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FEEDBACK: BEST PRACTICES FOR EFFECTIVENESS

An Abstract of a Thesis

Submitted

in Partial Fulfillment

of the Requirements for the Degree

Specialist in Education

Hanne Elizabeth Wuertz

University of Northern Iowa

December 2012

ABSTRACT

The focus of this paper is on the use of formative assessment in classrooms which is increasingly becoming a widespread practice in education today. More specifically, the paper examines the role feedback (a crucial element of formative assessment) plays in student achievement. Feedback and the way it is defined, delivered, and used impacts the effectiveness of formative assessment. In addition, decisions about, and changes in, instruction are often made based on what is communicated through feedback. Thus, this paper defines feedback, discusses best practices for effective feedback, and describes how school psychologists can encourage and help facilitate the use of effective descriptive feedback between teacher and students. Implications and future directions for feedback within the context of formative assessment are discussed.

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CHAPTER 1

FORMATIVE ASSESSMENT AND FEEDBACK

Introduction

Assessment is a pivotal component in education as it communicates many details about students to schools and their stakeholders. Assessments inform teachers, administrators, school psychologists, and other educational personnel about student progress, the effectiveness of instruction, as well as specific needs of students. Based on assessment information, crucial decisions are made by teachers and school psychologists to improve students' educational experiences. For example, school psychologists analyze students' formative and summative assessment data together with teachers to decide what types of interventions students may benefit from. Although different types of assessment play important roles and contribute to student data in different ways, there is one type of assessment that facilitates communication between teacher and student quite clearly if done effectively. This type of assessment is called formative assessment, and it will be the focus of this paper.

The purpose of this paper is to examine the complex components of formative assessment and to focus in on a specific aspect of formative assessment, which is feedback. Within the paper, implications feedback has for student achievement will be discussed, effective practices of feedback found in the literature will be dissected, and the potential impact feedback has on teachers' reflective practice will be addressed. In addition, the role feedback plays for teachers and students, and the function school psychologists' take part in in this process, will be elaborated upon. These topics will be

covered in three chapters. In chapter one, formative assessment and feedback will be discussed, and the topic of effective feedback strategies will be addressed in chapter two. In chapter three, the conclusion along with the implications feedback has for teachers and school psychologists, the limitations of the paper, and future directions in research for feedback will be the focus.

Formative Assessment

This chapter will consist of three parts: (a) formative assessment, (b) feedback, and (c) impact of feedback on achievement. Formative assessment is one type among a variety of assessments that are used in the educational system today. Assessments differ and can range from screening assessments (e.g., Dynamic Indicators of Basic Early Literacy Skills), diagnostic assessments (e.g., Curriculum Based Evaluations), summative assessments (e.g., achievement and cognitive assessments) to formative assessments (McTighe & O'Connor, 2005). Each type of assessment plays an important role in determining students' strengths and weaknesses; these assessments also help to determine instructional needs of students. Of all the types of assessment, formative assessment is very crucial in informing the assessor of the progress and learning that is occurring through instruction (Black, Harrison, Lee, Marshall, & Wiliam, 2004; Stiggins & DuFour, 2009). Specifically, formative assessment communicates to teachers how students are progressing in their learning. In addition, the formative assessment process allows teachers to provide feedback to students. Then, the students are able to interpret the feedback, communicate their understanding back to the teacher, and make improvements on their performance and learning (Brookhart, 2012). Finally, the teacher

is able to adjust instruction to match the students' needs. The communication that occurs between teacher and student during the formative assessment process can be described as a "feedback loop." Within this feedback loop, school psychologists can be a powerful tool for teachers. When their expertise in communication and their knowledge of educational interventions that improve student learning are paired with teachers' understanding of classroom instruction, together they can collaborate and problem-solve portions of the feedback loop that may be breaking down.

Traditionally in classrooms, students are instructed on a subject and then at the end of a topic or lesson, teachers determine who has or has not learned the material. This type of approach to instruction and assessment is widely referred to as summative assessment or assessment of learning. It is also based on behaviorist theories which believe that learning a particular subject or topic is sequential in nature; thus, students must master content before moving on to the next learning objective (Shepard, 2000). To better understand this approach to assessment and instruction, Shepard (2000) compares the behaviorist theory and learning in school by explaining that learning a subject matter is similar to building a brick wall; basically, content is learned layer by layer just as bricks are added to a wall one-by-one. Unfortunately, when instruction occurs based on the behaviorist perspective, teachers fail to show students the connections between patterns and functions or multiplication and addition because doing so disrupts the sequencing of topics. Consequently, higher order thinking and transfer of knowledge and skills are not utilized until basic skills are mastered. So, in order for teachers to ensure students' master a topic or skill (e.g., reasoning, problem-solving, comprehension,

lifecycle, etc.) before moving on to the next objective, tests must be given frequently. Yet, this type of approach and only using this method is not realistic, nor is it a productive and meaningful way to tackle instruction and assessment.

