

Using Formative Assessment to Improve Student Achievement in Reading: Reflections from the Field

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The ability to read by the completion of the fourth grade is essential for a student's future academic and social success. With only thirty-four percent (34%) of fourth grade students reading on grade level, the importance of improving the instruction of reading cannot be overstated. The purpose of this study was to examine teacher's perceptions of the efficacy of formative assessment as a means of improving student's reading performance. The study utilized a qualitative methodology to interview, record, code, and analyze responses to eight open-ended questions relating to the efficacy of formative assessment. Participants included fourteen (14) language arts, English as a second language (ESL) teachers from an urban predominately Hispanic Title I public elementary school, grades kindergarten through sixth, in a large metropolitan city in North Texas. Findings identified nine major themes ranging from the identification of student's levels of performance to using formative assessment to empower higher levels of student achievement. The findings are considered appropriate to guide future practice and research.

Keywords: *formative assessment, reading instruction, efficacy, improvement themes*

Introduction

Many students leave elementary school without knowing how to read. This occurs even though reading is essential in ensuring the student's future academic and social success (Griffin & Murtagh, 2015). Schechter et al. (2015) revealed that approximately only 34% of fourth grade students read on grade level. Students who are unable to read proficiently by fourth grade are less likely to graduate from high school. When students do not possess the basic skills needed to read, their comprehension and communication skills are diminished (Leu & Maykel, 2016).

Many countries have implemented high stakes testing in the form of summative assessments which have little impact on student learning. Summative assessment, known as *assessment of learning*, differs from formative assessment which is referred to as *assessment for learning* (Dixson & Worrell, 2016). Assessment of learning or summative assessment occurs when a test is administered and scored to judge a student's achievement at mastering the learning target. Assessment for learning or formative assessment occurs when student responses modify instruction, encompasses the students' understanding, and are used to establish future learning goals (Black & Wiliam, 1998a).

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Research has revealed formative assessments, when used correctly, can positively impact student learning (Black & William, 1998a). Teachers employing formative assessment practices throughout a unit of study enable intervention strategies needed for objective mastery to be implemented. Stiggins and Chappius (2005) assert that “assessments have to help teachers accurately diagnose student needs, track and enhance student growth toward standards, motivate students to strive for academic excellence, and verify student mastery of required standards” (p.14). Black and Wiliam (1998b) contended that teachers do not utilize formative assessments consistently because the instructional power and benefit to improve student outcome have not been fully conceptualized. The incomplete utilization of formative assessment propagates ineffective usage of the evaluation tool.

The present study examined kindergarten through sixth grade elementary English language arts teachers’ perceptions of formative assessments as a tool to assess reading, the role formative assessment plays in lesson planning and instruction, and teacher’s perceptions as to whether formative assessments lead to improved student learning. The study was conducted in a Title I, predominantly Hispanic elementary (kindergarten through sixth grade) school in a large metropolitan city in North Texas.

Theoretical Background

The current study is framed by the constructivist theory of social development and on both Piaget and Vygotsky’s work on social learning theory, zone of proximal development, and the more knowledgeable other. Additionally, assessment types and usage, descriptive feedback, and collaboration support the framework. The following narrative address each of these topics.

Constructivist Theory of Social Development

The constructivist learning theory is founded historically on the work of several pioneers in the field of educational psychology including but not limited to Piaget and Vygotsky (Bada, 2015). The constructivist theory is formed on the premise that learning is an active process which occurs as students construct new learning by building upon previously learned information while providing meaning through their learning experiences (Bada, 2015).

Vygotsky added to the understanding of social development theory by highlighting three key themes: 1) the learner’s collaboration with others, 2) individual possession of a deeper knowledge of the concept, and 3) the difference between what a learner can do independently versus with assistance (Vygotsky, 1978). Taking into consideration the importance of interaction and collaboration between the teacher and students and between students and peers, the social learning theory as outlined by Vygotsky (Popham, 2013) forms the foundation for this study. Vygotsky (1978) stressed that social learning theory provides the basis for collaborations between teacher, student, and peers. Vygotsky viewed such collaboration as the catalyst for student learning and understanding

concepts coming from interaction with one another rather than just by teacher-centered lessons. Likewise, Zhou and Brown (2015) emphasized Vygotsky's postulation that social interaction precedes learning as they maintained that students learn with the help of others.

