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Growing Motivation and Learning for the Middle School Student through Reassessment Practices

Abstract

The purpose of this study was to explore the best reassessment practices, in a middle school setting, that would nurture a learning and motivating classroom environment. The research questions sought to discover the best reassessment practices in middle school and how do these practices increase a middle school student's ability and motivation to re-learn. Forty-eight middle school students in the 7th and 8th grade were surveyed to assess the effectiveness of each reassessment practice. Furthermore, interviews with four students were conducted for a more in-depth exploration of student learning and motivation. Statistical significance was found in the quantitative data indicating accountability to be the best reassessment practice for student learning and motivation. When students practiced taking responsibility and monitoring their own progress, learning and motivation increased. The qualitative data highlighted the importance of teachers offering reassessment practices so that students know their next steps of learning.

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Action Research Report Submitted in Partial Fulfillment Of the Requirements for the Degree of Master of Education

Growing Motivation and Learning for the Middle School Student
through Reassessment Practices

by

Payton Ponstein

BA in Elementary Education, Hope College, 2015

Action Research Report
Submitted in Partial Fulfillment
Of the Requirements for the
Degree of Master of Education

Department of Education
Dordt College
Sioux Center, Iowa
May, 2019

BEST REASSESSMENT PRACTICES FOR THE MIDDLE SCHOOL LEARNER
Growing Motivation and Learning for the Middle School Student
through Reassessment Practices

by

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Abstract

The purpose of this study was to explore the best reassessment practices, in a middle school setting, that would nurture a learning and motivating classroom environment. The research questions sought to discover the best reassessment practices in middle school and how do these practices increase a middle school student's ability and motivation to re-learn. Forty-eight middle school students in the 7th and 8th grade were surveyed to assess the effectiveness of each reassessment practice. Furthermore, interviews with four students were conducted for a more in-depth exploration of student learning and motivation. Statistical significance was found in the quantitative data indicating accountability to be the best reassessment practice for student learning and motivation. When students practiced taking responsibility and monitoring their own progress, learning and motivation increased. The qualitative data highlighted the importance of teachers offering reassessment practices so that students know their next steps of learning.

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We see second chances given in many aspects of life. Our world is full of re-dos and do-overs. Wormeli (2016) provides several examples, noting that “Pilots can come around for a second attempt at landing. Surgeons can try again to fix something that went badly the first time. Farmers grow and regrow crops until they know all the factors to make them produce abundantly and at the right time of the year. Movie directors? They invented it” (p. 1). Our students need to experience re-dos in the classroom and understand the normality of mistakes. Reassessing student learning needs to be incorporated into the educational process.

Many educators would agree on the importance of offering students the opportunity to improve their work or study habits; however, the best methods to reassess learning are difficult to evaluate. Experts give a step-by step process on how to create a teacher’s own reassessment procedures: First, a teacher should conference with the student who needs to reassess. Having a conversation with a student establishes relationship and time to make a plan for the next steps to learning. Then, provide reteaching opportunities. Lastly, decide whether the student needs to retake the entire assessment or only part of it (“Reassessment Done Right,” 2015, p. 1).

The purpose of reassessment practices is to increase student growth in learning. Chappuis (2012) articulated three questions educators should always be thinking about through the assessment process: “Where am I going? Where am I now? How can I close the gap”? (p. 11) The last question offered by Chappuis (2012) is one that directly relates to the reassessment process. An educator’s process of analyzing reassessment practices and implementing them into classroom instruction is vital for student growth. Note this, “Reteaching is not about punishment, it is about the end goal – learning” (“Reassessment Done Right,” 2015, p. 1). “Making reassessments a school-wide practice changes the learning culture for students from one where they are trying to earn enough points to pass to one in which they are held accountable for

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everything they need to know and be able to do” (Stack, 2013, p. 1). Reassessments are a necessary part of the learning process.

Purpose of Study

The purpose of this study was to analyze the best methods of reassessment practices to increase student learning and motivation. Students should have the opportunity to learn through reassessment, in addition, to being taught how to be accountable for their previous learning. “Holding students accountable for their performance by ensuring that their work is tied to real world consequences is a realistic approach. When students gain greater agency over their learning and are allowed to move at their own pace, this may boost student interest of learning and provide efficient learning” (Tyner & Petrilli, 2018, p. 8-9). Student motivation increases when students understand the purpose behind the assessment has “real world” implications. “For example, when a 15 or 16-year-old prepares for their driver’s license exam, they have a plainly evident source of motivation: pass and you can legally drive a car” (Cornelius, 2015, p. 1). Therefore, the purpose of this study was also to determine if reassessment practices for student learning increase student motivation through understanding.

Research Questions

To address the purpose of the study, the following questions were investigated.