Although summative assessments will always play a role in communicating student learning, this approach does not allow for timely feedback and for teachers to adjust their instruction while student learning is still taking place (Jenkins, 2010; Sadler, 1998). Assessment of learning only monitors the end product (e.g., topic test, final exam), and results are typically reported in an evaluative manner through scores or grades. Subsequently, there are other negative effects that summative assessments can have on classrooms. At times, the impact of summative assessments and accountability tests can go undetected, but many of these assessments are capable of fostering an environment that uses less challenging tasks and external rewards (Shepard, 2009). Providing students with easier tasks and external rewards creates more opportunities for successful student performance; however refraining from challenging students in the educational setting can be detrimental to their motivation, mindset, and future success. Therefore, using summative assessments exclusively is insufficient in maximizing student learning and challenging thinking. At the end of a teaching period, it is too late to find out gaps in students' learning and there is no opportunity to provide students with appropriate feedback (McTighe & O'Connor, 2005).

In contrast to summative assessment, monitoring students' progress throughout the instructional process, versus the end, is considered "assessment for learning" (Shepard, 2000) or formative assessment (Leahy, Lyon, Thompson, & Wiliam, 2005;

Popham, 2011; Shepard, 2000; Stiggins, 2007). This concept of assessment derives from the constructivist viewpoint that formative assessments occur concurrently with instruction and are considered an on-going process (Shepard, 2000; Stiggins & DuFour, 2009). This means that in a classroom, ongoing assessments provide specific information to both the teacher and students in order to guide and improve teaching and learning (McTighe & O'Connor, 2005; Popham, 2011). For example, during instruction on fractions in an elementary school classroom, the teacher may notice that few students are raising their hands or that only a couple seem to provide correct answers on some of the fraction problems. At this time, the teacher is able to inquire more about how students came up with their answers. Through this discourse, a teacher can immediately determine if additional instruction needs to occur for the entire class, for a small group, or for a couple of students. The teacher may also determine that more specific practice on fractions is needed.

Another scenario in which formative assessment is used includes students working in small groups. During this work time, the teacher is able to float around the classroom to determine student progress on the topic or project based on the objectives and expectations that are to be clearly communicated to students before beginning their work. At this point, one may ask how a teacher, during an instructional sequence, knows when to do these informal assessments. Popham (2011) explains that teachers rely on learning progressions, a sequenced set of building blocks known as sub-skills, to check student understanding. Therefore, knowing what students must master to reach a higher level of thinking enables the teacher to assess the class, a small group, or individual

students more informally and take action immediately (versus waiting to the end of the instructional sequence) to help students better understand the topic. Implementing such formative assessments (the examples provided do not exhaust the options teachers have to assess students in a formative manner) and classroom dialogue throughout instruction allows teachers to scaffold student learning, assist students in transferring knowledge, elicit higher order thinking, and help make thinking visible to students (Shepard, 2000).

This type of information in addition to other data that is continuously gathered throughout the school year is often referred to as progress monitoring. Monitoring student progress "involves the collection of information on a repeated basis over time to see if the student is showing adequate growth toward a particular goal" (Howell & Nolet, 2000, p.102). If a student is making adequate progress toward a specific goal, then it is possible to think that the instruction is appropriate for the student and that proper feedback is occurring between teacher and student. However, if a student is not making adequate progress based on the monitoring information, this is a time when teachers can solicit the assistance of the school psychologist. Specifics about the assistance school psychologists can provide teachers when students are lacking adequate progress are further elaborated upon in the discussion section of the paper.

Based on previous research (Black & Wiliam, 1998; Rampasad, 1983; Sadler, 1989), formative assessment has two main core activities. First, the learner must have an understanding or perception of the gap between the desired goal and his or her present state. Second, is the action taken by the learner to close the gap in order to attain the desired goal (Black & Wiliam, 1998; Rampasad, 1983; Sadler, 1989). In order for the

learner to gain an understanding of the gap that exists and for the learner to take action, they must be provided specific, descriptive feedback. As stated by Black and Wiliam (1998), the nature of the message in feedback impacts how the learner responds and takes action.

A more current perspective of formative assessment has been presented by Stiggins (2007) and Brookhart (2012). Stiggins (2007) believes that the formative assessment process begins when teachers share achievement targets or learning goals with their students. Thus, students should understand the expectations of a task and be shown examples of quality student work. Frequent self-assessments allow students and teachers to have timely, descriptive feedback. When students are provided this type of feedback, they are able to discover where they are in accordance with the goals or achievement targets, and they are also able to determine what improvements they need to make in order to reach the prescribed goals (Stiggins, 2007). Teachers who have timely and descriptive feedback are better able to understand students' progress towards the achievement targets. In addition, teachers can make changes during instruction, based on student feedback, in order to improve academic performance. Brookhart (2012) supports this definition by stating that formative assessment has three steps. The first step is for students to understand the learning objective, then students compare their work against the objective or goal, and finally students must take action in order to make improvements (Brookhart, 2012).

