher reflected on

her success as a student due to being a good memorizer of facts for exams, but had little

understanding of how to learn, much less being able to manage her own learning; and (b)

an elementary school unit on apples which appeared to be thematic, active, and filled

with activities of student interest. However, according to the authors:

> There is no real depth because there is no enduring learning for the students to
>
> derive; the work is hands-on without being minds-on because students do not
>
> need to (and are not really challenged to) extract sophisticated ideas or
>
> connections. They do not have to work at understanding; they need only engage in
>
> the activity. Moreover, there are no clear priorities – the activities appear to be of
>
> equal value. The student's role is merely to participate in mostly enjoyable
>
> activities without having to demonstrate that they understand any big ideas at the
>
> core of the subject. (Wiggins & McTighe, 2005b, p. 20)

Other situations included: (c) a mathematics problem for eighth graders which required

understanding of the parameters involved, but was incorrectly answered by 75% of the

students who applied rote mathematics skills without actually discerning the problem;

and (d) a world history teacher who suddenly realized that he must switch into a fast-

forward lecture mode if the material was to be covered within the time limits of the

remaining school year (Wiggins & McTighe, 1998).

Young people dealt directly with subjects or courses of study that were separate

and distinct from their real world lives. They were expected to deal with the incoherence

that arises from the implication of curriculum that what happens inside the school has

little to do with what happens inside a young person. Often, there were no worldly

pictures that show how pieces of the curriculum hold together. Perkins and Blythe (1994)

maintained that "most school activities are not performances that demonstrate

understanding; rather they build knowledge on routine skills" (p. 6). This knowledge,

though usable in specific situations, often did not lend itself to transferability in real world problems (Wiggins & McTighe, 2005b).

Sizer (1992) stated, "Teachers must focus more on how kids think than on what they think" (p. 132). Wiggins and McTighe (1998) termed most curriculum as "medieval", based on repeating facts, which result from a logical outline of all adult knowledge, which is termed "scope" and the ordering of this knowledge which is termed "sequence" (p. 44). Wiggins and McTighe (1998) called scope and sequence a "sham" whereby all of this knowledge is translated into complete lessons, and where "a fact or theory encountered once in the 8th grade as a spoken truism is somehow to be recalled and intelligently used in the 11th" (p. 45).

Boyer (1995), in *The Basic School*, advanced his position that we must organize curriculum and teach it in our schools in a comprehensive and coherent manner. Curriculum with coherence enabled students to see relationships and patterns, which the teacher as designer had been able to achieve by beginning this process from a predetermined end. Glatthorn (1995) said that we must establish the goals for student mastery, "the major concepts or theories by which learning is organized and then develop our activities around them" (p. 87). Beane (1995b) observed that curriculum which was incoherent, was because "many courses are mere conglomerates of activities with no organizing thread or overarching purpose" (p. 109). According to Beane (1995a), "Only by building units and lessons backward from worthy assessment tasks requiring the use of core content will we make students more likely to learn" (p. 118). Wiggins (1993) contended that a major flaw rendering most teacher-made tests invalid was the habitual practice of designing tasks first and dealing with validity second. He went on to explain:

This is an inevitable problem, given the teacher's tendency to try to design

effective instructional activities as opposed to tasks designed backwards from the

results one hopes to obtain; it is a problem that we must do a better job of

addressing in professional development. (p. 238)

Previous research already mentioned in this literature review centered on the

importance of curriculum organized around big ideas, which were the basis for essential

questions as organizing concepts (Gandal & Vranek, 2001). These essential questions

resulted from the teacher's conscious thoughts relating to what students should know and

be able to do as the result of learning experiences. The results of students' inquiry

became the goals for the lessons and the units, which enabled the teacher to determine

what would be tested and how it would be tested, and then developed lessons from that

point (Perrone, 1994). Four questions still to be addressed are: (a) How does the teacher

know what influence or effect his curriculum design and delivery is having on student

achievement? (b) How does standards-based curriculum design permit teachers to

develop learning targets and criteria for success stating exactly what students need to

learn, the extent in which to learn it, and the quality of work expected? (c) What are the

roles of focus and coherence in curriculum design and development? and (d) How does

standards-based curriculum design allow teachers to describe the amount of content to be

taught?

Bruner (1977) made a case for designing backward for greater focus on what

matters most:

The curriculum of a subject should be determined by the most fundamental

understanding that can be achieved of the underlying principles that give structure

to a subject…Teaching specific topics or skills without making clear their context

in the broader fundamental structure of a field of knowledge is

uneconomical…An understanding of fundamental principles and ideas appears to

be the main road to adequate transfer of training. To understand something as a

specific instance of a more general case – which is what understanding a more

fundamental structure means – is to have learned not only a specific thing but also

a model for understanding other things like it that one may encounter. (pp. 6, 25,

31)

Unfortunately, most teachers worked in systems that promoted what Wiggins and

McTighe (2005b) termed 'curricular chaos', which reflected the unlimited and

overwhelming array of instructional options that greeted them. Wiggins and McTighe

(1998; 2005b) drew an analogy with cooking where the cooks received mere descriptions

of finished meals without explicit help in using that knowledge to accomplish cooking

goals. In the absence of a clear path to goals, teachers often succumbed to "turning the

textbook into a syllabus" (Wiggins & McTighe, 2005b, p. 147). In the absence of

priorities, which allowed for designing backward from identified goals or outcomes,

teachers continued to ask what their course would cover rather than to what ends their

lessons should be designed (Wiggins, 1989; Wiggins & McTighe, 2005b). Lewin and

Shoemaker (2011) proposed that if we desired to teach in such a way that students really

get it instead of using short canned units, we needed to determine and focus our design on

basic core knowledge, facts, concepts, and generalizations. Their research suggested that

chaos in curriculum resulted when little or nothing happened in the system to help

teachers coordinate priorities and then teach them coherently. Beane (1995a) attributed

the redundancies, gaps, and missed opportunities in curriculum that were coherent to lack

of deliberate planning. According to Beane (1995b):

> Typically, learners experience no clear purpose, hence consistency in lesson plans
>
> and a unity that would be clear only if students saw how specific overarching
>
> objectives (framed as questions, criteria, and performance tasks) necessitate
>
> content choices and ordering. 'Why are we doing this?' is a question students
>
> should rarely need to ask; the answer should be evident. (p. 103)

Beane (1995b) discussed how teachers stated their performance goals to him, which

should be the results from their curriculum, as what they intended to do; which he termed

"the educator's egocentric fallacy, or I taught it so they must have learned it" (p. 104).

Many teachers assumed that teaching caused learning, as opposed to the successive

approximations that students took to accomplish their learning using lessons that were

designed backward with focus and coherence from clearly defined goals.

Schmoker (2007) stated that the same teaching continued and was unchallenged

because there were few parents or children who knew the criteria for quality work,

because few schools provided meaningful examples of the work students should strive to

complete. Without a plan that enabled the teacher-designer of curriculum to stay focused

and coherent by working backward from a destination, the educators subscribed to "the

myth that everything of importance can be learned through didactic teaching" (Wiggins,

1992, p. 45). Grebe (1989) found that many teachers were simply oblivious to student

needs, which resulted in students becoming casualties of the curriculum. Wiggins (1992)

saw this as bad teacher habits unwittingly reinforcing student habits deemed undesirable.

These teacher habits deemed undesirable were a penchant toward coverage of material

and short-answer tests. Herman et al. (1992) called this front-loaded curriculum, which was curriculum where activities were established first and which led rather than followed the outcomes.

Wiggins and McTighe (2007) provided a testimony of usage and rationale for implementation given more than 50 years ago by Tyler (2013). According to Tyler:

Educational objectives become the criteria by which materials are selected and are outlined, instructional procedures are developed, and tests and examinations are prepared. The purpose of a statement of objectives is to indicate the kinds of changes in the student to be brought about so that instructional activities can be planned and developed in a way to attain these objectives. (Tyler, as cited in Wiggins & McTighe, 2005b, p. 20)

Teachers maintained that designing backward was a different concept to attain and master since it was a change from training they received in lesson design based on organization according to steps in the learning process. Reeves (1996) maintained that organization of the process of presenting material and checking for understanding was just a portion of what teachers must consider when designing lessons for maximum positive effect on student achievement. Most important was the teacher's adoption of a strategy of pulling the weeds before planting the flowers, that is determining the ends of the learning and then deciding what was important to assist the students in reaching these ends:

Teachers have assembled lesson plans, carefully cultivated over the course of years, perhaps decades, and they cannot lightly toss them aside. Tests, which have been passionately defended for a generation, are not easily replaced by new assessment techniques. Indeed, the very notion that there are any weeds at all in

teaching practice may be offensive to some teaching professionals. Nevertheless, we must confront the issue that, despite the hectic pace of teachers' lives and the harried atmosphere of many classrooms, there are some unimportant, noncontributory, irrelevant, and potentially harmful activities, which are taking place in classrooms – and these activities must be stopped. (p. 13)

Wiske (1994) pointed out that "articulating understanding goals and assessment criteria with students upfront may be difficult for several reasons, one of which that teachers may never have made these goals explicit for themselves" (p. 20). Designing backward assured 100% alignment to the test because the test was the base for defining what was aligned.

Wiggins and McTighe (2005b) identified three stages of backward design: (1) Identify desired results, (2) Determining the acceptable evidence; and finally, (3) Plan learning experience and instruction. Fitzpatrick (1992) identified desired results as striving to address these key questions: "Upon completion of their high school studies, what should our students know? What should they be able to do? And, what should they feel or believe?" (p. 135). Simmons and Kameenui (1996) stressed that powerful and often logical connections in a curriculum beginning with identification of desired results comprised strategic integration. Wiggins and McTighe (2005b) emphasized that the effectiveness of curriculum, assessment, and instructional design was determined by the achievement of desired learning. Beane (1995b) found that coverage of curriculum was less when essential learnings were known at the beginning of a unit's plans since what the pupil learned, he at least understood. Teachers who were open to change learned a number of lessons: they did not have to sacrifice their principles about teaching to be

rigorous in measuring student achievement and they needed to align their instruction with what they were measuring.

A Compass and a Sextant . . . Not Just an Itinerary

Curriculum design was best served "when the designer begins with the end in mind and maps backward from the desired result to the present to determine the best way to reach the goal" (Wiggins & McTighe, 1998, p. 146). Designing backward provided both the amount of material to be taught and the most logical way to reach the performance goal. The designer asked where her students were headed and what was most important for them to learn. The task of the teacher was to provide students with a record of their longitudinal progress in meeting the goal or standard. Wiggins and McTighe (2005) called the curriculum a compass and a sextant; it provided the direction. Grebe (1989) proposed that students and teacher should actively discuss the benefits of achieving the goal or standards before the lesson or unit begins. Schmoker (1999) argued that students should be provided with models and exemplary samples of achievement within and between every area of study. Lewin and Schoemaker (2011) supported this and added use of scoring guides and self-assessment to the everyday samples. Wiggins and McTighe (2005b) emphasized that "there is no way to empower the student to master complex tasks if the tasks, criteria, and standards are mysterious (or are revealed, but not in advance)" (pp. 51-52). Beane (1995b) took the position that the curriculum was not just a plan; rather it was a fluid document containing process criteria for making continual, ongoing adjustments:

The only way to stay on course is to know your destination and to have a compass and a sextant - performance tasks and standards and troubleshooting guides. At

present, teachers receive or work from only a list of sites to visit. Curriculum

guides must become more like a compass and a sextant than an itinerary. We need

more than a well-planned set of work requirements and supporting lesson ideas;

we need clarity about how courses can help students attain objectives in the face

of various 'adventures' and 'detours.' That adjustment depends on knowing in

advance the specific performance 'destination': The tasks students should be able

to perform, and to what standard, as a result of our teaching. (p. 110)

In the state of Missouri, the standards movement was marked by 73 Show-Me

Standards (MODESE, 2009). Thirty-three of these were skills, or process standards that

teachers should address when writing curriculum experiences. Forty of these were

knowledge or content standards which, when combined with the process standards,

would be the base for designing curriculum in Missouri schools. Because of the

broadness of the Show-Me Standards, committees of teachers representing the six content

areas worked to compose curriculum frameworks documents for each area (mathematics,

Communication Arts, social studies, science, health/physical education, and fine arts). In

November 1996, MODESE (2009) published *Missouri's Frameworks for Curriculum

Development* to show school districts how they could build the Show-Me Standards into

their instructional programs. Content overviews in five of the six areas (social studies did

not combine skills with knowledge in its document) emphasized that students must be

able to locate, decode, analyze, explain, and apply ideas and information. Once students

located information, they needed to be able to evaluate that information critically. They

also needed to organize that information in ways that made sense to them (MLS, 2014a).

However, students needed to be able to do more than simply locate, evaluate, and

organize information. In order to actively engage with the world around them, students were to be able to demonstrate their understanding by creating new communications, applying newly organized information to new situations, and making connections between information, ideas, and their personal experiences. These complex processes required repeated practice. Therefore, these skills were introduced in the frameworks at the earliest possible time, and then spiraled in complexity as students moved up through the grade levels (MLS, 2014b). Missouri's adoption of the CCSS added 'depth' and 'clarity' to mathematics and English Language Arts, and prioritized teaching students more robust, worldly skills to better prepare for careers or further education after high school (MODESE, 2013).

The frameworks were guided by state standards, which specified what students should know and be able to do; they were created to help teachers identify teaching and learning priorities and guided teacher design of curriculum and assessment (Wiggins & McTighe, 1998; 2005a; 2005b). Using curriculum frameworks allowed districts to have more control over what students learned. The frameworks existed as guidelines for: assessments, curriculum, and instruction and were aligned with content standards; thus, students were tested on what they had been taught. Each of the six content area frameworks was developed from the content standards by committees of educators, under the direction of MODESE. Written curriculum goals exerted quality control over scope and sequence of the curriculum. Back-loading, which was developing the curriculum backward from identified goals, allowed the system of curriculum to become rational, as it was able to move its operations closer and closer to the target through reception of feedback. The teacher-designer was working from the test, what students should know

and be able to do, to the curriculum. Design alignment became the relationship between the curriculum (the work plan) and the test (the work requirement). Herbert (2001) found that designing backward allowed the teacher to "bridge the developmental distance from a student's natural sense of competence to an adult-constructed standard" (p. 71). Willis (2002) stated that basing curriculum design on explicit criteria also demystified the assessment process for students. Wiggins and McTighe (2005b) concluded that "clear and worthy standards combined with measuring of incremental progress, always provides incentives to the learner even when the gap between performance and the standard is great" (p. 155). If the curriculum, according to Beane (1995b) was to rise above being considered only a 'well-intended fiction' by teachers, it must be written based upon performance requirements and questions that informed every other choice of selection and ordering. McDonald's (1999) research showed that teachers could be trained to design and teach according to a set of goals or standards, which answered the question, what do I need to teach to meet these standards? Educators who cared about their students' achievements needed to be like doctors who cared about their patients' health (Willis, 2002). Doctors carefully selected certain essential health indicators. Then, they gathered data relative to those indicators. Only then, did they diagnose and prescribe. Educators must select the indicators that give definition to what they value. Once determined, these indicators help teachers to know where to aim their limited amount of time and resources. This is the logic of backward design.

Tyler (2013), in his foundational work, *Basic Principles of Curriculum and Instruction*, introduced the concept of contextual learning. This concept described the teacher's role as the designer of curriculum, which involved a student with experiences

that give her an opportunity to practice the kind of behavior by the goal or standard. Learning experiences were selected which were "likely to produce given educational objectives and . . . situations are set up which will evoke or provide the kinds of learning experiences desired" (p. 65). Hull and Pedrotti (1995) maintained that contextual learning by students demanded that curriculum be organized according to clearly identified goals with activities that were interrelated and connected to the student's frame of reference. The question became does what is being learned make sense to students in the context of their real world? Do students see the connection between the teacher's lesson and their lives? Can the teacher anticipate student questions such as 'What is this good for?' or 'Why do I have to learn this?', and, 'How is this going to help me in the real world?' If learning was based upon simple attainment of abstract concepts by students, then learning was decontextualized and the above questions had a negative answer.

Retention was affected negatively since students had difficulty understanding why a concept was important and how it related to reality. Unger (1994) stated that real-world problems were best when asking students to apply understanding of abstract ideas and formulas. Teachers who designed effective curricular experiences used what students already knew to make sense of what they did not know. And, when students already knew the goals of their learning experiences because the curriculum was back-loaded, that is, designed backward from the desired ends, they became more involved in exploring and assessing their achievement of the goals. Wiggins (1989) discovered that "a sign of successful curriculum and instruction, where priorities are clear, can be found in students' abilities to anticipate the final exam in its entirety and provide accurate-assessments of their finished work" (p. 58). Thus, by designing from a point beyond

knowledge, which is the end, "educational progress will be measured as the ability to deepen and broaden one's command of essential questions by marshalling knowledge and arguments to address them" (p. 46). The student was empowered to think of mastery as control over the "knowable essentials, not as calculated cramming and good guesses" (Wiggins, 1992, p. 119). Beane (1995a) viewed this as validation of teaching and learning against performance of obligations, contexts, and criteria found in the wider world.

Student performances can be longitudinally overtime, assessed on a continuum that ends in final performances. Sylwester (2003) proposed that memory was contextual. If we want students to communicate effectively in writing; speak and write knowledgeably, inquisitively, and honestly; apply concepts to real-world situations and become confident in their skills to deal effectively with real-world problems, then we should teach them in context to do these things within our curriculum (Herman et al., 1992). Our classes were not only filled with students in the top 25% of the school population. Therefore, we should consider designing our curriculum in context with the learning environments in which they live. For the majority of our students, abstract concepts were not processed and retained by the mind for meaningful use unless connections were made and points of reference or relationships were established between what was known and what was to be learned (Hull & Pedrotti, 1995). Wiggins and McTighe (2005b) described backward design as concrete evidence of the teacher-designer's focus on contextual learning. The student knows where she was headed with work that was designed to engage and build interest in the goals of the lesson. Each task

was an assignment designed to induce learning, sharpen thinking, and establish greater purpose in the student's frame of reference.

Curriculum, Instruction, and Assessment

Wiggins and McTighe (2005b) lamented that we, as educators, expected children to accept what we would never be able to offer to adults, that was an abstract idea that a naked score on a test is sufficient reward for learning, and that the score would bear on the their future goals. He maintained through his research that students and teachers were entitled to a more instructional and user-friendly assessment system than was currently provided to current psychometric criteria (Wiggins, 1989). Costa and Kallick (1995) found that the assessment factor in educational innovations and programs was largely been missing; thus, many of these initiatives made little difference. Evidence for this, according to the researchers, lay in the failure of these programs and innovations to be adopted widely, much less their short-fall in reaching desired ends. They echoed the words of countless teachers, 'what goes around, comes around,' as the common reaction to lack of focus on what works, since assessment of the results of these programs and innovations was largely non-existent. Schmoker (1999; 2001; 2009) called the failure to assess an example of basing results and success of programs and innovations on the amount of input, rather than output.

Good Assessment Equals Good Instruction

Scriven (as cited in Tyler, 2013), an educational researcher, revealed the processes used to evaluate educational programs and, in this process, provided delineation between formative and summative evaluation. Scriven described formative evaluation in the process of instruction as an opportunity for ongoing improvement.

Summative assessment was deemed as a final appraisal that could yield evidence to sustain or terminate an existing program. Scriven proposed to qualify evaluation as a combination of the two processes of formative and summative assessment.

Bloom (1968) adapted Scriven's philosophy of educational evaluations to classify two types of assessments: formative assessment as a process to improve ongoing performances and summative assessment to verify if learning has occurred. He recognized traditional assessments as procedures for classifying students and judging their performances. He viewed assessments as advantageous when continual feedback was given to students in relation to needed improvements. Further, Bloom admonished the use of grades generated through formative assessments and viewed them as a deterrent to frequent usage, reasoning that grades could scaffold students' efforts more on earning a good grade rather than learning, and excess grading could discourage teachers.

Bloom (1968) postulated formative evaluations must be followed by meaningful feedback to students by teachers in relation to needed improvements. Chappuis et al. (2012) defined effective feedback as "information provided to students that cause an improvement in learning as a result" (p. 30). They characterized effective feedback to include that, which is timely, specific, and descriptive by acknowledging both strengths and weakness, as well as provides suggestions for improvements.

Subsequently, assessments in education continued to fall primarily in these two categories. Summative assessment was a formal judgment of students' overall performance and obtainment of learning goals, and formative assessment was a continual process of progress-monitoring and active feedback in an attempt to advance learning (Black & Wiliam, 1998; Bloom et al., 1971; Sadler, 1989; Stiggins, 2002). The only

difference was the variable being assessed and the actions taken because of the

assessment. Evaluations of educational programs and curriculum could be described as

formative if they led to improvements, and assessments of students learning were

formative if the assessments led to adjustments in curriculum or the delivery of

instruction. Without sufficient time for improvements through modifications, an

assessment was not formative in nature (Bloom, 1968). Over the past four decades,

formative assessment evolved to include much more than Bloom's originally conceived

definition.

Assessment was not only central to instruction, it was essential to establishing

validity (Wiggins & McTighe, 1998; 2005a; 2005b). Assessments provided the teacher

with an understanding of what the students learned, both short-and long-term, by

answering the question related to whether they learned what they were expected to learn.

Assessment was a process for gathering information to meet a variety of evaluation needs

using many indicators and sources of evidence. Herman et al. (1992) maintained that

assessment was central to curriculum alignment, which was the relationship of what was

taught to the test and the curriculum. Herman et al. also supported assessment as

important to be contextualized within instruction to generate worthwhile educational

experiences and in "greater motivation for performance" (p. 113). Herman et al. (1992)

emphasized that:

> The key to good assessment is matching the assessment task to your intended
>
> student outcomes (the knowledge, skills, and dispositions you identified in your
>
> initial assessment planning). What tasks or assignments represented their intended
>
> accomplishments? You can create many interesting and suitable possibilities.

When considering assessment tasks, your best choices are those you believe most

closely target your instructional aims and allow your students to demonstrate their

progress and capabilities. (p. 33)

Wiggins (1993) regarded tests as instructional, with assessment as a central experience

within curriculum and instruction. Proficiency in anything demanded a standard to work

toward and assessments of progress during the journey. Clarity as to the destination and

an educative assessment system throughout the process allowed feedback to the student

traveler to be objectified. Students had a right to "full knowledge and justification of the

form and content of each test and the criteria by which their work will be judged"

(Wiggins, 1993, p. 73). Grebe (1989) advocated teaching to the test, as long as

instructional practices were accurately aligned. He explained that teachers who

understood the knowledge and skills, for which students were responsible, could design

curriculum to reflect those standards. Their individual learning lessons would continue to

include better and better descriptions of outcomes or goals; and the results teachers

achieved from planning and designing this way would serve as assessment or

performance feedback for both teachers and students (Oliva, 2005). Herman et al. (1992)

proposed that, "it is not that tests ought to drive the curriculum, or that teachers ought to

teach to the test; rather good assessment is an integral part of good instruction" (p. 3).

Good assessment equaled good instruction that was planned backward from desired

instructional goals.

McTighe and O'Connor (2005) recognized assessments as not just a means for

grading students' performance after learning occurred. Rather, they contended there were

three categories of classroom assessments, which included summative, formative, and

diagnostic. In contrast to traditional summative evaluations, diagnostic and formative

assessments had the potential to promote students' learning. Diagnostic assessment was a

tool for making assumptions about students' level of knowledge on the concept to be

taught, and typically, this assessment preceded instruction. Data generated for diagnostic

purposes could be instrumental in teachers' planning processes and accommodated

differentiated instruction (McTighe & O'Connor, 2005). Formative assessment was

continuous throughout the instructional process and provided teachers with vital

information about students' learning so they could provide necessary guidance.

McTighe and O'Connor (2005) explained the importance of teachers' awareness

of varying assessments, but equally prioritized teachers' abilities to officiate assessment

practices. They purported seven practices to promote students' learning, and claimed

effective teaching required teachers to do the following:

> Use summative assessment data to frame meaningful performance goals; Show
>
> criteria and exemplar model in advance; Assess before teaching; Offer appropriate
>
> choices… Provide feedback early and often; Encourage self-assessment and goal
>
> setting; and, Allow new evidence of achievement to replace old evidence. (pp. 12
>
> – 17)

Teachers' effectiveness was dependent on their abilities to make accurate adjustments

based on each student's need. Meaningful feedback was perhaps the most vital

component for learning. Meaningful feedback, according to Littky and Grabella (2004),

was "any response made in relation to students' work such as an assessment task, a

performance, or product" (p. 33). In contrast to traditional assessments routinely given at

the end of a unit, quarter, or year, formative assessments were given before, during and

upon conclusion of the culminating performance task. "*Understanding by Design* emphasizes the regular use of ongoing informal and formal assessments" (Wiggins & McTighe, 2005b, p. 247). It could be given by a teacher or a student peer. It could be spoken, written, or inferred.

Bloom (1968) observed that most teachers organized curriculum into different sections or units and then checked on students when the unit ended. These checks on learning progress, he reasoned, would be much more valuable if they were used as part of the teaching and learning process to provide feedback on students' individual learning difficulties and then to prescribe specific remediation activities. McTighe and O'Connor (2005) advised teachers' use of performance assessments as the summative assessment piece. They recommended giving students the summative assessment at the beginning of a unit to ascertain what students already knew, correct misperceptions, and to provide students a preview of the unit to come. Formative assessment practices included both formal and informal assessment techniques to elicit information about students' current levels of understanding throughout a unit of instruction. McTighe and O'Connor further described formative assessment practices by examples of common use which included the following: (a) teachers provide rubrics, exemplars, and modeled performances; (b) differentiate instruction to better meet the needs of all students; provide effective feedback, which is timely, actionable, and specific; and (c) provide students with authentic performance tasks to help them see the value for learning. They declared, "The best teachers recognize the importance of ongoing assessments as the means to achieve maximum performance" (p. 13).