Vygotsky stressed that another important component of cognitive development is the Zone of Proximal Development (ZPD) which is defined as what a student can do with assistance of someone and not independently (Zhou & Brown, 2015). Teachers can use the formative assessment process to determine a students' ZPD, establish attainable goals, and move students from working independently to working interdependently which increases learning capacity (Heritage & Chang, 2012; Moss & Brookhart, 2019). Moore, (2011) Vygotsky emphasized that the most explicit instruction should be given in the ZPD (Moore, 2011). The more interaction and guidance children receive when they are learning a new skill or concept, the greater the attainment of the concept being taught (Vygotsky, 1978).

Assessment

Assessment is a necessary part of the education process (Dixson & Worrell, 2016). As a link between teaching and learning, assessment is the way to determine if the applied instructional approaches resulted in students meeting the targeted learning objectives (Wiliam, 2013). The central purpose of all assessment is to provide data to help educators make decisions regarding students' progress (Moss & Brookhart, 2019). Beginning in the 1950s, a summative style of standardized testing became a regular part of district and statewide assessment practices in education throughout the United States (Stiggins & Chappius, 2005).

Formative Assessment

Formative assessment, for this study, was defined as a process teachers' use throughout the instructional period to guide their teaching and to gauge student progress toward learning targets (Black & Wiliam, 1998a; Popham, 2013). Research has emphasized formative assessment as a continuing process that is comprised of the teacher using varying methods of data collection throughout instruction (Black & William, 1998a; Curry, Mwavita, Holter, & Harris, 2016). The social development theory supports the concept that meaningful formative assessment occurs when the teacher fully implements formative assessment strategies. (Black & Wiliam, 2009; Clark, 2012).

Benjamin Bloom contributed greatly to the theory of formative assessment when the mastery of learning concepts was linked to the terms, formative and summative evaluation. Bloom et al. (1971) suggested that to improve achievement and close achievement gaps, differentiated instruction is needed. Differentiation can be accomplished by conducting ongoing formative assessments to determine student's level of understanding, using that knowledge to guide instruction and target learning gaps thus enabling students to more effectively learn. Bloom et al. (1971) further asserted that explicit feedback, with teachers correcting misconceptions and

misunderstandings, is important and occurs as a result of ongoing formative assessment utilization.

The landmark research study, *Inside the Black Box*, conducted by Black and Wiliam (1998a) found that the efficient use of formative assessment can have a significant impact on teacher practice, on student learning, and on closing the achievement gap between student populations. Further, the results showed formative assessments have the greatest impact on the achievement of students identified as struggling or low achieving (Black & Wiliam, 1998a).

Stiggins and Dufour (2009) postulated that formative assessments are utilized by teachers and schools in order to “identify student understanding, clarifying what comes next in the learning, trigger and become part of an effective system of intervention for struggling students” (p. 640). Additionally, formative assessments have the power to “inform and improve the instructional practice of individual teachers or teams, help students track their own progress toward attainment of standards, [and] motivate students by building confidence in themselves as learners” (p. 640). Stiggings and Dufour (2009) also asserted that formative assessments can be catalysts for continuous improvement for students and schools. Perera-Diltz and Moe (2014) stated the reason for applying formative assessment is to actively engage students in the learning process and to foster growth by using various assessment strategies. The implementation of the assessment is only the beginning of formative assessment process (Dixson & Worrell, 2016). The analysis and use of collected assessment data make the process formative.