1. What are the best reassessment practices for middle school learners?
2. Do the best practices, when applied to a middle school setting, impact student motivation and learning?

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Definition of Terms

The following definitions will be used for the purpose of this study and unless otherwise noted, are the definitions of the author.

Reassessment – to evaluate again

Feedback – the information sent to an individual or group about its prior behavior so that the individual may adjust its current and future behavior to achieve the desired result.

Motivation – having a strong reason to act or accomplish something in a certain way

Accountability – to hold up your end; to be liable

Formative Assessment – methods used to conduct in-process evaluations of comprehension, learning needs, and academic progress during a lesson, unit, or course.

Metacognition – higher-order thinking about your own thinking process that enables understanding

Collaborative learning – an educational approach to teaching and learning that involves a groups of students working together to solve a problem, complete a task, or create a product.

Ownership of learning – claiming possession or control of one's educational development

Manipulation – to control or play upon by unfair means to one's own advantage

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Literature Review

Consider the situation where a student takes a science assessment on the phases of matter. After the assessment has been graded by the teacher, what if the student failed the assessment? What if the student received a lower grade than what he or she expected? What are the next steps? What are the best practices to help that student move forward in their learning? Offering a reassessment process is necessary and realistic. “Adults, many times have something due for a committee, meeting, or graduate course that was not planned out in time to finish the task, and we are always grateful when the person in charge says, ‘I understand, have it finished in a couple of days.’ As long as it’s not a habitual problem we are still held in high regard” (Wormeli, 2016, p. 1). Offering compassion in our classroom through reassessment practices is effective and refreshing for our students (Wormeli, 2016, p. 1).

Best Practice in Reassessment

Our current culture of assessment emphasizes how students learn. Establishing student prior knowledge is valuable for a teacher to determine what the student can learn next. Teachers tend to look for new and improved ways to find out what student knows; the next “big thing” that will lead to a student’s success in learning and assessing. However, William (2016), stated, “But as long as there are things we know would improve student learning that are not routine practice in our classrooms, we should stop worrying about the next big thing and instead focus on doing the last big thing properly” (p. 1). When it comes to reassessing student learning, the “last big thing” that William (2016) points to is formative assessment (p. 1). When educators formatively assess a student’s work on an assessment, there is a better sense of where the student is now and what the student needs to get where they want to be.

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Higgins, Kokotaski, and Coe (2018) examined which classroom practices are the most impactful towards student achievement and found that the reassessment practice of feedback was one of the most effective interventions towards student learning. Other research has supported the use of feedback in the classroom. Burnett (2010) claimed, “Students who reported a positive relationship with their teacher perceived that their teacher gave them extensive effort feedback with little negative feedback” (Burnett, 2010, p. 146). Feedback is important in that it offers learning direction:

For these researchers, the way forward is to ensure that feedback is provided in a timely manner (close to the act of learning production), that it focuses not just on strengths and weaknesses but also an offering corrective advice, that it directs students to higher order learning goals and that it involves some praise alongside constructive criticism. (Nicol & MacFarlane-Dick, 2006, p. 9)

Ultimately, feedback should convey to students what they need to do to achieve their goals.

Reassessment Practices and Student Learning

Reassessment practices such as assessment tracking sheets, formative assessments, written feedback, and accountability are forms of feedback that enhance student learning. The assessment tracking sheet provides a list of learning targets that were addressed in the unit, a box to identify how many questions on the assessment addressed a specific learning target, and a box to write down how many correct responses a student had for a specific learning target (Chappuis, 2012 p. 169). “Within a few minutes, students will have a graphic representation of their strengths and weaknesses on each learning outcome” (Dueck, 2011, p. 74). Thus, students have a clear picture of what they need to relearn.

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Formative assessments, in general, also serve as powerful feedback tools. William (2016) suggested, “formative assessment could be thought of as involving three processes in learning – where the learner is going; where the learner is now; and how to get there” (William, 2016, p. 1). Sharing different levels of quality work, selecting students at random to answer questions, and having students collaborate are effective formative assessments (William, 2016). The teacher has to know what they want students to learn, and what students have learned to administer impactful formative assessments. “What makes formative assessment formative is that it is immediately used to make adjustments so as to form new learning” (Clark, 2011, p. 167).

Written feedback facilitates learning in two primary ways: it provides concrete explanations for the grade received and bridges the gap from current performance to future performance. Written feedback gives students the opportunity to reflect their current level of understanding. In addition, it allows students to understand how they are performing and how they can improve on the next assessment (MacDonald, 2018, p. 1). Therefore, offering written feedback that encourages a student to revisit the errors they have made, allows the student to improve their understanding of the content in a non-threatening way.

Additionally, conferencing with the student about where they are not meeting proficiency allows the student to see the expectations that need to be meant for the reassessment.