Marzano (1992) promoted teachers' effective use of assessment data and described three factors to influence students' motivation. These included teachers' efforts towards "task clarity, relevance, and potential for success" (p. 3). Task clarity was the visibility of the clear learning goal to be accomplished, and it provided demonstration for students about the quality of work to be completed (Marzano, 1992). Relevance was students' beliefs about the importance of concepts to be learned. Research showed motivation for learning dramatically increased when students perceived a personal connection to the concept to be learned (McCombs, 1987; Schunk, 1990). Finally, students' motivation to learn was significantly enhanced when students believed themselves capable of learning and meeting the scoring criteria (Marzano, 1992). When students perceived teachers genuinely cared about their success in learning, they were more willing to invest effort in learning (McTighe & O'Connor, 2005).

Formative Assessment

Many researchers acclaimed formative assessment as a powerful agent for change in the processes of education reform existent within United States school systems (Bloom et al., 1971; Brookhart, 2008; Chappuis et al., 2012; Sadler, 1989). Two British researchers, Black and Wiliam (1998), made a case for the significance of formative assessment. The study's purpose was to determine if improving formative-based classroom assessment practices would yield gains in student understanding and achievement of standards, where there was room for improvement, and how to find evidence of improvement. In 1998, they conducted an extensive review to study empirically-based research on formative assessment used in classrooms. Their analysis entitled *Assessment and Classroom Learning* included more than 250 studies conducted

over a nine-year timespan, from more than 160 journal articles focused on classroom

assessment practices. Their purpose was to determine if improving formative-based

assessment practices would lead to gains in standards, if there was room for

improvement, and whether there was evidence of accomplishing improvement. They

theorized that people often incorrectly viewed classrooms as a black box; teachers,

students, standards, and resources go in; therefore, learning goes out. When learning did

not meet expectations, an examination pursued as to the interior of the box to determine

the cause for discourse. Their analysis revealed,

> Firm evidence shows that formative assessment is an essential component of
>
> classroom work and that its development can raise standards of achievement . . .
>
> Indeed, we know of no other way of raising standards for which such a strong
>
> prima facie case can be made. (Black & Wiliam, 1998, p. 13)

Through a correlation of multiple studies, Black and Wiliam (1998) concluded formative

assessment practices were most helpful in raising the achievement of consistently lower

performing students, and even better, teachers' efforts to modify instruction for those

students consequently enhanced learning for all. According to Black and Wiliam (1998),

advancements were contingent on accurate, descriptive, and specific feedback given to

students while there was still time for students to use it to advance their learning. Further,

their review determined practices of formative assessment and a wide range of remedial

activities to improve students' understandings (Black & Wiliam, 1998). In fact, they

postulated that formative assessment included everything a teacher does from planning,

teaching, and assessing learning for the purposes of improved understanding (Black &

Wiliam, 1998).

Popham (2005; 2008; 2011) supported Black and Wiliam's (1998) synthesis of

formative assessment as an important learning tool for students and claimed its use to be

equally important to teachers. He deemed it effective when employed by classroom

teachers as an instructional tool because it allowed for swift, effective remediation,

essential for teachers' adjustments to instructional delivery (Black & Wiliam, 1998;

Chappuis & Stiggins, 2002; Popham, 2005, 2008, 2011). Popham (2008) described two

types of instructional adjustments employed by teachers: minor changes to instructional

delivery and major changes causing teachers to change their overall approach. Needed

adjustments were revealed through a continuous collection of evidence both formal and

informal about students' understandings and misunderstandings. When adjustments were

deemed necessary, Popham (2008) recommended teachers examine the learning

progression to determine if a concept or skill needed to be retaught before returning to the

target-goal to be learned.

Popham (2008) defined a learning progression as "a sequenced set of building

blocks—that is, sub skills or bodies of enabling knowledge—it is thought students must

master en route to mastering a more remote, target curricular aim" (p. 280). The

curricular aims were focused on the obtainment of higher-level cognitive, curricular

outcomes. Teachers planned a learning progression by breaking down a larger curricular

goal into a sequenced set of learning goals. This allowed coverage of each goal, and

helped identify students' weaknesses in learning, provided each level was assessed. A

primary danger occurred when teachers attempted to overburden a progression with too

many sub skills and pieces of knowledge to be learned, rather than prioritizing only the

essential elements. These elements should be ordered in the sequence most likely to assist

students' mastery of the larger curricular aim. These building blocks provided teachers

with continual evidence of students' understandings and misunderstandings along the

learning progression, which facilitated teachers' abilities to make continual modifications

necessary to close the achievement gap (Popham, 2008). Popham (2011) asserted, "The

formative-assessment process revolves around assessments and the adjustment decisions

associated with every building block in a learning progression" (p. 282). Figure 1

illustrates Popham's learning progression.
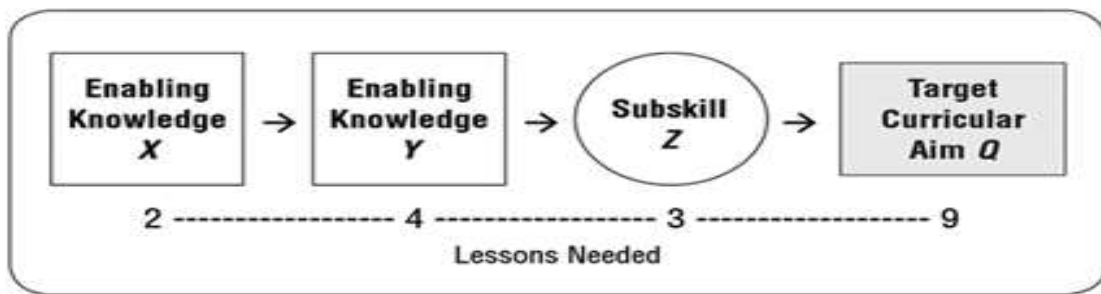
Figure 1. This is a learning progression model showing the knowledge and skills making up a larger curricular aim. Reprinted with permission from Popham (2008, p. 27).

Black and Wiliam's (1998) study, and that of others, also supported students' use

of formative assessment data as having an ability to cause effects on student achievement

(McTighe & O'Connor, 2005; Sadler, 1989; Shepard, 2006; Stiggins, 2001, 2002, 2007a,

2007b; Wiggins & McTighe, 1998; 2005a; 2005b). Sadler (1989) purported students' use

of data hinged on their abilities to monitor their own work, based on criteria for quality.

Sadler stated,

> The indispensable conditions for improvement are that the student comes to hold
>
> a concept of quality roughly similar to that held by the teacher, is able to monitor
>
> continuously the quality of what is being produced during the act of production

itself, and has a repertoire of alternative moves or strategies from which to draw at any given point. (p. 121)

Further studies found that when teachers facilitated students' involvement with formative assessment processes they could learn to become self-regulating, and with teaching and modeling, could advance the abilities of their students to assume responsibility for their learning. However, some studies found a difference between understanding the concept and knowing the processes involved for effective use (Black & Wiliam, 1998; Leung & Mohan, 2004; Popham, 2005, 2008, 2011).

Chappuis and Stiggins (2002) proclaimed that teaching students to self-monitor and regulate their own thinking required continuous training, persistent modeling and demonstration, followed by explanation and justification for how and why corrective feedback could be used to improve students' work. They theorized assessment for learning (AFL) enhanced student achievement because its very purpose was to improve students' levels of understanding while they were learning. Researchers developed a model for AFL processes, which included three questions for students' continual self-assessment of learning (Atkin, Black, & Coffey, 2001; Sadler, 1989). Students must be taught to self-assess by engaging in a series of self-questioning, which included the following: 'Where am I trying to go? Where am I now? And, how do I close the gap?' (Chappuis & Stiggins, 2002, pp. 42 - 43). Teaching students to direct their own learning fostered confidence, and willingness to attempt new learning opportunities.

Chappuis and Stiggins (2002) contended that when students were trained to see feedback productively, they could become self-regulated, efficacious learners. However, this required teachers to rewire students' thinking about assessment. Historically, students

were conditioned by their teachers to become passive receivers of assessment after an

instructional sequence; this was termed as Assessment of Learning (AOL). The students

were presented with information to learn and then tested. The result was a final

assessment represented by a grade. Changing students' perceptions required teachers to

re-program students' thinking through designing lessons that involved students in

performing and producing throughout the learning experience. Chappuis and Stiggins

suggested teachers plan and design tasks that incorporated productive use of feedback as

a basis for making improvements. They explained,

> Students engage in the AFL process when they use assessment information to set
>
> goals, make learning decisions related to their own improvement, develop an
>
> understanding of what quality work looks like, self-assess, and communicate their
>
> status and progress toward established learning goals. (p. 2)

Chappuis and Stiggins maintained that teachers who understood formative assessment

relied on evidence of student performance and production while students were involved

in learning rather than after the process of learning. Improvements were contingent on a

continual exchange of teaching, assessing, adjusting, and providing effective feedback

(Chappuis & Stiggins, 2002). Formative assessment techniques could be utilized before,

during, and after a lesson to guide teachers' decisions (McTighe & O'Connor, 2005).

Data collected both formally and informally, provided both teachers and students with

information about students' current understandings on a given topic and allowed them to

modify and adjust their tactics to improve learning (McTighe & O'Connor, 2005;

Popham, 2008). This continual briefing on students' progress throughout the learning

process enabled teachers to target individualized techniques to meet the needs of students

particularly enabling teachers to make timely decisions and modify instruction to best promote students' mastery.

Popham (2008, 2011) advanced his position that an important facet of formative assessment was the purpose for which results would be used. If the assessment was used to inform instructional practices, the results were used to provide students with feedback, and if students used the assessment, the results were used to make improvements in their learning tactics. Summative assessment results did provide feedback, however it was provided only after an instructional sequence was completed, and the feedback was evaluative rather than constructive (Popham, 2005). Unlike feedback deemed effective for purposes of formative assessment, evaluative feedback did not usually serve to affect learning while it was occurring. This shift in design, purpose, and uses of assessment data required not only retraining teachers to see assessments as a valuable tool to teaching, but it required administrators to provide teachers with training and support to administer assessments in this manner.

Employment of both formal and informal assessments enabled teachers to obtain valuable information as to students' knowledge and understanding. The status report guided teachers' future decisions as to each student's next step along the learning trajectory. In both assessment for learning and formative assessment, feedback about and for students' learning was an integral part of the learning process. The difference in AFL and formative assessment was the expectation of increased student involvement where both students and teachers used formative assessment data to enhance learning (Stiggins, 2002). Research showed effective feedback that included accurate descriptions of suggested improvements could positively increase students' learning (Black & Wiliam,

1998). Black and Wiliam (1998) explained, "Through assessment and instructional

processing with students, assumptions are made about students' understandings, thus

enabling teachers to make instructional adjustments and provide specific feedback to

improve learning" (p. 8). Other researchers confirmed that the AFL processes enhanced

student achievement by providing teachers with data, which allowed them to modify

instruction, target weaknesses, and build on students' strengths (Black & Wiliam, 1998;

Chappuis & Stiggins, 2002; Moss & Brookhart, 2012; Popham, 2008; Shepard, 2006).

Like formative assessment, AFL processes must be planned by the teacher, which to

allow time for both teachers and students to make modifications in teaching and learning.

Marzano (2013) shed light on the destination for learning regardless of the

curricular content in question. He expounded on various terms associated with

instructional content goals, such as objectives, targets, and standards and defined them as

things educators want students to know and be able to do. Marzano (2013) contended that

regardless of the terminology, the following procedures should be addressed. These

processes included:

> Districts and schools should create an internally consistent system for referencing
>
> curricular goals . . . Start with objectives that focus on a single unit of instruction.
>
> . . . Break the objective down into a learning progression…Use the learning
>
> progression to establish daily targets . . . and, translate daily targets into student-
>
> friendly language. (pp. 1 – 2)

It was important for practitioners to establish consistency when referencing learning

goals with students in order to help students establish procedural routines in regulating

their own learning (Marzano, 2013). Marzano (2013) explained, "Objectives commonly

fit within much broader statements, which we commonly call standards" (p. 1). Teachers could better promote students' achievement of standards by breaking them down into learning progressions, which could be taught in a single lesson (Marzano, 2013; Popham, 2008). Moss and Brookhart (2012) asserted, "The most effective teaching and the most meaningful student learning happens when teachers design the right learning target for today's lesson and use it along with their students to aim for and assess understanding" (p. 2).

Learning Targets as the Curricular Aim

Many researchers referred to the curricular aim as a learning target (Battelle for Kids, 2010; Chappuis et al., 2012; Moss & Brookhart, 2012). This was because targets implicitly conveyed that learning was something in which all should aim. Battelle for Kids (2010), an organization grounded on expeditionary learning, stated that learning targets were at the heart of formative assessment practices. They published an explanatory guide illustrating the exchange of information between students and teachers in an effort to promote the obtainment of shared learning targets. The illustration of a target depicted six processes of formative assessment shared by students and teachers. According to Battelle, these processes defined "effective teaching and learning" (pp. 3 – 4).
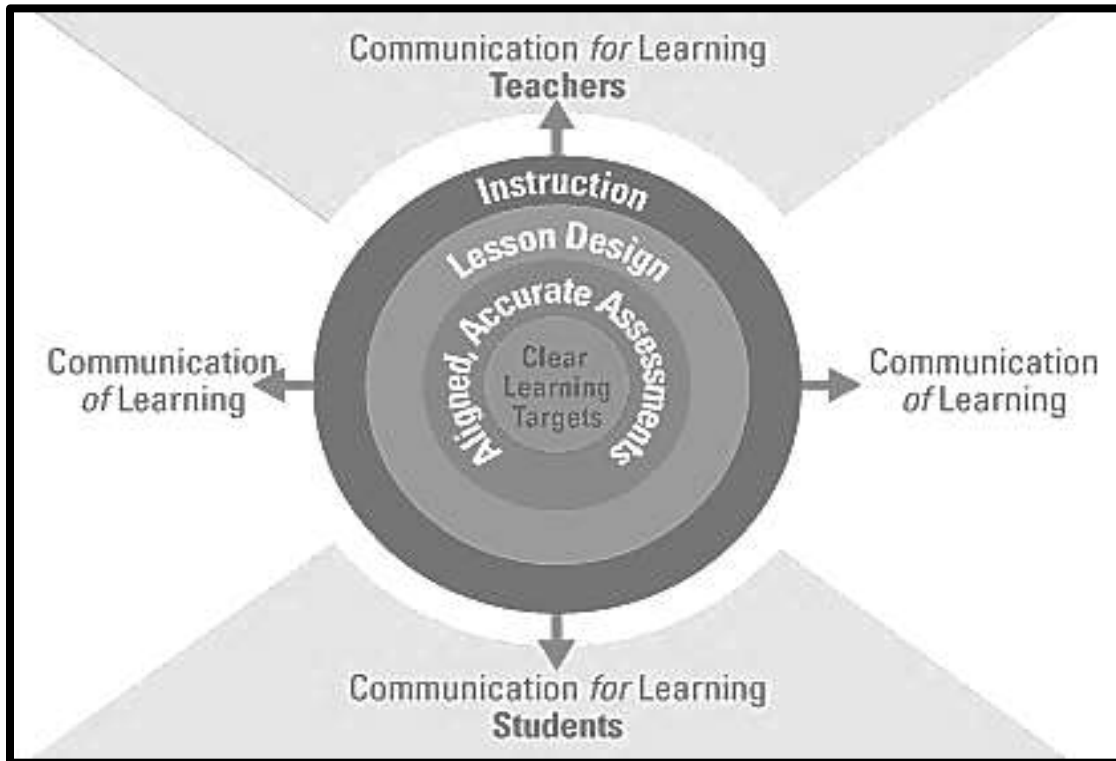
Figure 2. The formative framework of teaching and learning. Reprinted with permission from Battelle for Kids, (2010).

The Formative Framework of Teaching and Learning (Figure 2) illustrates the processes of formative assessment revolving around a learning target. The curricular aim represents "the core of the teaching and learning process" (p. 3) and on the target a bulls eye, which implicitly conveys the central target of which all participants should aim. The rings extending beyond the target represent the cyclical processes of assessment, curricular design and delivery, and feedback, both descriptive and evaluative.

Learning Targets as Central to Assessment for Learning

Moss and Brookhart (2012) published *Learning Targets: Helping Students Aim for Understanding in Today's Lesson*. The authors generated nine action points educators should use to implement a Learning Target Theory of Action (LTTA) within an

educational setting and used a metaphorical analysis to illustrate the power of learning

targets in promoting meaningful learning and deep understanding. Moss and Brookhart

equivocated learning targets to the assistance provided by a GPS, because according to

them, they help users arrive at their destinations. Moss and Brookhart went on to explain

that learning targets provided timely, accurate, specific directions, which identified what

students would learn, how to learn it, and how students would know when they arrived.

Better than a map, a GPS highlights where a person is in relation to where they want to

go. It continually reflects progress, and makes adjustments when a user strays off course.

It provides timely feedback to redirect, in friendly-language that is easy to understand.

Along the route, it provides strategies for upcoming detours, tells of unexpected

roadblocks, and continually feeds the driver forward. However, a GPS cannot make the

voyage alone. It requires a team effort: a driver making decisions, which keeps the

vehicle safely on the road. The car stays en route towards the destination only when the

driver is mindful, focused, and continually self-assessing his decisions based on

information provided by the GPS. A GPS is only beneficial when a driver is actually

performing, engaging, and advancing. It is useless, however, without a destination. Both

a learner and a GPS must begin with the end in mind and have a clear destination to be

effective.

A Learning Target Theory of Action

Moss and Brookhart (2012) contended that the key to students' success was the

establishment of a Learning Target Theory of Action (LTTA) incorporating the processes

of a formative learning cycle to advance learning. School districts adopting a LTTA must

prioritize alignment between the espoused theory (what people say they do) and the

theory-in-use (what people actually do) to develop a cohesive system for advancing

student achievement throughout their district. A LTTA had nine action points that, when

followed, Moss and Brookhart contended, "reframe what counts as evidence of expert

teaching and meaningful learning. And they engage in double-loop learning to question

the merits of their present beliefs and practices" (p. 10). Combining the elements of

formative assessment with learning targets, according to Moss and Brookhart, enhanced

the processes of both teaching and learning.

Action Point 1: "Learning targets are the first principle of meaningful learning

and effective instruction" (Moss & Brookhart, 2012, p. 13). As demonstrated in the GPS

scenario, a learning target was the destination for learning, and all actions by both

teachers and students should revolve around hitting the target. When teachers focused on

planning and delivering guided instruction of essential content and provided students

with meaningful performances of understanding in which to engage, both learning and

teaching was greatly enhanced (Moss & Brookhart, 2012). Teachers must learn how to

construct learning targets by using grade-level curriculum derived from instructional

objectives. Moss and Brookhart (2012) contended that designing a learning target

required the teacher-designer to be well versed in the curriculum. All too often, teachers

dutifully delivered curriculum to students while both parties were moderately confused as

to the intent. When there was a lack of understanding for either party, both teacher and

students went through the motions of completing work, which was meaningless. The key

to unlocking students' understanding was through the teachers' abilities to design lessons

"that focus on essential knowledge and skills to engage students in critical reasoning

processes to learn that content meaningfully" (Moss & Brookhart, 2012, p. 13).
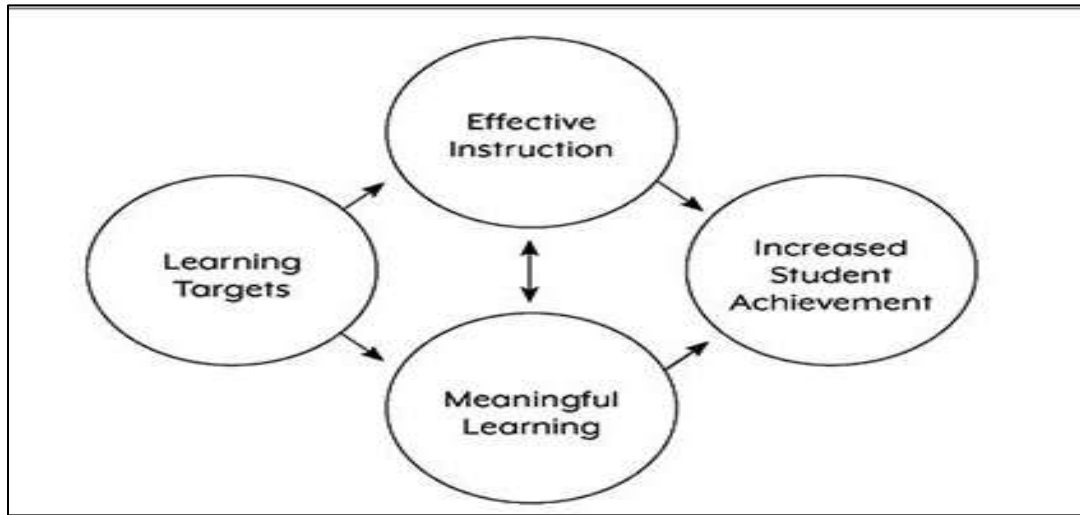
Figure 3. This figure shows the reciprocal relationship between learning targets, meaningful learning, effective instruction, and increased student achievement. Reprinted with permission from Moss & Brookhart (2012, p. 13).

Action Point 2: "Today's lesson should serve a purpose in a longer learning trajectory toward some larger learning goal" (Moss & Brookhart, 2012, p. 15). Moss and Brookhart (2012) contended, "Improving student learning and achievement happens in the immediacy of an individual lesson, or it doesn't happen at all" (p. 2). They explained that often teachers confused learning targets as another word for instructional objectives; but they were extremely different. Learning targets came from instructional objectives that teachers designed in student language, which is friendly. Teachers must learn to be adept at planning both short-term (designing and redesigning individual learning targets) and long-term goals (designing a series of learning targets that makes up an overarching learning trajectory). Planning a trajectory or path for learning, required teachers to consider the number of learning targets needed to achieve an instructional objective and make decisions about where an individual lesson resided in the series of lessons. A trajectory, or path for learning, may require many lessons or just a few. It depends on the

instructional objective. Teachers must be flexible in the way they schedule and teach

using learning targets framed around instructional objectives, because they often need to

adjust the learning trajectory. Moss and Brookhart contended,

The learning target for today's lesson depends on the answers to the following questions:

"What did students learn in yesterday's lesson? How well did they learn it? Where are

they confused? What can they use meaningfully? Where is their learning heading in

upcoming lessons?" (p. 17)

Adjustments may result in more time needed to steady students' aims or refocus their

sights altogether. Figure 4 illustrates the role of the Learning Target.

Figure 4. This figure shows the primary role of learning targets as key to all teacher-led processes in the classroom. Reprinted with permission from Moss & Brookhart (2012).

Even when another lesson is required to achieve a prior day's learning target, a new

learning target should be articulated, posted, or shared with students, which reflects the

new knowledge, which was gained during the prior lesson. Moss and Brookhart asserted,

"A lesson should never ask students to do more of the same . . . each lesson should have a

specific purpose and a reason to live" (p. 17). Figure 5 illustrates questions the teacher to

address when designing learning targets.
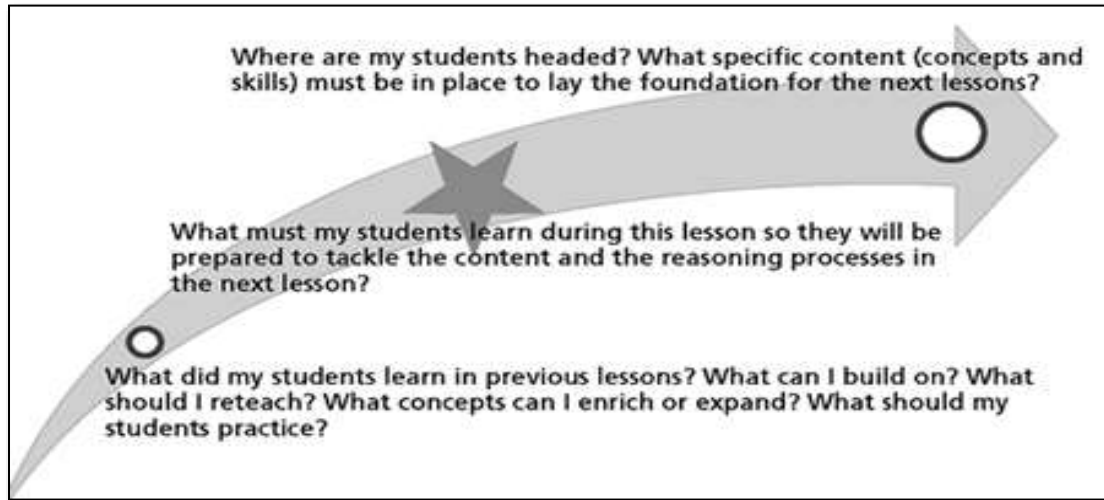
Figure 5. This figure shows the questioning processes used to determine the learning
trajectory. Reprinted with permission from Moss & Brookhart (2012).