Background: Defining Feedback

Prior to discussing effective feedback strategies, feedback must first be defined. Various definitions of feedback exist in the literature; therefore, it is important to have some clarity and consistency in defining feedback. Depending on how feedback is defined, the nature of the feedback, how it is used, and the beliefs in its impact on students may also differ (Cauley & McMillan, 2010). Vollmeyer and Rheinberg (2005) outline the multiple functions feedback takes on in society: feedback can be a motivator for increasing performance, information students can use to change or validate their learning, and feedback can be used as a way to satisfy individuals. Kluger and DeNisi's (1996) definition is more narrow in that feedback is an external agent taking action to provide information to someone regarding an aspect of his or her task performance. Ramaprasad (1983) described feedback as "information about the gap between the actual level and reference level of a system parameter which is used to alter the gap in some way…for feedback to exist, information about a gap must be used to alter the gap" (p.4). A common thread in the various definitions is that the purpose of feedback is to help the student understand more about the learning goal, their own achievement status relative to that goal, and about ways to bridge the gap between their current status and the desired status (Brookhart, 2008; Hattie & Timperley, 2007; Heritage, 2010; Ilgen & Davis, 2000; Kluger & DeNisi, 1996; Sadler, 1989).

Hattie and Timperley (2007) conceptualized feedback as "information by an agent regarding aspects of one's performance or understanding" (p. 81). This definition can be thought of in two ways: feedback from the teacher to a student, or feedback that derives

from the student and is understood by the teacher. Both types of feedback take place during formative assessment, and each is a key component that makes feedback successful. Rodgers (2006) provided an alternative perspective of feedback from the student to the teacher; he considers descriptive feedback to be "students' description of their experiences as learners" (p.213). Thus, since feedback is a two-way street between teacher and students, the feedback loop is rendered incomplete if it only occurs from one person and is not received and reciprocated by the other person.

The literature also describes the purpose of feedback and how the process of descriptive feedback works. Brookhart (2008), Heritage (2010), and Rodgers (2006) contributed that descriptive feedback has multiple purposes. The first purpose is for teachers to gather information on what students have learned, how they have learned it, and what helped or hindered their learning. Then, students use feedback to adjust and improve their learning while teachers also use feedback from students to adjust and improve their teaching (Darling-Hammond & Pecheone, 2010). Therefore, it is important to recall that information itself is not feedback, rather when the information is actively used to alter the gap (that is, the gap between the actual level of performance and the goal level) is when it becomes feedback (Heritage, 2010).

The second purpose is for the student to become aware of his or her own learning processes. This awareness often stems from the student describing his or her own experiences as a learner; thus, providing feedback to the teacher. Hence, feedback may be what the teacher provides students; however, what matters most is what students do with the feedback (Brookhart, 2012). The third purpose is establishing a cooperative and

trusting environment in order for the teacher and the student to learn together and independently. Also, it is important that the learner is comfortable in expressing his or her learning experiences without being judged. As Rodgers (2006) aptly stated, "feedback gives everyone a chance to slow down, to breathe, to make sense of where they've been, how they got there, where they should go next, and the best ways to get there together – a decision made *with* students, rather than *for* them" (p. 219).

The definitions of feedback and its purposes mentioned above are essential to assuming this important question: How does feedback impact student achievement? Like many aspects of education, there are multiple variables or influences that contribute to the overall success of student achievement in schools. Feedback is one of many influences that impacts student achievement; however, the literature provides evidence that effective feedback does make a difference in the academic success of students. Thus, it is to the discussion, of how feedback impacts student achievement that one will now be presented with.

The Impact Feedback has on Achievement

For this section, two meta-analyses related to the impact of feedback on achievement will be reviewed. The first was conducted by Kluger and DeNisi (1998), and the second by Hattie and Timperley (2007). The impact feedback has on student self-regulation will also be discussed according to Brookhart's (2012) review.

Kluger and DeNisi's (1998) meta-analysis found that feedback (or feedback intervention) does improve student performance on average; however, feedback interventions have yielded variable effects on performance in the past (Ilgen, Fisher, &

Taylor, 1979; Kluuger & DeNisi, 1996, 1998). Due to the variability found in the effects of feedback, one third of Kluger and DeNisi's (1998) cases of feedback interventions reduced performance. Yet, the findings of their review could not be explained by sampling error, feedback sign, or existing theories. They stated that "under certain circumstances, feedback can impair performance and that the process through which feedback affects performance requires more than simple explanations" (Kluger & DeNisi, 1998, p.67). As a result, the researchers proposed their own theory and tested it with moderator analyses. The results of their test suggested that the effectiveness of feedback decreases as attention to meta-task processes made feedback effects on performance weaker; yet, attention to task-motivation or task-learning processes increased the effects of feedback on performance (Kluger & DeNisi, 1998). Although Kluger and DeNisi's (1998) review established that feedback can be a double-edged sword, they also found that using feedback in combination with clear goals increases the effectiveness of feedback. The concerns and contrasting opinions that Kluger and DeNisi (1998) mentioned in their study are notable; however, recent research supports the idea of feedback influencing achievement and performance in a positive way (Black & Wiliam, 1998; Hattie & Timperley, 2007; Stiggins & Chappuis, 2006). Their research also confirms the idea that feedback is just one component of the entire formative assessment process (e.g., specify learning goals, instruction, feedback, change instruction, etc.).