In many cases, summative assessments contain individual questions that require students to apply multiple skills or varied knowledge in order to answer them. In these cases, students would more than likely need to retake the entire assessment. However, an assessment may also contain very specialized questions related to one specific skill or piece of knowledge. If students perform poorly on these types of questions, they may not need to take the entire assessment over again. (Reassessment done right, 2015, p. 1)

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In addition, accountability strategies allow students to create action plans for their learning. Students write out specific goals they want to meet from the reassessment and create action plans to identify what score they want to achieve, how they're going to close the learning gap, and what they'll do to be successful on the next try (Chappuis, 2015, p. 185). The accountability process allows students the responsibility to monitor their progress (Cornelius, 2015).

Best Motivation Practices in Middle School

Motivating middle school students requires an awareness of the developmental nature of the early adolescent. Wormeli (2014) described the importance of knowing where a student is developmentally, noting that teachers who understand what a young teenager is going through and can relate their content to their lives are taken seriously. Wormeli (2014) suggested these helpful tips to be tuned in to middle school student learning preferences: switching activities every fifteen minutes, teaching a topic in more than one way, showing enthusiasm about the subject, and giving students time to recover from failure (Wormeli, 2014).

Additionally, Wormeli (2014) offered empathy as a best practice approach toward motivation for middle school students. "Young adolescents intensely value teachers' opinions of them" (Wormeli, 2014, p. 28). Therefore, the response teachers give a student when they are incorrect or the words teachers say when students make an error have tremendous impact. Wormeli (2014) noted that appropriate responses to a mistake include affirming the middle school student's ability to take a risk, or having the student elaborate more on how they got their answer (Wormeli, 2014).

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Anderman and Midgley (1997) discussed three theories that are prominent for students and teachers when it comes to motivation: attribution theory, goal theory, and self-determination theory. Teachers listening to student attributions of past successes and failures is linked to their motivation. “The implications for teachers revolve around the importance of understanding what students believe about the reasons for their academic performance” (Anderman & Midgley, 1997, p. 42-43). Goal theory focuses on student perceptions of the reasons why they achieve. Communicating messages to students about the meaning of their achievement and effort through daily instruction impacts their motivation (Anderson & Midgley, 1997). The third theory, self-determination, concentrates on autonomy. “Within the classroom, autonomy needs could be addressed through allowing some student choice and input on classroom decision making” (Anderson & Midgley, 1997, p. 44). Offering choice over the types of tasks to engage in class or the amount of time to work on an assignment are associated with students’ feelings of autonomy (Anderson & Midgley, 1997). All three of these theories also have implications for reassessment practices.

Another best practice in motivating middle school students is to have accountability. Bishop and Woessmann (as cited in Tyner & Petrilli, 2018) noted that, “Student effort is probably the most important input in the education process” (p. 5). One of the best approaches to elicit student effort is to hold students accountable (Tyner & Petrilli, 2018). Each student has a lot at stake when it comes to their own academic success. Thus, empowering students to understand that their work is tied to real consequences is valuable (Wormeli, 2006). This accountability approach emphasizes an immediate consequence for students. Students have a difficult time looking into the future, which in part, makes their schoolwork seem unrelated to their lives.

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When student effort increases they desire to do well, when they desire to do well, they learn more. This is where the reassessment practices impact student learning. Formative feedback before external exams gives students the opportunity to self-assess where they are at in the learning, which gives them the option to pursue more understanding (Chappuis, 2012). Students obtain accountability for their academic success when they can answer the questions “Where do I go now”, and “How am I going to get there”?

Best Reassessment Practices and Motivation

The authenticity of a reassessment practice is important when related to student motivation. If the reassessment process is not rigorous or does not offer ample opportunity to let the student take ownership of his relearning, student motivation decreases (Tyner & Petrilli, 2018). The use of motivational strategies needs to be done cautiously so that they are not seen as manipulative. To motivate students, educators need to tap into students’ intrinsic motivation. Student-accountability systems that use external assessments to evaluate student progress have been proven to increase the intrinsic drive of a student (Tyner & Petrilli, 2018, p. 6).

Students need to make some decisions when it comes about their assessments. “Young adolescents are developmentally primed for learning things that are intellectually and physically advanced and for getting excited about their growing expertise and the freedoms that come with competence” (Wormelli, 2014, p. 27). To accommodate the different preferences of student expertise, students should have choice on how to display their knowledge: an exam, an essay, a project, and a performance are all possible options for students (Cornelius, 2015).