Although, learning targets come from the instructional objective, they are

developed by teachers through a process Moss and Brookhart (2012) referred to as

"mining" (p. 28). Teachers who "mine" instructional objectives use a series of questions

to determine the "lessons reason to live" (p. 29). Key questions included: what skills and

knowledge do students need to learn; what content for lessons should be considered; and,

how should the lessons I choose to design best fit into an organized course of study? At

this stage, Moss and Brookhart suggested teachers engage in a new series of questions:

What was learned yesterday? How well did they comprehend? Was there any confusion?

What was accomplished? Where did the lesson leave off?

Action Point 3: "It's not a learning target unless both the teacher and the student

aim for it during today's lesson" (Moss & Brookhart, 2012, p. 17). When the learning

target is the central focus in the classroom and acts as the primary theory of action, the

flow of energy from all classroom participants, both students and teacher, prioritize

"sharp-shooting" thereby, increasing the aim. Moss and Brookhart (2012) purported,

"This results in meaningful learning and increased student achievement" (p. 17). Figure 6

illustrates the components of meaningful student learning, led by learning targets.
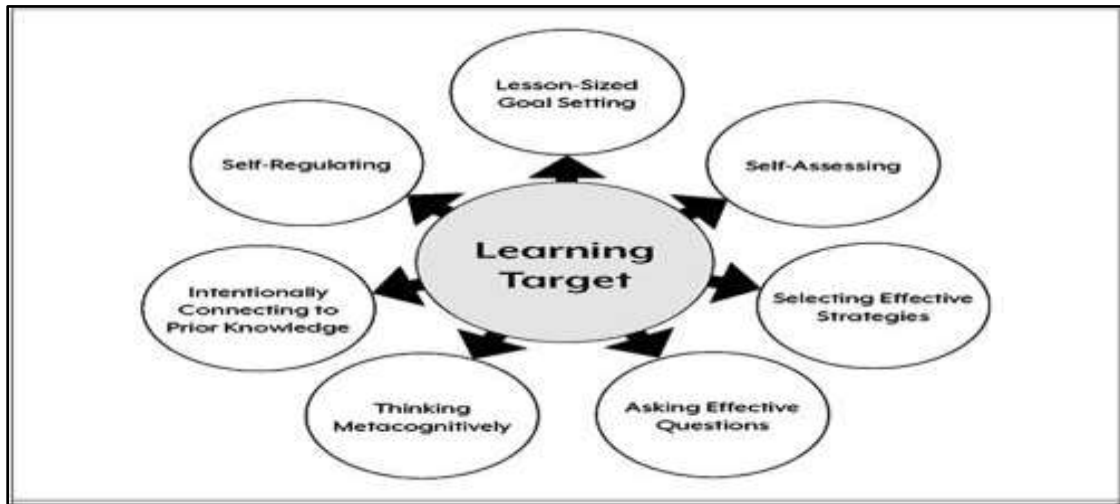
Figure 6. This figure shows the processes of meaningful student learning revolving around a learning target. Reprinted with permission from Moss & Brookhart (2012, p. 16).

Figure 7 illustrates hitting the mark in learning when both halves of learning

following the learning target. Focus on a shared learning target ensures achieving the

goal.

Figure 7. This figure shows the outcome when both halves of the learning team pool their energy both focusing on a shared learning target. BULLSEYE! Reprinted with permission from Moss & Brookhart (2012, p. 19).

On the contrary, a lesson without a learning target leaves both "halves of the

classroom learning team" (Moss & Brookhart, 2012, p. 17) questioning the intent of a

lesson, distracted, and aimless. When only the teacher is privy to the lesson's intent

directly guided by an instructional objective, she must allocate her energy on getting

everyone to meet the objective. All the while, students expend their energy trying to

please the teacher by 'learning' whatever she says. Figure 8 illustrates the results when

each half of the learning team focuses on different learning targets.
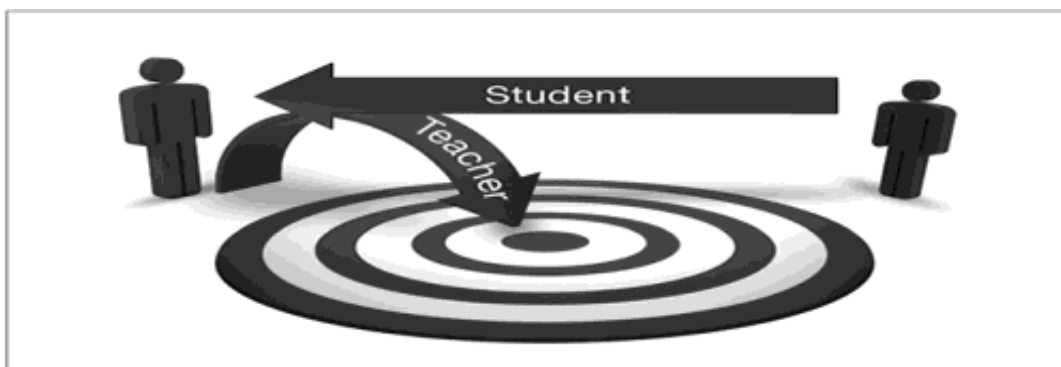
Figure 8. This figure shows the outcome when both halves of the learning team squanders their energy without the benefit of a shared learning target.   Reprinted with permission from Moss & Brookhart (2012, p. 18).

Learning targets drive both halves of the classroom learning team. When teachers share learning targets meaningfully and provide key information to help advance students' deep understanding, learning becomes more meaningful.

Action Point 4: "Every lesson needs a performance of understanding to make the learning target for today's lesson crystal clear" (Moss & Brookhart, 2012, p. 18). Moss and Brookhart (2012) purported, "The single best way to share the learning target and success criteria for today's lesson is through a strong performance of understanding" (p. 44). A performance that qualified as strong clarified a lesson's target, and required students' engagement in the learning process. However, to qualify as a strong performance of understanding, the performance must meet certain requirements. The authors explained that the performance was not just an activity, a worksheet packet, or homework. To meet the criteria of a strong performance of understanding a student must do something that helps her gain understanding, acquire a skill, develop reasoning processes or disposition about the concept to be learned, and produce evidence necessary for making adjustments in teaching, learning, or both. During the lesson, students could use the performance to self-assess where they were in relation to the target. Moss and Brookhart explained how learning targets, performances of understanding, and criteria for success helped to foster students' self-assessment skills when teachers demonstrated and modeled how to use it to set goals and make improvement to their work. Teachers must show students how to judge their own work and teach them about the value of success criteria, also referred to by Moss and Brookhart as student look-fors. Moss and Brookhart contended that when students could determine where they were in relation to the target,

they became motivated to close the achievement gap. Figure 9 illustrates student

understanding of the learning target, which results in self-evaluation of student work.

Hit the Target

Look at your work on:_____

Place a dot on the target and the date you made that "hit."

Bull's-eye! I can do this well all the time.

Close! I know what I'm doing, just need practice.

Getting better. I'm starting to understand what to do.

Just beginning. I'm not sure how to do this yet.
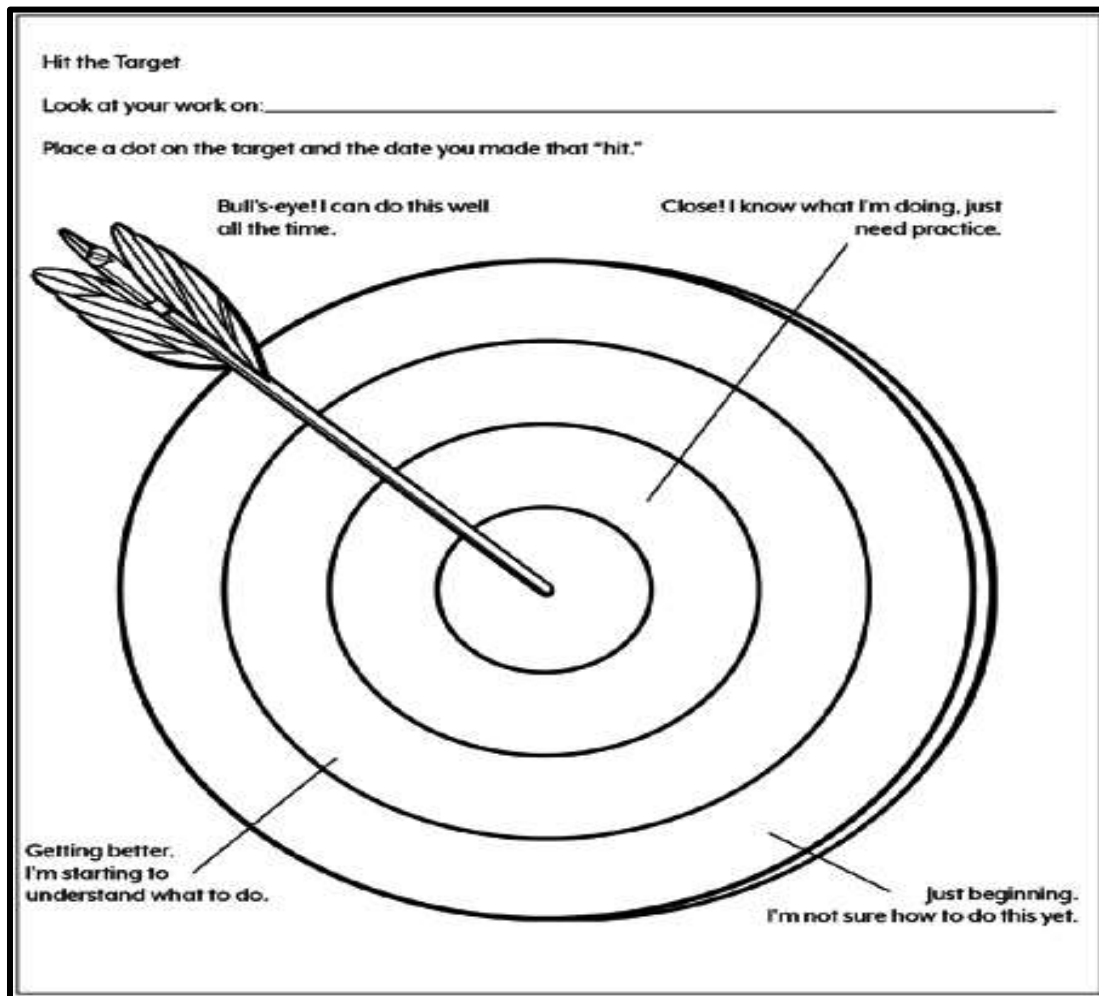
Figure 9. This figure helps students understand the learning target and evaluate their work. Reprinted with permission from Moss & Brookhart (2012).

To feed students' abilities to self-regulate, students should be taught to ask

themselves the following question while replacing 'this' with today's learning target.

"When 'I can' do this, I will KNOW I have hit the target!" (Moss & Brookhart, 2012, p.

44). The same question should also be helpful for teachers to ensure there is a strong

match between the learning target and the performance of understanding, "If my students

can do 'this', then I will have strong evidence that they have reached the learning target"

(p. 44).

Clarke (2001) purported that using I can statements helped students internalize

that they were the ones responsible for learning. Moss and Brookhart (2012) contended

that using I can statements helped make a learning target visible. They explained, "For

younger students, I can statements are particularly useful, but they also help older

students" (p. 48). When learning targets were framed from the students' point of view,

students internalized their understanding and ability to perform. Each I can statement

should reflect the goal of the learning target and describe the performance of

understanding. The complexity of a learning target determined if I can statements were

sufficient in describing the criteria for success or if students would require additional

descriptors, often provided by exemplars or rubrics (Moss & Brookhart, 2012). The type

of learning target and criteria for success depended on the learning goal for each lesson,

which varied, based on the desired outcome. Teachers must first determine what students

are being asked to learn in reference to the type of learning goal, such as comprehension

of knowledge or understanding a concept, creation of a product or learning a skill,

development of their disposition, reasoning or problem-solving techniques. After teachers

have determined the type of learning target, then they can determine the appropriate

technique for providing criteria for success.

Action point 5: "Expert teachers partner with their students during a formative

learning cycle (FLC) to make teaching and learning visible and to maximize

opportunities to feed learning forward" (Moss & Brookhart, 2012, p. 21). Moss and

Brookhart (2012) contended the formative learning cycle included five stages. The

teacher began by reviewing yesterday's learning target, sharing today's learning target,

and modeling and explaining the learning outcomes for today's lesson. Sharing the

learning target for today's lesson included teachers explaining to students the criteria for

success and describing the performance of understanding. Next, she used guided practice

to scaffold students' learning by demonstrating strategies and techniques for learning and

warned students about pitfalls to avoid, and tricks to advance comprehension. Once

students observed a variety of strategies for learning, the teacher encouraged students to

set goals for themselves and modeled how to self-assess progress by reflecting on their

own performance while demonstrating the performance of understanding. After that, she

engaged students in a meaningful performance of understanding to generate evidence of

learning and adjust teaching and learning practices (Moss & Brookhart 2012; Popham,

2005, 2008, 2011). Then, the teacher provided timely, effective feedback to students

about their work.
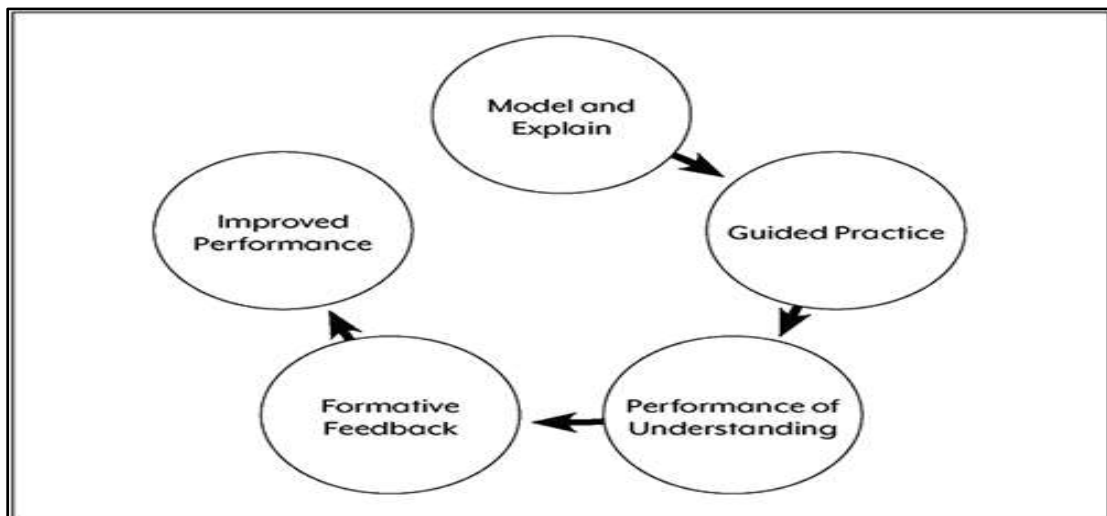
Figure 10. This figure represented the main processes of the formative learning cycle.
Reprinted with permission from Moss & Brookhart (2012).

Figure 10 illustrates the steps of the formative learning cycle. In the final step, the teacher provided students with an opportunity to improve their work. Throughout the process, the teacher solicited comments or questions and engaged students in discussion about the learning target to gauge students' understanding, correct misperceptions, and make instructional adjustments as needed. Moss and Brookhart (2012) described the formative learning cycle as a process that feeds learning forward.

Action Point 6: "Setting and committing to specific, appropriate, and challenging goals lead to increased student achievement and motivation to learn" (Moss & Brookhart, 2012, p. 23). Moss and Brookhart (2012) described two different goals pursued by educators: distal or long-term goals and proximal or short-term goals. Distal goals were overarching instructional objectives that students must achieve by the end of a school year to be prepared for next year's subject content. Proximal goals contained lesson-sized objectives that could easily be translated into learning targets. Moss and Brookhart explained students need specific, challenging, daily targets for which to aim. Proximal goals often supported students' self-monitored independent work through the use of criteria for success or students look-fors, detailed performance rubrics, and scoring guides.

Regardless of the goal pursued, Moss and Brookhart (2012) purported that each student must be challenged at his or her respective level of understanding to advance learning. Teachers must commit to setting and attaining challenging learning targets for each of her students, differentiate as needed, provide feedback on student performance, teach students to utilize feedback, and make time for students to improve on their performance. If students failed to hit a target in today's lesson, then they will more than

likely fail to hit tomorrow's target, and if they hit today's target with ease and

tomorrow's target equally effortless, then learning stalls. Moss and Brookhart explained

that teachers should continually review the series of learning targets within each learning

trajectory, as mastery of each target spirals learning towards mastery of the larger

learning goal.

    Action Point 7: "Intentionally developing assessment-capable students is a crucial

step toward closing the achievement gap" (Moss & Brookhart, 2012, p. 24). Moss and

Brookhart (2012) contended a crucial element in advancing student achievement was

teaching students to self-monitor by using scoring guides, rubrics, feedback, student look-

fors, and other success criteria for judging and improving their own work. Students

skilled in self-assessment strategies learned to ask effective questions about their work in

order to make improvements aligned with quality criteria. They learned to seek feedback

from teachers and others and use it accordingly. The formative learning cycle became a

place where students set goals for their work and make adjustments in their learning.

These adjustments were continuous as feedback from others may deem more adjustments

necessary. The formative learning cycle valued students' questions and encouraged

appropriate student responses as indicators of learning which is meaningful. Moss and

Brookhart contended, "Expert teachers intentionally help students hone their

metacognitive and decision-making skills and provide appropriate degrees of challenge to

help students master targeted concepts and learning to monitor their own progress" (p.

25).

    Action Point 8: "What students are actually doing during today's lesson is both

the source of and the yardstick for school improvement" (Moss & Brookhart, 2012, p.

25). Moss and Brookhart (2012) surmised that what students were doing in today's lesson is what counted for improved learning in school improvement efforts. Most school improvement efforts were based on results generated by standardized test scores, and these normally did not affect daily lessons occurring within individual classrooms. Students trained to self-regulate looked for improvements within their daily learning targets, selected specific strategies to help themselves advance their learning, looked for feedback from others about their progress, and were able to overcome challenges in tomorrow's lesson.

Action Point 9: "Improving the teaching-learning process requires everyone in the school—teachers, students, and administrators—to have specific learning targets and look-fors" (Moss & Brookhart, 2012, p. 26). Moss and Brookhart (2012) maintained that often administrators did not describe exactly what they observed during a classroom observation. Rather, they reported what they are able to describe. Often, the discrepancy in what was perceived and what was actually occurring inaccurately portrayed the climate within the classroom and disabled the observer's recommendations for improvements. "Ask 20 principals what 'engaged learning' looks like, and you will get 20 different descriptions" (p. 26). Moss and Brookhart recommended educators establish cohesive observational criteria that scaffold teacher look-fors and classroom success. "With a learning target theory of action, all stake-holders in the learning community know where they are and where they are headed and use strong evidence of student achievement to decide how to close the gap between the two" (p. 27).

Shared Intellectual Empowerment

McTighe (1996-1997) maintained, "Developing student understanding is a primary goal of teaching; understanding is the ability to apply facts, concepts, and skills appropriate in new situations" (p. 7). Designing backward moved the emphasis from what the teacher was teaching to what the students were learning (Colby, 1999). Ausubel (as cited in Ivie, 1998), in his learning theory, emphasized the importance of the student's clear and well-organized cognitive structure in order to facilitate the learning and retention of new information. Consequently, good curriculum design and teaching puts the mind in order and strengthens the learner's capacity for acquiring more new knowledge. The learner is intellectually empowered through standards-based learning activities because these activities/assessments are closely linked with expectations, and a large body of evidence suggests that high expectations lead to better student achievement (Reeves 1996, 2006). Students who know what the standards are will also know what the assessments will contain. Designing backward provides students with the rules before they are expected to play the game. Reeves (2006) made the point that:

> The tests, which many students take, are mind-numbingly boring and strikingly irrelevant to the worlds of work and life. It is not uncommon for employers to express shock that students are completely unfamiliar to the world of work. This is largely reflective of the fact that so little of the language and activity of the work place has been included in school life. Standards-based performance assessments can change this. They can provide extended assignments, which challenge students to engage in real world activities. (p. 6)

Students are in a better position to understand any academic concept when they have an opportunity to put this knowledge to use in a real situation. Shared intellectual

empowerment results when students and teachers view outcomes of significance as the

basis for learning and instruction (Fitzpatrick, 1992). Shared intellectual empowerment

results when students and teachers apply, analyze, and demonstrate the components of the

outcomes, which form the basis for teaching and learning (Reeves, 1996; 2006). Shared

intellectual empowerment results when, in any subject area, students and teachers want to

know where they stand in relation to achievable standards; and when they work to

improve knowing how they are doing (Schmoker, 1999; 2001; 2009).

The State of Assessment in Education

Wiggins and McTighe (2005b) described assessment in U.S. curriculum as

"inauthentic" because assessment was primarily composed of tests which "must simplify

each task in order to make the items and answers unambiguous and independent of one

another" (p. 15). According to them:

> Testing in this country has become generic in the sense of being linked neither to
>
> a particular curriculum nor to realistically complex problems and their natural
>
> settings. We live in a schizophrenic world of shared national expectations for
>
> schools but diverse local cultures and curricula. We have defined accountability
>
> as comparability on common measures, despite the fact that accountability is not
>
> dependent on tests and is better done at the local level through responsiveness to
>
> clients. (p. 15)

Herman et al. (1992) discovered in their research that an emphasis on standardized tests

actually narrowed the curriculum since basic skills were overemphasized and higher-

order thinking skills were neglected. Instructional improvement was usually sacrificed to

the pressure to improve tests scores. Perrone (1992) viewed standardized testing as

driving the curriculum and dominating instruction, which ultimately "renders schools ill-equipped to focus on transformation in students' development" (p. 48). Perrone (1994) saw the concentration in American education on standardized testing as separate from effective teaching practices. Teachers found it difficult, if not impossible, to teach curriculum authentically, that is, according to the reality of the needs of their children for functioning in society. The mandated curriculum, which was based on raising test scores, did not provide teachers with the opportunity and encouragement to engage in and experiment with authentic assessment practices in their classrooms. "Teach, test, and hope for the best" becomes "teach to the test" (Wiggins & McTighe, 2005b, p. 5). Even though teachers were aware that high tests scores did not necessarily reflect their own teaching that rationality dissipates "in the face of all the excitement about those magic numbers" (Perrone, 1992, p. 19). In graduate classes or during in-service training, teachers often had difficulty in separating assessment from testing. Assessment as immediate and ongoing for students was almost as foreign as backward design. When asked, 'How do you know they understand?' the prevalent answer becomes, 'because I provide testing for that.' Wiggins (1993) stated, "This constant failure to receive good feedback is a legacy of defining education as teaching and assessment as testing" (p. 187). Testing only at the completion of a lesson or unit inferred that because the teacher taught it, the students must have learned it. Teaching and then testing without assessment feedback prior to testing denied that teaching is really guidance as a means for the student achieving mastery. Presenting material and then testing to see if it was remembered or recalled ignored true understanding based on students' abilities to adapt and apply what has been taught to new situations. Wiggins (1993) proposed, "Classroom teachers are

rarely much better at providing useful feedback than test manufacturers are; many still

believe that a grade and a short series of comments constitute feedback" (p. 182). Perrone

(1994) observed that American education was even more committed to coverage of

material because of the focus on standardized testing. Curriculum, which attempted to

guess what was to be tested by a standardized instrument, "reduces the decision-making

potential of educators in schools and may well be negatively influencing the direction of

curricular and pedagogical practices" (p. vii). Simmons and Kame'enui (1996) cited a

comparison of American curriculum and that of other nations:

> American texts are qualitatively different from the instructional tools of other
>
> nations in the types of scaffolded examples…Japanese textbooks contain many
>
> more worked-out examples than do the U.S. books…Japanese textbooks tend to
>
> support learners in the learning process by providing multiple examples of
>
> successful problem-solving strategies, whereas in the U.S., textbooks are more
>
> likely to provide lots of exercises for the students to solve on their own without
>
> much guidance. (p. 457)

Wiggins and McTighe (2005b) stated that the absence of scoring systems based on

models of exemplary performance ignored the charting of progress. Consequently, tests

were devoid of criteria and standards. Herman et al. (1992) maintained that good

assessment was not defined by multiple-choice items, but by standards. "To know

something is not just to have received information but to have interpreted it and related it

to other knowledge one already has" (p. 111).

Districts and states developed systems in which the schools, but not the staff or

students, were responsible for student learning. Students were asked to give effort on

testing in which they have little or no interest and which had no consequences for their

future. These standardized tests were based on a selection of knowledge and skills made

by individuals who had no connection to any school or district, and were not responsible

for teaching the tested content. The result, as found by Perrone (1994), was, "kids who

test well, test essentially the same way; kids who test badly, test badly in their own way"

(p. 4). Calfee (1994) spoke of internal and external systems of assessment:

> Internal assessment is clearly more compatible with cognitive schooling, whereas
>
> external assessment fits the behavioral model. Depending on conditions and
>
> resources, either of these end points may make sense. If the aim of an educational
>
> system is to select an elite for special advancement and if assessment costs are to
>
> be minimized, then standardized approaches are appropriate. However, if one
>
> views…testing as a resource for human potential, then it seems critical to return to
>
> teachers the responsibility and authority for informed assessment. (p. 346)

The connection between assessment and instruction determined a dual purpose to, not

only determine student performance, but equally to guide the teacher's instructional

decisions. External assessment signified pressure from outside sources to be accountable.

Internal assessment exemplified the educator's acceptance of responsibility for student

understanding and achievement.

