

HIGH YIELD FORMATIVE ASSESSMENT

**HIGH-YIELD FORMATIVE ASSESSMENT: RESEARCH BEHIND THE “WHY” AND
THE CHANGE LEADERSHIP NEEDED TO GET THERE**

by

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**Implementing High-Yield Formative Assessment: Research Behind
the “Why” and the Change in Leadership Needed to Get There**

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Abstract

According to Wiliam (2011), “the greatest impact on learning is the daily lived experiences of students in classrooms, and that is determined much more by how teachers teach than by what they teach” (p. 19). This capstone study identifies high-yield formative assessment strategies and the change management framework that is required to implement them. More specifically, it highlights the importance of formative assessment and its positive effects on student achievement. Formative assessment is the foundation that gathers evidence with which teachers or students can enhance the learning. Dedicated leaders who focus on change to improve student learning can have a positive impact. Through a commitment to change, leaders can inspire all stakeholders to embrace this movement and can provide students with the amazing education they deserve.

Keywords: change agent, change leadership, collaboration, formative assessment, leadership capacity, leadership quality standard, motivation, professional development, school culture, school leader, shared vision, stakeholders, student achievement, summative assessment

Table of Contents

Acknowledgements	iii
Abstract	v
Chapter 1: Introduction to the Study	1
Introduction	1
Background	2
Statement of the Problem	4
Purpose of the Study	5
Research Questions	5
Significance of the Study	5
Scope of the Study	6
Summary	6
Outline of the Remainder of the Paper	7
Chapter 2: Literature Review	9
Introduction	9
Definition of Terms	9
Review of Research Literature	11
Formative Assessment	11
Building a Foundation	12
Shifting Mindsets	14

Making Learning Visible	15
Building Capacity	16
High-Yield Formative Assessment Strategies	17
Establishing a Target	17
The Power of Feedback	19
Activating Learning	21
Reinforcing Effort and Providing Recognition	22
Formative Leadership	23
Change Leadership	23
Fostering Effective Relationships	24
Effective Collaboration	25
Leadership Capacity	27
Career-Long Learning	27
Being Vulnerable	28
Change the Group	29
Summary	30
Chapter 3: Summary, Recommendations, and Conclusions	32
Summary of Findings	32
Implications	33
Administrators	33

Teachers	34
Students	35
Parents	36
Recommendations	37
Recommendation 1: Setting Learning Goals	37
Recommendation 2: Feedback, Feedback, Feedback	40
Recommendation 3: Activating and Sustaining	42
Conclusion	45
References	47

Implementing High-Yield Formative Assessment: Research Behind the “Why” and the Change in Leadership Needed to Get There

Chapter 1: Introduction to the Study

Introduction

Student achievement must always be the focus of teachers, administrators, parents, community members, and other stakeholders within school communities. As found by Wiliam (2011), higher levels of education mean higher earnings, better health, and increased life span. Therefore, reducing the gap between successful and unsuccessful students must be a priority. Students must feel confident, connected to their learning, and motivated. They must have or develop a belief in themselves that allows them to find success. Bandura (1993) described this belief as self-efficacy, which can be seen as a student’s “belief about their capabilities to exercise control over their own level of functioning and over events that affect their lives” (p. 118). Through formative assessment, educators learn more about the complete student and empower each of them to take ownership of their learning. Moss and Brookhart (2009) stated, “Formative assessment works because it has a direct, evidence-based effect on the two most important players in the teaching-learning process: the teacher and the student” (p. 9). Research-proven formative assessment strategies positively impact student success while helping teachers mold activities to best target areas that students need further development (Black & Wiliam, 2009). If student success is the goal, then educational leaders must cultivate a culture of change in which teachers develop a mindset of increased collaboration, continued professional development on assessment, and a buy-in to becoming change savvy (Fullan, 2010).

Background

Wiliam (2011) stated, “The greatest impact on learning is the daily lived experiences of students in classrooms, and that is determined much more by how teachers teach than by what they teach” (p. 19). Every day, students encounter situations in which they are challenged to grow, think, and learn. Therefore, teachers must apply “a current and comprehensive repertoire of effective planning, instruction, and assessment practices to meet the learning needs of every student” (Alberta Education, 2018c, p. 5). While these areas of teaching practice resonate with many in the profession, teachers are aware that these practices can also conflict with one another.

School leaders can bridge this gap and help create a culture in which high-yield formative assessment strategies are used. Bell and Cowie (2001) defined formative assessment as “the process used by teachers and students to recognize and respond to student learning in order to enhance that learning, during the learning” (p. 37). Black and Wiliam (1998b) explained that students “who encounter difficulties are led to believe that they lack ability, and this belief leads them to attribute their difficulties to a defect in themselves about which they cannot do a great deal” (p. 142). The extensive research on the benefits of formative assessment has indicated otherwise, and it has begun to emerge that formative assessment has a connection to a student’s self-perception and, in turn, their achievement. Black and Wiliam (1998a) found that formative assessment has two essential components. First, it helps students recognize the gap between what they currently understand and their goal, and second, it is the strategies needed to close that gap and meet the final goal (Black & Wiliam, 1998a). Black and Wiliam’s (1998a) study, which spanned across various grade levels, subjects, and countries, found that effective use of assessment can boost student results by as much as 15 percentile points on standardized achievement tests. This was a huge indication that there was a link between assessment and

effective instruction. Crooks (1988) studied the impact of assessment practices on students and concluded that, although classroom assessments do have the power to influence learning, too often, the use of assessments for summative purposes get in the way.

Therefore, teacher professional learning in the area of assessment is needed now more than ever to meet the rapidly evolving needs of students and society (Juliani, 2015). It is more than just becoming knowledgeable in a subject area; it also means becoming more knowledgeable about how students are learning. A study that attempted to improve mathematics and science learning in early childhood classrooms found that increasing teachers' subject knowledge had no impact on student achievement (Piasta et al., 2015). These studies found that teachers are making the difference but much less about what makes the difference in teachers.

School leaders are expected to cultivate “a culture of high expectations for all students and staff” (Alberta Education, 2018a, p. 4). Creating this culture of change can be an intimidating task, but it is important to understand how to navigate that journey so that all students can have the outstanding school they deserve (Whitaker, 2012). A learning community in which teachers are empowered to implement high-yield assessment strategies in their practice is one built for success. Fullan (2010) stated, “Effective change can't be accomplished overnight, but the skinny change agents can accomplish quality implementation with high impact in remarkably short time frames—much shorter than we hitherto thought possible” (p. 7). Fullan (2010) described the “skinny” as a mindset in which an entire system must be engaged and not just isolated individuals. Educational leaders must look to increase knowledge of this culture of change through different ideas that have implications for all teachers. The purpose of this capstone study is to understand the impact that implementing research-proven formative assessment strategies can have on student success and the change processes needed to get there.

Statement of the Problem

During the transition from elementary to middle school, a student's motivation, confidence, and ability to self-regulate begins to tumble (Beesley et al., 2018). At this stage, students begin to compare themselves to others more, and their perceptions on being judged increase. These changes have drastic effects on student achievement in the classroom. In this environment, teachers feel hesitant to give challenging work to their students and then start to oversimplify their assignments. Beesley et al. (2018) believed that, rather than decreasing the cognitive demand of the questions, teachers could find success by implementing small group discussions and embedding formative assessment.

The other side of the problem is teachers' being resistant to change and relying on dated instruction and assessment practices that are not meeting the needs of their students. This problem is compounded when "ineffective teachers think that they are doing a good job" (Whitaker, 2004, p. 5). School culture can also resist this change, and many teachers cannot find ways to overcome the barriers and move forward. Various leading experts in the area of school culture have reported that it can take anywhere from three to nine years to make a substantive change (Whitaker, 2012). Therefore, the role of the school leader is to break that pattern and create a culture of change in which teachers are moving their practices forward. However, "change savvy leaders always know that you can't directly make people change. You create a system where positive change is virtually inevitable" (Fullan, 2010, p. 62). Therefore, a proper understanding of formative assessment is needed to guide teachers toward research-driven strategies that facilitate student learning and positively impact their success.