Formative Assessment and Instruction

Formative assessment is an ongoing planning process that teachers implement during instruction to gather information to improve student performance (Hattie (2012) as cited in Duckor et al., 2018; Popham, 2013). Wiliam (2013) identified three major processes central to the implementation of formative assessment: 1) identification of learners’ current skill, 2) identification of target, and 3) steps the learner needs to reach the targeted skill. The results of formative assessment are utilized when teachers change their instructional strategies, the instructional program, or both to meet student needs (Brink, 2017). It is vital that as teachers plan instruction, multiple formative assessment strategies are utilized to determine the amount of student mastery of concepts and provide guidance for instructional adjustment (Blythe, 2015). Formative assessment used correctly guides instruction but is not used for student grade evaluation (Cizek et al., 2019). Popham (2014) indicated that when teachers use formative assessment to adjust instruction, substantive gains in student achievement can occur. Additionally, teachers can use the information obtained through formative assessment to set new and more challenging learning targets to increase achievement levels, and to extend learning for students that have mastered the learning objectives (Wilson & Mackie, 2018). Brookhart (2011) found that feedback has a greater impact on achievement when it is focused on the student’s performance or process on a task.

Student Engagement

Black and Wiliam (1998b) found that students should be active participants in the formative assessment process. As previous stated, the constructivist theory states that learning occurs as students are actively engaged in learning activities. It is essential that students are aware of learning expectations and the target established to achieve mastery. When student participate in the formative assessment process, they are more likely to take ownership of their own learning by embracing the strengths and weaknesses discovered through an analysis of data and targeting areas for improvement. Students can use formative assessment results to reflect on their current levels of performance, to set the new learning goals and to monitor their progress.

Feedback

Feedback is an essential component of the formative assessment process (Heritage & Heritage, 2013). “Feedback provides a vehicle for integrating all components of formative instructional practices...” (Chan et al., 2014). When teachers provide feedback, research indicates that student learning significantly increases and learning gaps at all grade levels significantly decrease (Sekulich, 2020). When formative feedback is shared, the learner’s thinking is impacted thus improving learning (Shute, 2008). “Not all feedback is equally effective. Feedback is effective only when it produces the desired outcome, that is, when students are able to move their own learning forward” (Chan et al., 2014, p. 97). Feedback that is “timely, specific, addressable, ongoing and content-rich” is essential (Duckor, 2014, p. 28). Fisher and Frey (2015) stated that “checking for understanding is part of a formative assessment system in which teachers identify learning goals, provide students feedback, and then plan instruction based on students’ error and misconception” (p. 2).

Feedback should be reciprocal. Both Hattie (2012) and Tovani (2012) suggested that the most powerful feedback is from student to teacher. Teachers can better assist students if learning is viewed from the student’s perspective (Tovani, 2012). The value of feedback as part of the formative assessment process is undeniable.

Purpose of the Study

The purpose the current study was to examine teachers’ perceptions of formative assessments as a tool to assess reading, the role formative assessments play in lesson planning and instruction, and whether formative assessments lead to improvement of student learning. Fourteen language arts teachers in a North Texas Title I elementary school were interviewed using structured open-ended questions (Appendix). The analysis of results led to reflections on the participants perceptions of formative assessment as related to reading instruction.

Method

A qualitative research approach was utilized to examine teachers' perception in using formative assessments in elementary reading classes. A purposeful sampling of only language arts teachers was employed. The researcher used open-ended interview questions which allowed participants to share thoughts, beliefs, practices, and experiences about formative assessment. A case study research design was utilized as it allowed the researcher to study perceptions among a group of elementary language arts reading teachers. Yin (2015 & 2017) proposed the use the case study method when the researcher had little to no effect on the people or conditions being studied. Additionally, Creswell and Plano Clark (2011) indicated that case studies allow the researcher to gain in-dept understanding of a phenomenon with a small sample of participants.

Participants

The study was conducted in a traditional, urban predominantly Hispanic Title I public elementary school, grades kindergarten through sixth grade, in a large metropolitan city in North Texas. Participants included one male and thirteen females, all who taught either English as a second language (ESL) or bilingual language arts classes. Of the participants, eight were Hispanic, three were Anglo, two were African American and one was Asian. The average age of the participants was forty-two and the average teaching experience was eleven and one-half years, with a range from one year to twenty-four years.