Standards contained their own means of assessment. However, if they were absent

from an instructional sequence, that component of curriculum did not contain any means

for student understanding. Curriculum equaled assessment when standards were the basis

for design. Reeves (1996, 2006) described an elementary school teacher who devoted

three weeks to teaching her class about internal combustion engines. The opportunities

for integrating science, mathematics, English Language Arts, and social studies into this

class were there and standards-based assignments integrated with them could have been

developed. However, the unit was simply composed of teacher lectures, demonstrations,

and exhibitions with no active involvement by the students in performances; the unit was

also without assessments. Students were not required to increase their thinking skills

through performance assessments; rather, they responded to multiple-choice tests on the

material covered by the teacher. Students dealt with a fixed body of facts to be

memorized, but were not taught to develop abilities to apply new information and analyze

it with respect to a given new situation. Kluth and Straut's (2001) research evidenced that

students could be taught how to solve a problem in many ways. Perrone (1992) stated that

student problem solving evidenced a larger conception of teaching. Teachers became

thoughtful observers, documenters, and organizers of evaluation. Willis (2002)

maintained that if learning goals that transcend mere recall were to be assessed, then

educators would emphasize active learning requiring assessment tasks that called on

students to write, debate, create products, conduct experiments, and so on. Wiggins and

McTighe (2005b) stressed the responsibility for assessment to demonstrate essential

educational aims, which were helping the student learn and the teacher instruct:

> Students and teachers are entitled to a more instructional and user-friendly
>
> assessment system than provided by current systems and psychometric criteria. A
>
> deliberately instructional assessment makes sure that tests enlighten students
>
> about real-world intellectual tasks, criteria, context, and standards; and such an
>
> assessment is built to ensure user-friendly, powerful feedback. (p. 25)

Defining Assessment and Student Learning

The word assess means "to sit beside, to assist the judge" (Perrone, 1992, p. 26). To assess is to collect and review data through a plan for documentation. Reeves (1996, 2006) termed the traditional assessment as secret since students were deliberately and purposefully prevented from knowing what would be assessed until the test was administered. Wiggins (1993) questioned teachers who used assessments as if it was something done to students rather than something done with them. Perrone (1992) regarded assessment as an "attitude of keeping on track" (p. 29). The task of the assessor was to check the student's progress towards understanding certain things. The assessor operated to find out how the students were doing and to adjust instruction to be sure that the curriculum was positively affecting the desired outcomes (Schmoker, 1999, 2001, 2009).

Assessment ensured instruction that was responsive to the needs, interests, and resources of the children in the classroom (Perrone, 1992). In a study, Simmons (1996) stated that "assessment is not something that we tack onto learning; it is an essential ongoing component of instruction that guides the process of learning" (p. 7). Assessment placed the teacher in the role of shepherding students' growth. Perrone (1992) called it "the transition from formal critique to ongoing informal critique that signifies the real adoption of the culture of high standards" (p. 35). Rather than equating assessment with the development of better tests, Reeves (1996) stated that assessment represented a whole network of classroom practices that informed teaching and increased student understanding. Teachers frequently inserted performance assessment tasks into their lessons as a culminating activity of a sequence of instruction. Separating assessment into a specific performance removed it from the level of the individual student who, under the

direction of a teacher, was constantly performing and assessing his own work, deciding

what was right and wrong, what fit and what did not, what was a good enough job.

Reeves' (1996, 2006) research showed that assessment should be an opportunity for

students to show what they know.

Students needed regular feedback if they are to do their best. They needed to be

thoughtfully involved with their learning and they would do their best work when there

was a clear opportunity for self-satisfaction, which Wiggins (1993) described as "the

feeling that comes from having mastered something or contributed something of value . .

. or the reinforcement that comes from getting better and better at different challenges"

(p. 138). Beane (1995b) cited the work of Elbow in his publication, *Trying to Teach*

While Thinking about the End:

> Elbow sums up the benefits (and problems) in teaching toward known
>
> competencies embodied in performance tasks. In discussing why this teaching
>
> approach causes more, not less, to be effectively learned, he notes that teachers
>
> feel more obligated and able to help those students having difficulty. Why?
>
> Because student problems are now more, understandable because they can be cast
>
> intangible, performance-deficit terms as opposed to vaguer, more fatalistic views
>
> that tends toward analysis of intellect and character instead of performance
>
> deficiencies. (p. 110)

Beane (1995b) emphasized that performance assessments enhanced a teacher's ability to

effectively evaluate students' learning and minimized the probability that coverage or

aimless activities would not ensure achievement. If the desired result of teaching was to

promote understanding then the questions to be answered were directly related to what

was the evidence of in-depth understanding as opposed to superficial or naïve

understanding.

Where should the teacher look and what should the teacher look at to determine

the extent of student understanding? In addition, what kinds of assessment tasks and

evidence needs will anchor the teacher's curricular units and thus guide instruction?

Perrone (1992) saw understanding as evidenced from assessment coming when the

schools were fitted to the students rather than the traditional practice of fitting the

students to the school. Standards as the destination followed to its fullest conclusion

would mean far less standardization of curriculum and organizational structures (Perrone,

1992). Reeves (2007) found that the assessment measures must be clear:

> Any accountability system must itself be accountable. This means that the validity
>
> and reliability of accountability measures cannot be assumed, but must be
>
> constantly measured and subjected to challenge, improvement, and revision. This
>
> emphatically does not mean that every student must take the identical test in order
>
> for the achievement of standards to be demonstrated. Instead, districts should
>
> consider the concept of concurrent validity tests, in which teacher-created
>
> assessments are the primary determinant of standards achievements, and district-
>
> wide assessments are performed for random samples of students. (p. 15)

An effective assessment system included a philosophy of how good learning occurred,

what good instruction was like, and what, therefore, good assessment was like. An

effective assessment system included parameters to guide decision-making such as what

would be tried and what would not be done (Sweeny, 1996). An effective assessment

system made classroom assessment and classroom reporting a better feedback

mechanism, which eliminated teacher reliance on external tests (Scherer, 2001).

During World War II, the Office of Strategic Services (OSS) created situational

testing or simulations which were designed to "replicate not only the challenges but also

the conditions the recruits were likely to face" (Wiggins, 1993, p. 18). After World War

II, post-graduate training for professionals in many fields emulated the simulation model.

This was particularly true in medical schools, which designed their education programs

based on student involvement in simulations of actual medical practices and situations.

This was a direct statement that too much of assessment had been about being competent

at memorizing facts, and being able to make effective speeches just through references to

famous people, sayings, and works. Too much of educational assessment was based on

the student doing nothing more than citing borrowed quotes, assignments, facts, and

figures. Wiggins (1993) stated, "What must be assessed is not whether the student is

learned or ignorant, but whether he or she is thoughtful or thoughtless about what has

been learned" (p. 37). Assessment through student involvement in the real world through

simulation was true feedback to the participants as they worked to master the material

and show true understanding. The ideal assessment system was termed by Wiggins

(1993) as one in

> which the score or grade symbolizes something we already know. Our level of
>
> performance should be utterly transparent; like a player's statistics in a sport, the
>
> reporting system should simply convey in shorthand, the results or consequences
>
> that we recognize to have occurred. (p. 148)

Establishing an Assessment Culture in the Classroom

Perkins and Blythe (1994) advanced their findings that if students were to learn

for understanding they must have criteria, feedback, and opportunities for reflection from

the beginning of and throughout any sequence of instruction. Teaching for understanding

demanded establishment of clear performance targets, which were powerful means for

linking curriculum, instruction, and assessment. Assessment was up-front because

performance assessments became "targets for teaching and learning as well as serving as

a source of evidence that students understand and are able to apply what we have taught"

(McTighe, 1996-1997, p. 8). Assessment was an integral part of instruction when

instructional goals were the first crucial step in designing meaningful assessment tasks

and scoring procedures (Herman et al., 1992). An assessment culture in the classroom

actively involved students in a process that joined what was taught, how it was taught,

and how it was evaluated. An assessment culture meant that teachers and students were

continually asking how they could each make use of the knowledge being taught and the

available feedback (Perrone, 1994). Reeves' (2006) interpretation of an assessment

culture was one where "there is no longer a wall which divides teaching and testing, but

rather assessment will become an integral part of the teaching process" (p. 8). All classes

in a school were designed to help students meet academic content standards; and, the

more different ways that could be found to teach students in a standards-based manner,

the better-prepared students would be to demonstrate proficiency in all standards. An

assessment culture views standards less as a limitation and more as the external

boundaries of a very large and creative environment for teaching and learning. Schools

could preserve and encourage the creative energies of teachers, while at the same time

insisting on relevance and meaning for every hour in the classroom. An assessment

culture required that teachers could stop unimportant, noncontributory, irrelevant, and potentially harmful activities, which were taking place in classrooms (Reeves, 2006). An assessment culture contained assignments that should require that students consistently meet all standards and that they have an objective means of applying every piece of work in the class.

Willis (2002) found that an assessment culture existed when what was taught was tested. Aligned classroom assessment enabled the teacher to make instructional decisions for students on a continual basis (Darling-Hammond & Falk, 1997). Classroom assessments allowed students to practice skills from simple to complex and to integrate those skills in meaningful ways. Oliva (2005) found a culture of assessment required responsibility for learning by all stakeholders; learning was uniquely individual to the student; non-linear, and based upon previous learning. Wiggins and McTighe (2005b) proposed that an assessment culture was marked by instruction tailored to the unique needs of students; learning was an active process; teachers were facilitators rather than dispensers of knowledge; and all students met or exceeded performance standards. Evaluation yields data that provided feedback about student achievement and the instructional program. An assessment culture used feedback from student performance as the start of evaluating a performance assignment; students chose to continue a learning activity when they had a choice to do other fun activities since their engagement was high; each assignment was reviewed by others to weed out unnecessary knowledge and activities; and, the work was judged by more than one observer to meet a specified performance standard.

Boyer (1995), in *The Basic School*, cited Wiggins when he stated, "good teaching is inseparable from good assessing. The question, therefore, is not whether to evaluate students, but how to measure performance in ways that will enrich learning rather than restrict it" (p. 29). Wiggins (1993) asked what successful understanding looks like. Costa and Kallick (1995) viewed understanding as the result of assessment, which organized all curriculums according to what the students should know and be able to do. Assessment activities were moved closer to the actual work of teachers, and students were taught to achieve larger purposes, such as becoming active readers and writers, individuals who read newspapers and magazines (Perrone, 1994).

A culture of assessment joined what was taught, how it was taught, and how it was evaluated. Students exemplified a culture of assessment when, in a standards-based classroom, they had the opportunity to continuously revise and improve their work while dealing with assignments that were rich in detail and complex in achievement (March & Peters, 2002). Student assignments integrated cumulative knowledge on a subject with several other academic disciplines and student proficiency was demanded in every academic subject. Finally, in a culture of assessment, every activity was itself an opportunity for a student to demonstrate proficiency, so that the activity/assignments itself could become an assessment (Reeves, 1996, 2006). An assessment culture in the classroom was established when the classroom conditions included "nurturing complex understandings, and making use of assessment as a moment of learning" (Perrone, 1991, p. 51). An assessment culture required a student-centered classroom where teachers stepped back from their traditional roles at the head of the classroom, and allowed

students to take center stage while teachers became accomplished guides in the process of

self-assessment (Perrone, 1991).

Assessment as Central to Teaching

Since the increase in standards-based design brought about by the nation-wide

movement toward educational standards, educators focused on making sure that lessons

contained performance assessments. Perrone (1992) explained interest in assessment as

widespread but uneven:

> One difficulty is that naturalistic assessment approaches entail new roles for
>
> teachers and students in the process of evaluation; thus, much more is required
>
> than simply replacing one type of instrument with another. For example,
>
> provisions must be made to bring staff together around central questions of design
>
> of assessment and standards for interpretation of data. (p. 23)

New roles for teachers involved not only learning how to develop better assessments, but

also learning to develop all curriculums as assessment (Sweeney, 1996). Teachers were

encouraged to develop separate performance assessments to insert into lessons. They had

not been encouraged nor provided training to write curriculum to students that involved

them with immediate and ongoing responsibility to carry out the curriculum as a series of

tasks. These assessment activities must be engaging and require the teacher designer to

assume the role of director rather than the presenter of the lesson (Drake, 2001). Students

were provided with the criteria for assessment at the beginning of the lesson or unit and,

as their understanding of the criteria increases, they developed greater skills of self-

assessment and self-monitoring (Colby, 1999). They learned, in fact, to think more like a

teacher. When the teacher designed curriculum as assessment and placed responsibility

for learning on the children, students adapted thinking skills that improved their learning

and performance as students and they internalized critical skills for life-long learning, as

well. Teachers can be trained to develop, refine, and reach consensus on quality tasks and

scoring criteria, and they learn to articulate what is important in ways that others

understand. That means, according to the research of Kluth and Straut (2001), that

developing and refining performance assessments was a good preparation for learning

how to teach others about those same tasks and criteria.

Assessments were instruction. They were straightforward performance tasks and

projects that ask students to explain, not simply recall (Wiggins & McTighe, 2005b).

Assessments asked students to think by linking facts with larger ideas and justify the

connections by showing their work and supporting their conclusions. Goal 4, standard 1

of the Missouri Show-Me Standards (2014) called for student thinking evidenced through

explanation and justification of answers arrived at in problem situations (MODESE,

2014). Knowing something transcends passive reception of information to the student's

interpretation of it and incorporation into her prior knowledge. Herman et al. (1992)

stated that,

> the presence or absence of discrete bits of information . . . is not of primary
>
> importance in the assessment of meaningful learning. Instead, we care more about
>
> how and whether students organize, structure, and use that information in context
>
> to solve complex problems. (p. 15)

Brandt (1995) stated that everything must be tied to particular situations through

situational learning, that the purpose of the classroom was to prepare children for the rest

of life, and teaching should focus on problems that teach learning in context of

performance. Harman et al. (1992) stated, "To prepare students for success in the future, schools must emphasize how to apply rather than just acquire information" (p. 14). Steplen and Gallagher (1993) viewed the teachers' main role as helping students to organize their own learning. Costa (2008) took the position that teachers could develop thinking skills in their students through brainstorming, requiring students to show the steps in their thinking processes, and by providing an answer for which they must devise a question.

Thinking must be taught and developed since it did not come naturally for all students. For example, Reeves (1996) found that the teacher could cause thinking development by designing engaging performance assessments, which, as closely as possible, emulated the tasks, which students would face in the real world. The student was required to apply the information acquired and written and oral presentations of understanding were required. Wiggins and McTighe (2005b) asserted that instruction should include explicit opportunities for students to confront alternative theories and diverse points of view. Wiggins and McTighe (2005b) reinforced the teacher's efforts as deliberate building of knowledge from the inside. Costa and Kallick (1995) emphasized that thinking skills, developed through teacher design of authentic assessments, enabled students to successfully deal with challenges requiring the application and synthesis of knowledge. Costa and Kallick concluded that the use of authentic assessments to build thinking skills resulted in classrooms adopting a workshop look exemplified through guided practice, rather than a lecture look.

Newman (1995) considered the place of assessment tasks in communicating to students the kind of intellectual work that was valued. In 1923, Dewey referred to

assessment tasks as we later termed them, as "more direct modes of activity, constructive

and occupation work, scientific observation, experimentation . . . which may be

introduced not as isolated studies, but as organic outgrowths of the child's experience"

(p. 113). Instruction and assessment, according to Newman (1995), "must aim toward

tasks that demand construction of knowledge through disciplined inquiry and that results

in discourse, products and performances that have value or meaning beyond success in

school" (p. 14). Sylwester (2003) described effective teaching for thinking as

> concentrating more on developing our students' abilities to quickly locate,
>
> estimate, organize, and interpret information; and we should teach them how to
>
> use the superior speed and accuracy of available information technologies
>
> whenever a complex problem requires an accurate solution. (p. 14)

This means that teachers ought to adapt to their students and not expect the opposite.

Moreover, as Newman (1995) proposed, participation in authentic tasks was more likely

to motivate students to sustain the hard work that learning required. Herman et al. (1992)

found evidence that suggested that students involved in personal research through finding

a problem of interest, designing a researchable question, and deciding on a design were

more likely to complete investigations that yielded authentic learning. The same evidence

also indicated that students exposed to authentic education suffered no disadvantage

when undergoing conventional testing and were likely to perform as well or better than

students with conventional preparation (Newman, 1995).

Authentic assessments allowed the teacher to use the classroom as a laboratory for

students' attention research (Sylwester, 2003). Sylwester (2003) found that solving

problems through simulation, role-playing, and games allowed the teacher to teach

students how to confront their own thinking processes. Students were taught how to solve

problems in their limited world as they prepared to solve problems in the larger world.

Newman (1995) found that students learned through doing, "The mere reproduction of

knowledge does not constitute authentic academic achievement, because it does not

involve interpretation, evaluation, analysis, synthesis, or organization of information that

characterizes authentic adult accomplishment" (p. 9). Tyler (2013) saw problem solving

as seeing a difficult problem or question requiring an answer, analyzing the problem

through analysis, collecting relevant data, formulating hypothesis, drawing conclusions,

or solving problems. Dewey (1933) said that working through problems allowed children

to get infinitely more acquainted with facts of any subject content much more than

children would get where "information is the professed end and object, where they are

simply set to learning factors in fixed lessons" (p. 54). Through authentic learning,

students were involved with more training of attention, more power of interpretation, of

drawing inferences, of acute observation, and continuous reflection. Over time, these

strategies fostered in students intrinsic motivation, confidence, and an ability to self-

regulate. Clark (2012) asserted, "Self-regulation occurs when learners are encouraged to

articulate their tacit knowledge 'existing motives, ideas, opinions, beliefs, and

knowledgeable skills" (p. 209). Voogt and Kasurien (2005) reinforced the value of tacit

knowledge as being the knowledge that was derived for both students and teachers after

classroom discussions, interactions, and reflections about a given topic have occurred. A

challenge for teachers, according to Black and Wiliam (1998), was to reveal students'

tacit knowledge about the curricular aim making it transparent and explicit. Black and

Wiliam referred to this as the "formative interaction" (p. 11).

Moss and Brookhart (2012), provided an analogy to describe the power of the formative learning cycle and the combination of the learning target, long-term goals, and feedback that feeds forward being exactly what all students need to achieve more. They contended a meaningful performance was "the single best way to share the learning target and success criteria for each lesson" (p. 44). This point was explicitly demonstrated in the following scenario:

When you teach someone how to drive, your teaching begins before you get into the car. You consider what the student driver needs to master during today's lesson according to your long-term goals and the evidence you gathered from the last session. You choose a destination and a driving route that represent the appropriate level of challenge. With your student behind the wheel, you explain and model one or two particular skills that he should aim for as he drives. You describe the exact route, noting lane changes and turns…These strategies will help your student stay safely on the road and boost his confidence for meeting upcoming challenges. As the student drives the targeted route, you both pay close attention to his decisions and performance. You provide crucial criteria that help him keep track of how well he is doing as he is driving. If he drifts off course, you supply a 'just-in-time' strategy to keep him firmly on the road. If he is unable to safely continue, you have him pull over and stop. You discuss what he did and how well he did it, and you use that information to reteach the concepts and skills he needs to learn to move forward. Before he continues driving, you provide a refined set of skills and strategies that he can use to improve his driving. Throughout the lesson, you partner with him to aim for today's learning target and

work toward the long-term goal of becoming a capable, self-regulated, and

independent driver. (Moss & Brookhart, 2012, pp. 61-62)

This scenario illustrated the necessary relationship between the target and the

performance of understanding as well as the necessity of timely feedback, and

adjustments made by both teacher and student. If expected performance was off-course,

teachers could promptly readjust to better align with the target. Consequently, teachers'

readjustments affect students' self-assessment prompting further adjustments. Through

this illustration, Moss and Brookhart defined the role of the formative teacher who

carefully planned, minutely orchestrated, appropriately guided, and swiftly redirected a

student when much was at stake. The combination of the learning target, the performance

of understanding, criteria for success, feedback to drive forward evidenced by the

teacher's attempts to model, explain, define, describe, inform, manipulate, perpetuate,

note, heed, and boost, was precisely what all students need to advance (Moss &

Brookhart, 2012, p. 62).

Defining the elements of effective teaching was complicated by the

multidimensional aspects of any given learner: style, needs, strengths, weaknesses,

individuality, etc. Simplistically speaking, the cause and effect of the relationship seemed

obvious; good teaching equated to learning, great teaching equated to greater

understanding. Multiple studies existed on instructional methods proven effective in

attaining student achievement (Atkin et al., 2001; Brookhart, 2010; Marzano, Pickering,

Pollock, 2001), but also in existence was research supporting the theory for delivery

(Caine & Caine, 1997) and teachers themselves (Moss & Brookhart, 2012). Rather than

any one instructional component, theory for delivery, and/or teacher, one could argue that

a blending of the three: a sound theory, an effective style of delivery, and an effective

teacher produce optimal learning, therefore defining the elements of effective teaching.

Learning by Doing

Learning by doing was a transfer of knowledge; it was the applicability to

contextualize information. Deep understanding allowed students' to use wisdom in

producing evidence of knowledge. Wiggins and McTighe (2005b) described

understanding by doing as a performance, which "transfers and uses big ideas – not mere

recall" (p. 250). Teaching to gain greater understanding required the teacher to act as

coach.

"Guided inquiry often referred to as exploratory learning promotes a deep

understanding of subject knowledge" (Kuhlthau, 2007, p. 19). It was student centered and

best accomplished using essential questions. Successful implementation required the

usage of multiple assessments for learning: pretest, diagnostic/formative assessments e.g.,

KWL charts, concept maps, quick writes, exit slips, and a summative assessment

designed to evaluate the student's ability to produce and perform in the area for which

learning occurred. Instructional feedback was descriptive, and should provide a clear and

worthy progress report. A standards-based grading approach was most effective in

narrative format.

> We do things backwards. We think in terms of getting a skill first, and then
>
> finding useful and interesting things to do with it. The sensible way, the best way,
>
> is to start with something worth doing, and then, moved by a strong desire to do
>
> it, get whatever skills are needed. (Holt, 1983, p. 4)

Best teaching and best learning occurred when teachers designed meaningful learning targets and guided student learning with the use of essential questions. Equally important was the use of feedback aiding and abetting student performance. Moss and Brookhart (2012) theorized,

> Feedback that feeds forward shares five characteristics: (a) it focuses on success criteria from the learning target for today's lesson; (b) it describes exactly where the student is in relationship to the criteria; (c) it provides a next step strategy that the student should use to improve or learn more; (d) it arrives when the student has the opportunity to use it; and (e) it is delivered in just the right amount – not so much that it overwhelms, but not so little that it stops short of a useful explanation or suggestion. (p. 64)

Theories of Action Governed by Individual Beliefs

Schreiber and Moss (2002) purported that people were driven by their beliefs. The beliefs driving the actions within all members of an organization would affect the actions that members take at any given time. If schools believed that all students could learn, then they must examine the processes employed by individuals to overcome obstacles when that theory was challenged. When people engaged in a belief-altering change rather than a systematic change, they engaged in double-loop learning as opposed to single-loop learning (Argyris and Schön, 1974). The direct relation to the concept of a theory of action was the relationship between individuals and organizations (Argyris & Schön, 1974, 1978). Argyris and Schön (1974) contended that people, through habitual practice developed mental maps for doing things and became trained to articulate acceptable responses on cue. When asked to describe what a person would do under certain

situations, the espoused theory, that which is pleasing is most often projected. This theory repeated often and revered in social settings, was often incongruent with a person's actions. The action most frequently taken was the theory-in-use (Argyris & Schön, 1974, p. 67). There was often a contradiction between conflicting performances of what people said they did as compared to what people actually did.

"If you want to uncover what someone truly believes about any situation, look for what that person is actually doing" (Moss & Brookhart, 2012, p. 8). Schreiber and Moss (2002) maintained that if a teacher was asked to explain her beliefs about meaningful work and the type of assignments she regularly used to engage her students, she might say that students should consistently be engaged in authentic tasks. Yet an unprompted visit to her classroom might reveal students copying vocabulary definitions or engaging in other seatwork. The teacher's professed philosophy about the innovative use of authentic assessments was not concurrent with her teaching practice, at least on that day. Despite the teacher's obvious knowledge about best practices for exposing students to meaningful learning, "her beliefs, at the core of reflexive and customary decisions of practice" (Schreiber & Moss, 2002, p. 25) set in motion, habitual practice. Many teachers were "fixated" on their beliefs about educational practices and through acceptance of past authority-figures, from whom they learned, emulated their practices accordingly (Schreiber & Moss, 2002, p. 27).

Learning was the process of correcting one's errors (Argyris & Schön, 1974, 1978). When faced with a problem, people and organizations often attempted to change their behaviors or apply a new strategy while holding on to their beliefs. Argyris and Schön (1978) called this "belief-preserving line of reasoning single-loop learning" (p. 7).

In contrast, deeper levels of change occurred when people and organizations engaged in double-loop learning. This was the process of questioning one's beliefs and underlying strategies, and the use of reflective analysis as a foundation for change (Argyris & Schon, 1974, 1978). As Edmondson and Moingeon (1999) put it:

> The underlying theory, supported by years of empirical research, is that the reasoning processes employed by individuals in organizations inhibit the exchange of relevant information in ways that make double-loop learning difficult and all but impossible in situations in which much is at stake. This creates a dilemma, as these are the very organizational situations in which double-loop learning is most needed. (p. 160)

Moss and Brookhart (2012) advised district and building administrators to develop a cohesive belief system, thereby unifying their educational theory of action. This theory must be shared throughout the district and embraced by all stakeholders. Moss and Brookhart purported, "When educators share learning targets throughout today's lesson, they reframe what counts as evidence of expert teaching and meaningful learning. And they engage in double-loop learning to question the merits of their present beliefs and practices" (p. 9).