Purpose of the Study

The goal of this capstone study is to identify the benefits of implementing formative assessment in the classroom. Drawing from previous research, it reviews the different forms of formative assessment and the benefits and downfalls of each. More specifically, the purpose is to analyze which formative assessment practices that can be seen as high yield and how they provide students with the information to increase their achievement (Black & Wiliam, 2009).

This capstone study also analyzes the ways that school leaders can create a culture of change in which teachers want to improve their assessment practices. Examining the research and Fullan's framework, this capstone study specifically explores the advantages of creating this culture of change. The focus of leaders is getting teachers moving in an improved direction and then taking the fear out of change. In other words, teachers must keep moving forward with their assessment, so how can educational leaders inspire them to get there?

Research Questions

The research questions for this capstone study are the following:

- What research-based formative assessment strategies positively impact student success?
- How can a school leader create a culture of change in which teachers are motivated to implement high-yield assessment strategies in their practice?

Significance of the Study

Quality instruction and assessment are essential aspects of student learning. Effective teachers have the ability to adjust their assessment methods to meet the needs of their students and engage them in the process of learning rather than their results. Teachers often become concerned with their class average when "there isn't one size student or one way to learn"

(Hough, 2015, para. 17). As Todd Rose (as cited in Hough, 2015) said, “human beings don’t line up perfectly. There is no average learner” (para. 17). Through establishing focus, providing feedback, and building student self-efficacy, student success improves (Killen, 2005). This capstone study focuses on the benefits of implementing high-yield formative assessment practices in classrooms and cultivating the culture of change needed to get there. It is valuable and important for all teachers to see the benefits of research-driven practice and how it can be applied in their classrooms. Teachers may notice these benefits, but their students will be the biggest beneficiaries. Professional practice requires a shift in teacher mindset away from rote memorization and summative assessment to practice that intentionally infuses elements of critical thinking, communication, creativity, collaboration, inquiry, and innovation so that students are better prepared for life outside of school (Juliani, 2015).

Scope of the Study

This capstone study examines research concerning formative assessment, change leadership, and how to measure impact when implementing these changes into schools. The study narrows the focus to high-yield formative assessment strategies that can be implemented in any classroom. It then analyzes Fullan’s models of change to provide school leaders with a guide to improved implementation of change initiatives in educational settings. The review of the literature addresses formative assessment practices and the successful use of change models to identify factors that measure the impact of effective assessment and change leadership.

Summary

When educational stakeholders implement formative assessment practices and various types of change initiatives, the result is often a significant impact on student academic success (Scott & Bagaka’s, 2004). It is about diving into the data that supports movement for all

stakeholders and pushing them in a positive direction. Fullan (2006) asked, “What theories of action really get results in education reform ... [and] why, once identified, [are] such ‘successful’ theories ... not embraced more widely?” (p. 3). Formative assessment allows teachers to be proactive in their instruction and begin to respond to the needs of all students, and change leadership can help to maintain a shared focus among staff and students and ensure that the learning needs of all students are met.

Outline of the Remainder of the Paper

This capstone study examines the importance of formative assessment and the change management strategies that are required to help teachers move forward in their practice. It identifies frameworks that school leaders can use to implement significant changes in their school districts and schools. Chapter 1 in this capstone study identified the reasons for increased use of formative assessment in our classrooms and the need for school leaders to consider using change management models.

Chapter 2 reviews the literature on current assessment practices in education and how they relate to the problem identified. The literature on formative assessment is presented to establish the reason behind this shift for teachers. The research also identifies high-yield strategies that are proven to positively impact student achievement. The literature analyzes Fullan’s model for change and explains its importance for school leaders. The work of Fullan, including his secrets of change, guide the second half of the review as it looks deeper into how change management applies to education and schools upon introducing new initiatives. In addition, research on change management provides strategies and practices for implementation and aims to help a school leader create a culture of change in which teachers are motivated to implement high-yield assessment strategies.

In Chapter 3, the capstone study aims to provide recommendations for how school leaders can lead with formative assessment strategies and manage change initiatives. The goal is to ensure student success while maintaining a professional and positive school culture for all. It also includes suggestions about how school leaders can sustain the success of these initiatives and build schools centered around student learning, effective assessment, and change leadership.

Chapter 2: Literature Review

Introduction

The concept of using assessment to help students and guide their learning has been around for decades; however, the use of *formative assessment* as a technical term is much more recent. Brookhart et al. (2009) found the change of terms from “formative evaluation” to “formative assessment” had come when the emphasis changed from a teacher-directed activity to a shared student-and-teacher activity. This capstone study focuses on formative assessment at its core and which high-yield strategies continue to have positive impacts on student achievement. Through establishing this foundation, educational leaders can compare and contrast the benefits of implementing formative assessment practices in their schools. Comparing the studies from multiple researchers allows for a comprehensive look at this type of assessment and how it can be successfully implemented in a classroom. Importantly, educational leaders can start establishing a shift in teacher mindset towards one that puts ongoing student learning at the forefront of instruction.

The literature review also reviews the work of Fullan, a highly respected researcher, to provide information on his change management model. Through his model and secrets of change, school leaders can more confidently approach significant change in their educational setting. In the end, educational leaders are responsible for “professional learning and ongoing critical reflection, identifying and acting on research-informed opportunities for enhancing leadership, teaching, and learning” (Alberta Education, 2018b, p. 4).

Definition of Terms

Change Agent: “The individual or group that undertakes the task of initiating and managing change in an organization” (Lunenburg, 2010, p. 1).

Change leadership: “The ability to influence and inspire action in others, and respond with vision and agility during periods of growth, disruption or uncertainty to bring about the needed change” (Akpoveta, 2019, para. 7).

Collaboration: A process in which teachers work together to analyze and impact professional practice. This improves individual and collective results (DuFour, 2006).

Formative Assessment: “All those activities undertaken by teachers, and/or by their students, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged” (Black & Wiliam, 1998a, p. 7).

Leadership capacity: “A broad-based, skillful participation in the work of leadership in schools where learning and instructional leadership becomes fused into professional practice” (Lambert, 2006, p. 2).

Leadership Quality Standard: Framework to support the professional growth, supervision and evaluation of all principals and school leaders (Alberta Education, 2018a).

Motivation: The energy to act in a certain way (Fowler, 2019).

Professional development: “High-quality professional development leads teachers to gain and refine knowledge of both content and pedagogy, ... reflects best practices in teaching and learning, [and] ... has a positive impact on the classroom in terms of teacher effectiveness and student learning” (Strickland, 2009, p. 4).

School culture: A collaborative environment in which teachers are trusted and empowered and have access to leadership roles that are facilitated and distributed (Balkar, 2015).

School leader: The individual in charge of the day-to-day operations of a school.

Shared leadership: The collaboration of members to create and establish a common goal (Drescher et al., 2014).

Shared vision: The goal that the learning environment is trying to bring forth and achieve (Kotter, 1995).

Stakeholders: Encompasses all school community members who will be affected by the change initiative. These include, but are not limited to, the teachers, students, siblings, parents, community members, administrators, and trustees.

Student achievement: The measurement of the amount of educational content a student learns in a given time frame.

System thinking: “The framework for seeing inter-relationships rather than individuals and for seeing patterns of change rather than static snapshots” (Senge, 1990, p. 68).

Teaching Quality Standard: Framework for the preparation, professional growth, supervision, and evaluation of all teachers (Alberta Education, 2018c).