Data Collection

Data were collected through individual interviews using eight specific, targeted open-ended questions (Appendix). Prior to collecting data, the researcher received approval of the Institutional Review Board (IRB) which ensured that implementation of the study as designed protected the rights and welfare of human subjects and that no harm would occur as a result of participating in the study. All potential participants were assured that participation was voluntary and that all identifying information would be removed. Additionally, the information provided would only be used for this specific study and would then be destroyed. All potential study participants were provided an overview of the study designed for implementation and invited to participate should they so desire. Each teacher that accepted the invitation to participate was provided with a research study package via their personal email which included a letter of invitation, a consent to participant form, and the interview protocol that would be utilized. Following receipt of the signed consent, the researcher contacted each respondent and scheduled an interview at the participants convenience. The interviews were held via Zoom videoconferencing and lasted no more than one hour. Prior to beginning the interview, the researcher clarified any questions the participant might have.

Analysis

Multiple steps were taken in the analysis of data. The first step was to record all interviews for transcription purposes. Additionally, copious observational notes were taken during the interview that were used for comparison with the transcriptions for accuracy. Following the interview, the researcher listened to the recording and transcribed each word-for-word. The transcription was then compared to the notes taken during the interview to establish accuracy. The interviews were then thoroughly analyzed and trends in responses were identified. Identified themes were coded and organized according to patterns that emerged in the study. The researcher then organized the coded data into common themes.

Results

The results from the data collection showed that the respondents believe that, when fully utilized, formative assessment had a positive effect on student reading development. Additionally, the participants indicated that the use of formative assessment data was essential in both future lesson planning and modification of existing lesson plans. All participants credit formative assessments as leading to improved student learning and academic mastery of concepts.

Using Formative Assessments as a Tool for Assessment of Reading

Analysis of responses revealed that participating teachers believed formative assessments provided data necessary to identify students' current levels of understanding compared to the mastery learning expectations. Respondents communicated that using reading formative assessments provided the opportunity to verify students' correct application of reading strategies and skills taught during the instructional period. All respondents reported using some method of formative feedback to support student learning in reading and desired professional development to teach additional skills in using formative assessment strategies to improve student engagement, participation and learning outcomes.

Identifying Student's Level of Performance

The findings revealed that all the participants across all grade levels expressed feeling confident in using formative assessment. Participants expressed the assumption that multiple formative assessment tools should be used, throughout the lesson, to gather information about student learning and level of understanding. Respondents further emphasized that formative assessments provided insight as to the effectiveness of material presentation.

These assertions are confirmed by the literature. The value of formative assessment lies in the quality of feedback teachers give to students about their learning and to teachers about their teaching (Andrade, Lui, Palma, & Hefferen, 2015). Teachers become better teachers when they continuously use feedback

through the formative assessment process to target and eliminate gaps in the learning (Kincal & Ozan, 2018).

Identification of Students' Strengths and Weaknesses

In relation to the study, participants reported the usefulness of formative assessments in identifying students' areas of strengths and weakness. Chappuis (2012) noted that using formative assessment to obtain feedback on student learning "directs attention to the intended learning, pointing out strengths and offering specific information to guide improvement" (p.4).

Participants also observed that formative assessment assists in the identification of students' weaknesses. Teachers reported that the use of formative assessment to identify student level of attainment of specific reading concepts like main idea or cause and effect, decoding, and using vocabulary allowed them to provide more targeted intervention for small groups of students or individual students. Chappuis (2009) indicated that information gained from formative assessment data guides teachers in providing targeted interventions for those students struggling to master concepts (Chappuis, 2009). Likewise, Gustafson et al. (2019) observed that "[t]aken together, the two aspects regarding the content and form of instruction, respectively, provide a general framework for how to develop a successful and individualized educational system for reading instruction" (p. 18). Using the data collected from formative assessments including student work samples, teachers were able to set more targeted goals for all students throughout the educational tiers: Tier 1 - entire class instruction, Tier 2 - small group instruction and Tier 3 – one-on-one instruction an intervention (Gustafson et al., 2014).