Summary

This investigative inquiry evolved from thoughtful consideration of the effectiveness of learning targets as a curricular component in lesson design, delivery, and assessment for learning in one school district in the state of Missouri. New standards required for student achievement resulted in new standards for instructional design, delivery, and assessment for learning, and teachers must be trained to meet these

requirements. The adoption of the CCSS implicated school districts with the formidable

opportunity to design and redesign curriculum to reflect Missouri's new learning

standards. These standards represented what students should know and be able to do as

outcomes of their time spent in K-12 classrooms. Upon receipt of these newly developed

guides, teachers in each grade and department were charged to design their lesson plans

based on these curriculum frameworks while incorporating innovative practices deemed

best: big ideas, essential questions, learning targets, and assessment for learning

strategies. Recommendations were made for districts to acquire a LTTA as a cohesive

belief system that will ultimately frame the actions that members within an educational

organization will take to design, develop, deliver, and assess students' conceptual

understanding. Further, Moss and Brookhart (2012) contended the adoption of a LTTA

enabled a learning community to close the achievement gap by helping them understand

where they were in relation to where they needed to be in order to help students achieve

in the 21st century. Making a structurally sound transition required educators to let go of

the past realizing that 21st century learning required innovative teaching much different

from the modeling in their own schooling experiences. Administrators and teachers must

be willing to adapt to a newly developed curriculum aligned to CCSS that integrates

formative assessment practices, developing, designing, and delivering curriculum around

learning targets, while providing students with effective formative feedback that

integrates real world problem solving strategies and authentic learning opportunities.

Administrators must be cognizant of the challenge to overcome reluctance by teachers to

adapt to a new way of doing things and they must embrace that, "They're responsibility is

to prepare the learners in their care for their world and their future" (Jacobs, 2010, p. 2).

The researcher contended that guiding teachers' in this new direction would require extensive on-going training but the results would far exceed the effort.

Chapter Three discusses methodology and design of the researched study. A component of the new curriculum integrated the use of weekly learning targets. The adoption of a new curriculum, which incorporated the use of learning targets, instigated this mixed-methods, action research study. The triangulation of data conducted by an elementary classroom teacher included surveys, instructional practice criteria, students' reflections, and interviews. The CCSS enforced changes in educational policy, content, and practice for all teachers throughout the state, which included the study district where the researcher was employed. In accordance with CCSS and a commitment to prepare students for college and/or work, a relatively large Missouri school district, with over seventeen thousand students revised its elementary curriculum in alignment with new standards, as well as instituted the use of best practices designed to reflect 21st century learning. The new curriculum required teachers to incorporate new practices in their methods, and made teachers accountable for students' achievement and success.

The researcher was concerned that there may be a lack of understanding among teachers about the intent of learning targets and the implications for successful implementation. She contended a lack of training for teachers on targeted-based instruction would likely pose an impediment to proper implementation of the district's new curriculum, and through action research sought to bridge the gap between teachers' knowing and doing best practices embedded within the new curriculum.

Chapter Three: Methodology

Overview

The purpose for this action research study was to ascertain one school's

elementary teachers' understanding of learning targets in designing and delivering

classroom curriculum, their current usage of learning targets, and their perceptions of the

effectiveness of these in improving student academic achievement. Learning targets were

determined to be the heart of both teaching and learning because they clarified what

students should know and be able to do. The previous chapter reviewed the literature on

the historical formation of curriculum, the revelation of perceived mediocrity within

America's school systems, an era of educational reform movements, innovative

techniques for design and delivery to promote 21st century skills, and assessment

practices, both formative and summative. The review provides a foundation for why

learning targets were necessary and to show how, through integration of other

pedagogical techniques, learning targets may have enhanced student achievement.

In alignment with the Common Core State Standards, the study district developed

and adopted a comprehensive, cohesive curriculum consisting of 'best practices' (ELA

Course Outline, 2013). The design of the curriculum reflected that of the Common Core

and provided a continuous progression for all students in grades K-12. The embedding of

learning targets designed to reflect the specific content knowledge students should master

within each grade level was an important, but possibly overlooked, facet of curriculum.

Although targets stemmed from educational objectives, also called standards, there were

some major differences (Moss & Brookhart, 2012, p. 3). The addition of targets required

classroom teachers to make changes in their designs and instructional practices. Without

change, the target emulated the traditional role of an educational objective used solely by

the teacher to inform his or her instructional practices, thus potentially rendering the

inclusion of targets useless. The researcher contended that efficiency in implementing

learning targets required extensive training, which became another area of investigation.

The data gathered may provide insight as to the level of teachers' understandings,

perceptions, and implementation processes of effective target-based curriculum and

instruction. The results could be useful in guiding future decisions regarding professional

development in the study school and district. Further, results herein have the potential to

assist the study district in refining teacher evaluation rubrics through the construction of

targeted learning 'Look-fors', which were generated by a cohesive application of the

Learning Target Theory of Action (LTTA) (Moss & Brookhart, 2012, p. 51). These

'Look fors' could be an effective tool for evaluating teachers' performances, establishing

criteria for success, and assisting students in self-assessment of reaching the intended

target (Moss & Brookhart, 2012, p. 51).

Chapter Organization

This chapter describes the methodology used to investigate the perceptions of

teachers in their understandings and uses of learning targets in curriculum designs and

instructional practices. Revealed are strategies for recruitment of and incentives for

participation, along with an ethnographical (cultural) description of the sample

population within the study school. This was necessary for making a connection between

data collected through written and articulated reflections about teachers' perceptions of

instructional practices towards implementation of learning targets. Also provided are

outlined agendas for three workshops facilitated by the researcher on a LTTA and a

summary for each of six action tools provided by Moss and Brookhart (2012), primarily used for training purposes. There is an explanation for the collection of and analysis of both types of data used to evaluate teachers' perceptions and usage of learning targets as an instructional component, that included a teacher survey with open-ended responses and recorded interviews. Finally, this chapter includes a depiction of the attention allocated to integrity, validity, anonymity, and confidentiality necessary when dealing with research involving human subjects.

Research Questions and Hypotheses

This investigative inquiry addressed the following questions and null hypotheses:

Question 1: How do teachers in one school within the study district evidence their understanding of the use of learning targets in their curriculum and instructional practices?

> *Null Hypothesis 1***:** Teachers will not indicate via survey responses their understanding of the purposes(s) of learning targets in their curriculum and instructional strategies.

Question 2: How do teachers in one school perceive the effectiveness of using learning targets to increase student engagement, comprehension of subject matter, and their academic achievement?

> *Null Hypothesis 2:* Teachers surveyed will not perceive a difference in student classroom engagement, comprehension, and achievement, as a result of using learning targets in their curriculum and instructional strategies.

Rationale for Action Research

Action research was the method used in this study, as evidenced by focus on inquiry, problem solving, and improvement of classroom practices. Action research involves a systematic inquiry usually conducted by administrators, teachers, or others in an educational setting for the purposes of gathering information often reinforced by personal reflection (Mills, 2003). The researcher, a teacher within the study school, initiated a process of systematic inquiry to first determine, and then advance, teachers' knowledge about learning targets, with the intent to improve efforts for implementation of a new curriculum. The processes as defined were indicative of action research.

This form of research can have a powerful effect on teaching by empowering teachers through ownership in professional knowledge (Mills, 2003). Furthermore, this research methodology was useful for studies focused on problem solving, orchestrating change, and teacher reflection on practices (Fraenkel & Wallen, 2000). Since a classroom teacher, with the intent purpose of successful integration and implementation of a newly adopted curricular component conducted this study, action research best described this study's methodology.

This study implemented the use of a survey questionnaire and recorded interviews with grade-level chairs and the building administrator to elicit teachers' perceptions about the use of learning targets in curriculum planning and instruction, as well as perceptions of their effectiveness towards advancing student achievement. Through teachers' perceptions and feedback about the usage and effectiveness of learning targets, future decisions about curriculum and instruction may be better informed and professional development further advanced.

Consent and Inquiry

Requests and permissions. The researcher requested permission from her principal to conduct action research. Both the teacher and principal were interested in improving teacher understanding of target-based curriculum in order to create a plan to advance its implementation in the classroom. The building principal granted permission to the researcher for the orchestration and delivery of three workshops for training purposes on effective usage of learning targets, as portrayed in Moss and Brookhart's (2012) *Learning Targets: Helping Students Aim for Understanding in Today's Lesson* (Appendix A). Following the meeting with the building principal, the researcher requested and received permission to conduct action research from the district's superintendent (Appendix B). Upon attainment of consent, the researcher met with the district's elementary curriculum coordinator for English Language Arts to discuss the newly adopted curricular component, learning targets (Appendix C). Information acquired during this meeting was necessary for ensuring an alignment between the district's intended application of learning targets with the applications addressed by Moss and Brookhart.

Copyright. Once consent to research was obtained, the researcher, a premier member of the Association for Supervision and Curriculum Development (ASCD Publications) participated in an on-line workshop and literature study hosted by Brookhart, about her (2012) book *Learning Targets: Helping Students Aim for Understanding in Today's Lesson*, co-authored by Moss (2012). Included in the manuscript were five action tools for implementation of a Learning Target Theory of Action (LTTA). The researcher requested and received permissions to use all copyrighted material included in the ASCD Publications publication by both authors and ASCD

Publications (Appendices D - F). Further, in gathering materials for workshop

presentations, the researcher requested and received permission to use *Clear Learning*

Targets, a PowerPoint slideshow produced by Regional Teacher Partners, with the

Pimser P-12 Math and Science Outreach program.

   Recruitment. To elicit interest among staff members and students, the researcher

created a large bulletin board displayed in the hallway, publicizing clear learning targets

as the classroom goal to be mastered (Appendix G). Twenty-two cardboard arrows

surrounded a large target personalized with each student's signature. Framing the

doorway was a display of student-designed targets used to teach students to evaluate their

individual strengths and weaknesses, quantifiably compare their work with the target goal

documenting dates for student's mastery, and using rings around the target to represent a

percent band for students' use in self-assessment (Appendix H). Teaching students to

compare their knowledge and abilities to that of the target goal can be a powerful way to

motivate (Moss & Brookhart, 2012). The visual display elicited staff interest, but the

principal advanced recruitment efforts by announcing the opportunity for staff to

participate in the researcher's action research study in the back-to-school letter sent out

over the summer.

   Teacher designee. To protect anonymity of participating staff members, it was

necessary to appoint a teacher designee to regulate the flow of information between

researcher and participants, because the researcher worked in the study school. The

grade-level chairperson for the researcher's grade level voluntarily acted as the

researcher's designee throughout the study. A week before each of the three workshops,

the researcher sent an email to the teacher designee, who forwarded the email to each

participant reminding participants of the upcoming workshop and eliciting feedback from

teachers in regards to questions or comments. The teacher designee listed all feedback

from participants on one document, without identification, and promptly relinquished the

information to the researcher. The researcher addressed specific questions individually by

returning a reply to the designee, and the designee would electronically forward the

response to the participant. The researcher also used participants' feedback to plan

upcoming workshops. The teacher designee also regulated each participant's completion

of the final survey. Although the final survey was administered online through

Surveymonkey.com, completion of the survey had to be witnessed by the teacher

designee to receive the 50-dollar stipend, provided by the researcher, and given to

participants upon completion of three Action Tool D packets and the final survey. After

each participant submitted Action Tool D packets and took the final survey, the teacher

designee relinquished the monetary stipend.

Materials. Pursuant to the researcher's request, the principal provided multiple

copies of Moss and Brookhart's (2012) book, *Learning Targets: Helping Students Aim*

for Understanding in Today's Lesson, which served as the conceptual framework in this

study. Allocation of manuscripts included one per grade level, one for the fine arts team,

one for special education, and one for each administrator.

Research Sample

Demographics of the community. The school where the study took place was

located in a suburb of the St. Louis metropolitan area. During the 2013 – 2014 school

year, the study school consisted of 541 students from kindergarten through fifth grade

(MCDS, 2013-2014, p. 1). The demographics of the student population were Caucasian

(75%), African American (9%), two or more races (7%), Hispanic (5%), Asian (3%), and American Indian/Alaska Native (1%). The total number of students receiving free or reduced lunch was 186 (34.6%) (MCDS, 2013-2014, p. 1).

Subjects. The participants were all certified elementary teachers employed at the study school within the study district. The study school was a K-5 building. Each grade level had four teachers teaching within a self-contained classroom, with the exception of one grade level with only three teachers, due to decreased enrollment. While apprised of the information, the fine arts team of certified staff was unable to attend workshop presentations, due to scheduling conflicts; consequently, they were excluded as participants. Also excluded were special education teachers who, through personal decisions, felt the information was more applicable to a regular classroom. Percentage of participation was 82.6% with 19 of the 23 teachers participating. Though two of the four non-participatory team teachers initially volunteered to participate, they were unable to complete the required documentation within the given time, thereby excluding themselves as participants.

Survey participants and questionnaires. Due to the adoption of learning targets, recently added to the curriculum, all certified staff participated in three, 45-minute workshops held during the first quarter of the school year to support implementation of learning targets. Both before and after all three workshops, attendees were asked to complete three self-assessment, open-ended questionnaires (Appendices I - K. This information was useful in determining both teachers' perceptions and usage of learning targets in their instructional practices and as a gauge in measuring teachers' growth in understanding about the information presented. Posed were six statements replete with a

five-scale rating system to elicit teachers' perceptions in regards to learning targets. The

Likert-scale used a five-point rating and included the following responses: 5 = strongly

agree; 4 = agree; 3 = neither agree nor disagree; 2 = disagree; and 1 = strongly disagree.

A Likert-scale was "a psychometric scale allowing respondents to evaluate responses or

Likert items according to subjective or objective criteria with a view to measuring the

level of agreement or disagreement" (McDonald, 1999, p. 6). On each of the three self-

assessment questionnaires, teachers were asked to mark their levels of agreement about

each question, both before and after each workshop. The before workshop rating was

marked with an X, and the after workshop rating was marked with a circle. In addition to

the Likert-scale survey provided, there was a column next to each question for written

responses entitled 'Evidence'.

Action tools. Action Tools A through F were provided in Moss and Brookhart's

(2012) book *Learning Targets: Helping Student's Aim for Understanding in Today's*

Lesson, which served as the conceptual framework in this study. They were used to

educate faculty on a LTTA and to support implementation by guiding educational

practice for both teachers and administrators. While participants were only required to

complete and return three Action Tool D packets and one class set of Action Tool E, they

each received all six packets to use as resources throughout the study. Action Tool A

attempted to deepen understanding of the differences between an educational objective

and a learning target. This was a common misconception among educators and often

required continuous clarification. Action Tool B was an administrative walk-through

guide, but it was also helpful to teachers, as it summarized success criteria that should be

evident in every lesson. Action Tool C was a guide for lesson planning. It began with an

educational objective, guided the development of a learning trajectory, assisted in the

design of clear learning targets, prompted teachers to share the learning target through a

meaningful performance of understanding, differentiated, and prompted teachers to

support students in self-assessment of their own learning. Action Tool D was a teacher's

self-assessment on planning and delivery of learning targets, as described in the LTTA. It

could be useful before or after a lesson to assist and improve teachers' effective

implementation of a LTTA, boost teachers' understanding of the LTTA action points, or

guide the collection of evidence for teacher evaluations. Action Tool E elicited students'

perceptions about a specific learning target, the criteria for success, and the performance

of understanding. It was useful in teaching students to become assessment-capable and

guided their learning. Teachers could also use the student results to adjust their

instructional techniques. Action Tool F guided teachers in making a cohesive alignment

between instruction, assessment, and grading. There was also a list of big ideas on

collecting evidence useful in both formative and summative evaluations. These action

tools were necessary for establishing cohesive implementation of learning targets

throughout each participant's classroom. Data obtained through Action Tools D and E

will allow analysis to portray teachers' level of usage of the LTTA.

Workshop One

The first workshop occurred before the 2013-2014 school year began, to prepare

teachers for integration of learning targets as a curricular component. The researcher

began the workshop by utilizing a video clip of a news brief from Kansas City reporting

the gains in student achievement after implementation of a standards-based system

prioritizing learning targets (KSHB, 2011, December 15). Following the clip, the

researcher asked workshop attendees to complete a six-question, self-assessment survey

by ranking from low to high their current level of understanding about the prompt in each

question; there was space provided to document evidence of use following each answer.

After the survey, the researcher delivered a PowerPoint presentation on Moss and

Brookhart's (2012) LTTA, while highlighting the significant value of learning targets

when used as a central focus of teachers' planning and instructional processes. Halfway

through the presentation, a second video clip featured a third grade teacher facilitating a

mini lesson on narrative writing, which demonstrated the formative learning cycle guided

by a learning target (KSHB, 2011*).* The presentation concluded with a third video clip to

further teachers' facilitation of formative assessment practices with special emphasis on

guiding students' self-assessment of their own work to guide their own learning (Knatim,

2010). Following the presentation, teachers were asked to retake the self-assessment

survey to illustrate increased understanding.

Study Participants and Recruitment Strategy

Upon the completion of the first workshop, an additional 15 minutes was

necessary for enlisting teachers' consent for participation. During this time, teachers were

given the Informed Consent for Participation in Research Activities contract. The

researcher (a) gave an overview of the study and a time-line for events, (b) reviewed

participatory obligations, (c) discussed incentives, and (d) introduced the teacher

designee. To alleviate undue pressure on teachers about whether to participate, the

researcher exited the room and the teacher designee answered questions and collected

signed consent forms.

Incentives for participation. Foremost, the new curriculum incorporated the use of subject content and learning targets, therefore all teachers stood to benefit by exposure to research-based processes of targeted learning. However, there were two primary incentives for participation, both of which had the potential to be arbitrarily perceived by each potential participant. The first incentive for participants was a $50 Target gift card, provided by the researcher, upon completion of all requirements: (a) 3 Action Tool D packets, (b) 1 Action Tool E packet completed by their students, (c) a final survey on Survey Monkey, (d) a recorded interview, and (e) attendance at the next two workshops on learning targets. The second incentive for teachers was the procurement of requirements in the newly adapted Missouri's Educator Evaluation System (MEES). As a participant, teachers would be meeting many of the objectives stipulated in their evaluations, as well as collecting evidence of students' work.

Resources provided. Each participant received Action Tools A through F, available for download in Learning Targets (Moss & Brookhart, 2012). Although participants were only required to utilize tools D and E, the other tools were useful in lesson planning and design. In addition to the Action Tools, the researcher created a learning target tutorial packet containing important information about integration of learning targets in lesson planning and design, which included a learning target poster set, subject-specific learning target signs, and a list of websites and videos demonstrating effective use of learning targets in all subjects and grade levels.

Support by administration. The principal supported the study through an announcement on the back-to-school meeting agenda and subsequent meetings thereafter, purchase of multiple copies of the book for distribution throughout the building, and

joining teachers in learning during all three workshops facilitated by the researcher. In

addition, the principal met with the researcher on a regular basis to review progress, lend

support, and relay pertinent information gathered by classroom observations and through

speaking with other teachers.

Workshop Two

The second workshop was held mid-quarter to allow time for teachers'

assimilation of content and trial use. The researcher distributed an agenda to organize

activities; and asked teachers to take a new self-assessment questionnaire to gauge their

progress of initial learning target implementation, their perceptions of the effectiveness in

learning targets for boosting student achievement, and knowledge gained at the end of the

second workshop. The workshop began with an informal discussion with regard to

progress, questions, success, and/or frustrations. Next, as opposed to the lecture

presentation in the first workshop, workshop two was participatory as the researcher

engaged attendees in a sample lesson modeling how to share the learning target with

students through performance of understanding and criteria for success. The learning

target signs provided in the participants' packets were completed and on display

demonstrating effective use for classroom purposes. Following the sample lesson, the

researcher showed an animated video on YouTube displaying Moss and Brookhart's

(2012) LTTA. A discussion ensued about the timeline for the study's completion of all

required paperwork. The last five minutes of the workshop were used for teachers to

retake the self-assessment questionnaire.

Workshop Three

The final workshop focused on the benefits of grooming students who were

assessment capable and the necessity for using students' 'Look-Fors' in each

performance of understanding. It was held two weeks prior to the end of the first quarter

to train teachers to support students' self-assessment of learning targets along the way

towards mastery. The workshop began with a final self-assessment questionnaire focused

on teachers' abilities to guide students in self-assessment. Feedback from teachers

regarding concerns about students' abilities to understand and complete the self-

assessment, Action Tool E form, prompted the researcher to generate a modified version

using emoji graphics (Appendix M). Teachers were given an option to use either format

or to differentiate according to their students' abilities. The researcher then reviewed the

formative assessment processes discussed during workshop two and restated the

importance of teaching students to use these questions to guide their own learning. The

workshop ended with teachers retaking the self-assessment survey by circling their

response, as opposed to marking it with an X.

Final Survey

At the end of first quarter, a survey was administered to all participants. The

survey consisted of nine statements each with a Likert-type scale for teachers to rate their

perceptions. The Likert-scale used a five-point rating and included the following

responses: 5 = strongly agree; 4 = agree; 3 = neither agree nor disagree; 2 = disagree; and

1 = strongly disagree. Each statement was followed by an open-ended question asking

teachers to either explain or elaborate on their rating of each question. The purpose for

administering the survey was to elicit teachers' perceptions of their understanding about

the LTTA and to gauge their perceptions about the effectiveness of learning targets as an

instructional component. Survey statement one focused on the impact of learning targets as meaningful to both teaching and learning. Survey statement two delved into teachers' knowledge about the learning trajectory. Survey statement three considered the partnership between teachers and their students while engaging in the formative learning cycle. Survey statement four considered sharing the learning target through a meaningful performance of understanding. Survey statement five regarded the processes involved in the formative learning cycle. Survey statement six pertained to teachers' awareness of higher-order thinking skills and differentiation of instruction. Survey statement seven focused on guiding students' self-assessment abilities to advance self-regulation. Survey statement eight pertained to clarification of learning targets enhancing students' knowledge and skills. Survey statement nine centered on teachers' overall participation and implementation of a LTTA enhancing teaching and learning in the classroom.

Recorded Interviews

The final act of participation was a recorded interview with the teacher leader in each of grades K through 5 and the building principal about their grade level efforts towards implementation and the overall effectiveness of a LTTA. Each interview lasted about 10 minutes, and participants were asked similar questions, with the exception of questions posed to the principal relating more to an overall effect of learning targets on classroom teaching and learning, as observed by administrative walk-throughs. The principal was asked to answer the following questions:

1. What specific differences have you noticed in regards to your walk through observations?

2. Are you observing teachers' use of learning targets and success criteria?

3. Are you able to determine the learning target by what teachers are doing or by what they are having their students do?

The teachers were asked to answer the following questions:

1. What effect do learning targets have on your teaching and your students' learning?

2. How often do you go back and revisit the target?

3. Do you communicate weekly learning targets with parents?

4. Which of the nine action points would you suggest for more training?

Data collected through recorded interviews with the building leadership team could assist the researcher in making a qualitative analysis about teachers' perceptions about the usage of learning targets and the overall effectiveness.

Summary

Chapter Three described the methodology used for this action research investigative inquiry. There was a description of the processes used to facilitate three-teacher training workshops on learning targets based on the book, *Learning Targets: Helping Students Aim for Understanding in Today's Lesson,* by Moss and Brookhart (2012) serving as the conceptual framework for implementation. There was an overview of the subjects involved in this study and strategies for recruitment, a discussion regarding data collection, and procedures for guiding this study were revealed. Chapter Four will show the results of teachers' self-assessments of the perceptions and effectiveness of learning targets in their instructional planning and delivery and teachers' efforts to incorporate learning targets in the district's new curriculum. Further, data will

show teachers' attempts to encourage students' abilities in self-assessment as they engage

in a formative learning cycle.

Chapter Four: Results

Overview

The purpose of this study was to determine teacher understanding of learning

targets in the curriculum and their perceptions as to the effectiveness of targets as

learning strategies to assist students in improving their academic achievement.

Participants in this study were certified teachers employed in the same elementary school,

charged with implementation of a newly adopted curriculum, which for the first time

integrated the use of learning targets. One tenured teacher working in the study school

conducted this action research study to enhance implementation efforts through cohesive

application of a Learning Target Theory of Action (LTTA), developed by Moss and

Brookhart (2012) and reported in their book, *Learning Targets*. After a series of three

training workshops, surveys were given to all 15participants, which incorporated the use

a Likert-scale ranking system and a forced, open-ended response prompt. A *t*-test for

difference in means analyzed Likert-scale results and the open-ended responses were

qualitatively coded to reveal potential patterns or anomalies among teachers' perceptions.

Interviews were conducted and recorded with the building principal and each grade level

chairperson working within the K-5 building.

To unify and advance application of instructional practices, participants were

provided Moss and Brookhart's (2012) Action Tools A-E, available for download

through *Learning Targets* (pp. 164 - 198). Designed for teachers, administrators, and

students, these tools incorporated the primary elements of a LTTA and assisted efforts of

effective implementation. Each participant completed three Action Tool D packets and

guided their students through the completion of a students' self-assessment form. A

report was prepared containing the findings from three teachers' self-assessment surveys

and administered both before and after each of the three training workshops.