Review of Research Literature

Formative Assessment

Educational leaders are called to establish school environments built around effective assessment and three key questions:

- Where am I going?
- Where am I now?
- How can I close the gap? (Chappuis, 2005, p. 40).

The challenge is how to motivate students who resist taking risks, preferring to complete only easy questions and avoid mistakes. This level of student involvement can be improved by the creation of a supportive learning environment in which students feel comfortable taking risks in decision making, asking questions, and defending ideas (Sharma, 2015). Black and Wiliam (2009) linked the importance of formative assessment, which helps create proactive classrooms

and improves student cognitive growth. This capstone study allows leaders to gather a wealth of knowledge on formative assessment from its origins to its practical application in the classroom. Through this focus, leaders start to shift teacher mindsets and establish the reasons—the “why”—behind the change. As a result, teachers begin to make learning visible and build capacity within students to sustain this change in assessment.

Through high-yield formative assessment strategies, educational leaders help teachers and students set targets for improving learning and increasing achievement. Providing meaningful feedback then starts moving the learning forward. Having students reflect on their own learning and providing them with formative feedback affect their growth in all subject areas (William, 2011). Leaders then activate stakeholders in the learning and fuel the flame through reinforcing the effort and providing recognition. Thus, this commitment to formative assessment starts to build the foundation that positively impacts student success.

Building a Foundation

Gipps (1994) was one of the first researchers to introduce the term “formative assessment” to the educational community, and found that formative assessment involves using assessment information “to feed back into the teaching/learning process” (p. 3). This cycle of assessment helps students understand that learning is a process and does not end after a summative test, quiz, or exam. Gipps (1994) stated that assessment of learning is equated with summative assessment and assessment for learning with formative assessment. Therefore, assessment of learning is the basis of summative assessment or evaluating what has been learned, while assessment for learning is about using some of these evaluations to feed back into the teaching process and thus improve student achievement.

Black and Wiliam (1998b) suggested that formative assessment helps learners understand exactly what is needed to succeed and embeds opportunities for all learners to express their understanding. Through this process, the student starts to shift to the process of self-reporting, which leads to higher student achievement because the students have reasonably accurate understandings of their levels of achievement (Hattie, 2009). Effective assessment occurs when teachers assess to find out what and how children learn, and it is a part of good teaching practice. It is about teachers' being proactive in their instructional practices with ongoing assessments that guide their practice instead of assessing for results at the end. If "teacher assessment is used for formative purposes which then results in improved learning then, the assessment can be said to have consequential validity" (Gipps, 1994, p. 124). This essentially grounds formative assessment in research and gives it validity for teachers.

Black and Wiliam's (1998a) influential research around formative assessment was based on a literature review on classroom assessment practices. Wiliam (2011) found, "The effective use of formative assessment would increase achievement by between 0.4 and 0.7 standard deviations, which would be equivalent to a 50 to 70 percent increase in the rate of student learning" (p. 38). This impact should not be understated. This research provided educational leaders with solid data that confirmed the power of formative assessment and started to build the foundation for future research. Effective leadership can be seen as grounded in effective teaching; therefore, leaders are accomplished educators who are able to create the conditions in which quality teaching and optimum learning can be sustained. Furthermore, Alberta Education (2018a) holds leaders to this standard and states that educational leaders must make sure "that every student has access to quality teaching and optimum learning experiences" (p. 4).

Shifting Mindsets

Gipps (1994) explained that there is a clear distinction between assessment of learning and assessment for learning. To move students forward in their learning, effective teachers understand the difference and see assessment as more than a way to find out what students know. While many individuals in education believe that assessment is only formative if it involves the student, others find that it is a process that involves the teacher's working alongside the student. Gipps (1994) took the latter stance and indicated that a teacher must involve the student in the discussion of the evaluation and what is needed to improve.

William (2011) found that an assessment, such as a quiz or exam, can be seen as formative or summative depending on the purpose of their use. However, these assessments might also have both summative and formative purposes. An assessment can be used to evaluate achievement and learning to a certain point, but it can also be used for a formative purpose to inform the planning for the next lessons. Teachers may use the data to revise certain areas that the students do not understand or to move more quickly through areas that the students grasped right away. William (2011) emphatically said, "The effective use of formative assessment would increase achievement" (p. 1). He found that the problem became how challenging implementing formative assessment can be seen. This is especially true in schools or school divisions in which students, teachers, and parents are only familiar with summative assessment. It takes a shift in mindset or a change initiative to start moving assessment in a positive direction, and it is important for leaders to explain the rationale for these changes, understand the changes thoroughly, and implement them slowly over time (Black & William, 1998a).

Making Learning Visible

Effective instructional practices require making student learning visible to all stakeholders. Doing so allows educators to know that what they are teaching has a direct impact on student achievement. Hattie's (2009) *Visible Learning* is seen as one of the biggest evidence-based research projects in education. In this book, the researcher synthesized 800 meta-analyses of 50,000 research articles and almost 240 million students. This method of combining results from different studies helps to identify patterns in the research and is being critically acclaimed by many in the education world. Hattie (2009) found that, when teaching practices are visible, the student knows what to do and how to do it. In addition, when the learning becomes visible, the teacher can determine if learning is occurring. Making this learning visible allows students to become their own advocates for their education, and this step is a crucial aspect of becoming a lifelong learner.

How do educators make learning visible, and what impact do the different strategies have? Hattie's (2009) research made it easy for educators to find a starting point with rankings and barometers for each strategy, which measure the effect on student achievement. Hattie's scale ranged from a negative standard deviation of -0.2 to a positive deviation of +1.2. Teachers and school leaders should seek strategies and interventions that have effects on student learning above a +0.4 of deviation. This +0.4 deviation is considered a hinge-point and about the average effect expected from a year's schooling. Therefore, school leaders should aim to implement interventions of 0.40 and above because they are the ones that will truly improve student achievement. Every school is different, and in turn, every group of students is different. Consequently, teachers should be vigilant in constantly evaluating what is working and what is

not working in their classrooms, and effective teachers use this evidence to inform their instructional practices and move their students forward in their learning (Hattie, 2009).

Building Capacity

Hattie (2009) found that self-questioning and self-verbalization held a positive impact of 0.64 deviation, and teachers should foster environments in which students seek to improve their learning through this intrinsic motivation. Hattie (2009) stated, “Self-verbalization was among the most effective of the strategies, but it worked better for task oriented skills like writing or mathematics” (p. 193). This repetitive and positive self-talk is what changes a student’s self-image and allows them to achieve. Huang’s (1991) study of student self-questioning found that the effects were higher with lower ability students. He noted that the use of self-questioning helped in finding the required information and thus increased students’ understanding of the learning goals. Hattie’s (2009) data found that the effects were higher for pre-lesson questioning ($d = 0.94$) and post-lesson questioning ($d = 0.86$), compared to self-questioning that was happening during the lesson ($d = 0.52$). It comes back to finding where students are at and where they need to get to. Allowing them the opportunity to self-question and verbalize can go a long way in bridging the gap and creating classrooms in which students are empowered in their learning. In turn, through being reflective and transparent in their self-questioning moments, educational leaders can model this strategy to their staff and other stakeholders.

School leaders are called to build the “capacity of teachers to respond to the learning needs of all students” (Alberta Education, 2018a, p. 4). Through modeling effective instructional strategies, leaders can actively engage teachers in the learning process and support them in reaching their goals. Pink (2011) found that developing a staff of teachers is essentially developing a classroom of learners. Marzano et al. (2001) conducted a meta-analysis that

analyzed selected research studies on instructional strategies that teachers could implement in their classrooms. The researchers wanted to find out which of these strategies are most effective in certain subject areas or grade levels. However, Marzano et al. (2001) stated, “Instructional strategies are tools only. Although the strategies presented in this book are certainly good tools, they should not be expected to work equally well in all situations” (p. 8). This point is important for educational leaders who seek to impact change and build capacity in their schools. The key is avoiding thinking the “findings of a single study or even a small set of studies should be taken as the final word on whether a strategy or approach works well” (Marzano et al., 2001, p. 4). Instead, Marzano et al. (2001) challenged educators to think critically while reading about the nine strategies that were found to have the greatest positive effect on achievement for students in all subject areas and grade levels.