Student-centered assessments offer students who struggle with motivation more ownership. Cornelius (2015) noted

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For instance, if your assessment involves a writing assignment, start by having the student or groups of students analyze both an excellent writing assignment and a poor one. Then, instead of telling them yourself, ask your students to identify what makes the good example strong and the poor example weak. (p. 1)

Also, the struggling student needs individual time to work with their teacher. Personalizing time to go over an assessment tracking sheet or written feedback on a graded assessment with a student will teach them learning strategies that they can use for the future. (Cornelius, 2015) In addition, research confirms that students be involved in their assessments. Chappuis and Stiggins (2002) reported

Student involvement means that students learn to use assessment information to manage their own learning so that they understand how they learn best, know exactly where they are in relation to the defined learning targets, and plan and take the next steps in their learning. (p. 2)

Student-monitored progress demonstrates a students' ability to be accountable for their own growth in learning. (Cornelius, 2015, p. 1). When students can visually see the goals and expectations they are achieving, they become motivated to explain what they are learning (Cornelius, 2015). Other studies have shown assessment for learning helps students develop their self-assessment skills. Students can practice comparing their work to models of high-quality work, use teacher feedback to gather evidence about what they know, and reflect on teacher questions designed to prompt the students to an intended learning target (Chappuis & Stiggins, 2002). All of these strategies help students monitor where they are and where they have to be in their learning.

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Methodology

Participants

The research participants were 48 7th and 8th grade students from a private PK-8 school in Western Michigan. Twenty-one of the participants are male and twenty-seven are female with a mean age of 13. All forty-eight students took a survey while four were randomly selected for an interview.

Materials

A permission letter, found in Appendix A, was given to all parents of students involved in the study. Four surveys, found in Appendix B, and an interview found in Appendix C, were created by the researcher to determine the effectiveness of reassessment practices on student learning and motivation. Each survey correlated with one reassessment practice. There were four reassessment practices in this study: written feedback, accountability, assessment tracking sheets, and formative assessments. The surveys and interview were constructed by the researcher. Parents of the students selected for the interview were also given information about what the interview's purpose, where it took place, and how long it took. The interview was administered by the researcher in a classroom.

Design

The 48 participants were randomly assigned to one of the four reassessment practice groups in the study. Four highly effective reassessment practices were chosen by the researcher based on the research of Higgins et al., (2018): written feedback, accountability, assessment tracking sheets, and formative assessments. Each reassessment practice was associated with a specific letter for organizational purposes. The letter A was associated with written feedback, letter B with accountability, letter C with assessment tracking sheets, and letter D with formative

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assessments. The numbers 1 and 2 correlated with what the reassessment practice impacted. The number 1 was correlating with the impact on student learning. The number 2 was associated with the impact on student motivation.

Using an online random simulator, four interviewees were assigned from each reassessment practice group. Each interviewee represented one reassessment practice group. Each interviewee explained their answers, first to their specific survey, and second their observations of the other three practices. The randomization strategy for the four interviewees was sampling without replacement. The data was analyzed using an excel spreadsheet. The information on the spreadsheet included the individual scores each student gave on their control group's reassessment practice survey. Additionally, the survey consisted of two Likert scale questions to compare the impact of motivation and student learning based on their control group. Each group's median and mode scores were calculated for analysis purposes.

Procedure

During the first week of the study, letters were sent home with the participants for permission from parents to take part in the surveying and interviewing segments of the study. Within that same week, all 48 students were assigned their reassessment practice group. Then, over the course of five weeks of curriculum, students participated in the reassessment practice they were assigned to after they had completed an assessment. The content areas students were being assessed on were Science, Algebra, and Bible. During these five weeks, the researcher was collecting permission forms, tracking student learning, and recording student's reactions to their reassessment practice. In addition, the random sampling without replacement for the four interviewees was selected and participants were notified.

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At the end of the five-week period, students were all given a survey about the reassessment practice they participated in and how it impacted their learning and their motivation to learn. Also, the four interviewees met with the teacher to share their personal experiences with the reassessment practices. Recordings of the interviews were made with an iPad and were analyzed thoroughly by listening to evidence students gave about the reassessment practice they participated in, and observations they saw from other students' reassessment practices.

Results

Research Question One

How do the best reassessment practices increase student learning? When examining the responses of the student surveys about the impact reassessment practices had on their learning, all the mean scores of the four practices were at or above a three-score rating. A three on the Likert scale meant that the student neither agreed or disagreed that the practice impacted their ability to learn. Any score higher than a three meant that the student agreed or strongly agreed that the practice impacted their learning. The scores as described in Table 1 were as follows: reassessment practice 1A (written feedback) scored a 3.75, reassessment practice 1B (accountability) scored a 4.083, reassessment practice 1C (assessment tracking sheets) scored a 3, and reassessment practice 1D (formative assessments) scored a 3.33.