Protocol

Permission to conduct research was granted by the superintendent and building

principal. Teachers choosing to participate in the study signed their informed consent

letters at the conclusion of the first workshop, after the researcher left the room. Upon

consent, the teacher designee distributed to each participant a packet containing Moss and

Brookhart's (2012) Action Tools A-F, a learning target tutorial packet, a large shooting

range target, learning target posters, and a list of websites with videos demonstrating

effective use of learning targets in all subjects and grade levels. In addition, each grade

level chair received a copy of book, *Learning Targets: Helping Students Aim for*

Understanding in Today's Lesson, by Moss and Brookhart (2012).

Participants

The participants included all certified K-5 classroom teachers working in the

study school. All sixth grade levels had four classes, with the exception of one grade

level with only three classes due to decreased enrollment. Nineteen of the 23 teachers

(83%) voluntarily chose to participate in this study. Table 1 shows the number of

certified staff within the school and the total number of participants in the study.

Table 1.

Participants in This Study

Certified Staff	Total Number	Participants
K-5 Teachers	23	16
Fine Arts	5	1
Administrators	2	0
Special Education	2	0

Note. Fine arts teachers were unable to attend learning target workshops. Two of the participants were unable to complete the required paperwork within the given time and withdrew from the study.

Research Questions:

This investigative inquiry addressed the following questions and hypotheses.

Question 1: How do teachers in one school within the study district evidence their understanding of the use of learning targets in their curriculum and instructional practices?

Null Hypothesis 1: Teachers will not indicate via survey responses their understanding of the purposes(s) of learning targets in their curriculum and instructional strategies.

Question 2: How do teachers in one school perceive the effectiveness of using learning targets to increase student engagement, comprehension of subject matter, and their academic achievement?

Null Hypothesis 2: Teachers surveyed will not perceive a difference in student classroom engagement, comprehension, and achievement, as a result of using learning targets in their curriculum and instructional strategies.

Implementation of the Treatment

The researcher presented three workshops throughout a nine-week period. Workshop presentations included tutorials on a Learning Target Theory of Action developed by Moss and Brookhart (2012), written in their book, *Learning Targets: Helping Students Aim for Understanding in Today's Lesson*. In addition, teachers were given guided instruction for utilization of Moss and Brookhart's "Action Tool D: Teacher Self-Assessment Targets and Look-Fors Guide". At each workshop, teachers were asked to complete a self-assessment both before and after each meeting to rate their levels of understanding about learning target utilization. Each survey incorporated the use of a 5-point Likert scale, with 1 being low to 5 being high (Appendices I-K). Survey results were used by the researcher in planning subsequent presentations.

Quantitative Analysis and Results

Data instruments in this study included a teacher survey with nine, open-ended responses and recorded interviews.

Survey. Following a nine-week treatment, all participants took a final teachers' survey. The survey, designed by the researcher, utilized a Likert-scale rating system to derive a psychometric analysis on teachers' perceptions. Survey questions 2, 3, 4, 5, and 6 related to research question 1: teachers' understanding of learning targets. Questions 1, 7, 8, and 9 related to research question 2: benefits of learning targets on student achievement. Circled responses of Strongly Agree (SA) and Agree (A) were grouped as positive perceptions and responses of Neither Agree nor Disagree (N), Disagree (D) and Strongly Disagree (SD) were grouped as negative perceptions.

A two-tailed *t*-test determined the potential difference in proportions between

positive and negative responses on the final teachers' survey. Table 2 shows the results of

the final teacher survey.

Table 2.

t-test Results of Final Teachers' Survey

Statement	Survey Statement	Responses				
		Positive		Negative		*t*-test
		Count	%	Count	%	value
1	Learning targets have a meaningful impact on students' learning in your classroom.	14	93.3	1	6.7	4.749*
2	Today's lesson should serve a purpose in a longer learning trajectory toward some larger learning goal.	15	100	0	0	5.477*
3	Learning goals serve as targets when both students and teachers aim for mastery	14	93.4	1	6.7	4.749*
4	Every lesson needs a performance of understanding to make the learning target for today's lesson crystal clear.	15	100	0	0	5.477*
5	Expert teachers partner with their students during a formative learning cycle to make teaching and learning visible and to maximize opportunities to feed students forward.	15	100	0	0	5.477*
6	Setting and committing to specific, appropriate, and challenging goals lead to increased student achievement and motivation to learn.	15	100	0	0	5.477*
7	Learning targets help close the achievement gap through the development of assessment-capable skills	14	93.4	1	6.7	4.749*
8	Learning targets help to increase students' understanding of knowledge and skills.	15	100	0	0	5.477*
9	Overall, your participation in this study and the implementation of A Learning Target Theory of Action enhanced your teaching and students' learning in the classroom.	14	93.4	1	6.7	4.749*

Note. Data Collected from Final Teacher Survey on SurveyMonkey.com. N = 15.

t- Critical values = 2.11. *Significant findings.

Participants responded to 9 statements on the teachers' final survey. Statement 1 inquired about teachers' perceptions about learning targets having a meaningful impact on both teaching and learning. Statement 2 considered learning targets in lesson design and the learning trajectory. Statement 3 focused on teachers' beliefs on the partnership for learning described by Moss and Brookhart (2012) as the formative learning cycle. Statement 4 dealt with teachers' knowledge about designing meaningful performances of understanding. Statement 5 was concerned with teachers' knowledge about the formative learning cycle. Statement 6 inquired about teachers' perceptions about higher order thinking skills and challenge. Statement 7 considered teachers' perceptions on training students to self-regulate. Statement 8 focused on teachers' perceptions about learning targets advancing students' knowledge and skills. Statement 9 dealt with teachers' perceptions on effective integration of learning targets having a meaningful impact on student achievement.

In all nine survey statements, classroom teachers participating in this study verified a measureable positive response to each survey statement, thereby rejecting both null hypotheses and supporting both alternative hypotheses. The data revealed that at least 93% of participating teachers within the study school understood the purpose of learning targets in their curriculum and instructional practices, and 93% of the participating teachers perceived a significant difference in students' classroom engagement, comprehension, and achievement as a result of the integration of learning targets in their curriculum and instructional practices.

Qualitative Analysis and Results of Participants' Surveys

A forced-choice, open-response statement followed each survey question. The researcher prompted participants to expound on each of the nine survey statements by either elaborating on the topic or providing evidence of personal use in their instructional practices.

Teachers' responses on the open-ended survey were analyzed and thematically coded through a series of six phases developed by Braun and Clarke (2006). Phase 1 included an initial analysis of the data where the researcher looked for patterns. Phase 2 incorporated the development of codes based on recurring themes relative to each research question. This was a cyclical process to reduce and refine codes. Phase 3 involved a combining of codes to produce a set of themes indicative of statement responses. Phase 4 included a review of codes in effort to find responses that either supported or refuted each research question. During phase 5, the researcher defined each theme and revealed each note of interest. Finally, phase 6 consisted of a final report where themes were used to convey an overall story portrayed by the data. In addition, dialogue supporting or refuting a research question was included with each survey statement.

Survey Statement 1 Results. Learning targets have a meaningful impact on learning and effective teaching in your classroom.

Most comments linked effective teaching to meaningful learning and cited learning targets as a key contributor to student achievement.

One teacher stated:

I believe that when students know the expectations, they rise to meet them.

Letting students know the learning target ahead of time helps them understand

better what they are expected to do. Learning targets also help students know

what to explicitly listen for and take in from the lesson.

Another teacher wrote:

Learning targets help remind both the teacher and students of the goal and explain

systematically how to get the work done! Students look forward to seeing the

daily targets posted around the bull's eye each morning. We briefly discuss the

learning targets for the day during our morning meeting. While working, I remind

students of the Look-fors to help them self-assess. At the end of the work time,

we meet again to discuss our progress and share our results. We begin with the

learning target, we end with the learning target, and we continually assess where

we are in relationship to where we want to be all the time between.

One teacher perceived learning targets to be effective but only when prioritized by the

teacher, revisited often, and accompanied by success criteria. She wrote:

Just writing learning targets in your lesson plans and on the board will not make a

difference in student achievement. You have to incorporate learning targets with

criteria for success, provide opportunities for students to produce or perform, and

teach students to self-assess their own learning. Even then, you have to revisit a

learning target constantly and motivate students to challenge themselves to

achieve mastery.

Survey Statement 2 Results. Today's lesson should serve a purpose in a longer

learning trajectory toward some larger learning goal.

Most teachers' answers supported Moss and Brookhart's (2012) theory in regards

to a learning trajectory. Teachers explained that learning targets break down learning

goals into lesson-sized chunks of information, which are much easier for teachers to teach and for students to master. One teacher further explained:

> Students need to know the essential learning targets and teachers need to communicate how each target will build towards the ultimate target. Each unit, students receive a new bull's eye sheet listing the skills and concepts included in the learning trajectory. Students keep track of their progress while learning and document where they are in relation to the bull's eye.

Another teacher commented:

> I think each lesson should be a continuation of the day before. It takes time for students to achieve understanding on any skill. A learning trajectory includes all the pieces of the puzzle to achieve learning.

One teacher had a different opinion than most:

> I think to do a learning target for each and every lesson is a little too much. I agree that students need to know the essential learning targets and teachers need to communicate how each lesson will build toward the ultimate target, but each lesson for each new day, is almost impossible.

Survey Statement 3 Results. It's not a learning target unless both the teacher and students aim for it during today's lesson.

Most participants strongly agreed with this statement and explained that learning targets assist in fostering a relationship between the teacher and her students. One teacher explained:

> Since I started using learning targets, I feel more committed to the end result and helping students hit the target. The large bull's eye on the main wall in my room

seems to be an attraction for all. Students bring their targets back to my desk

every Friday, and we discuss their performance that week: where they are and

where they want to be and I feel more compelled to help them find strategies to

get closer to the target.

Another teacher commented:

Motivating students to achieve learning targets requires prioritization. Teachers

prioritize learning targets by making mastery of each target the primary goal for

everyone including herself. This is evidenced through the following: Start and end

each day with each learning target, discuss it often, model criteria for success,

highlight strategies, display results, have students share their strategies, and

reflect on learning.

One participant gave a negative response to this statement. This teacher explained:

I not sure about this statement. I do my best to make learning targets a priority,

but there are times when students don't engage in learning. Why would a

student's lack of interest or concern invalidate the learning target?

Survey Statement 4 Results. Every lesson needs a performance of understanding

to make the learning target crystal clear.

All teachers strongly agreed with this statement and attributed enhanced

clarification on learning to a meaningful performance of understanding. Many teachers

explained that learning to utilize Moss and Brookhart's (2012) four-step framework (p.

51) helped them share learning targets with students thus advancing student achievement.

One teacher wrote,

I believe all teachers should learn to design lessons that engage students in the

learning process. For me, using the checklist to make each assignment meaningful

made a huge difference. Now, I always seek to give assignments that deepen

understanding, help students aim for mastery, provide evidence of students'

knowledge and skills, and will produce evidence of progress.

Another teacher commented,

Students must have an opportunity to engage in learning and to process new

knowledge and skills. A performance of understanding allows them an

opportunity to question their own understanding and set goals for improvement.

Survey Statement 5 Results. Expert teachers partner with their students during a

formative learning cycle to make teaching and learning visible and to maximize

opportunities to move students forward.

All teachers strongly agreed that expert teachers form a partnership with students

during a formative learning cycle, and that specific, timely feedback from teachers is the

most important element to feed learning forward. One teacher explained:

Teachers must be willing to work with students on a nonconventional level that

utilizes all types of formative assessment based on students' needs. Although

teachers need to continually evaluate their students and assess their performance,

it is even more important for them to teach students to assess their own learning.

Another teacher commented:

Teachers also need to be working with students individually as needed to help

them reach that target. Their lessons will be most effective if they use the

information they have gathered from formative assessments to teach follow up

lessons whether that be whole-group, small group, or individualized.

Survey Statement 6 Results. Setting and committing to specific, appropriate, and
challenging goals lead to increased student achievement and motivation to learn.

A majority of teachers' responses indicated learning targets help teachers filter
subject content by focusing specifically on the most important learning goals. By
removing erroneous content, students are often more motivated to commit to achieving
each target.
One teacher explained:

When we set goals, we strive to achieve them. When we look at how we progress

toward those goals, students are better aware of where they are as a learner and

what they need to do to achieve the expectation. However, if there is no

communication during the progression of reaching that goal, then there is not as

much achievement.

Another teacher explained how differentiation for a few could have a positive affect for
all:

Teachers must be willing to differentiate learning targets based on students'

strengths and weaknesses. Providing challenging opportunities for students to

work on their level can advance each learner to the next stage. In addition, I

believe in allowing students a chance to share their understanding and projects in

a whole class discussion after learning has occurred. Sometimes, students'

misperceptions can be best clarified by other students.

Survey Statement 7 Results. Intentionally developing assessment-capable students is a crucial step toward closing the achievement gap.

Responses were overwhelmingly positive as to the importance of teaching students to become assessment-capable. Teachers reported that assessment-capable students are more confident and resilient; they have an ability to transfer and apply skills; they develop stick-to-itiveness and a can-do attitude, these students know how to use look-fors and criteria for success; and they seek feedback from a variety of sources and then use it to self-correct. One teacher spoke on the importance of modeling assessment strategies for students:

> Promoting assessment-capable students requires teachers to engage in modeling assessment-taking strategies while engaging students in a similar performance of understanding. Students should be taught strategies for taking each type of assessment whether it is multiple-choice, performance driven, or an essay format. Teachers can help students achieve the expectations set forth by teaching students assessment-taking strategies and modeling appropriate answers.

Another teacher spoke about the difficulties related to teaching young students to self-assess. The teacher said:

> It has been a challenge teaching young students to accurately assess themselves. They are very confident by nature and believe they are doing a good job even if they are not. It is hard for them to recognize an area where they are confused. At a young age, students need lots of teacher support to help them.

One teacher questioned the importance of developing assessment-capable students. That teacher elaborated by saying:

I do feel there is more to student learning than building assessment-capable students. Although important, I feel developing life-capable students is a crucial step toward closing the achievement gap. In my opinion, teaching students about good character and positive living is more important than building their ability to achieve on assessments.

Survey Statement 8 Results. Learning targets help to increase students' understanding of knowledge and skills.

All participants perceived learning targets as having the potential to increase students' knowledge and skills. A majority of responses attributed students' increased knowledge and skills to be the result of clarification on the learning goal viewed by participants as beneficial for both teachers and students. Explanations included positive comments about the visibility of learning targets stated on the board as beneficial to students who seek to self-regulate and to teachers who continually verbalize the learning target throughout each lesson or review the learning targets at the end of each day. One teacher explained,

Learning targets help keep me on track and help my students and I make the most of each day. In my room, weekly learning targets for each subject are displayed around a large learning target bulletin board, and daily learning targets are placed around the bull's eye. In the bull's eye area, I have a spinning arrow. Throughout the day, students enjoy taking turns at spinning the arrow to reveal the specific learning target to be mastered during each lesson. Many students begin each day eager to see the new learning targets for the day, and at the end of each day, the display is useful in reviewing what was learned.

Another teacher explained,

> I definitely think that learning goals clearly stated are advantageous in that they
> show students what it is that mastery looks like and helps to clarify any confusion
> or misunderstanding in the lesson. Furthermore, students can easily assess
> themselves and reflect on their own learning. Creating targets and having an
> essential question for each lesson could help produce deeper level thinking and
> understanding of our world.

> **Survey Statement 9 Results.** Overall, your participation in this study and the

implementation of A Learning Target Theory of Action enhanced your teaching and

students' learning in the classroom.

Most teachers reported learning targets brought clarity as to the purpose of each

lesson. Clarification of the learning goal enhanced everyone's ability to stay focused on

the task at hand.

One teacher wrote:

> My participation in this study has helped my teaching abilities because I am more
> aware of the targets that need to be reached. Breaking down the target into
> necessary skills also helps me figure out where and why a student is struggling.

One participant struggled with teaching her young students to self-assess. She stated:

> I have always thought learning targets were important. I have also believed that it
> is important to communicate the purpose of a lesson and do quick checks to make
> sure the students are on target and that they themselves can check to see if they
> learned what they were supposed to learn. What this study has taught me was the
> self-reflection piece is very difficult for my students. When their work shows that

they have not yet met the target, but their self-assessments say they have, there's a problem. It is a new question I have--especially in this age of data collection and goal setting--as to how to help my students self-assess. How do I help them be able to know for themselves if they are struggling with something or not? It is easier said than done. When it is cut and dry (e.g. jump rope, ride a bike, etc.), they know whether they can or cannot because they can demonstrate the skill or not. When it comes to classroom academic standards, they struggle more. If I ask them to tell me the main idea, and they give a wrong answer, it is apparent that they do not understand that they are not successful with the learning goal even though they think they understand. Until my feedback and until I confer with them, they don't know that they don't get it. That's the most challenging part of this. It does not mean that the study did not enhance my teaching, but it did open new questions and problems that I did not expect to be there.

Qualitative Analysis and Results of Recorded Interviews

The final instrument used in this study was a recorded interview with each team leader and the building principal. The purpose for interviewing team leaders was to acquire a general understanding of how each team utilized learning targets in their curriculum and instructional practices and their perceptions on the effectiveness of learning targets in boosting student engagement, comprehension of subject matter, and students' academic achievement. The researcher chose to interview a small sample of teachers who may or may not have acted as participants in this study, to avoid redundant answers often shared among team members working in the same grade level. Teachers' responses were recorded, transcribed, analyzed, and thematically coded again utilizing

Braun and Clarke's (2006) 6-Phases of Thematic Analysis. The same four questions were used for all classroom teachers. However, the questions were slightly modified for the building administrator to gauge her perceptions of the overall effect of the integration of learning targets on a school-wide level.

Interview Question 1 Results. What effect do learning targets have on teachers' lesson planning and instructional practices?

A building administrator responded that the integration of learning targets have produced positive changes throughout the building. First was the visibility of classroom learning goals. Walk-through observations revealed learning targets posted on signs, Smartboards, anchor charts, or simply written on the board. Also observed was enhanced engagement on the learning goal between students and teachers and dialogue about learning targets, criteria for success, and strategies for self-assessment. She further asserted:

> I also noticed more teachers posting rubrics, exemplars, and self-assessment
> guides. Many teachers were using individual targets, which depicted each
> student's current level of knowledge or ability in route to mastery of the target.

A majority of team leaders responded that learning targets bring about clarity and simplicity to a learning goal. Three of the six-team leaders spoke on classroom processes and each day or lesson beginning with a classroom meeting to discuss each new learning target and criteria for success. All team leaders reported learning targets being posted throughout the lesson. Most team leaders conveyed their team's practice of continually revisiting each learning target before, during, and after each lesson.

Interview Question 2 Results. What effect do learning targets have on students' learning?

An administrator responded that learning targets have improved the way students articulate about what they're learning. She stated:

Before, when I'd walk into a classroom and ask students what they're working on, students would say spelling or writing. Now when I walk into a lesson and ask students what they are working on, they are much more specific and actually want to explain what they are doing, 'We are writing and we're trying to find adjectives in our work.

One team leader commented that learning targets are beneficial because students know what they're going to learn and how to accomplish the goal before actually trying it. Another team found learning targets useful for students in that they serve as visual goals and help students track their progress. Team leaders were united in that learning targets help focus students' attention on key elements of a lesson. One team leader asserted,

 If I'm reading a book to students and I want them to focus on how people find things in a community to satisfy their needs, I'll explain the learning target to students and in a sense, channel their energies to listen for that information while I'm reading. By using this approach, I've found a much more positive response to students' overall efforts. Whereas before, each student may listen to the story and get caught up in minute details that may or may not have anything to do with the point of the lesson. I think that's the best part of learning targets!

Interview Question 3 Results. How often did you go back to revisit each target?

Each team differed in their philosophy on revisiting learning targets throughout

each day and on days following. Some team leaders reported they continually revisit each

target throughout each day as well as begin the following day with a review of

yesterday's targets. Other team leaders reported inconsistency in their efforts to review

previous targets, which may not be relevant to the immediate target for that day. One

team leader described,

> Unfortunately, I do not revisit the target often, and I'm not sure if the other
>
> teachers do or not. It's just that there's so much to do in every lesson, I think we
>
> become wrapped up with moving forward in just teaching the lesson. There are
>
> certain targets, like power targets that we mention probably daily.

Interview Question 4 Results. What are your perceptions of learning targets and

do you think it's a valuable instructional component?

All three team leaders teaching grades K-2 reported difficulties implementing the

processes of a Learning Target Theory of Action. They found it useful stating the

learning target and showing students exactly what to do to be successful. However, using

criteria for success and attempting to teach students self-assessment strategies were

extremely difficult. A team leader commented more on this:

> Having students complete the self-evaluation, form was very difficult. Maybe
>
> developmentally they're not ready to assess themselves yet because my entire
>
> team and I found our students to all believe they could do everything well.
>
> Literally, all students in all of our classrooms marked perfect scores for all
>
> assessments indicating they completely understood the learning target and have
>
> mastered the concept. Like I may teach a lesson on main idea and students are

scoring themselves high in terms of understanding yet their performance

assessment reveals a lack of understanding.

Team leaders teaching intermediate grades 3 – 5 found learning targets to be beneficial

for both students and teachers. They help keep everyone on track throughout the day. One

teacher asserted:

Learning targets have completely changed the way I teach and the way my

students learn. I begin each morning with a classroom meeting to introduce each

new target for each subject and allow students to predict, reflect, conceptualize

prior knowledge, share ideas, tell stories, make requests, and ask questions about

each target. This is a great time for me to gauge students' understandings and

relative awareness of the topic.

Action Tool D Packets

The Action Tools provided by Moss and Brookhart (2012) in *Learning Targets*

were used by teachers to ensure use of specific criteria to be used during implementation

of target-based instruction. Although these tools were not part of the instrumentation used

in this study, they were valuable resources to support teachers' integration of learning

targets in curriculum design and instructional practices as well as assisted in the

collection of evidence for targeted-based instruction. Each participant completed three

Action Tool D packets for purposes of self-assessment, and the results have been

tabulated on a table for a comparison of responses.

Evidence of a LTTA in Teachers' Instructional Practices:

Data was collected through teachers' self-assessment surveys both before and

after each of the three, 45-minute workshops conducted for training purposes. The

results, though useful to the researcher in the regulation of workshop material best suited

for the general population, were not considered as findings to the study. The pre- and

post-test data gained through teachers' self-assessment surveys were used by the

researcher to scaffold the content of each workshops presentation according to material

that would address the generalized level of knowledge and understanding possessed by

teachers in the study school. Confidentiality was maintained by including all certified

teachers in attendance at each of the three staff meetings and having no identification

included on the surveys. Both building administrators participated in each of the three

workshops, as well as completion of self-assessments.

An open-ended, six-item, ranking-scale questionnaire was distributed at each of

the three workshops. At the first workshop, the pre- and post- self-assessment survey

were administered to both administrators and 36 teachers, excluding the researcher who

throughout the study did not participate in the self-assessment surveys, since survey

questions were developed by the researcher herself and required tacit knowledge of

target-based instruction to devise. Therefore, data generated by the researcher/presenter

would skew the results.

Responses from the pre- and post-test self-assessment survey were tabulated and

presented in terms of how certified staff at the study school responded to six statements,

with the choices ranking participants' knowledge from '1' (low) to '5' (high). In keeping

with the 'I can' statements associated with learning targets, teachers' self-assessment

surveys consisted of 'I can' statements rather than questions about their level of

knowledge about each topic at the moment the survey was conducted. The pre- and post-

responses from the first teachers' self-assessment survey were tabulated to show

teachers' growth of knowledge after each workshop. Tables 3, 4, and 5 display results.

Table 3.

Workshop 1: Teachers' Self-Assessment on Learning Target Usage and Know How

I Can Statements	Pretest					Posttest				
	1	2	3	4	5	1	2	3	4	5
I can explain the difference between standards and targets…	18	31	28	21	3	0	0	5	56	38
I can develop and implement lessons using learning targets…	20	36	28	13	.03	0	0	15	49	36
I know how to use criteria for success to produce evidence…	15	26	46	18	0	0	.03	23	46	28
I can describe how targets are used in assessments…	26	28	36	10	0	.03	.03	21	44	31
I can identify considerations for implementation…	28	46	15	13	0	.03	.05	23	41	28
I can distinguish between four types of learning targets…	56	28	15	0	0	.03	10	23	31	33

Total Number of Respondents = 39

Note. Participants rated their knowledge of each 'I can statement' using a scale from one (low) to five (high) both before and after Workshop 1. Figures represent a percentile vote.

Table 4.

Workshop 2: Teachers' Self-Assessment on Learning Target Usage and Know How

I Can Statements	Pretest					Posttest				
	1	2	3	4	5	1	2	3	4	5
I KNOW how learning targets relate to a learning progression.	23	35	25	13	.05	0	0	.05	45	50
I can build a learning progression from an objective…	23	30	25	23	0	0	0	20	40	40
I can use formative assessment techniques to make progress …	15	38	43	.03	.03	0	0	20	50	30
I KNOW the sequential steps to follow when 'mining'…	20	33	30	15	.03	0	0	25	38	38
I KNOW how to support students' mastery of learning …	23	45	23	.08	.03	0	0	0	38	63
I can use the four-step framework to share the target…	30	30	18	20	.03	0	0	23	53	25

Total Number of Respondents = 40

Note. Participants rated their knowledge of each 'I can statement' using a scale from one (low) to five (high) both before and after Workshop 2. Figures represent a percentile vote.

Table 5.