High-Yield Formative Assessment Strategies

Establishing a Target

Setting goals was found to be connected to higher motivation, self-esteem, self-confidence, and autonomy (Locke & Latham, 2006). Locke and Latham (2006) found that individuals find the motivation to accomplish goals that are specific and challenging as well as achievable. Goals enable people to find a sense of identity for themselves within their work environment. In addition, research has established a strong connection between goal-setting and high levels of success (Matthews, 2015). Therefore, teachers should create specific and flexible goals that allow for student choice and narrow student focus. Effective teaching helps to prioritize learning objectives and “big rocks” that are essential to improved student achievement (Covey et al., 1994). Covey et al. (1994) stated, “When we set and achieve goals that are in our

Center of Focus, we maximize the use of our time and effort” (p. 166). These focused goals give students a target and generate the highest and most immediate impact.

Students need to have a target for their success while also feeling like they contributed to that vision. This act of goal-setting is a practice that educators can use to help make learning visible and improve a student’s intrinsic motivation. According to Schunk (2003, as cited in Midwest Comprehensive Center, 2018), “students use goals to direct their actions, assess their progress, and drive their own learning over time” (p. 2). According to Dweck and Leggett (1988, as cited in Midwest Comprehensive Center, 2018), an important aspect in the goal-setting process is the purpose of the student’s goal:

[Students] who are focused on gaining new knowledge and skills ... are said to possess a “mastery” goal orientation. In contrast, [students] who are focused on the completion of tasks and the anticipation of extrinsic rewards are said to possess a “performance” goal orientation. (p. 4)

As the Midwest Comprehensive Center (2018) explained, “goal setting in isolation cannot be assumed to produce positive outcomes for students. Like most instructional practices, the outcomes associated with student goal setting will vary depending on how educators design and implement their goal-setting strategies” (p. 5).

The Power of Feedback

In education, the power of feedback has such an influential effect on student achievement. Meta-analyses have shown considerable variability, indicating that some types of feedback are more powerful than others. Black and Wiliam (1998a) found that formative assessment is about feedback that helps students move forward in their learning. The student is unlikely to be able to improve their work if they do not receive direct feedback. Teachers should

share feedback that focuses on the assignment and guides the students to reflect on their performance. Winne and Butler (1994) claimed that this feedback is “information with which a learner can confirm, add to, overwrite, tune, or restructure information in memory, whether that information is domain knowledge, meta-cognitive knowledge, beliefs about self and tasks, or cognitive tactics and strategies” (p. 5740). This feedback should also push students into improved learning while avoiding comparison with other learners. It trains them in self-assessment and provides opportunities for them to be learning resources for each other. Black and Wiliam (1998a) stated that these research-proven formative assessment strategies positively impact student success, while helping teachers mold activities to best target areas that students need further development in. Hattie (2009) described effective feedback as follows:

The most effective forms of feedback provide cues or reinforcement to the learner, are in the form of video, audio or computer-assisted instruction feedback, or relate feedback to learning goals. It is also worth noting that the key is feedback that is received and acted upon by students—many teachers claim they provide ample amounts of feedback but the issue is whether students receive and interpret the information in the feedback. (p. 174)

While the traditional idea of feedback is from the teacher to the student, Hattie’s (2009) research delved deeper into that narrative and then challenged it. He studied the different types of feedback, and interestingly, extrinsic rewards were the least effective forms of feedback for enhancing achievement. On the other end of the scale, when feedback was combined with effective instruction in classrooms, it was seen to be very powerful in enhancing learning and student achievement (Hattie, 2009). To effectively implement this instructional strategy, feedback and formative assessments need to provide information specifically relating to the task or learning goal. Wiliam (2011) stated, “Feedback should cause thinking. It should be focused

and it should relate to the learning goals that have been shared with the students. It should be more work for the recipient than the donor” (p. 142). Essentially, it bridges the gap between what is already understood and what needs to be understood (Sadler, 1989).

Marzano et al. (2001) also linked setting objectives and student goals with feedback. They found that feedback should be corrective, timely, and specific to a criterion (specific target of knowledge). Using formative assessment, teachers give feedback to students immediately after test situations, thus leading to higher achievement. This accurate, constructive, and timely feedback is important to meet the learning needs of every student. In turn, students begin to develop the ability to provide feedback on their own work. For leaders and teachers, this development of capacity within classrooms is a pillar of effective instructional practice.

In addition, Hattie (2009) flipped previous research around and found that feedback was powerful when it was from the student to the teacher. Teachers need to be receptive to feedback from students regarding what students know, what they understand, where they make errors, when they are confused, and when they are not engaged. Therefore, feedback is the backbone of formative assessment, and it helps teachers make learning visible.

Activating Learning

Teachers who model cueing and advanced organizers in a classroom can help improve what students are learning. These tools are presented before students learn new information, and they activate students’ prior knowledge on the subject. Marzano et al. (2001) stated that, the more that students know about a topic, the more they will be interested in learning. Effective leadership and teaching practices promote higher-level questioning from the stakeholders. This structure of questioning aims to engage students in a constructive and effective discussion. In addition, questioning helps students focus and gets them involved in the learning process.

Finally, questions should be designed to carefully and accurately develop students' knowledge base about specific topics (Marzano et al., 2001). These higher-level cognitive questions motivate students to apply their knowledge to practice.

With questioning comes the important use of wait time. Rowe's (1974) original definition of wait time was pausing for several seconds after asking a question. This pause gives students time to think before being called on to answer. Tobin (1987) took it to the next step and identified several different types of wait times (e.g., a pause following any teacher's words and a pause following any student utterance and preceding any teacher utterance). If done correctly, cueing, questioning, and waiting are all important strategies that activate students and lead to improved student achievement.

Reinforcing Effort and Providing Recognition

Educational leaders hold their teachers and students to the highest of expectations and expect them to excel. In turn, these expectations "become a self-fulfilling prophecy" (Duckworth, 2016, p. 12). Reinforcing effort helps enhance students' attitudes and beliefs surrounding the school and their achievement. In turn, these meaningful achievements are guided by allowing the students to have autonomy over their learning (Pink, 2011). According to Marzano et al. (2001), the challenge is that not all students recognize the importance of believing in effort. Fortunately, they found that these beliefs can be learned. Through formative assessment and recognizing the process over summative results, students begin to learn that increased effort can lead to increased achievement. Van Overwalle and De Metsenaere (1990) found that students who were taught about the relationship between effort and achievement increased their achievement more than those who were taught techniques for time management and comprehension of new material. It is by encouraging a growth mindset and helping students to

find their own drive and passion for learning that educators can truly increase motivation (Drake et al., 2014).

When students begin to find success, then intentional recognition of their achievement should follow. Marzano et al. (2001) found that recognition needs to be aligned with a performance standard. It also must be an abstract rather than a tangible reward. This idea of abstract recognition can better be understood as positive feedback or verbal praise. When this type of feedback is given, it is seen as an extrinsic motivator that positively alters attitude and behaviors (Cameron & Pierce, 1994). Through formative assessment and personalized feedback, students are encouraged to increase their achievement through increased effort, and students “who understand that effort and hard work lead to mastery and growth are more willing to take on new, difficult tasks” (Pink, 2011, p. 190).