Overall, the ANOVA test in Table 1 gives evidence that there was a significant difference between each reassessment practice group. The ANOVA test does not indicate which practice is better; however, there is a high probability that certain reassessment practices are better than others, because of the significantly low p-value of .004656. An ANOVA test with a p-value less than .05 or 5% is evidence of statistical strength.

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Table 1

Anova: Single Factor for Reassessment Practices and the Impact on Student Learning

SUMMARY						
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
1A	12	45	3.75	0.386364		
1B	12	49	4.083333	0.44697		
1C	12	36	3	0.727273		
1D	12	40	3.333333	0.606061		

ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>Df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	8.083333	3	2.694444	4.974359	0.004656	2.816466
Within Groups	23.83333	44	0.541667			
Total	31.91667	47				

Research Question Two

How do the best reassessment practices impact motivation? When calculating the mean scores about the best reassessment practices and their impact on student motivation, the results were somewhat similar with the impact on student learning. As illustrated in Table 2, reassessment practice 2A scored a 3.083, reassessment practice 2B scored a 4.083, reassessment practice 2C scored a 3.166, and reassessment practice 2D scored a 2.75. The analysis of the ANOVA test's p-value (just over 1%) concluded strong evidence that there is a difference between reassessment practices and the impact on student motivation. There is a high probability of a difference between reassessment practices and their effect on student learning and motivation.

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Table 2

Anova: Single Factor for Reassessment Practices and the Impact on Student Motivation

SUMMARY						
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
2A	12	37	3.083333	0.628788		
2B	12	49	4.083333	0.265152		
2C	12	38	3.166667	1.606061		
2D	12	33	2.75	1.295455		

ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	11.72917	3	3.909722	4.120426	0.01165	2.816466
Within Groups	41.75	44	0.948864			
Total	53.47917	47				

Research Question Three

What are the best reassessment practices for middle school learners? There is strong evidence that there are reassessment practices that impact student learning and motivation differently. To show the comparison between the reassessment practices researched in this study, a T-test was performed. A t-test shows if there is strong evidence that two specific practices are different from one another. Table 3 compared the written feedback and accountability groups (1A and 1B) in regard to the impact in their learning. The t-test showed a p-value of almost 11%. This evidence suggests that there was not a significant difference between these two practices and the impact on student learning.

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Table 3

t-Test: Two-Sample Assuming Unequal Variances for Written Feedback and Accountability

	<i>IA</i>	<i>IB</i>
Mean	3.75	4.083333
Variance	0.386363636	0.44697
Observations	12	12
Hypothesized Mean Difference	0	
Df	22	
t Stat	-1.264911064	
P(T<=t) one-tail	0.109569211	
t Critical one-tail	1.717144374	
P(T<=t) two-tail	0.219138423	
t Critical two-tail	2.073873068	

However, when comparing the groups to each other, there was significant statistical evidence indicating a best reassessment practice. With four practices studied, twelve t-tests were administered (Six for impact on student learning and six for impact on student motivation). Tables 4-7 of the six t-tests for the impact on student learning gives clear support that the assessment tracking sheets and formative assessments did not impact student learning as much as the practices of written feedback and accountability. When the practices of written feedback and accountability were compared to the assessment tracking sheets and formative assessments in Tables 4-7, the p-values were significant. Written feedback vs. Assessment Tracking Sheets scored a two-tail p-value of .023 in Table 4, Accountability vs. Assessment Tracking Sheets scored a two-tail p-value of .0023 in Table 5, Written Feedback vs. Formative Assessments scored a two-tail p-value of .162 in Table 6, and Accountability vs. Formative Assessments scored a two-tail p-value of .018 in Table 7. Therefore, written feedback and keeping students accountable were more impactful on student learning than assessment tracking sheets and formative assessments.

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Table 4

t-Test: Two-Sample Assuming Unequal Variances for Written Feedback and Assessment Tracking Sheets

	<i>1A</i>	<i>1C</i>
Mean	3.75	3
Variance	0.386364	0.727273
Observations	12	12
Hypothesized Mean Difference	0	
Df	20	
t Stat	2.461955	
P(T<=t) one-tail	0.011513	
t Critical one-tail	1.724718	
P(T<=t) two-tail	0.023026	
t Critical two-tail	2.085963	

Table 5

t-Test: Two-Sample Assuming Unequal Variances

	<i>1B</i>	<i>1C</i>
Mean	4.083333	3
Variance	0.44697	0.727273
Observations	12	12
Hypothesized Mean Difference	0	
Df	21	
t Stat	3.46317	
P(T<=t) one-tail	0.001163	
t Critical one-tail +9	1.720743	
P(T<=t) two-tail	0.002326	
t Critical two-tail	2.079614	