Workshop 3: Teachers' Self-Assessment on Learning Target Usage and Know How

I Can Statements	Pretest					Posttest				
	1	2	3	4	5	1	2	3	4	5
I can use learning targets to help students aim for better…	0	0	11	35	53	0	0	0	34	66
I can utilize effective ways to share learning targets …	0	0	11	21	68	0	0	0	13	87
I can utilize effective ways to share criteria of/for success…	13	26	13	13	8	0	0	8	55	37
I can design a performance of understanding that supports …	0	0	21	32	47	0	0	18	34	47
I can deliver the primary elements of a LTTA…	13	8	18	39	21	0	0	3	29	68
I can feed learning forward by partnering with my students	0	0	24	32	45	0	0	0	24	76

Total Number of Respondents = 38

Note. Participants rated their knowledge of each 'I can statement' using a scale from one (low) to five (high) both before and after Workshop 3. Figures represent a percentile vote.

Summary

This mixed-methods study employed the used of both quantitative and qualitative data to investigate how teachers evidence their understanding of learning targets in their instructional practices, and how they perceive the effectiveness of learning targets in advancing student achievement. A Learning Target Theory of Action was the conceptual framework for implementation. Usage of learning targets and perceptions on effectiveness were measured quantitatively through the use of a Likert-scale survey. Open-ended responses after each survey statement were analyzed and reported, along with recorded interviews, which together made up the portion of qualitative data results.

Chapter Five: Discussion, Implications, and Recommendations

The purpose of this study was to determine teacher understanding of learning targets in the curriculum, and their perceptions as to the effectiveness of targets as learning strategies to assist students in improving their academic achievement. This was a mixed methods study, which generated both quantitative and qualitative data. A teachers' survey distributed through Surveymonkey.com generated quantitative data. Two methods generated qualitative data: an open-ended response prompt following each of nine statements on a teachers' survey and recorded interviews with each team leader and one building administrator.

Research Questions and Hypotheses

There were two research questions guiding this study as well as a hypothesis for each question.

Question 1: How do teachers in one school within the study district evidence their understanding of the use of learning targets in their curriculum and instructional practices?

Alternative Hypothesis 1: Teachers will indicate via survey responses their understanding of the purpose(s) of learning targets in their curriculum and instructional strategies.

Question 2: How do teachers in one school perceive the effectiveness of using learning targets to increase student engagement, comprehension of subject matter, and their academic achievement?

Alternative Hypothesis 2: Teachers surveyed will perceive a difference in student classroom engagement, comprehension, and achievement, as a result of using learning targets in their curriculum and instructional strategies.

Review of Methodology

In order to determine teachers' perceptions as to the effectiveness of learning targets, the first step was to ensure proper usage and efforts toward effective implementation. The researcher presented three workshops on learning targets based on a Learning Target Theory of Action developed by Moss and Brookhart (2012) in their book, *Learning Targets*: *Helping Students Aim for Understanding in Today's Lesson*. This book served as the conceptual framework for exemplar lesson planning and delivery. Teachers used data tools included in the book for planning and delivering three lessons.

After a nine-week period of implementation, participants responded to a Likert-scale survey. The survey consisted of nine 'I can' statements. Survey questions 2, 3, 4, 5, and 6 related to teachers' understanding of learning targets, with regard to research question 1. Survey questions 1, 7, 8, and 9 related to benefits of learning targets on student achievement, with regard to research question 2. The survey utilized a 5-point Likert scale of Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, and Strongly Disagree. Teachers' responses of Strongly agree and Agree were tabulated as positive, whereas responses of Neither agree nor Disagree, Disagree, and Strongly disagree were counted as negative. A two-tailed *t*-test was used to determine the potential difference in proportions between positive and negative responses. Qualitative data included an open-ended response prompt following each survey statement and selective

interviews with each team leader in grades K through 5, along with a building

administrator. Teachers' responses were analyzed, thematically coded, defined, and

summarized based on patterns relative to both research questions.

Analysis of Quantitative Findings

A *t*-test for difference in proportions showed that teachers perceived a significant

difference in student classroom engagement, comprehension, and achievement, following

the use of learning targets in their curriculum and instructional strategies. Four statements

on the teachers' survey specifically related to the benefits of learning targets and yielded

the following results: (a) 93% of the teachers confirmed that learning targets had a

meaningful impact on students' learning in the classroom; (b) 93% of the teachers

believed that learning targets helped close the achievement gap by developing

assessment-capable skills; (c) 100% of the teachers believed that learning targets helped

increase students' understanding of knowledge and skills; and (d) 93% of the teachers

believed that learning targets enhance students' learning in the classroom.

A *t*-test further revealed that teachers understood the purpose of learning targets in

their lesson planning and instructional delivery. Five statements on the teachers' survey

related to teachers' understanding and yielded the following results: (a) 100% of the

teachers strongly agreed that each learning target served a purpose in a longer learning

trajectory toward a larger learning goal; (b) 93% of the teachers strongly agreed that

learning goals served as targets, when both students and teachers aim for mastery; (c)

100% of teachers agreed that every lesson needs a performance of understanding to make

the learning target for today's lesson clear; (d) 100% of the teachers agreed that expert

teachers formed a partnership with their students during a formative learning cycle to

make teaching and learning visible and to maximize opportunities to feed students

forward; and (e) 93% of the teachers agreed that a Learning Target Theory of Action

enhanced their teaching.

Discussion of Qualitative Data Analysis on Survey Statements

Each survey statement was followed by an open-ended response prompt

requesting participants to elaborate on each answer. Overall, participants' responses

indicated understanding on the purpose and usage of learning targets in lesson planning

and instructional delivery and unanimous agreement that learning targets enhanced

teaching and learning. Many responses expressed teachers' plans to increase usage and

implementation of a Learning Target Theory of Action, following the study. Most

teachers said they displayed and discussed learning targets regularly and felt learning

targets clarified and increased focus on learning goals. Teachers also acknowledged the

importance of providing students a meaningful performance of understanding. Teachers

reported students' increased interest and engagement in the learning goal motivated by

hitting the target. Teachers also described increased collaboration and partnership with

their students.

There were four neutral responses on the Likert-scale survey for questions 1, 3, 7,

and 9, and consequently they rated as a negative response. The researcher was compelled

to discuss each of these responses, as full support and understanding of learning targets

could be vital to implementation, since each person operates based on their individual

belief system (Argyris & Schön, 1974), and beliefs drive the actions within all members

of an organization at any given time (Moss & Brookhart, 2012).

Statement 1: Learning targets have a meaningful impact on learning and effective teaching in your classroom. A respondent explained, 'Sometimes learning targets are helpful and sometimes they're not. Mostly they work when I remember to remind students about the target, but I have so many other things to do that I often forget.' This response suggested that this teacher considered learning targets to be an additional requirement, rather than the driving force behind the teacher's instructional planning and delivery technique. When used correctly, learning targets convey the desired learning outcome and all other actions that should be taken within a classroom (Battelle for Kids, 2010; Chappuis et al., 2012; Moss & Brookhart, 2012).

Statement 3: It's not a learning target unless both the teacher and students aim for it during today's lesson. A respondent wrote, 'I am not sure about this statement. I do my best to make learning targets a priority, but there are times when students don't engage in learning. Why would a student's lack of interest or concern invalidate the learning target?' This response implied either a misinterpretation of the statement or the teacher's lack of commitment to setting high expectations for both herself and her students through shared intellectual empowerment. Fitzpatrick (1992) described the process of shared intellectual empowerment as a phenomenon that occurs when students view outcomes of significance as the basis of learning and instruction. Schmoker (1999; 2001; 2009) purported that shared intellectual empowerment resulted when, in any subject area, students and teachers want to know where they stand in relation to achievable standards; and when they work together to improve knowing how they are doing. If the teacher acknowledges a student's lack of engagement in learning, she is obligated to first discover the cause and secondly produce a change. The teacher's response that some

students do not engage in learning, even after she has done her best, seems to suggest that

she accepts that outcome. Rather than accepting times when students do not engage,

thereby inferring there will be times when students do not learn, teachers can and should

differentiate instruction to promote students' engagement in learning (Moss & Brookhart,

2012).

Statement 7, intentionally, developing assessment-capable students is a crucial

step toward closing the achievement gap. One participant responded,

> I do feel there is more to student learning than building assessment-capable
>
> students. Although important, I feel developing life-capable students is a crucial
>
> step toward closing the achievement gap. In my opinion, teaching students about
>
> good character and positive living is more important than building their ability to
>
> achieve on assessments.

This response could have been made by a respondent who was ill informed on Moss and

Brookhart's (2012) formative learning cycle; subsequently, the intent of the question.

Moss and Brookhart contended a crucial element in advancing student achievement was

teaching students to self-monitor by using scoring guides, rubrics, feedback, student look-

fors, and other success criteria for judging and improving their own work, which must be

modeled continuously throughout the formative learning cycle.

Finally, statement 9: Your participation in this study and the implementation of a

Learning Target Theory of Action enhanced your teaching and students' learning in the

classroom. A respondent wrote,

> How do I help my students be able to know for themselves if they are struggling
>
> with something or not? It is easier said than done. When it is cut and dry (e.g.

jump rope, ride a bike, etc.), they know whether they can or cannot because they

can demonstrate the skill or not. When it comes to classroom academic standards,

they struggle more. If I ask them to tell me the main idea, and they give a wrong

answer, it is apparent that they do not understand that they are not successful with

the learning goal even though they think they understand. Until my feedback and

until I confer with them, they don't know that they don't get it. That's the most

challenging part of this. It does not mean that the study did not enhance my

teaching, but it did open new questions and problems that I did not expect to be

there. Is self-assessment even possible at such a young age?

Moss and Brookhart (2012) contended that it is inaccurate to assume that young students

and those with learning disabilities are unable to self-assess their own learning, and the

same inaccuracy can be made by assuming that gifted students have a natural ability to

self-assess. According to Moss and Brookhart, "All students can and should learn how to

self-assess . . . scaffolding any new skill requires that we provide incremental challenge

and support as we pull our students to higher levels of competence" (p. 92). Moss and

Brookhart further explained that self-assessment is more that students judging the quality

of their work. The process of self-assessment must begin at the very beginning of the

lesson when teachers are sharing the learning target and criteria for success through

modeling and guided instruction. Teachers should model techniques for problem solving

and strategies for success, while reflecting on possible challenges that may arise. Swift,

effective feedback is essential for everyone but particularly necessary for very young

students. Moss and Brookhart suggested utilizing indicator systems, such as emoji or

traffic light symbols to help students indicate their level of understanding. Over time,

continuous reinforcement of self-assessment techniques can improve students' use of

self-assessment guides and ultimately, their abilities to self-regulate.

Discussion on Qualitative Analysis of Recorded Interviews

The final instrument used in this study was a recorded interview with each team

leader and the building principal. The purpose for interviewing team leaders was to

acquire a general understanding of how each team utilized learning targets in their

curriculum and instructional practices and their perceptions on the effectiveness of

learning targets in boosting student engagement, comprehension of subject matter, and

students' academic achievement. The researcher chose to interview a small sample of

teachers who may, or may not have acted as participants in this study to avoid redundant

answers often shared among team members working in the same grade level. The

questions were as follows:

1) What effect do learning targets have on teachers' lesson planning and

instructional practices?

2) What effect do learning targets have on students' learning?

3) How often did you go back to revisit each target?

4) What are your perceptions of learning targets and do you think it's a valuable

instructional component?

The responses made by an administrator were positive. She remarked on the

visibility of learning targets being posted throughout classrooms. This served to inform

students, the teacher, and both administrators. She also appreciated hearing increased

dialogue between students and teachers as she engaged in walk-through observations. She

noted both teachers and students saying criteria for success and students eager to share

the learning target as she entered each classroom. She indicated that teachers seemed

comfortable stating each lesson's target, but they seemed to struggle returning to the

target and reminding students to self-assess. The same issue was mentioned in two later

interviews. One team leader stated,

> Unfortunately, we do not revisit the target often. Each lesson usually takes the
>
> allotted time. Honestly, there's just not enough time to review each and every
>
> learning target. We are probably not very clear on the criteria for success either.
>
> For example, if the kids are writing an informational paragraph, giving them the
>
> rubric ahead of time would probably be good, but we do put the target on the
>
> board and the steps to meet the target while students are working/writing their
>
> paragraph so they have some framework for accurate completion.

Another team leader commented,

> Some days I'm better than other days about reviewing past targets. As a team, we
>
> have so much to cover that we barely have enough time to get through our
>
> curriculum as it is and re-teaching a lesson really sets us back. We are also
>
> confused about learning targets for today's lesson versus the learning targets in
>
> the curriculum guide, which are to be mastered by year's end.

The concern that teachers inconsistently revisit learning targets observed by the

administrator and articulated by two team leaders, which represent at least eight teachers

in the school, is a matter of concern, because it suggests that these teachers may be using

learning targets in the same context as traditional teachers used educational objectives.

The benefit of learning targets to both students and teachers is the clarification for

learning on each concept and skill within a learning trajectory. Moss and Brookhart

(2012) explained that this was analogous to the pieces of a puzzle that faithfully fit together to represent a completed picture. By breaking an objective into a set of learning targets that make up a learning trajectory, teachers can engage students in individual performances of understanding for each sub-skill that makes up a larger learning goal, standard, objective, etc. In addition, by breaking down learning goals into smaller, individual skills, teachers can better pinpoint students' weaknesses and differentiate instruction accordingly. Continuous, ongoing review of each learning target within a learning trajectory is essential for students' achievement of the entire learning goal. One team's practice of posting learning targets could be a helpful suggestion for team leaders who reported time restrictions interfered with the team's ability to review. This team leader reported,

> We keep each day's learning targets posted throughout an entire unit and use them for quick introductions to each new lesson, repeated reminders, and final reviews before dismissal. Also, the collection of learning targets posted around the room makes reviewing for the final test that much easier.

It is apparent that this team understands the purpose of each learning target as they continually review past lessons along the route towards mastery of the overarching learning goal.

Overall, the responses given by team leaders were positive. Teachers reported increased clarity on learning goals enhanced their teaching and students learning by focusing on the most important part of the lesson to teach and learn. Most team leaders discussed the value of 'I can' statements. One team leader said,

I can statements definitely help my students! Like when we were writing

informational paragraphs. I used an I can statement to make students more aware

of the steps required to be successful by telling them, I can write an informational

paragraph and to do this I can begin with a main idea sentence. I can support my

main idea with at least three detail sentences to describe and explain, and I can

write a closing sentence that refers back to the main idea. This helps them

internalize their own level of success along the continuum of mastery for the

target goal.

Another team leader reported that I can statements assisted students' comprehension on

the performance of understanding. She said she would tell her students exactly what they

were going to do by using the I can statement. She explained,

I would tell my students to repeat after me, I can put periods at the end of each

sentence. Then I would say what that means and demonstrate how to do it. At

times, this was very helpful! It was so helpful that some students would ask me

repeatedly, throughout a lesson, to repeat the learning target. Since many of them

were unable to read the learning target sign, they wanted occasional reminders of

the target goal to stay on track.

One team leader voiced an unexpected comment received from parents about I can

statements during parent teacher conferences. She reported,

Many parents told us at conferences that their other child's teacher was putting a

bunch of I can statements in their weekly newsletters and they don't have any clue

what it all means. Parents complained that their kids have no idea what it means

either, but the teacher makes the class say I can do this. We think parents will

> eventually get used to the I can statements when the district converts to a
>
> standards-based report card, but right now I don't think we're there. I think
>
> primarily parents just want to know what is due and when do my kids have to
>
> submit.

When utilized and communicated effectively, learning targets can inform parents about

the expectations for learning in the classroom. By sharing daily, weekly, or monthly

learning targets with parents, teachers can forge a partnership between school and home

(Moss & Brookhart, 2012). In the above situation, it appeared that some parents may be

confused as to the intent of a learning target or the teachers' purpose for including it in

the newsletter. The implication for teachers is to ensure communication about learning

targets with parents at the beginning of the year to avoid unnecessary confusion in the

future.

The most common concern expressed by team leaders was students' inabilities to

self-assess. One team leader said, 'The self-evaluation for young students is impractical

and very difficult to do at this grade level.' Another team leader said,

> Having students complete the self-evaluation, form was very difficult. Maybe
>
> developmentally they're not ready to assess themselves yet because my entire
>
> team and I found our students to all believe they could do everything well.
>
> Literally, all students in all of our classrooms marked perfect scores for all
>
> assessments indicating they completely understood the learning target and have
>
> mastered the concept. Like I may teach a lesson on main idea and students are
>
> scoring themselves high in terms of understanding yet their performance
>
> assessment reveals a lack of understanding. I'm not sure if the thumbs up /

thumbs down approach contributed to skewed evaluations or if they're just too

young to understand the concept.

Another team leader reported,

We liked everything except the self-assessment thing. Every time we asked our

students to assess how they think they were doing on mastering the learning target

and to show with thumbs up, thumbs out, or thumbs down, every single kid had

thumbs up in the air. However, half of those kids would turn right around and fail

an assessment on that skill. It was the same result in all of our classrooms. These

guys cannot accurately assess their own understanding or generally have difficulty

evaluating if they truly understand how to do something or not.

Moss and Brookhart (2012) purported that students must be taught to self-assess

and equipping students to acquire these skills "may require a shift in thinking for some

teachers" (p. 80). Traditional teaching techniques assumed teachers would teach and

assign lessons accordingly. Consequently, learning occurred through students'

completion of assignments. Self-assessment requires that students learn to use three

questions, which guide the formative assessment processes. The questions include:

'Where am I going? Where am I now? And 'How can I close the gap between where am I

now and where I want to go?' (Chappuis & Stiggins, 2002, pp. 42 - 43). Teachers must

demonstrate and model utilization of these questions, give continuous feedback, and

allow students an opportunity to improve their work. Moss and Brookhart proclaimed, "It

is this golden second change that makes the difference" (p. 21).

Summary of the Literature Related to the Research Questions

One of the research questions guiding this study was, why do teachers hesitate to design lessons and units based on what students should know and be able to do in favor of covering what is within the curriculum? The research revealed a few possible answers to this question. First, it was suggested that teachers are 'fixated' on their beliefs about educational practices, and through acceptance of past authority-figures, emulate their practices accordingly (Schreiber & Moss, 2002). Schreiber and Moss (2002) purported that people's belief systems influence their actions. Therefore, teachers working within an organization engage in traditional practices for lesson planning and delivery based on curriculum guidelines. Argyris and Schön (1974) contended that people, through habitual practice, develop mental maps for doing things and become trained to articulate acceptable responses on cue. There is often a contradiction between conflicting performances of what people say they do as compared to what people actually do. Changing teachers' techniques for lesson planning and delivery would require a belief-altering system of change referred to as double-loop learning (Argyris & Schön, 1978). Double-loop learning is the process of questioning one's beliefs and underlying strategies, and the use of reflective analysis as the foundation for change. In contrast to this is single-loop learning where people and organizations attempt to change their behavior or apply a new strategy while holding onto their beliefs (Argyris & Schon, 1978).

The literature also attributed teachers' hesitation to design lessons and units based on what students should know and be able to do to a lack of training. Goodlad (1983), Stiggins (2002), Wiggins and McTighe (1998; 2005a; 2005b) discerned that most teachers were ill prepared to adapt to a standards-based framework for teaching due to

inadequate preparation and an opportunity to do so. "Historically, U.S. education has minimized the role of planning and design in teaching" (Wiggins & McTighe, 2005b, p. 158). Educators, due to school schedules and duties, rarely have opportunities to engage in substantive curriculum planning (Wiggins & McTighe, 1998, 2005a; 2005b). This study and usage of Moss and Brookhart's (2012) Learning Target Theory of Action guided teachers' efforts towards successful implementation of learning targets in both planning and instructional delivery and incorporated the use of formative assessment practices.

Moss and Brookhart (2012) contended that meaningful design of curriculum required teachers to focus on planning and delivering guided instruction of essential content and to provide students' performances of understanding that are meaningful. A strong performance of understanding must meet certain requirements to be considered meaningful (Moss & Brookhart, 2012). Moss and Brookhart purported a meaningful performance of understanding develops learners' knowledge or skills and supplies evidence of learners' abilities. Evidence of learning enables teachers and students an opportunity to adjust their learning or teaching tactics (Popham, 2008). Classroom teachers should be trained to design or redesign curriculum in a way that makes it relevant to the needs of students (Tyler, 2013), and educational leaders need to allow time for teachers to address the needs of students working at all levels (Moss & Brookhart, 2012).

Beane (1995b) proposed "subject-centered or discipline-focused teaching and learning models that are dominant in schools today are decontextualized, driven by curriculum objectives, and divorced from learner outcomes" (p. 98). More often than not,

teachers do not make decisions on what students should know and be able to do. In fact, the current system of curriculum and instructional development encourages teachers to teach what they know and what they are familiar with, along with the contents of the curriculum guide (Wiggins & McTighe, 1998; 2005a; 2005b). Wood (1992) questioned why subject content could not be delivered in the framework of much larger, broader educational goals, perhaps a curriculum embedded by essential questions where students' academic performance could be assessed through authentic performances.

Wiggins and McTighe (1998; 2005a; 2005b) viewed essential questions as effectively establishing priorities in a course of study. Essential questions go to the heart of a discipline. Essential questions arise from the teacher-designer's answers to what students should know and be able to do. Curriculum designers can design a course of study and build tests around recurring essential questions that give rise to important theories and stories. Essential questions guide teaching and engage students in uncovering the big ideas at the heart of each subject. Fitzpatrick (1992) stated that curriculums should be organized around essential questions to which the content within the curriculum would represent the answers, and the assessment or grading of student progress would depend on students reaching the essential outcomes, or answering successfully the essential questions. Essential questions represent learning targets for both teachers and students and are developed through strategies revealed in task analysis.

Task analysis is what to teach and how to teach it, which identifies the learning target. Wiggins (1989) proposed that the task of all curriculums was to equip students with the ability to keep questioning and, to demonstrate whether they have a thoughtful as opposed to thoughtless grasp of the essentials:

The aim of the modern curriculum ought to be to use selected content as a vehicle

for developing in students an unwillingness to accept glib, unwarranted answers

from any source. They must leave school with the passion to question, without

fear of looking foolish, and with the knowledge to learn where and how the facts

can be found. (p. 57)

Teaching students to monitor their own learning through reflective thought is a crucial

step to closing the achievement gap (Moss & Brookhart, 2012).

Another research question, which guided this study, was, how do classroom

teachers know what influence or effect his curriculum design and delivery is having on

student achievement. Wiggins and McTighe (2005b) purported, "A great shift requires us

to be aggressive in assessing as we teach, uncovering the learners' understanding and

misunderstanding along the way" (p. 247) and using results-oriented data to improve

instruction, thereby improving learning (Black & Wiliam, 1998; Chappuis & Stiggins,

2002; Darling-Hammond & Falk, 1997; Wiggins & McTighe, 2005a; 2005b). Popham

(2008) described two types of instructional adjustments employed by teachers: minor

changes to instructional delivery and major changes causing teachers to change their

overall approach. Needed adjustments are revealed through a continuous collection of

evidence both formal and informal about students' understandings and

misunderstandings. When adjustments are deemed necessary, Popham (2008)

recommended teachers examine the learning progression to determine if a concept or skill

needs to be retaught before returning to the target-goal to be learned.

A fourth research question guiding this study was, how does standards-based

curriculum design permit teachers to determine exactly what students need to learn, what

to teach, and what to work on as they engage in designing and teaching activities best

performed in conjunction with colleagues. Standards-based instruction assumes that

learning is progressive and over time, will result in achievement of a larger standard

(Moss & Brookhart, 2012). The Common Core State Standards were written to provide a

common basis for understanding equal connections between what is taught, prior

knowledge, and real life (CCSS Initiative, 2010). They offer teacher-designers a common

focus including learning targets framed as 'I can' statements, generative topics evidenced

through essential questions, outcomes aligned to appropriate performance assessments,

ongoing assessment, and integration of content. The frameworks provide exemplars of

what students should know and be able to do so that teacher-designers can know the end

of the game before they start. The role of the frameworks is to provide districts with an

organizing frame for building curricula using the Common Core State Standards as a

foundation. District curriculum guides furnish the interior plan and appropriate

instruction. The frameworks exist to provide teachers with help in designing curriculum

that is coherent since they are based on creating and maintaining visible connections

between purposes and everyday learning experiences, which will lead toward these

purposes.

Moss and Brookhart (2012) emphasized the importance of planning effective

instruction through a process they call mining. Teachers who "mine" instructional

objectives use a series of questions to determine the "lessons reason to live" (p. 29) and

to plan each learning trajectory. Key questions included: what skills and knowledge do

students need to learn; what content for lessons should be considered; and, how should

lessons be designed to best fit into an organized course of study? Following each lesson

within the learning trajectory, Moss and Brookhart suggested teachers engage in a new series of questions: What was learned yesterday? How well did they comprehend? Was there any confusion? What was accomplished? Where did the lesson leave off? Each lesson should have a new learning target and engage students in a meaningful performance of understanding so that both students and teachers can make adjustments if necessary.