Formative Leadership

Formative practices are effective not only within classrooms but also for educational leaders. With the high positive measure of 0.9 deviation, formative evaluation provides a form of feedback that allows teachers to quickly understand where students are and where they need to go. The attention to detail in informing a teacher’s instructional practice, the willingness to seek negative evidence when students are not learning, and the openness to trying different strategies can make the difference (Hattie, 2009). It is important to note that not all teaching styles and strategies are successful. Through formative evaluation, teachers are consistently refining their practice and improving engagement in their classrooms. Teachers in Alberta are called to continue “ongoing critical reflection to improve teaching and learning” (Alberta Education, 2018c, p. 4). The idea is that teachers should pay close attention to the effects of their own

teaching style, as it is this consistent “formative evaluation of the effects (intended and unintended) of their programs that makes for excellence in teaching” (Hattie, 2009, p. 181).

Change Leadership

Fullan (2006) analyzed many change theories that he believed had the most significant impact on teaching and learning. He aimed to identify which of these theories had great promise and which were seriously flawed below the surface to find theories that produced positive results in school environments. He found that most current theories lacked clarity concerning the change, had a disconnect between the instructional practice and the classroom learning, and did not possess a continual development of strong leaders and strong culture. Through his research (e.g., Fullan, 2001, 2005, 2006, 2010, 2011; Fullan et al., 2004), he designed a change theory that would positively impact teaching practice and student achievement in schools.

Change must be implemented and then survive in today’s complex school environments. At the heart of his theory, Fullan (2001, 2005, 2010) explained that behaviors change before beliefs and that school leaders must guide their stakeholders through what he calls “implementation dips.” These dips in performance occur as an individual encounters a change that requires a new skill or a new understanding. Experiencing this dip is a part of any change initiative, but effective leaders are responsible for “promoting innovation, enabling positive change and fostering commitment to continuous improvement” (Alberta Education, 2018a, p. 3).

Through this capstone study, the literature is used to analyze the strategies to implement change initiatives, such as formative assessment, in school environments. What are the keys to cultivating a school culture that is built to sustain a mindset shift towards learning-centered assessment?

Fostering Effective Relationships

Fullan (2011) found that effective change starts by exploring the importance of building the school culture through relationships. Focusing on teachers, staff, and students, leaders can cultivate a culture in which stakeholders want to learn and achieve. Quin (2017) found that, when teachers prioritize building strong connections, the ability of students to learn and stay engaged in schools increases. In fact, positive relationships affect students in more ways than just academics. Kim (2021) stated, “When students had positive relationships with teachers, they tended to have better physical and mental health” (p. 9). Leaders are called to cultivate a school environment centered around fostering effective relationships with all stakeholders (Alberta Education, 2018a). When these connections are established, both staff and students have a desire to contribute to a larger purpose. In contrast, it can be difficult to move a school forward without these connections and relationships. When people feel connected, they learn and grow. Sinek (2014) stated,

And when a leader embraces their responsibility to care for people instead of caring for numbers, then people will follow, solve problems and see to it that that leader’s vision comes to life the right way, a stable way and not the expedient way. (p. 134)

Therefore, to implement high-yield formative assessment, leaders must first start with establishing positive connections with their staff. If leaders fail to establish these connections, teacher effectiveness begins to decline. Carrington (2018) noted, “If teachers feel unsupported, misunderstood, unappreciated and empty, they will have little capacity to help those they teach and care for every day” (p. 3). Through the development of mutual respect and a shared vision centered around student achievement, the gap begins to shrink. Teachers start to buy in and move together towards improved, data-informed assessment practices.

Effective Collaboration

According to Fullan (2011), “student learning and achievement increase substantially when teachers work in learning communities supported by school leaders who focus on improvement” (p. 8). Through effective collaboration, schools and teachers are required to explain and support their reasoning for instructional and assessment practices. Leaders begin to develop a shared vision that positively impacts student achievement. A school that embodies a shared vision helps to provide the direction and purpose for teacher collaboration, thus increasing the confidence in teaching practices (Rosenholtz, 1989). This task, though simple in theory, can be challenging to implement. In fact, “creating, implementing, and sustaining a shared vision is a complicated task for any leader” (Price, 1997, p. 10). However, to have an optimal impact, teachers must embrace and push for a positive change in schools.

Effective leadership surrounding formative assessment breaks down classroom walls and allows teachers to be vulnerable with their assessment practices. Brown (2019), stated, “Everyone wants to be brave. Very few of us want to feel vulnerable. There is no courage without uncertainty, risk, and emotional exposure. Brave is vulnerable. Embrace the suck” (para. 1). When teachers are forced out of their comfort zones and into a world where they have to be vulnerable, real learning begins to happen. Connecting teachers to a purpose of improving student achievement also gives teachers the reasons behind a change initiative. As Sinek (2009) explained, “people don’t buy what you do, they buy why you do it” (p. 41). To understand the purpose of implementing high-yield formative assessment, stakeholders need to clear about the reasons for it. Collaboration cultivates this understanding within the school community and provides a focus on student success, engagement, learning, and well-being.

When changes start to occur, collaboration allows for celebrating the work of students and even for friendly competition between teachers, who try to outdo each other. Through increased knowledge of formative assessment, teachers begin to engage in meaningful discussions around what is working for the betterment of all students, and they begin to be proactive in their approach to assessment. This knowledge flows as teachers continuously learn what works best (Fullan, 2011).

Leadership Capacity

Capacity building can be defined as all the school community members' having "a right to fully informed and critical participation" (Apple & Beane, 1995, Chapter 1). According to Alberta Education (2018a), it is an opportunity for leaders "to support others in fulfilling their educational roles" (p. 4). Building capacity allows for continuous and positive growth in a school environment. Lead teachers and administrators who aim to implement increased use of formative assessment need to be vulnerable to accepting suggestions and criticism. Additionally, they need to be open to the change that comes with giving up the lead. The narrowing process of their vision allows for a targeted outcome and an evaluation of the change initiative. In this step, it is important for them to guide the vision while not micromanaging. Sometimes, the best visions take a whole new and improved direction when they become shared, providing a sense of ownership to all the stakeholders involved in the process. By developing high levels of leadership capacity in schools in regards to formative assessment, teaching quality begins to improve for all (Lambert, 2006).

Career-Long Learning

Alberta Education (2018a) stated, "A leader engages in career-long professional learning and ongoing critical reflection to identify opportunities for improving leadership, teaching and

learning” (p. 3). This commitment to the process of learning is important to model to all stakeholders. Hattie (2009) found that teacher quality and school leadership are the most important factors in raising student achievement, so it is important to foster them within school environments. Formative assessment and evaluation can help educators get there. Mizell (2010) explained, “For teachers and school leaders to be as effective as possible, they continually expand their knowledge and skills to implement the best educational practices” (p. 3). Formative assessment is grounded in research that has shown positive effects on student achievement. Through professional development, teacher knowledge on instructional and assessment strategies grows, teaching practices improve, and a commitment to lifelong learning is fostered. Essentially, teachers learn as they go, and this commitment requires “thoughtful planning followed by careful implementation with feedback to ensure it responds to educators’ learning needs” (Mizell, 2010, p. 10). Educational leaders and teachers must then put their new knowledge and skills to work. Professional development is not effective unless it leads to teachers’ improving their practice.

In assessment, there is a common misconception that summative equals quantitative and that formative equals qualitative. While both types of assessment can be both quantitative and qualitative, the difference lies in the intended use of the assessment. Through a culture of learning, educational leaders can adapt to the ever-evolving needs of students while engaging their teachers in reflective practices that challenge the knowledge of student assessment and achievement. Educators must learn to help students learn at the highest levels, and this process is what drives achievement (Mizell, 2010). However, teachers who do not engage in effective professional development do not improve, and student achievement suffers.