Formal Summative Assessment Usefulness

Participants also found formal assessments, such as summative assessments and benchmarks were useful in providing information about student learning. Study participants reported using other types of assessments such as end of unit tests, weekly tests, standardized tests, and benchmarks to obtain information about students' mastery of concepts. While teachers administered many of these tests because they are required by the school district or the Texas Education Agency, they believed formal assessments were also purposeful. Dixson and Worrell (2016) identified the primary difference between summative and formative assessment is how teachers use the collected information. Respondents expressed the belief that summative assessments had a place in the learning process because they show how much students know. The participant teacher's perception of summative evaluation reflects the thoughts of Candal (2016) who reported that summative assessments provide a comprehensive view of student learning. Gupta (2016) also found that summative assessments or end of unit assessments allows the teacher to "gather data about student performance with regards to learning outcomes" (p. 44).

Using Formative Assessments to Guide Lesson Planning

Results of data analysis additionally revealed that the study participants were of the opinion that formative assessments should be an integral part of lesson planning and instruction. While teachers may administer other types of assessments, respondents felt that formative assessment provided real time data that could be utilized to alter current lesson plans and/or develop subsequent lessons based on student performance on the formative assessment used during instruction. Participants further expressed their belief that formative assessment strategies can be used to increase engagement and build student confidence.

Targeting Reading Skills based on Running Records

The findings revealed that respondents felt running reading records were indeed formative assessments because types of information collected were specific measures of reading abilities like oral reading skills and how learners used strategies presented in class. Lipp and Helfrich (2016) explained that teachers should document observable student behaviors using running records which then allows analysis to determine text comprehend (Lipp & Helfrich, 2016). Gillett and Ellingson (2017) purported “Running records provide concrete evidence of students’ skills, reading levels, strategies, and progress as readers” (p. 136). Teachers reported using running reading records to determine student reading level. Respondents reported that a deep analysis of running records provided data on what students have the ability to perform independently or with assistance known as the Zone of Proximal Development (ZPD).

Modifying Lesson Plans and Subsequent Instruction

Research findings revealed that respondents incorporated formative assessment when designing instructional lesson plans and subsequent instruction. Formative assessments were both planned prior to instruction and often occurred spontaneously, as needed, to guide instruction. Previous researchers have found that true formative assessment occurs when teachers change their instruction to meet the learners’ needs based on the data collected from the process and not to make judgements about student learning (Black & Wiliam, 1998a; Davidson & Frohbieter, 2011). Conderman and Hedin (2012) noted that formative assessment has a greater impact on teacher lesson planning and instruction because teachers have more opportunities to make instructional adjustments throughout instruction rather than having to wait to discover students’ understanding at the end of the unit.

Participants reported designing questions to gauge student understanding thus using student responses to determine the concepts following lessons would contain. Participants reported modifying their lesson plans based on results from formative assessment. Teachers described scaffolding lessons, dedicating more time and attention to a certain concept, or moving on to more advanced concepts. Teachers were more likely to modify their lessons to meet the needs of the whole

class or struggling students by re-teaching the lesson or providing individual interventions.

Using Different Types of Formative Assessment Strategies during Instruction

Teachers shared their beliefs that formative assessment is different from other assessments in that it could be completed quickly and provided data that was immediately usable. Buelin et al. (2019) stated “[f]ormative assessment takes place frequently, can be quite informal, and is used to monitor and adjust instruction while that instruction is in progress” (p. 21). Teachers reported being able to help reluctant students by implementing formative assessment in nonthreatening ways like using whiteboards, exit tickets, and thumbs up or thumbs down. Buelin et al. (2019) reported that “[f]ormative assessments take many familiar forms: web or concept maps, hand signals like thumbs up/down, exit tickets that students complete before leaving class, choral responses, one- word or one-sentence summaries of lesson content, think/pair/share activities, journal responses, and low- or no-stakes quizzes” (p. 21). Teachers believed utilizing these methods made students feel more confident and did not publicly single out those students struggling with the concepts. Participants reported that student participation and engagement increased, both of which had a positive impact on student learning.