According to Hattie and Timperley (2007), meta-analyses were conducted by Hattie in 1999 to determine the various influences on student achievement. Using the earlier meta-analyses, Hattie and Timperley (2007) determined how effective feedback

impacts student achievement. From Hattie's 1999 synthesis of more than 500 meta-analyses (with 450,000 effect sizes from 180,000 studies) on the various influences on student achievement, Hattie and Timperely (2007) identified at least 12 previous meta-analyses that included feedback within classrooms. Within the 12 meta-analyses, 196 studies and 6,972 effect sizes were included, and an average effect size of 0.79 was found for those studies (Hattie & Timperley, 2007). This average effect size falls into the top five to 10 of the highest influences on achievement in Hattie's 1999 synthesis (Hattie & Timperley, 2007). An effect size "is a general term that refers to the strength of association between variables…it indicates the strength of the linear association between variables" (Cozby, 2007, p. 238). Effect size values range from 0.00 to 1.00 where effect sizes closer to 1.00 signify larger effect sizes or stronger relationships between variables. Top influences on achievement included in Hattie and Timperley's (2007) meta-analysis are direct instruction (effect size of 0.93), reciprocal teaching (0.86), and students' prior cognitive ability (0.71). Influences such as socioeconomic influences (0.44), homework (0.41), the use of calculators (0.24), reducing class size (0.12), and retention of students back one year (-0.12) can be found to have effect sizes on the opposite spectrum (Hattie & Timperley, 2007). Overall, "the studies showing the highest effect sizes involved students receiving information feedback about a task and how to do it more effectively" (Hattie & Timperley, 2007, p.84). Specifically, cues or reinforcement to learners are the most effective forms of feedback. Feedback in the form of audio-, video- or computer-assisted instructional feedback or related to goals also make feedback highly effective (Hattie & Timperley, 2007). Lower effect sizes found in Hattie and Timperley's (2007)

analysis were related to praise, rewards, and punishment. For example, feedback that is least effective for enhancing achievement include praise, programmed instruction, extrinsic rewards, and punishment. The specifics of feedback in the form of praise will be examined further in the paper.

More recently, Brookhart's (2012) literature review explained that feedback from teachers does not guarantee learning because it is what the student does with the feedback that matters. The role feedback plays is a type of external regulation for students. Basically, "feedback helps increase the changes that the student will learn and that the student will want to learn" (Brookhart, 2012, p. 227). As a result, it is the external regulation, or feedback, teachers provide that enhance student self-regulation of learning. According to Brookhart (2012), internal regulation should impact students in two ways: students should be impacted cognitively as they make improvements to their learning, and as students learn to control more of their learning they become more motivated in the learning process.

Since the many studies in the meta-analyses reviewed by Kluger and DeNisi (1998) and Hattie and Timperley (2007) underscored the importance of feedback to student achievement, and Brookhart's (2012) review emphasized the value of self-regulated learning, it is useful to describe the elements that contribute to feedback effectiveness.

CHAPTER 2

EFFECTIVE FEEDBACK STRATEGIES

The primary focus of this chapter is on describing effective feedback. The chapter is comprised of six brief sections: (a) learning goals and achievement targets, (b) qualities of effective feedback, (c) the discourse of feedback from teacher to student, (d) intelligence- versus effort-based praise, (e) feedback from student to teacher, and (f) the role of the teacher as a recipient of feedback.

Effective Feedback

Although feedback may seem straightforward, it is complex and variable due to the relationship between its form, timing, and effectiveness. Even though there is no magic formula for feedback, there are suggestions as to what are deemed effective feedback strategies since simple praise does not necessarily result in learning gains (Sadler, 1989).

Learning Goals/Achievement Targets

The first aspect to consider that contributes to the effectiveness of feedback is actually the beginning of the formative assessment process. Prior to giving feedback, teachers must establish clear learning goals or targets for students to follow. Research (Brookhart, 2012; Hattie & Timperley, 2007) has found that the impact of feedback is influenced by goal and task difficulty. Thus, feedback appears to have the most impact when goals are specific and challenging (Hattie & Timperley, 2007; Kluger & DeNisi, 1996). In addition, criteria that establish how students reach the goals must also be discussed between teacher and students. This is a crucial aspect of feedback because

students must understand where they are going and how they will get to where they are going (Hattie & Timperley, 2007). If feedback is given and the student does not have a clear idea of what the goal of the task is, the student cannot utilize the feedback to improve his or her performance (Brookhart, 2011). Therefore, feedback should relate to the goals that are defined and understood by the recipient (Brinko, 1993; Brookhart, 2012). McTighe and O'Connor (2005) suggested that before feedback is given, teachers must ask themselves if learners can specifically tell, from the feedback given, what they have done well and what they can do next time to improve. If the feedback does not communicate this, then the feedback is not understandable or specific enough to the learner.