Being Vulnerable

In *The Six Secrets of Change*, Fullan (2011) challenged leaders to let down their guard and be vulnerable in their approach to change initiatives. Brown (2012) said that “vulnerability is the birthplace of innovation, creativity, and change” (5:49). Regarding assessment and implementing these practices, these findings could not be any truer. Transparency is about allowing students’ involvement in formative assessment, and this involvement increases their self-ownership for specific learning. Brookhart et al. (2009) found that “not only have the teachers come to value and promote student ownership of learning using high impact formative assessment strategies, but that their efforts have resulted in high student engagement in learning and increased student achievement” (p. 52).

Through transparency and vulnerability, leaders allow their stakeholders another opportunity to see their change initiative in a positive light. To cultivate a change in assessment—one towards increased use of high-yield and formative assessment—leaders must create a culture in which being uncomfortable is normal. In this kind of culture, teachers begin to feel comfortable with being vulnerable. They do not shy away from difficult conversations; rather, they ask for help and are not afraid to fail. Furthermore, under these conditions, educational leaders begin to build trust, respect, and connections in their buildings. Through formative assessment and deprivatizing teachers’ assessment practices, teachers’ observing and being observed in their classrooms begin to feel normal and desirable. The process begins to evolve to a student-centered approach in which student learning and achievement is the priority.

Change the Group

Despite solid knowledge of theories and a commitment to change, schools often do not succeed in sustaining growth in a positive direction. Fullan (2011) found that the reason is too

much emphasis on individual leaders. He stated that it is the leaders, not the organization or school system, who change; therefore, many initiatives are discontinued. In education, leadership changes when there are administration transfers, and as a result, change initiatives can get lost in the shuffle. Hargreaves and Fink (2006, as cited in Fullan, 2011) stated that “the end result ... is a ‘perpetual carousel’ where schools ‘move up and down with depressing regularity’” (p. 108).

To combat this, Senge (1990) coined the term “systems thinking” and stated that it was the key to adjusting to the ever-changing world in education. An individual leader cannot sustain change because of the many factors impacting schools, such as student demographics, changes in staffing, economic conditions, cultural differences, and world events. To change the system and get it to learn, a leader must be committed to the change (Fullan, 2011). Specifically, leaders must be committed to developing leaders across their school or division. Fullan (2011) found,

Because many leaders are working together, they are constantly cultivating leaders within their ranks for the future. Younger leaders are being groomed for the future of the organization, and when leaders develop other leaders in this way the likelihood of continuity and good direction is greatly enhanced. (p. 111)

Through this commitment, leaders are responsible for “identifying, mentoring and empowering teachers in educational leadership roles” to implement and sustain change initiatives to improve student achievement (Alberta Education, 2018a, p. 4).

Summary

In Alberta, educational leaders are called “to create the conditions within which quality teaching and optimum learning can occur and be sustained” (Alberta Education, 2018a, p. 1). Through the practice of formative assessment, the teacher and the students partner to gather evidence of learning with the goal of improving student achievement. Student achievement then

becomes increasingly attainable when teachers begin to shift their mindset from correcting to informing. Formative assessment is the driver that helps teachers begin to build a new mindset in which they are assessing to improve rather than grade or audit student learning. This literature review aimed to provide a backbone for improving the quality of formative assessment in educational settings. As Black and Wiliam (1998b) stated, “there is a body of firm evidence that formative assessment is an essential component of classroom work and that its development can raise standards of achievement” (p. 148). Formative assessment has a foundation in effective research, and its influence is still felt in the modern work of researchers. Teachers must be persistent in their approach and help students understand the learning goal, how close their current work comes to it, and what should be done next.

Fullan (2011) stated, “Leaders have to provide direction, create the conditions for effective peer interaction, and intervene along the way when things are not working as well as they could” (p. 49). Implementing an increased use of formative assessment can be challenging, but with an effective change framework in place, change can be sustained. Change initiatives are successful when connections are made with all stakeholders, teachers learn to love their work, and there is a level of transparency in leadership. Fullan et al. (2004) stated, “When leaders implement these components rigorously, they can build school capacity and improve student learning” (p. 42). These efforts then start to generate positive momentum and cultivate a system prepared for sustainable change.

Chapter 3: Summary, Recommendations, and Conclusions

Summary of Findings

The intent of this capstone study is to analyze research on formative assessment and change leadership in order to implement an increased use of these high-yield strategies in the classroom. Formative assessments that are linked to a teacher's instruction help to provide continuous information. In this way, formative assessment becomes the process of learning that is used to encourage and promote further understanding. Therefore, a classroom with embedded formative assessment is a learning environment in which students are set up to achieve. As Wiliam (2011) explained,

The teacher's job is not to transmit knowledge, nor to facilitate learning. It is to engineer effective learning environments for the students. The key features of effective learning environments are that they create student engagement and allow teachers, learners, and their peers to ensure that the learning is proceeding in the intended direction. The only way we can do this is through assessment. That is why assessment is, indeed, the bridge between teaching and learning. (p. 55)

This evidence found that, when effective instruction is paired with effective assessment, student achievement improves.

In Chapter 2, the literature review examined the early studies on formative assessment and how it has shaped current research. Assessment for learning becomes formative assessment when evidence is used to adapt instruction, thus helping meet the learning needs of all students. Hattie (2009) and Marzano et al. (2001) took it a step further when they conducted massive meta-analyses on the teaching strategies that positively affect student achievement. While these researchers used different terminology, many similarities were found and tied back to the idea of

formative assessment. Leaders are called to make learning visible to students and help them to establish clear learning objectives. When they accomplish this goal, teachers start to build capacity in assessment through the power of feedback and positive recognition. These effective strategies are put into place with change leadership and by leaders who cause positive movement within their staff. Backed with a framework and a commitment to change, school leaders are set up to establish change initiatives that move teaching practices forward.

Implications

Implementing high-yield formative assessment is a task that takes resilience and a dedicated commitment to change. Educational stakeholders must work together to ensure that these changes are done with the intent of increasing student achievement. However, these changes can also have an impact on the various stakeholders. In the following sections, this capstone study examines the implications on school administrators, teachers, students, and parents. Each of these stakeholders is directly affected by the implementation of formative assessment and the change leadership processes needed to get there.

Administrators

School administrators would benefit from implementing this research in their buildings along with professional development opportunities for their teachers. In Alberta, school leaders are called to make sure that instructional practices are “evidence-informed” and encourage “a shared responsibility for the achievement of students” (Alberta Education, 2018a, p. 4). Through this research, administrators could narrow their vision to focus on formative assessment. Effective leadership also includes being data-informed. Thornton et al. (2019) found that administrators must use credible data that can be easily interpreted by staff. School administrators can also use Hattie’s (2003, 2009, 2015) research around formative evaluation to

serve as a model for how formative assessments can be applied to both teachers and students. It is important to establish a school environment in which all stakeholders want to improve. Teachers are vulnerable in their instructional and assessment practices, while students are receptive to feedback, recommendations, and recognition.

Furthermore, Fullan's (2001, 2005, 2006, 2010, 2011) research would provide administrators with a framework for a potential change initiative. A leader's connection to their staff guides the change, but building capacity sustains it. School administrators' aligning data with their school vision and goals establishes their foundation for change.

Teachers

According to Hattie (2003), teachers are the main source that affects student learning and achievement, and he found that they account for almost 30% of the variance in student achievement. Therefore, this capstone study is important for helping teachers improve their pedagogy to meet the needs of all their students. At a NWEA conference, formative assessment expert Dylan Wiliam explained that, when leaders create a culture in which every teacher believes they need to improve, there is no limit to what they can achieve (NWEAvideos, 2012). This capstone study aims to help teachers explore the positive impacts of formative assessment and how they can implement it. Instead of relying on experienced teachers to model best practices, the research can help challenge both new and experienced teachers to be reflective in their approach to assessment. In fact, Hattie (2003) found that experience does not always translate to effectiveness. Expert teachers often have a more integrated approach to organizing and delivering the content. This deeper understanding allows them to apply more strategies and adapt to students in a more effective way.