A fifth research question guiding this study was, what are the roles of focus and coherence in curriculum design and development? Boyer (1995), in *The Basic School*, advanced his position that we must organize curriculum and teach it in our schools in a comprehensive and coherent manner. Curriculum with coherence enables students to see relationships and patterns, which the teacher as designer has been able to achieve by beginning this process from a predetermined end. Glatthorn (1995) said that we must establish the goals for student mastery, "the major concepts or theories by which learning is organized and then develop our activities around them" (p. 87). Beane (1995a) observed that curriculum which is incoherent, is because "many courses are mere conglomerates of activities with no organizing thread or overarching purpose" (p. 109). According to Beane (1995a), "Only by building units and lessons backward from worthy assessment tasks requiring the use of core content will we make students more likely to learn" (p. 118). Wiggins (1993) contended that a major flaw rendering most teacher made tests invalid is the habitual practice of designing tasks first and dealing with validity second. He continued on to explain:

This is an inevitable problem, given the teacher's tendency to try to design effective instructional activities as opposed to tasks designed backwards from the

results one hopes to obtain; it is a problem that we must do a better job of

addressing in professional development. (p. 238)

Willis (2002) experienced training with the teachers, which continually verified they are

not used to designing backward. He found it difficult to change the mentality from a font-

loaded to a back-loaded curriculum design. Willis always asked the same question to

teachers who could not separate themselves from the pressure of planning activity after

activity to cover as much material as possible. His question was simply, 'How do you

know they understand?' Perkins and Blythe (1994) described understanding as a

student's ability to use a topic in different, thought-demanding ways. Perrone (1994) saw

student understanding as a mirror of teacher understanding of what they most wanted

their children to take away and what the teacher pays attention to all of the time.

The standards within the goals enable work to be judged against clearly

articulated criteria (Unger, 1994). These provide teachers with confidence that how they

are teaching students and assessing their work actually contributes to their achievement

(Lewin & Shoemaker, 2011). Wiggins (1998) asked, "What would count as evidence of

successful teaching? Before we plan specific learning activities, our question must first

be what counts as evidence of understanding" (p. 63). Students must be, according to

Wiggins and McTighe, (2005b), able to answer the following questions with specificity

and confidence as the work develops:

> What will I have to understand by units end, and what does that understanding
>
> look like? What are my final obligations? What knowledge, skills, tasks, and
>
> questions must I master to meet those obligations and demonstrate understanding
>
> and proficiency? What is the immediate task? How does it help me meet my

overarching obligations? How does today's work relate to what we did

previously? What is most important about this work? How should I allot my time?

What aspects of this and future assignments demand the most attention? How

should I plan? What should I do next? What has priority in overall scheme of

things? How will my final work be judged? Where is my current performance

strongest and weakest? What can I do to improve?. (p. 117)

Wiggins and McTighe (2005b) reasoned that students learn to learn as they are guided

through the processes of self-assessment. Teachers should be modeling the importance of

effective use of these questions and asking themselves, Can an interpretation or definition

of what is being learned be offered? And does the student demonstrate the ability to apply

what she has learned to new situations? "We will fall back on textbook coverage if our

goals do not clarify what students must be able to do themselves at the end of instruction"

(Wiggins & McTighe, 1998, p. 162).

The final research question guiding this study was how do learning targets in

standards-based curriculum design allow teachers to decrease the amount of content to be

taught? Moss and Brookhart (2012) explained that learning targets reduce the amount of

content to be taught by clarifying exactly what students should know or be able to do, and

how they will know when they have achieved the goal. A learning target channels the

energy of both the teacher and students in the same direction, which enhances students'

learning. Without a learning target, both teachers and students are working towards

different goals: teachers are attempting to teach students content and students are working

to please the teacher. With the use of a learning target, both teachers and students are

working for the same goal and together, a partnership for learning can be formed.

Teachers' feedback supports students' progress towards the intended learning outcome as students are given a number of chances to achieve mastery (Moss & Brookhart, 2012).

Tyler advised designers to begin by identify the organizing threads or elements that are the basic concepts and skills to be taught (as cited in Oliva, 2005). He suggested educators minimize subject-content to advance attainment of essential knowledge and skills. Moss and Brookhart (2012) substantiated Tyler's theory and explained, "Expert teachers use specific learning targets to remove distracting items and irrelevant tasks from today's lesson" (p. 24). They reasoned that through increased clarification, students are more likely to focus and work harder on achieving the target goal.

To meet the needs of students living in the 21st century, educators must teach students to understand conceptual knowledge on a deeper level. "It means a new way of understanding the concept of knowledge, a new definition of the educated person, and a new way of designing and delivering the curriculum" (Coalition for 21st Century Schools, 2010, p. 3). The results of this study suggested a Learning Target Theory of Action could be an effective instructional method as it transfers the responsibility for learning on students and begins the process of self-regulation.

Implications

Battelle for Kids (2010) considered a learning target to be the heart of formative assessment practices. Targets implicitly convey that learning is something in which all should aim: the desired learning outcome and all other actions that should be taken within the classroom. Effective use of learning targets requires buy-in from all stakeholders including students, parents, teachers, and administrators.

Implications for teachers. The implication of this study for teachers' integration of learning targets in lesson planning and instructional delivery are based on the processes of formative assessment. Just as formative assessment is often misperceived as being a paper and pencil test, learning targets are often misperceived as being synonymous with a curricular aim or educational objective. On the contrary, learning targets are a process deeply rooted in formative assessment that clarifies for students what they must know or do, how they can do it, and how they'll know when they've successfully achieved the learning goal. Effective use of learning targets requires teachers to design and share clear learning targets, incorporate and model criteria for success, teach students to self-assess by using rubrics, scoring guides, exemplars, or other methods, and commit to the achievement of developing, sharing, guiding, and assessing challenging learning goals for students and themselves alike.

Implications for administrators. Implications of this study for school leaders' efforts to improve teachers' integration of learning targets suggests that the Learning Target Theory of Action by Moss and Brookhart (2012) is one to be examined. Data from this study revealed that the processes of a Learning Target Theory of Action, which incorporates the use of criteria for success, and the development of a meaningful performance of understanding within a formative learning cycle is beneficial to students' comprehension, knowledge and achievement. Moss and Brookhart contended that through building a culture based on this cohesive theory of action and approach to teaching and learning, teachers and students can be united in their efforts to improve skills and performance. To foster school-wide use of learning targets, principals must embrace this theory, provide necessary teacher development of lesson planning and

instructional delivery, disseminate information to parents and other community members, spark interest through bulletin boards, newsletters, post messages on the school marquee, and intentionally begin and groom the process of developing a culture that values setting and achieving target goals for students' learning.

       Implications for students. The implications of this study for students are when students learn to utilize criteria for success during a performance of understanding accurately aligned to a learning target, they gain confidence in their abilities to complete assignments without assistance and over time, they can learn to be self-regulating. Further, when guided by formative assessment strategies, students can learn to self-assess where they are in relation to where they need to be, set goals, utilize strategize, assess progress, make adjustments, and achieve learning goals. Students who learn to self-regulate develop a strong sense of self-efficacy. They believe themselves capable of achievement and they have confidence in making decisions that will positively affect their performance (Moss & Brookhart, 2012).

Recommendations for Further Research

       One improvement that could be made for future research was to increase the number of participants. This study had a limited number of participants due to the available number of certified teachers working within the school. This limitation could reduce the effect of the results and prohibit generalizations about the population. One recommendation for increasing the size of participants would be to include any teacher who works with at least one student, not just self-contained K through 5 classroom teachers. This would include all special education teachers, speech teachers, Title I teachers, resource teachers, etc. Because learning targets have been proven to increase

clarification on the learning goal for both students and teachers, it seems appropriate that any teacher and student could benefit. Expanding the study to more participants or including all schools within one district would strengthen the results and expand the applicability of a Learning Target Theory of Action.

The study could also be improved by lengthening the time-period for treatment. This study was conducted during the first quarter of the school year. Nine weeks may not have been enough time for teachers' perceptions to surface. It would be useful to know if teachers' abilities to incorporate learning targets in their lesson planning and instructional delivery increased over time and if they continued to perceive them as having a positive impact on student achievement. This study could also benefit by gathering information about each teaching participant. A teachers' experience makes a big difference in efforts to implement a new component. An experienced teacher has more practice and can use past experiences to alter an approach, whereas a new teacher has no experience to draw from and may be less inclined to make adjustments on what is perceived as being proper utilization.

Finally, this study could benefit by including data on student performance. It was suggested that learning targets have a positive impact on students' knowledge, comprehension, and student achievement, therefore student performance data would be useful to support those claims. Further, it might be interesting to track student performance data over an extended period of time. This could provide long-term results on the effects of using learning targets, rather than just measuring the results after one quarter of the school year. It would be interesting to know if students and teachers

continue to be motivated by learning targets, or if the interest in learning targets begins to wane over time.

Conclusion

This study sought to investigate how teachers in one elementary school used learning targets in their lesson planning and instructional practices and their perceptions about learning targets on students' achievement. The results of a teacher survey along with selective teacher interviews revealed teachers understood the purpose of learning targets in their curriculum and instructional strategies, and they perceived a significant difference in student classroom engagement, comprehension, and achievement as a result of using learning targets in their curriculum and instructional strategies. Though a small number of teachers participated in this study, the results offer insight as to how the elementary teachers in one school utilize learning targets in their lesson planning and instructional delivery and the teachers' perceptions on how they affected both students and themselves. A strength evidenced through this study was a revelation of the importance of learning targets as a central focus of formative assessment processes and the integration of different processes into one document. As each aspect of learning targets was examined with regard to lesson planning, instructional delivery, and impact on students and teachers, additional information in the form of useful strategies and practices was presented in the areas of teaching and learning.

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Appendix A

Consent of Building Principal to Conduct Action Research

FORT ZUMWALT SCHOOL DISTRICT
HAWTHORN ELEMENTARY SCHOOL
166 Boone Hills Drive
St. Peters, Missouri 63376

Telephone: (636) 474-3999
Fax: (636) 447-9216
Web Site: www.fz.k12.mo.us

Dr. Bernard J. DuBray
Superintendent of Schools

Ms. Nicole Shidaker
Principal

Ms. Teale Shearer
Administrative Assistant

April 10, 2013

To Whom It May Concern,

As principal of Hawthorn Elementary School, I have authorized Mrs. Friederich to collect data from staff in regards to their understanding, usage, and implementation of learning targets in their curriculum and instructional practices. I understand data will be derived from a number of sources ranging from survey questions, observations, journal entries, and interviews.

Further, I have given Mrs. Friederich consent to meet with staff members during grade level and Professional Learning Community (PLC) meetings to anonymously record their comments relative to their understanding and perceptions of the effectiveness of targeted-based curriculum and instruction in their classrooms.

Sincerely,

Nicole Shidaker
Principal, Hawthorn Elementary

Appendix B

Consent of District Superintendent to Conduct Action Research

FORT ZUMWALT SCHOOL DISTRICT
DISTRICT ADMINISTRATIVE OFFICES
555 E. Terra Lane
O'Fallon, Missouri 63366-2637

Honored for "Distinction in Performance" by the State Board of Education

Telephone:	(636) 272-6620		Dr. Bernard J. DuBray
Metro:	(636) 240-2072	July 22, 2013	Superintendent of Schools
Fax:	(636) 980-1946		
Web Site:	www.fz.k12.mo.us		

Melissa Friederich
199 Berry Manor Circle
St. Peters, MO 63376

Dear Melissa,

I have received your July 11 letter in which you request permission to perform research for your doctoral dissertation at Lindenwood University. My understanding is you will plan to conduct research on instructional pedagogy on learning targets and techniques for implementation. Based on the information you've included in your letter I will approve your project based on the following conditions:

1. All participation on the part of district staff must be voluntary.
2. All research and info published using data and observation on and of district subjects should be anonymous.

If I or Dr. Floyd can be of assistance to you in your project please do not hesitate to contact us. I look forward to the results of your research.

Sincerely,

Dr. Bernard J. DuBray
Superintendent

BJD:lw
Cc: Jackie Floyd
         Nicole Shidaker

Board of Education

Michael Price***	Barbara Bryant*	Scott Grasser*	Michael MacCormack***	Dr. Renee Porter*	Laura Schmidt*	Mike Swaringim*
President	Vice President	Member	Member	Member	Member	Member

* Certified Board Member / ** Advanced Certified Board Member / *** Master Certified Board Member

Appendix C

Meeting with District's Curriculum Coordinator for ELA

Dear Ms. Allen,

I'd like to meet with you to discuss the newly adopted curriculum specifically the integration of learning targets as an instructional component. I will be conducting an action research study with teachers at XXXXXXX and would like to meet to ensure alignment between the district's intent for learning targets and the learning target conceptual framework I will be using in my study.

Please let me know a date and time that works with your schedule.
Thank you,

Dear Mrs. Friederich,

I would love to talk with you. I am available to meet on July 25th at 9:00 AM. Let me know if this day will work for you and we can arrange a time.
Have a great day, and I can't wait to talk!

Ms. Allen,

July 25th would be perfect! I know you're busy so I very much appreciate your getting back to me so quickly. Any time would work for me. Just let me know what works for you, and I'll work around your schedule. It may be helpful for me to briefly explain my purpose for the meeting and the information I'm seeking.

My study is designed to analyze teachers' perceptions about learning targets, but my intent is to reinforce and support teachers' efforts in their design and delivery of lessons which will utilize targeted learning theory and principles

 I was thrilled to see our new curriculum incorporates learning targets and essential questions, but I began wondering about first, my own ability and second, the ability of my colleagues to actually apply these principles in everyday lessons using them in the manner for which they were developed. I believe there is a big difference in traditional teaching and targeted instruction.

One common misconception is the ambiguity between objectives and learning targets. I'd like to clarify or at least attempt to, the intended use of targets, demonstrate how to use essential questions to authenticate learning, model a lesson from beginning to end which exemplifies proper delivery using criteria for success and performance of understanding, and ask teachers to try using the same lesson with the same approach in their classrooms. Before that can occur, however, I want to be sure that I understand the district's rationale for development, intended use, and goals for application.

I believe there is much to be gained in investigating teachers' perceptions and knowledge about targeted instruction. Not only will this study bring awareness of key elements associated within this context, but the results can help determine future needs in way of professional development.

I'll see you soon!

Appendix D

Request Permission to Both Authors and Publishing Company:

Connie Moss, Susan Brookhart, and ASCD Publications, for Use of Copyright

Materials

Request for Permission

July 11, 2013

Good Morning, Ms. Brookhart, Good Morning, Ms. Moss,

First, I'd like to commend both of you! Your theories and developments on instructional leadership are brilliant, and the materials you've created are exactly what I need and want to use in an action research project I'll be conducting this fall.
With that being said, I'd like to use some of the tools you've published, and I'd very much appreciate your taking a moment to grant such permissions.

In brief, I'm a third grade teacher in the Fort Zumwalt School District. I've been teaching for twenty years, and I'm a doctoral student at Lindenwood University. I have a small committee guiding me and supporting this study. They've directed me to contact you and request permission(s) to use your work in conducting my study. My dissertation investigates teacher perceptions of learning targets and effective implementation.

The materials I'm requesting include the following resources published in *Learning Targets* pages 164-196.
　　　Action Tool A: Understanding Learning Targets;
　　　Action Tool B: Learning Target Classroom Walk-Through Guide;
　　　Action Tool C: Learning Target Lesson-Planning Process Guide;
　　　Action Tool D: Teacher Self-Assessment Targets and Look-Fors Guide; and
　　　Action Tool E: Student Self-Assessment and Intentional Learning Guide.

Ms. Brookhart, I'm also reading a few other books you've written, *How to Create and Use Rubrics* and *Formative Assessment Strategies*. I plan to cite some of your information in my literature review and may be contacting you for further permissions.

Thank you in advance for your time and consideration. I look forward to hearing from you!

Kind regards,

Melissa Friederich

Appendix E

Consent to Use Copyright Materials by Authors Connie Moss and Susan Brookhart

Dear Melissa,

Good morning, and thanks for your kind words. We published the Actions Tools in the book in hopes that they would be used in schools, and using them for teacher action research seems to me to fall into the "fair use" category. Using them isn't the issue – publishing is. If you were seeking to *publish* the tools (e.g., in a journal article), you would need permission. ASCD Publications (not us) holds the copyright to the material as it was published in the books. So a question to ask now is how you plan to represent the Tools in your dissertation document. For example, I am not certain whether fair use would allow you to construct a results table that quotes items from a Tool, include a Tool in an appendix in your dissertation, or anything like that. This is because I am not sure whether a dissertation (that presumably will end up in Dissertation Abstracts International or some other database) constitutes publication in the same sense as a journal article does. I have copied the Rights and Permissions department at ASCD Publications and ask for their advice on this matter.

We are delighted that the Tools suit your purposes and would be very pleased to receive a copy of the results when your study is completed.

I have changed Connie Moss's e-mail address; I don't believe she received your first e-mail.

Best wishes,
Sue
Susan M. Brookhart, Ph.D.
Consultant, Brookhart Enterprises LLC
Senior Research Associate, Center for Advancing the Study of Teaching and Learning, Duquesne University
2502 Gold Rush Ave.
Helena, MT 59601
406-442-8257 or 406-431-7746
susanbrookhart@bresnan.net

Dear Melissa,

I agree with everything that Sue just said.
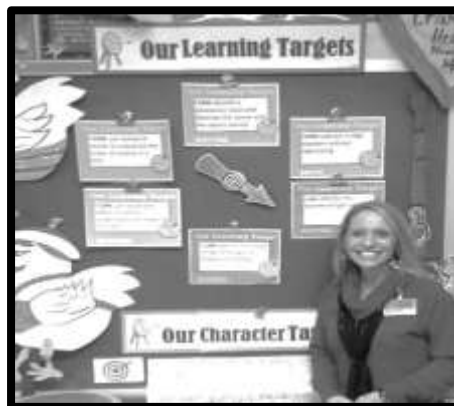
Sincerely,
Connie Moss
````````````````````````````````````````````````````````````````````````````````````````````````````````

Connie M. Moss, Ed.D.
Director, Center for Advancing the Study of Teaching and Learning (CASTL)
Director, Master of Science in Educational Studies Program
Duquesne University School of Education
Department of Foundations and Leadership
406 Canevin Hall, Pittsburgh, PA 15282

## Appendix F

## Consent from Publisher to Use Copyright Material

Dear Melissa,

In response to your request below, please accept this as permission to use the excerpts referenced in your July 11th email to Susan Brookhart, from the *Learning Targets: Helping Students Aim for Understanding in Today's Lesson,* in your action research project that you are conducting as part of your dissertation, with appropriate credit to ASCD Publications. If your research results in use of our content in a product or publication for commercial release, please contact me again to secure further rights to do so.
Thank you for your interest in ASCD Publications and good luck with your dissertation.

**Regards, Katy**

**KATY WOGEC** · Rights and Permissions Manager                                        1703
N. Beauregard Street · Alexandria, VA 22311-1714
P 703-575-5749 · F 703-575-3926 · www.ASCD Publications.org · www.wholechildeducation.org

**Appendix G**

**Hallway Bulletin Board Displays**

## Appendix H

## Students' Self-Assessment Targets

**Appendix I**

**Workshop 1**

# Self-Assessment of Learning Targets

For each target below, use an X to indicate where you think you are in relationship to mastering of the target before the workshop.  Mastery would mean, in this instance, you could accomplish the target on a regular basis.  At the end of the workshop, use a circle to indicate where you think you are.  In the space provided, give evidence to justify your rating.

| Target | Scale<br>Low → High | Evidence |
|---|---|---|
| 1.  I can explain the difference between standards, targets, and activities. | 1   2   3   4   5 | |
| 2.  I can effectively develop and implement lessons using learning targets and activities. | 1   2   3   4   5 | |
| 3.  I know how to use criteria for success to produce evidence of student learning. | 1   2   3   4   5 | |
| 4.  I can describe how targets are used in assessments and instructional decisions. | 1   2   3   4   5 | |
| 5.  I can identify important considerations for implementation. | 1   2   3   4   5 | |
| 6.  I can distinguish between four types of learning targets and give appropriate activities for each. | 1   2   3   4   5 | |

**Appendix J**

**Workshop 2**

# Teachers' Self-Assessment of Targets

For each target listed below, use an X to indicate where you think you are in relationship to mastering the target at the beginning of the day.  Mastery would mean, in this instance, you could accomplish the target on a regular basis.  At the end of the workshop, use a circle to indicate where you think you are.  In the space provided, give evidence to justify your rating.

| Target | Scale<br>Low    →    High | Evidence or Examples |
|---|---|---|
| 1.  I KNOW how learning targets relate to a learning progression. | 1   2   3   4   5 | |
| 2.  I CAN build a learning progression from an educational objective. | 1   2   3   4   5 | |
| 3.  I CAN use formative assessment techniques to make progress along a learning progression. | 1   2   3   4   5 | |
| 4.  I KNOW the sequential steps to follow when 'mining' an educational objective. | 1   2   3   4   5 | |
| 5.  I KNOW how to support students' mastery of learning targets through a meaningful performance of understanding and criteria for success. | 1   2   3   4   5 | |
| 6.  I KNOW how to feed students' learning forward in the formative learning cycle. | 1   2   3   4   5 | |

**Appendix K**

**Workshop 3**

# Teacher Self-Assessment of Targets

For each target listed below, use an X to indicate where you think you are in relationship to mastering the target at the beginning of the day. Mastery would mean, in this instance, you could accomplish the target on a regular basis. At the end of the workshop, use a circle to indicate where you think you are. In the space provided, give evidence to justify your rating.

| Target | Scale<br>Low    →    High | | | | | Evidence or Examples |
|---|---|---|---|---|---|---|
| 1. I believe learning targets help students aim for better understanding. | 1 | 2 | 3 | 4 | 5 | |
| 2. I discovered and utilized effective ways to share learning targets for Today's lesson. | 1 | 2 | 3 | 4 | 5 | |
| 3. I discovered and utilized effective ways to share criteria of/for success with each learning target. | 1 | 2 | 3 | 4 | 5 | |
| 4. I strategically design a performance of understanding that supports students' understanding and demonstrates mastery of learning targets. | 1 | 2 | 3 | 4 | 5 | |
| 5. I believe that the learning target theory of action enhances learning. | 1 | 2 | 3 | 4 | 5 | |
| 6. I KNOW the importance of the four-step framework and always incorporate it in my lesson plans. | 1 | 2 | 3 | 4 | 5 | |

**Appendix L**

**Action Tool E: Student Self-Assessment and Learning Guide**:

| My Learning Target: | | | |
| --- | --- | --- | --- |
| **My Look-Fors** | **I need to work on this** | **I am unsure of or confused about this** | **I am already good at this** |
| I can | | | |
| I can | | | |
| I can | | | |

Mark where you are on your way to the learning target. → → → → → →

| **My Goals for Today's Lesson**<br>Thinking about what I am already good at, where I am confused, and what I need to work on, here is what I plan to do during today's lesson to aim for and hit my learning target. |
| --- |
| 1. |
| 2. |
| 3. |

| **My Questions**<br>Thinking about the goals I have for improving my understanding and work, here are the questions I have about what I am learning and being asked to do. Getting these questions answered will help me hit my learning target. |
| --- |
| 1. |
| 2. |
| 3. |

| **My Learning Strategies**<br>This is exactly what I can do to improve my learning and do quality work. |
| --- |
| 1. |
| 2. |
| 3. |

**Appendix M**

**Action Tools E Modified Version: Students' Self-Assessment**

| *1. Students' Learning Target for Today's Lesson:* | | | |
|---|---|---|---|
| *1a. (Answered by students before the lesson.)* <br> **I CAN:** | | | |
| *Teach the lesson, review, describe, explain the criteria for success and remind students to use their knowledge to help them hit the target for Today's Lesson. Then, read aloud each 'I Can' statement and direct students to lightly shade the face which best describes their feelings about that skill.* | | | |
| *2.* <br> **My (STUDENTS') Look-Fors:** <br> **(Criteria for Success…to be able to do this,** <br> **my students my know and understand how** <br> **to…)** | **I need to work on this** | **I am unsure of or confused about this** | **I am already good at this** |
| *2a.* <br> **I CAN:** | | | |
| *2b.* <br> **I CAN:** | | | |
| *2c.* <br> **I CAN:** | | | |
| *STUDENTS' MASTERY OF TARGET AFTER INSTRUCTION* | | | |
| *3a.(Answered by students after BOTH instruction has been given and the performance of understanding has been completed.)* <br> **I CAN:** | | | |

## References / Permissions Granted

Moss, C. M. & Brookhart, S. M. (2012). *Learning Targets*. ASCD, Alexandria, VA.

Authors Consent for Use of Materials issued July 11, 1013

Expressed Permission for Use of Materials Issued (2013 July 11) *Association for Supervision & Curriculum Development*. Learning Targets Action Tools. Alexandra, VA.

Slides adapted from "Clear Learning Targets: How to Deconstruct the Standards." Permission for use of copyrighted materials granted by Regional Teacher Partners with the PIMSER P-12 Math and Science Outreach (July 12, 2013).

**Vitae**

The author/researcher earned her Bachelor of Science in Elementary Education from Southern Illinois University at Edwardsville in 1993. Immediately following graduation, she began her teaching career at a middle school in southern Illinois. In 1995, she reenrolled in SIUE to complete her Masters of Science in Elementary Education. The author/researcher spent four years as a middle school Communication Arts teacher and then relocated to Missouri where she accepted an elementary teaching position. In 2002, she enrolled at Lindenwood University to complete her Masters of Arts in Educational Administration. The past sixteen years the author/researcher has served as an elementary classroom teacher in the study district. She completed her Doctorate in Educational Administration from Lindenwood University in May 2014.

Professional accomplishments include an Excellence in Teaching Award from SIUE in 1998; voted Candidate for Teacher of the Year in 2006; served on numerous building leadership teams; and served as the district's Young Authors Coordinator. She is a trained MRI instructor, has developed curriculum in reading, writing, math, and social studies; has written and received two of three grants; sponsored Choir Club, Computer Club, and Talking Hands Club; and co-sponsored Drama Club for 18 years. The author/researcher is a Premier member of Association for Supervision and Curriculum Development (ASCD).