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Table 6

t-Test: Two-Sample Assuming Unequal Variances

	<i>IA</i>	<i>ID</i>
Mean	3.75	3.333333
Variance	0.386364	0.606061
Observations	12	12
Hypothesized Mean Difference	0	
Df	21	
t Stat	1.448874	
P(T<=t) one-tail	0.081071	
t Critical one-tail	1.720743	
P(T<=t) two-tail	0.162142	
t Critical two-tail	2.079614	

Table 7

t-Test: Two-Sample Assuming Unequal Variances

	<i>IB</i>	<i>ID</i>
Mean	4.083333	3.333333
Variance	0.44697	0.606061
Observations	12	12
Hypothesized Mean Difference	0	
Df	22	
t Stat	2.531812	
P(T<=t) one-tail	0.009499	
t Critical one-tail	1.717144	
P(T<=t) two-tail	0.018997	
t Critical two-tail	2.073873	

When comparing practices regarding student motivation, t-tests indicated more significant statistical evidence. Again, another six tests were done to analyze all the comparison possibilities, however, only three tables are shown below because of their statistical strength. The analysis of Tables 8-10, gave evidence for the reassessment practice of accountability to be the most impactful practice for student motivation. Accountability vs. Written Feedback scored a

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two-tail p-value of .00165 in Table 8, Accountability vs. Assessment Tracking sheets scored a two-tail p-value of .034758 in Table 9, and Accountability vs. Formative Assessments scored a two-tail p-value of .002151 in Table 10.

Table 8

t-Test: Two-Sample Assuming Unequal Variances

	2A	2B
Mean	3.083333	4.083333
Variance	0.628788	0.265152
Observations	12	12
Hypothesized Mean Difference	0	
Df	19	
t Stat	-3.66384	
P(T<=t) one-tail	0.000825	
t Critical one-tail	1.729133	
P(T<=t) two-tail	0.00165	
t Critical two-tail	2.093024	

Table 9

t-Test: Two-Sample Assuming Unequal Variances

	2B	2C
Mean	4.083333	3.166667
Variance	0.265152	1.606061
Observations	12	12
Hypothesized Mean Difference	0	
Df	15	
t Stat	2.32135	
P(T<=t) one-tail	0.017379	
t Critical one-tail	1.75305	
P(T<=t) two-tail	0.034758	
t Critical two-tail	2.13145	

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Table 10

t-Test: Two-Sample Assuming Unequal Variances

	<i>2B</i>	<i>2D</i>
Mean	4.083333	2.75
Variance	0.265152	1.295455
Observations	12	12
Hypothesized Mean Difference	0	
Df	15	
t Stat	3.697283	
P(T<=t) one-tail	0.001076	
t Critical one-tail	1.75305	
P(T<=t) two-tail	0.002151	
t Critical two-tail	2.13145	

Interviews

All interviews were recorded and subsequently transcribed and coded to identify the following themes and trends. Qualitative data contributes to research discoveries. It is important for qualitative research to be established because it enables us to make sense of reality, describe the social world, and develop theories (Morse & Field, 1996, p. 1).

Written Feedback and the impact on student learning and motivation. The opening question given to the interviewee, Student 1, was about the impact written feedback had on his learning. Student 1 really enjoyed the written feedback because it gave specific descriptions on “how I needed to improve” and “how I needed to do it” instead of the teacher giving the answer and doing it for him. The next question presented was about the impact written feedback had with motivation. Student 1 responded, “The written feedback helped know what I’m good at and, what I know” (Student 1 interview, March 8, 2019). The written feedback reinforced Student 1’s strengths and gave him confidence. Student 1 ended the interview saying, “Knowing you got an answer wrong is all fine and good, but in the end, like, I got that wrong, how am I going to go

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forward on it”? Overall, Student 1 would like to see more written feedback on assessments because it helps answer the question, “What are the next steps to my learning”? (Student 1 interview, March 8, 2019)

Accountability and the impact on student learning and motivation. Another interviewee, Student 2, was given the opportunity to express how receiving a letter grade, the assessment score in percent form, and the class average score, kept her accountable with her learning. Student 2 replied, “The class average helped boost my confidence in what I had learned” (Student 2 interview, March 9, 2019). The class average score assisted Student 2 in answering this question, “Do I need to learn more or am I understanding”? (Student 2 interview, March 9, 2019) Student 2 also spoke about how accountability through assessment scores impacted her motivation in a positive way because her scores were always above the class average. In addition, she mentioned that accountability could have negative impacts if the student did worse than the class average. Overall, Student 2 thought accountability was an effective way to reassess, because it increased self-confidence and motivated for continual success.