Specific, Clear, and Timely

Feedback is most effective when it is specific, clear, and timely. When clear learning goals are established, feedback can be given to students; however, the feedback itself must be specific, clear, and timely (Brookhart, 2011; Fluckiger, Tixier y Vigil, Pasco, & Danielson, 2010; McTighe & O'Connor, 2005; Price, Handley, Millar, & O'Donovan, 2010). This is what makes feedback descriptive. In essence, feedback should come immediately after a task or soon after the activity or assignment so that the student still remembers what the task or assignment was about and why they were doing it (Brinko, 1993; Brookhart, 2011; McTighe & O'Connor, 2005). Although feedback should be timely and frequent, it should not be given excessively (Brinko, 1993; Price et al., 2010). For example, if learners perceive that feedback is too frequent from the teacher, the learners may feel a loss of personal control and thus may come to depend

heavily on external cues rather than themselves for feedback (Brinko, 1993). Also, it is interesting to note that immediate feedback may be more powerful for feedback about the task whereas feedback about processing the task may benefit more from delayed feedback (Clariana, Wagner, & Roher Murphy, 2000). Clariana et al.'s (2000) research on the effectiveness of delayed versus immediate feedback on given test items suggests that delayed feedback may provide more opportunity to process the task, especially when the test item is difficult and requires a greater degree of processing. In contrast, immediate feedback should be provided on easier test items that do not require a lot of processing, such as facts or items that are right or wrong (Brookhart, 2012; Clariana et al., 2000; Kulik & Kulik, 1988).

Discourse of Feedback: The Message Feedback Sends to the Receiver

Due to the subjectivity that can occur with feedback, there are many other aspects of feedback to consider. To begin with, the tone of the feedback and how strengths and weaknesses are communicated through feedback impact its effectiveness. Brookhart (2012) stated that the tone of the feedback from teacher to learner can impact the learner's understanding and the effectiveness of the feedback. This is because how we talk with students sets up expectations (Allington, 2002). Also, focusing on one or more strengths of the student and providing at least one suggestion for the next step in the task makes feedback more effective (Brookhart, 2011, 2012; Tunstall & Gipps, 1996). This is valuable since not every student recognizes his or her own strengths and where to go next in the assignment. Brookhart's (2011) findings are in line with similar research such as Brinko (1993) who asserted that the tone of feedback and its effectiveness by indicating

that feedback should contain more positive than negative remarks, and if negative feedback is given, it should be "sandwiched" by positive feedback. The meta-analysis conducted by Kluger and DeNisi (1996) also links the findings of Brookhart (2011) and Brinko (1993). The meta-analysis determined that the direction of the feedback relative to performance on a task influences the power of feedback (Kluger & DeNisi, 1996). They specifically found that feedback is more effective when it provides information on correct responses rather than incorrect responses (Kluger & DeNisi, 1996).

Next, Brookhart (2011) mentions feedback should not be judgmental; rather, effective feedback is descriptive by comparing the work a student is doing to the criteria of what "good work" looks like. Prior to the task or assignment being done, students should know and understand the criteria for good work because this helps them see how they are performing relative to the goal or criteria (Fluckiger et al., 2010; Hattie & Timperley, 2007; Stiggins, 2007). Additionally, this type of feedback informs students on where they need to go next. Thus, Brookhart (2011) summarizes that feedback "can compare a student's current individual performance to how he or she performed in the past, but feedback should never compare a student's work with other student work" (p. 34). Also, Brinko (1993) and Brookhart (2011) affirm that in order for feedback to be effective, it should focus on the student's work (or the process) and not the student personally.

In a study by Lipnevich and Smith (2009), descriptive and detailed feedback was determined to be most effective when given alone and unaccompanied by praise or grades. They found that written, detailed feedback specific to individual work was

strongly related to improvements in achievement. Lipnevich and Smith (2009) also discovered that receiving a grade was generally associated with lower self-efficacy and more negative effect. When detailed feedback was accompanied by grades, a decrease in the effects of the feedback occurred (Lipnevich & Smith, 2009). An explanation for this comes from Kluger and DeNisi's (1996) feedback intervention theory that letter grades or numeric scores (being evaluative in nature) tend to turn students' attention away from the task and toward the self, leading to negative effects on performance. These findings are consistent with research from the past few years (Black et al., 2004; Hattie & Timperley, 2007; Kluger & DeNisi, 1996; McTighe & O'Connor, 2005). To provide a more precise example of the research, McTighe and O'Connor (2005) stated that placing a letter (e.g., B) or a number (e.g., 85%) on students' work is no more helpful than comments such as, "nice job" or "I know you can do better." Yet, it is pertinent to note that although good grades and positive remarks may increase a student's self-esteem, such comments do not advance a student's learning (McTighe & O'Connor, 2005). It is evident in education that grades are interpreted to symbolically represent students' performance. However, due to the influence grades have on feedback and individuals, it appears that grades tend to disturb the feedback loop process; thereby resulting in a potentially significant impact on student achievement.