With the upcoming change in the Alberta curriculum, it is important for teachers to focus on instructional strategies that positively impact students. Wiliam (2011) found,

A bad curriculum well taught is invariably a better experience for students than a good curriculum badly taught: pedagogy trumps curriculum. Or more precisely, pedagogy is curriculum, because what matters is how things are taught, rather than what is taught. (p. 12)

Thus, teachers must become thorough and reflective in their teaching practice. Through increased formative assessment, they get the best evidence about what students have learned and are then able to use that information to decide what to do next. They believe that the students are the ones who guide the instruction instead of the curriculum.

The change leadership part of this capstone study would have direct implications on teachers and their professional development. Seeing change from that lens would allow teachers to understand the “why” behind changes from administrators and how they can be supportive in their role of building capacity in school environments. Systematic change starts with getting teachers involved. Then, through Fullan’s (2011) secrets of change, teachers can begin to see the importance of significant change.

Students

The research in this capstone study also has tremendous implications for students. Through the data, it was found that a school-wide implementation of formative assessment could positively impact a students’ achievement. Hattie (2003) suggested that, when high-yield strategies are visible, the student knows what to do and how to do it. Students work alongside the teacher to attain their goals and, in turn, increase their achievement. The research showed that some of the greatest effects on student learning happen when the students become their own

teachers (through self-monitoring and self-assessment). Students who are involved in collaborative learning with their teacher are more likely to engage in meaningful discussions surrounding feedback and recommendations. Formative assessment allows students to be empowered in their learning and helps them identify both their strengths and target areas that need more attention. In addition, through increased use of feedback, students get a clear picture of their progress and how they might improve (Marzano et al., 2001).

Parents

In addition to having implications on stakeholders in the school, this capstone study has implications on parents. Student success is important to parents, and the effectiveness of instructional practices has a direct correlation to that achievement. With formative assessment starting to gain more traction nowadays, this research could challenge the assessment practices that many parents are accustomed to. Increased use of formative assessment can also change a parent's expectations of learning. It becomes the responsibility of the school stakeholders to bridge that gap and help parents become supportive of this new learning and assessment method.

In addition, parents are impacted by the change initiatives happening in their children's schools. Fullan's (2011) change framework and secrets of change allow parents to feel connected throughout these changes. They should always be considered in the implementation of change initiatives and should be encouraged to participate in the discussions to improve the vision of the school. Transparency is at the heart of any change, and it allows parents to witness the growth of teachers and students throughout this process.

Recommendations

As found throughout this capstone study, high-yield formative assessment strategies positively impact student achievement. Data proved that this impact is quite substantial. In fact,

“the effective use of formative assessment would increase achievement by between 0.4 and 0.7 standard deviations, which would be equivalent to a 50 to 70 percent increase in the rate of student learning” (Wiliam, 2011, p. 38). The following recommendations are meant to guide educational leaders to implement an increased use of formative assessment through a change leadership framework. Leaders are called to create a culture of change in which teachers develop a mindset of increased collaboration, continued professional development on effective assessment, and a buy-in to becoming change savvy (Fullan, 2010). The capstone study narrows the focus and recommends three high-yield assessment strategies that are grounded in effective research. Woven within these three recommendations are ideas for how a school leader can create a culture of change in which teachers are motivated to implement the high-yield assessment strategies in their practice. Killen (2005) found that establishing learning objectives, providing feedback, and activating students in their learning lead to student success.

Recommendation 1: Setting Learning Goals

Through this capstone study, research was found to establish a strong connection between formative goal-setting and high levels of student achievement (Matthews, 2015). Therefore, effective formative assessment practices should start with teachers’ choosing challenging but fair learning goals. This strategy establishes a clear focus for the lesson and for the students. In fact, setting goals (or objectives) is a formative assessment strategy that both Hattie (2003) and Marzano et al. (2001) agreed had a significant impact on student achievement. Through the act of goal-setting, learning targets become clear for students, and teachers find purpose in their pedagogy. Hattie (2003) found that goal-setting is part of what makes the learning visible. Goals help focus energy, measure progress, and achieve purposeful results. This formative assessment

strategy impacts the stakeholders, as teachers motivate their students to attain these goals and are able to monitor the effectiveness of their own teaching.

Leaders must motivate their teachers to create specific and flexible goals that allow for student choice. According to Locke and Latham (2006), people are motivated by goals that they find specific and challenging. These goals must be seen as attainable by the individual, in turn helping establish purpose. In addition, goals enable teachers to find a sense of direction and identity within the school environment. While setting learning goals improves student achievement, it also improves a teacher's intrinsic motivation and well-being. Locke and Latham (2006) found goal-setting to be linked to higher motivation, self-esteem, self-confidence, and autonomy. Having goals allows teachers and students to have personalized targets for their success. Leaders can accomplish this through nurturing an “understanding of the link between the [learning objectives] and the intended learning outcomes” (Alberta Education, 2018c, p. 5). When this goal-setting is established from the top down, teachers begin to use learning objectives to assess their progress within their own learning.

To make goal-setting clear for students, the recommendation is for teachers to be clear in articulating and displaying the learning goals. It is important for educational leaders to model for teachers and students how to set their own learning objectives and provide feedback on the learning objectives they set. Then, together with their students, teachers could set a goal for a unit or a lesson using KWL (know, wonder, learned) charts to help students begin asking questions about what they want to know more about. Teachers should also encourage the students to personalize the learning goal by identifying their areas of interest. This process would get students thinking about their interests and would actively involve them in the goal-setting

process. Through increased use of formative assessment, teachers are then able to periodically check student achievement based on the established learning goals.

For the strategy of setting learning goals to be effective, educational leaders must guide their teachers to first establish big rocks in the curriculum. Covey et al. (1994) stressed the importance of determining these priorities. This process helps teachers ensure that they are focusing their time and energy on accomplishing learning goals. However, determining priorities for learning objectives is not a simple task. Through collaboration with leaders and other stakeholders, the change initiative starts to become a shared vision. Fullan (2011) stated, “Student learning and achievement increase substantially when teachers work in learning communities supported by school leaders who focus on improvement” (p. 8). Collaboration around formative assessment leads to developing a shared vision that positively impacts student achievement.

Dweck and Leggett (1988) stated that another important aspect in goal-setting is the intent of the learning goal. Teachers and students both need to understand the “why” behind the learning objectives. Through effective collaboration, leaders help connect teachers with a purpose of improving student achievement, and teachers are provided the reasons behind a change initiative. As Sinek (2009) stated, “people don’t buy what you do, they buy why you do it” (p. 41). To understand the effects of implementing increased goal-setting, the “why” needs to be clear for all stakeholders. Within school communities, leaders should use collaboration to cultivate an atmosphere in which there is a shared vision focused on student success, engagement, and learning.

Recommendation 2: Feedback, Feedback, Feedback

Since the beginnings of research on formative assessment, feedback has been an integral part of this concept. Black and Wiliam (2009) found the link between the importance of feedback and improving cognitive growth in students. Teacher feedback should push students into improved learning and help teach students how to improve their self-assessment of their own learning. In fact, Gipps (1994) stated students are unlikely to improve their work if they do not receive direct feedback.

To improve student achievement, the recommendation is that educational leaders and teachers implement an increased use of the high-yield formative assessment strategy of feedback. Leaders should model giving feedback that is corrective in nature and tell teachers how they are achieving in relation to their professional growth plan (PGP). In turn, teachers are motivated to do the same in their own classrooms in relation to student learning objectives. In classrooms, feedback can occur following a summative or a formative assessment; however, more importantly, increased feedback should be delivered throughout instruction. Feedback should also be timely (the sooner, the better) and concise so that it does not overwhelm the targeted individual. Teachers should begin to identify student misunderstandings right away and enable students to correct their own mistakes. Importantly, Hattie (2009) noted that the key to feedback is that it is also received and acted upon by the individuals. Teachers must be receptive to feedback from educational leaders, and achievement will increase if they want to learn from that feedback. Teachers must then expend effort and attention to the learning task following the feedback. Hattie (2009) reported that, by providing effective feedback and giving individuals the opportunity to use it, it has a 0.73 positive deviation.