Assessment tracking sheets and the impact on student learning and motivation. Student 3 began the interview answering the question of how the assessment tracking sheets impacted his learning. Student 3 appreciated how simple it was to fill out, and in return, how it assisted him in his ability to recognize what targets needed improvement. Student 3 replied, “The part when you check off what you got wrong, and then check if it is one you have to re-learn or one that you just made a mistake on and you know the answer” (Student 3 interview, March 10, 2019). Student 3 was able to use the chart on the tracking sheet to help him understand what he got wrong and what he was going to do next. The organizational piece of the assessment tracking

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sheet chart is very helpful for students who have a hard time recognizing where they need to improve. Overall, Student 3 thought the assessment tracking sheets were a good reassessment practice because of the simplistic process of finding out what you got wrong and if it was a mistake you could go back and fix.

Formative Assessments and the impact on student learning and motivation. Student 4 thought receiving a formative assessment about the questions they got wrong was an effective way to re-learn. Student 4 said, “After you took the test and saw what you got wrong, and had a better understanding of how to do it, you then could try another problem like it on the formative” (Student 4 interview, March 10, 2019). Student 4 appreciated the extra practice to see if he could improve his learning. Student 4 did not have much to say about how the formative assessment impacted his motivation to learn. The student’s main reason for doing the reassessment practice was to follow the teacher’s instructions. In addition, Student 4 thought this reassessment practice was a better use of time. Student 4 replied, “Instead of having to wait your turn to do questions on the board, you could just do it on your own” (Student 4 interview, March 10, 2019). Overall, Student 4 believed formative assessments were an effective reassessment practice because of opportunities they provided to relearn and question content that was initially incorrect on the assessment.

Discussion

Overview of Study

The purpose of this study was to explore the impacts of reassessment practices on student learning and motivation. The study addressed the following research questions: What are the best reassessment practices for middle school learners? Do the best practices, when applied to a

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middle school setting, impact student motivation and learning? These questions were assessed using surveys about each reassessment practice and the data was analyzed for statistical significance. In addition, the researcher conducted interviews of participants from each reassessment practice group to share their experience of learning and motivation.

Summary of Findings

Based on the survey and interview reports collected in this study, there was statistical significance that the best reassessment practice for student learning and motivation for middle school learners was accountability. Tables 8-10, in the results section, showed significant two-tail p-value strengths for the reassessment practice accountability when measured against the other three reassessment practices. Accountability vs. Written Feedback scored a two-tail p-value of .00165 (Table 8); Accountability vs. Assessment Tracking sheets scored a two-tail p-value of .034758 (Table 9), and Accountability vs. Formative Assessments scored a two-tail p-value of .002151 (Table 10).

It is interesting to compare this research study to what other research studies have found to be the most effective. The Education Endowment Foundation (2018) presented research on numerous educational practices that are taught from the ages of 5-16. They measured three factors in their research: the impact of student learning, the strength of the evidence, and the cost. The practice that had the highest impact of student learning from their research was feedback. Feedback had a rating of +8, which indicates learning gains of 8 months or more. Based on the Education Endowment Foundation (2018) research, this researcher would have expected that reassessment practice of written feedback would have had higher results.

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However, because the students participating were middle school aged, it is not surprising that the students involved in this study had high praise for the reassessment practice of accountability. Behavioral experts have researched the connection of external motivation, like an assessment, to human behavior and have found it to intrinsically drive students and have positive impacts on their learning (Tyner & Petrilli, 2018). On the other hand, students are vulnerable to develop a fixed mindset that the letter grade is all that matters. If a student receives an “A” on an assessment it naturally boosts these students’ self-esteem and gives them a sense of acceptance amongst their peers, parents, and teachers. The motivation behind a letter grade can be just as motivating or even more than the actual learning itself.

Based on the qualitative responses of students in the interviews, it does become more evident how reassessment practices can nurture a learning and motivating environment for students. “Knowing you got an answer wrong is all fine and good, but in the end, like, I got that wrong, how am I going to go forward on it” (Student 1 interview, March 8, 2019). This student realized that assessments have learning implications beyond just the assessment itself. Teachers need to consider which reassessment practices best suit their students and continue to analyze next step practices in ensuring student learning.

Teachers need to engage students in authentic learning experiences. When students are able to practice reassessment strategies in an authentic setting, they are able to identify a clear purpose for the activity. An authentic setting is a risk-free, mistake friendly environment. Students self-assess effectively when they realize the mistakes they have made are for learning purposes. Mistakes on an assessment should not leave a student stagnant it should move them forward. Reassessment practices help students take the next steps in their learning. These authentic learning experiences increase a student’s metacognition. Student 3 who participated in

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the assessment tracking sheets thought the practice was an effective way to chart his strengths and weaknesses on the assessment (Student 3 Interview, March 10, 2019). The student was able to identify on his own what he did and did not understand. The student found his mistakes in a setting that was safe, because all students were self-assessing. The student was doing all the thinking rather than the teacher doing the thinking for him. This example is one of many authentic learning experiences that can be happening in classrooms when reassessment practices are used properly.