Intelligence-Based Praise versus Effort-Based Praise

Praise or evaluative feedback can have positive effects on motivation; however the effects are not always strong and they vary for different age groups (Henderlong & Lepper, 2002; Mueller & Dweck, 1998). Yet, literature has also argued the negative

effects praise has on individuals (Baumeister, Hutton, & Cairns, 1990; Mueller & Dweck, 1998). For example, when praise is directed toward the individual student instead of the task the student is completing, cognitive resources are directed to the individual and not the task at hand. As a result, performance on complex cognitive tasks are hindered (Baumeister et al., 1990). Klueger and DeNisi (1996) and Brookhart (2012) also support the position that effective feedback should not focus on the self, and that feedback focused on the task is more productive.

Mueller and Dweck (1998) conducted six studies which demonstrated that praising students' intelligence has more negative consequences for achievement motivation than praising students' efforts. Specifically, students praised based on their intelligence led them to wish to continue looking smart, and led them to believe that intelligence is a fixed trait (Dweck, 2007; Elliot & Dweck, 1988; Mueller & Dweck, 1998). For example, fifth grade students praised for intelligence cared more about performance goals than other students who were praised based on their effort. Next, students who received intelligence praise appeared to choose problems or tasks that would allow them to display "good" performance. Also, students in one of the studies tend to misrepresent their scores on problems when praised for intelligence. These negative consequences of intelligence-based praise directly impacts how students perceive the feedback they are given through praise. For instance, in a study by Elliot and Dweck (1988) students who believed they had low ability responded to feedback about mistakes in a learned helplessness manner. They tended to respond negatively by giving up on attempts to overcome and learn from mistakes (Elliot & Dweck, 1988). For

example, generic praise or praise on the learner's intelligence (e.g., "good job," "you're smart," "you're a good student") after success on a task can foster a helpless and self-handicapping response to later mistakes (Brookhart, 2012; Hattie & Timperley, 2007; Kamins & Dweck, 1999).

In contrast, when students were praised on their efforts, it led them to want to learn new things, choose problems that would increase their learning, and believe that intelligence is malleable (Dweck, 2006, 2007; Mueller & Dweck, 1998). Such praise may sound like, "you found a good way to do that," or "you've worked really hard to find a solution" (Cimpian, Arce, Markman, & Dweck, 2007; Kamins & Dweck, 1999). Providing feedback in the form of effort-based praise fosters an environment for the learner to face obstacles, be persistent in finding solutions, and to become a self-motivated and lifelong learner.

Feedback from Student to Teacher

In order for the formative assessment process to be successful, feedback from teacher to student must be clear, specific, descriptive, and non-evaluative. However, the formative assessment process, or "feedback loop," cannot be complete without the feedback being understood and internalized by the student. Then, student feedback is returned to the teacher in a clear, specific, and descriptive manner in order to complete the feedback loop. Throughout this bidirectional movement, the teacher and student(s) must have a common understanding of what is being communicated (Brinko, 1993; Brookhart, 2008).

Based on the effective feedback strategies mentioned above, one would hope that descriptive feedback may be more successfully communicated to the learner. Since that step of the feedback loop has been established, the next part of the process is to ensure that the student or learner has successfully processed the feedback that he or she received. If the learner does not in fact process the feedback with some level of understanding, then it is hard to believe that feedback would have a positive effect on learning (Lipnevich & Smith, 2009).

One way to ensure that a student understands the descriptive feedback is to see what improvements are made on their work. Brookhart (2011) stated that "feedback is effective only if it helps the students improve their work" (p.33). However, there are some steps to take prior to examining work in order to determine if feedback was effectively communicated to the learner. For one, teachers can ask students to reflect on their experiences as learners by posing various questions such as, "What did you learn?", and "How do you know you learned it?" (Hattie & Timperley, 2007; Rodgers, 2006). By asking students what they have learned, the teacher is able to assess if students have mastered the subject matter or if the students only have a surface level understanding. Next, probing students for information on how they know they have learned what was taught uncovers the process students go through to internalize information (Brookhart, 2012; Hattie & Timperley, 2007; Rodgers, 2006). Also, asking students how they feel about a task or the feedback helps to provide a clear message to the teacher if the learners are ready and confident for the next stage of work. Overall, when students are asked to reflect on their learning, it not only benefits the teacher but it also provides students with

a deeper and more clear understanding of their learning experiences and how feedback can be utilized effectively.