Formative Assessment and Improvement in Student Learning

Further analysis of data revealed that all study participants believed that using formative assessment ultimately led to improved students’ reading ability and skills. Respondents also expressed the belief that formative assessment assisted teachers in the identification of needed student interventions placing focus on reading levels and skills and enabled improved text selection, targeted vocabulary, and language acquisition strategies. Additionally, teachers felt differentiation and scaffolding of lessons and activities for struggling students was enhanced through the use of data obtained from formative assessments.

Higher Level of Student Achievement

Analysis of participant responses revealed the belief that when implemented effectively as part of lesson planning and instruction, formative assessment leads to higher levels of student achievement. These findings are consistent with Wiliam (2013) who identified three major processes as central to the implementation of formative assessment: (a) identification of what the learner currently knows about the skill or concept, (b) identification of where the learner needs to be and, (c) identification of the steps the learner needs to master the skill or concept.

Several teachers believed formative assessments improved the student’s ability to learn because the teacher is not waiting until the end of the lesson to determine the level of student understanding. Participants described incorporating formative assessment during instruction to address student reading skills or concepts in the moment allowing quick identification and corrective actions to be taken so

student misconceptions do not persist. Hoover & Abrams (2013) found that there is a direct correlation between an increase in student achievement and formative assessment use.

Discussion

The purpose of this study was to explore the perceptions regarding formative assessment and student success. The participants teach elementary ESL and bilingual language arts teachers in a traditional, urban, Title I public school in North Texas.

Conclusions

This qualitative case study examined fourteen kindergarten through sixth grade elementary ESL and bilingual language arts teachers' perspectives of formative assessments as a tool to assess reading skills, the role formative assessment plays in lesson planning and instruction, and teacher's perceptions as to whether formative assessments led to improved student learning. The results of the study reveal that teachers felt that the use of formative assessment has a positive impact on student reading achievement and improve student learning outcomes. Furthermore, participants communicated their positive perspective regarding the usefulness of integrating formative assessment in lesson planning and instruction to assess student learning as well as using data from the assessments to guide lesson planning. Respondents shared their utilization of various formative assessment strategies to promote student participation, foster collaboration, and increase student confidence. The participants also expressed the need for more professional development on strategies that are exclusive to reading and that allow students to self-assess during the learning process. All participants shared the belief that formative assessment is a necessary part of the teaching and learning.

Recommendations for Future Research

In the spirit of continuing to increase awareness on the effectiveness of formative assessment, future studies, using mixed method approach could be performed. Furthermore, future researchers should identify how formative assessment is implemented and what formative assessment strategies are most often used by instructional personnel. Identified formative assessment practices could be researched and correlated with student reading scores obtained on standardized summative assessments.

This study only included teachers. Future research could include interviews to determine student perception show of the usefulness of formative assessments. Additionally, research could be conducted to determine the impact formative assessment have in increasing motivation, participation and engagement.

Future studies could also be expanded to include other content areas in addition to language arts. Additionally, a cross-curricular approach should be studied to determine if there is a correlation between how often students are exposed to the formative assessment process and student achievement.

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Appendix

1. How do you feel about using formative assessment?
2. How do you feel about using formative assessment in reading?
3. What other types of assessment have you used and why?
4. Can you explain how Running Reading Record may be considered as formative assessment?
5. How do you integrate the process of formative assessments within your lesson plans?
6. How do you integrate the process of formative assessment in your instruction methods?
7. If you believe that incorporating the process of formative assessment in your teaching has improved your student's ability to learn, please explain how.
8. What future training would you like on the topic of formative assessment?