Limitations and Recommendations

This study was conducted with a small sample size of 48 students in the 7th and 8th grade, and was only tested with one teacher. In addition, each reassessment practice group only had a small sample of 12 students. With the narrow population with each reassessment practice, it is possible the scope of the study was simply not large enough to generate a significant comparison between each reassessment practice and their impact on learning and motivation.

When engaging middle school students, it is worth mentioning that this development stage is such that students are uncertain about how to think about learning and motivation. The ideas of a growth mindset and metacognition are at an early stage of development. Students at this age often struggle with self-reflection. Therefore, it is possible that they were unable to fully articulate if the reassessment practices impacted their motivation to learn. An impression from the researcher during the interviews was that students view assessments as an end to their learning instead of viewing them as something to learn from. Students have a strong pull towards receiving a letter grade to solidify where they stand amongst their peers in school. The goal moving forward is to teach students that assessments are for learning and not for competition or approval.

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If the study were to be repeated, some changes should be considered. Because of the small size within each group having the students participate in all the reassessment practices instead of focusing on one practice could receive better results when looking at the effectiveness between each practice. A second recommendation would be to have other teachers who teach the same students but in different subject areas participate in the reassessment practices and compare findings. In addition, all students should participate in a similar practice at the same time. To avoid conflict between practices, if all students are reassessing themselves in the same manner better self-evaluation will take place. When students can see that everyone is doing something similar to what they are doing they buy in to the practice more. There is safety in numbers.

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Appendix A

Student Consent Form

Study Title: Re-assessment practices for Student Motivation and Learning

Investigator: Payton Ponstein, teacher at Jenison Christian School, graduate student at Dordt College

Purpose: Students are invited to participate in a study of re-assessment practices. I hope to learn how different strategies of re-assessment increase student motivation to learn and growth in their learning.

Procedures: The study will be taken place in my classroom (47). Students will be given a survey to complete about the re-assessment practices experienced. In addition, a recorded interview, with myself, will take place for those randomly selected.

Benefits/Risks: The students will benefit with a growth mindset of re-assessment practices. They may also see an increase in their learning and higher assessment scores. I don't foresee any risks with any of the procedures described above.

Confidentiality: All information collected from the surveys and interviews will be kept strictly confidential and only accessible to the investigator. If any publication results from this research, results will be written in a manner that protects your identity.

Your Rights: If you decide for your student to participate, you are free to withdraw your consent and to stop participation at any time with no penalty to you. You may also request a copy of this form to keep.

If you have any questions, please call (616)570-7277 or email me at pponstein@jenisonchristian.org

In conclusion, you are making a decision whether or not to participate. Your signature below indicates that you are allowing your student to participate in the study, and have read all the information provided above.

Signature of Participant

Date

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Appendix B

Student Survey Document

Introduction

Jenison Christian wants to be a school that pursues excellence in loving, learning, and leading. You have now experienced a variety of re-assessment practices and have a better understanding of what motivates you and increases your learning. Please fill out this questionnaire and place it on Mr. Ponstein's desk. Thank you.

What grade are you in?

7th | 8th

For each of the questions below, circle the response that best characterizes how you feel about the statement, where: 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Agree or Disagree, 4 = Agree, and 5 = Strongly Agree.

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
Written feedback on my assessment increases my understanding of where I need to improve	1	2	3	4	5
Written feedback on my assessment motivates me to make the needed corrections	1	2	3	4	5
Keeping myself accountable for my grades motivates me to do better on my next assessment	1	2	3	4	5
Keeping myself accountable for my grades					

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increases my ability to learn	1	2	3	4	5
The assessment tracking sheets improved my learning of the material	1	2	3	4	5
The assessment tracking sheets motivated me to make corrections and improve my knowledge	1	2	3	4	5
Formative assessments (quiz, homework, practice problems, review sheets) help me understand the learning targets	1	2	3	4	5
Formative assessments, such like the ones above, motivate me to increase my learning and improve my understanding	1	2	3	4	5

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Appendix C**Semi Structured Student Interview Questions**

Jenison Christian wants to be a school that pursues excellence in loving, learning, and leading. You have now experienced a variety of reassessment practices and have a better understanding of what motivates you and increases your learning. Please answer these questions the best you can. Your responses will be kept anonymous. Thank you.

Questions

- How do you feel about the reassessing practices you experienced?
- Were the practices helpful for learning?
- How well did they motivate you to learn going forward?
- What practices did you feel were the most useful?
- What reassessment practice will you ask for first to help relearn content?
- How prepared for an assessment do you feel after experiencing a reassessment practice?