However, some limitations to the feedback loop can occur, as described by Rodgers (2006). First, there may be cultural barriers to work through between teacher and student. The majority of these barriers are due to the students' perceived authority of the teacher. Nevertheless, once students perceive their views to be respected, desired, accepted, and acted upon by teachers, and the students understands what the teacher is asking for and why, feedback to the teacher is more likely to occur due to diminished barriers. In order for student doubt and reservations to fade away, teachers must also be ready to learn from the student. Not only must teachers listen to students' verbal feedback, teachers must also be aware of the bodily expressions, expression in words, and other nonverbal or subtle cues students give off (Rodgers, 2006). This process all begins by proving students opportunities to interact and respond to the feedback given (Brinko, 1993; McTighe & O'Connor, 2005; Price et al., 2010). Another way to foster an inviting feedback environment is for teachers to create a climate that maximizes student learning and puts less emphasis on grades (Fluckiger et al., 2010). In addition, building quality relationships between students and teachers also impacts the effectiveness of feedback (Price et al., 2010). Providing such a climate helps students to perceive themselves as partners in the assessment and feedback process; thus, students contribute to the feedback loop.

Teacher role as the recipient of feedback. The final section of this chapter addresses the question: What can teachers do to assist in the completion of the feedback loop? The first step in receiving feedback from students is probably the most difficult step for teachers. Therefore, the initial step is for teachers to listen to the feedback with an open mind. Receiving feedback from students may mean that the feedback is critical towards how the material was presented or taught. Although this may not be the most pleasant feedback to receive, it is important for teachers to remain clam, composed, and not be defensive toward what the students have shared (Rodgers, 2006). As stated earlier in the limitations of the feedback loop, students must feel heard and respected in order for the communication process to be successful.

Secondly, Rodgers (2006) states that teachers are to respond to student feedback so students know that teachers understand what they have said. Teachers can communicate their understanding of student feedback by restating or describing the basis of what they heard. Next, teachers are advised not to jump in and address problems (on the spot) that may have been expressed by students. So, instead of re-teaching what was already taught, it is suggested that teachers inquire about what would help the students understand the content of the lesson more. Lastly, it is important for teachers to analyze and act upon the feedback. This is a pertinent step because if a teacher does not understand the feedback from the students, then the teacher cannot act upon the feedback. If the teacher cannot act upon the feedback, this conveys to students that their feedback does not matter or make a difference to the teacher. Therefore, students would be likely to stop offering their feedback in the future.

Based on the review of literature in this chapter and pervious chapters, it is evident that the feedback process informs teachers of students' learning needs, but it also produces thoughtful and reflective practice on the part of educators. One of the factors of descriptive feedback that helps teachers be reflective is the idea that students must be partners in the formative assessment process and share equal power in their learning (Fluckiger et al., 2010). Establishing a leveled playing field for students as it pertains to their learning helps facilitate a communal environment in the classroom which fosters students' abilities to shape their own learning experiences through feedback (Rodgers, 2006). In addition, involving students and placing responsibility on their learning encourages students to self-monitor, self-evaluate, and self-assess themselves to determine what their progress is in comparison with the learning goals. Doing so instills more mastery-oriented thinking and goal setting; thus, improving motivation and engagement in students (Cauley & McMillan, 2010).

CHAPTER 3

CONCLUSION

Summary

This chapter provides a summary of chapters one and two, offers suggestions for practice, has specific implications for school psychologists, provides future directions for research, and limitations of this research are also noted. To summarize, formative assessment includes multiple components; one of which is crucial for students and teachers to use in order to provide effective communication of the learning that is occurring in the classroom. In order to promote effective feedback, multiple aspects of feedback must be considered. When descriptive feedback uses the components described in the paper (e.g., specific, timely, non-intelligence based praise, etc.), the feedback loop between teacher and students is more effective. This enhances the partnership students have in their learning and informs teachers of how impactful their instruction is on students. Lastly, considering the best practices of feedback allows teachers to reflectively think about how they are communicating to students both in their instruction and through their feedback.

Practical Application

One of the major implications of effective feedback is how it encourages students to take responsibility for their learning. Students who become active and continuous learners tend to seek out knowledge. In addition, students more accurately self-assess their learning and progress. This allows students to be more accountable for their learning, and it also facilitates a partnership between teacher and student.

Another implication of effective descriptive feedback is that teachers have a better understanding of their instruction and how students are reciprocating and receiving it. As teachers receive feedback from their students or interpret progress monitoring data, teachers can make adjustments to their teaching. This ensures that students are learning the material at a deeper level.

It is also important to consider the nature of feedback and how the effect of praise on students' intelligence fosters learned helplessness because students will associate their skills and success with a fixed trait. Thus, less effort, motivation, and engagement occurs in the classroom. Since motivation is often an issue or concern as school psychologists consult with teachers, approaching feedback as it has been presented in this paper may increase student motivation and engagement in their learning. It appears that proper feedback strategies may enhance motivation and engagement. Therefore, implementing such effective descriptive feedback strategies may prevent motivational concerns from arising.