Educational leaders can sustain a change initiative when they are able to establish “a welcoming, caring, respectful and safe learning environment” (Alberta Education, 2018a, p. 3). Leaders play a vital role in determining a positive school culture, and it starts with leadership that establishes an environment in which all stakeholders feel connected. It is recommended that leaders encourage collaboration and feedback between teachers to ensure that best practices are shared and that staff members are all working toward common goals (Eaker et al., 2002). Doing so helps leaders create a supportive school environment in which feedback and communication improve the achievement of all staff members. Through connection, teachers want to improve and learn from each other, while students want to improve and learn from their teachers. As this positive cycle continues, the learning process improves. When teachers prioritize building strong connections, the students’ ability to learn increases (Quin, 2017). Furthermore, a leader’s act of fostering effective relationships with all stakeholders helps break down the obstacles to effective feedback.

Feedback can come in many forms. Recommendations for teachers include, but are not limited to, one-on-one conferences with students, rubrics, small group work, exit slips, and the use of technology (e.g., Google applications and Google Classroom). They should aim to provide cues or reinforcement to the student and always relate the feedback back to the learning goals. For educational leaders, the recommendations are grounded in the same principles. They include one-on-one conferences with teachers, small group work during professional development, and co-teaching opportunities. Through these processes, teachers begin to develop the ability to provide feedback on their own teaching practice and on the practices of others. This continuous feedback then begins to move teaching practices forward throughout the school and has a positive impact on student achievement.

Recommendation 3: Activating and Sustaining

Marzano et al. (2001) found that helping individuals apply their knowledge deepens their understanding. Regarding activating student achievement, Alberta Education (2018a) requires school leaders to develop “a culture of high expectations for all students and staff” (p. 4). Through this culture, students become engaged in the learning, and teachers have the expectation for them to excel. These expectations “become a self-fulfilling prophecy,” and student achievement improves (Duckworth, 2016, p. 12). To accomplish these tasks, the recommendation is to activate and sustain achievement through cueing, questioning, reinforcing effort, and providing recognition.

Educators can first activate achievement through cueing and advanced organizers. When these tools are presented before individuals learn new information, they activate prior knowledge on the subject. Therefore, it is recommended that leaders model these tools to their stakeholders in staff meetings and during professional development opportunities for teachers. Through deliberate prompting, the targeted individuals begin to engage with the material. As a result, student learning begins, and teachers gain a deeper understanding of the “why” behind the leadership’s vision. Marzano et al. (2001) found that, the more previous knowledge that individuals have on a topic, the more interested that they are in learning. For example, leaders can provide teachers with an email preview of the upcoming professional development day. By doing so, teachers are given the opportunity to dive deeper into the material before the learning begins.

Effective leadership also promotes higher-level questioning from all stakeholders. When individuals are engaged in constructive and effective discussions, there is a positive impact on student achievement. In addition, questioning helps to provide direction for a shared vision and

gets teachers involved in the learning process. Questioning compels stakeholders to apply their knowledge rather than having them simply recall information (Marzano et al., 2001), and it can push conversations about effective instruction and assessment forward. These innovative dialogues can go beyond where a vision starts and into deeper depths of knowledge and change. This effective formative questioning strategy captures attention, fosters involvement, and facilitates an active learning environment.

Regarding sustaining a higher level of student achievement, reinforcing effort and providing recognition are recommended. While this strategy does not directly build cognitive skills, it enhances an individual's attitudes and beliefs surrounding school and achievement (Marzano et al., 2001). Through this strategy, stakeholders begin to believe in the importance of effort, and it is through this belief that learning starts to take off. Teachers and students start to see learning as a process instead of determining self-worth through summative results. Educational leaders must model this concept to teachers and support the habit of experimentation and risk-taking at all levels. Real change typically starts with "someone feeling a level of desperation that leads him or her to take constructive risks and experiment with alternative ways of being that previously felt inaccessible" (Kottler, 2014, p. 26). When teachers feel comfortable taking risks, they model the same for their students; in turn, learning accelerates.

Teachers also begin to appreciate the connection between an increased effort and increased achievement. This idea is reinforced by Van Overwalle and De Metsenaere's (1990) study about the relationship between effort and achievement. The researchers concluded that students who were only taught skills pertaining to increased effort achieved at a much higher level. To sustain high levels of student achievement, teachers and educational leaders must stress the significance of effort. Pink (2011) stated that individuals "who understand that effort and

hard work lead to mastery and growth are more willing to take on new, difficult tasks” (p. 190). Effective leadership is effective teaching; therefore, educational leaders should reinforce effort at every turn and advocate for it positively, transparently, and loudly.

When educational stakeholders begin to find success in school, leaders need to provide positive recognition to sustain the change. Providing this recognition will sustain achievement, but it needs to be aligned with a performance standard (Marzano et al., 2001). In addition, positive feedback or verbal praise are seen as more effective than tangible rewards. When teachers improve and show progress in their instruction or assessment practices, the achievement needs to be recognized privately and publicly. Furthermore, when this type of feedback is given, it becomes an extrinsic motivation for teachers and positively alters their attitude and behaviors (Cameron & Pierce, 1994). Brown (2018) stated that armored leadership means leaders are stuck trying to collect gold stars, while daring leadership is leaders’ thriving when giving out gold stars. Educational leaders must celebrate the successes of teachers. Through reinforcing effort and providing recognition, student achievement is positively impacted, and a culture of change in which teachers are motivated to implement high-yield formative assessment strategies in their practice develops.

Conclusion

This capstone study has identified high-yield formative assessment strategies and the change management frameworks that are required to implement them. More specifically, it has highlighted the importance of formative assessment and its positive effect on student achievement. In education, leaders and teachers are called to build a shared vision encompassing effective instruction and assessments practices, moving their practices forward and getting away

from reactive summative assessments that determine what students know after the learning process is done. This concept is supported by Wiliam (2011):

As soon as students get a grade, the learning stops. We may not like it, but the research reviewed here shows that this is a relatively stable feature of how human minds work. So, we have to deal with it and design assessment systems accordingly. (p. 146)

Through increased formative assessment, teachers can “respond to student learning in order to enhance that learning, during the learning” (Bell & Cowie, 2001, p. 37). Therefore, it takes a change initiative to get assessment practices to move in a positive direction. Leaders should explain the rationale for the change and implement it slowly over time (Black & Wiliam, 1998a).

In addition, this capstone study has emphasized the significance of educational leaders’ understanding of change frameworks and how they impact change initiatives in schools. When a school improvement process is implemented, there are always going to be obstacles to overcome. Leaders “understand the challenges of change [and] communicate a sense of urgency balanced with patience, persistence and optimism” (Wilson, 2011, p. 393). Therefore, it takes effective leadership with administrators and teachers who build “enduring greatness through a paradoxical blend of personal humility and professional will” (Collins, 2001, p. 20). Educators must be committed to students and their learning and should stay committed to increasing their achievement.

This capstone study has also provided reassurance that, when implemented properly, formative assessment practices can increase student achievement. Formative assessment is the foundation that gathers the evidence with which teachers or students can enhance the learning. By increasing formative assessment practices and involving students in the learning process, teachers make learning visible. In turn, students become active partners in improving their

learning. Through a commitment to change, leaders inspire all stakeholders to embrace this movement and provide students with the amazing education they deserve.

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