Implications for School Psychologists

As mentioned earlier in the paper, school psychologists are a useful resource to teachers especially when a student lacks adequate progress towards a specific goal or expectation and when a teacher is unsure how to adjust his or her instruction to meet the student's needs. Based on the progress monitoring data and other information from the teacher, the school psychologist can help by identifying where the break down is occurring in the feedback loop. For example, if the student is not scoring proficient on an assessment based on the school district's standards, then the teacher must consider how to

change instruction for the student. By looking at the assessment data, the school psychologist can identify where the area the student needs assistance (e.g., letter sounds, multiplication, photosynthesis process, etc.). Then, the school psychologist can help inform how to differentiate instruction for future lessons or how to re-teach the content previously taught. The teacher may have already identified the issue and may only need guidance as to how to add additional instruction for a student such as intervention time to remediate student struggles. Basically, whatever issue might occur during the feedback loop and under the umbrella of formative assessment, school psychologists are useful in assisting with data-based decision making that will positively impact student learning.

School psychologists' involvement with feedback is also important when they are evaluating or observing students. When assessments are administered to students, school psychologists have an opportunity to provide appropriate feedback. Obviously, the assessments provided to students are often standardized and may not allow for feedback *during* the assessment. However, providing appropriate feedback on student performance *after* the assessment makes the experience more meaningful for the student. Also, after standardized assessments have been given, school psychologists may informally check students' understanding of a word or math concept, for example, by walking them through a sentence or math problem and providing them feedback along the way. Based on the feedback given, students can make changes in order to improve their reading or computation. Students' ability to receive feedback and to take action upon the feedback informs the school psychologist of the skills students have and also what they need to succeed academically. In order to gather this valuable information, teachers, school

psychologists, and other stakeholders who work with children must first understand what formative assessment is and what makes feedback successful.

Another scenario in which school psychologists are valuable is if communication is ever unclear between teacher and student, or if the teacher is unsure of how to effectively communicate a lesson to his or her students. School psychologists can help serve as a consultant to assist the teacher to better understand how his or her instruction is impacting student learning and what information students are trying to communicate to the teacher. School psychologists receive explicit training in their graduate programs on how to effectively consult with school personnel. According to the National Association of School Psychologists' (NASP) blueprint (Ysseldyke et al., 2006), school psychologists receive extensive training in interpersonal and collaborative skills. This is due to the fact that they work with students, families, teachers, administrators, and other important educational personnel on a daily basis. Also, school psychologists are well versed in the diverse academic and behavior needs of students, and since one of their primary goals is to improve all competencies for all children and youth, school psychologists are dedicated and determined to figure out what works best for students and teachers in their classrooms. These competencies, when paired with teacher expertise, can help improve feedback and create instruction that is sensitive to student needs. Together school psychologists and teachers can discuss steps to improve feedback and formative assessment practices, and ways to match instruction to what the learner needs (based on student feedback to the teachers and from reflective thinking from the teachers). Also, school psychologists are available to help teachers interpret the data (qualitative and

quantitative) from formative assessments and progress monitoring in order to adjust instruction appropriately.

Limitations

One limitation of this paper is that formative assessment has received significant attention in the realm of education. Therefore, it should be acknowledged that all research pertaining to feedback within formative assessment could not have been examined in this paper due to the breadth of research.

Next, due to feedback's qualitative nature, it is difficult to research. That is, it can be challenging to determine correlation versus causation between effective feedback and student achievement and/or motivation. Although causation between the feedback and achievement or motivation variables may not be clearly determined, correlations implicate that effective practices of feedback can influence student achievement and motivation. Also, it is difficult to tease out if feedback is the sole contributor to gains in improved learning.

Lastly, due to the nature of the feedback loop, if one person does not buy in to the process, the loop will not be complete; thereby rendering it ineffective. Also, the receiver of the feedback must perceive it as relevant or applicable in order to utilize the feedback effectively (Price et al., 2010).

Future Directions

Based on the research reviewed, there is a need for further examination of circumstances when students feel uncomfortable and comfortable giving feedback because teachers can help facilitate the context in which feedback is received and

reciprocated in order to produce the most effective communication about learning. Also, what students are willing to share and what they withhold is worthy of future research attention. In addition, since the feedback loop is a two-way street, both teacher and student must participate in the process, future research must consider ways to promote buy-in from both parties.

Also, research examining how feedback should or should not differ based on student age and cognitive levels need to be considered. If verbal feedback based on students' thinking and meta-cognitive thinking of their learning is desired, then effective strategies specific to students' cognitive levels must be considered. In this case, if meta-cognition is desired from students, research on feedback with high school students may need to be specified. However, if feedback from tests or performance assessments is desired (where verbal communication is not always necessary) then appropriate feedback from teacher to student must be analyzed, again based on students' developmental levels. According to Price et al. (2010), effective feedback depends on a range of factors. For one, the use of vocabulary when giving students feedback must be at a level which students understand. Also, the amount and content of feedback need to be at students' developmental level.

Another important factor to consider with future research is that a common purpose of feedback, or at least an agreement between the key people in the formative assessment process, is vital. If the purpose of feedback is not understood or a classroom lacks a common understanding of feedback, they cannot work towards a common goal which then yields the feedback loop from even beginning.

Finally, the ways school psychologists can provide feedback to teachers in order to promote effective feedback strategies in the classroom is a topic to be further examined, as well as the way effective feedback is delivered to students from school psychologists is another area for future research.

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