

The Effect of Growth Mindset Feedback
on the Reading Fluency of on and Below Level Third Graders.

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Abstract

The purpose of this study was to evaluate the effectiveness of growth mindset feedback on the reading fluency development of on and below level third grade students. The measurement tool used was the Fountas and Pinnell Benchmark Assessment system and the Treasures Fluency Assessment book for grades 1-6. Growth mindset feedback was delivered through a digital survey and reflection questions. This study utilized quasi experimental pretest-posttest design. Growth Mindset feedback did not statistically impact reading fluency. Research on the impact of growth mindset on reading growth should continue due to the importance of reading on future academic success.

CHAPTER I

INTRODUCTION

Reading on grade level before entering the intermediate grade levels is an important indicator of high-school achievement. Reading fluency is the bridge between decoding and recognizing the words in a text and gaining access to the meaning in that text (Bashir and Hook, 2009). Making the jump from identifying words in isolation and word reading one by one to becoming a fluent reader is not an easy task.

When students believe that their abilities are innate, they put a cap on their potential academic growth. Students with a fixed mindset think their academic successes are due to easy tasks and tend to face new and challenging tasks without perseverance (Yettic, 2014). Even typically high achieving students will give up when met with a challenging and unfamiliar task. With a growth mindset, students are able to approach learning opportunities as opportunities to grow their malleable minds.

Since learning to become a fluent reader is a rigorous task, students with a growth mindset would take on the challenging task more willingly. Students who believe they are not at the cap of their abilities can continue to push themselves and develop further as readers. This researcher wanted to see if their observations about growth mindset and its impact on academic success would show research-based evidence in a study on the important strategy of reading fluency.

Statement of the Problem

The purpose of this study was to examine the effectiveness of growth mindset reflection on the reading fluency development of below and on level 3rd grade students.

Hypothesis

The following null hypothesis will be tested to determine the effectiveness of growth mindset feedback.

Null Hypothesis

The improvement of growth mindset ratings will not have a statistically significant impact for students' growth on the Fountas and Pinnell Benchmark Assessment.

Operational Definitions

Reading Fluency. Reading fluency was defined as correct words read per minute. The passages were taken from the Fountas and Pinnell Benchmark Assessment system 2 (Fountas & Pinnell, 2016). The calculation of these scores was computed by dividing the total correct words read by the total number of words in the text. That number was then divided by the time it took to read in minutes.

Growth Mindset Feedback. Growth mindset feedback was the independent variable and was administered and assessed through self assessment and reflection. Answers were submitted in Likert-style scale and short answers. Growth mindset is defined as the belief that a person's intelligence is malleable and can be developed. Answers were submitted in Likert-style scale and short answers.

CHAPTER II

REVIEW OF THE LITERATURE

Reading instruction focuses mainly on the five components of literacy to get students on grade level. While focusing on these components of literacy is important, in order for instruction to be effective, some mindset changes need to occur. Recent research (Andersen & Nielson, 2016) has shown evidence that students who received constructive, effort-related feedback, showed increased abilities in reading and other subject areas. Feedback that includes effort-based comments encouraged students to continue to persist with difficult tasks. When students know how to deal with their successes and failures they become more equipped to approach new and more challenging tasks. Teachers who understand these complex needs of students will be able to teach the components of literacy with growth mindset feedback in mind to encourage continued perseverance. While many components of literacy are important, one of need and importance is reading fluency. Fluency is an important connection between word identification and comprehension (Bashir and Hook, 2009). When students are given direct and guiding feedback, their fluency is a tool that is used to access meaning in a text.

This literature review seeks to explore the topic of growth mindset feedback on reading fluency in elementary school students. The existing research on growth mindset strategies and feedback will be discussed in the first section. Then, growth mindset and academic success will be covered in the second section. Finally, information on reading achievement and fluency is covered in the last section along with strategies to reach struggling readers .

Growth Mindset

Growth mindset has been an important educational term since the adoption of new standards and No Child Left Behind (NCLB). Due to increasingly complex requirements of

students and a growing educational gap, an added tool of growth mindset may need to be utilized to help mend the large gap (Laursen, 2015).

Carol Dweck defines growth mindset as having two separate mindsets. A fixed mindset is a person who attributes their success and failure to their innate abilities. This student believes that he or she is born intelligent or unintelligent. People with a fixed mindset believe they are able to do things based on a level of innate intelligence (Yettic, 2014). Students who self identify as smart will approach tasks that they know they will find success in and will easily be frustrated when approaching new or challenging tasks. Students who identify as unintelligent will not take academic risks. They know their boundaries and will not attempt difficult tasks because they know they will not be able to do it. Students with a fixed mindset are rigid and unable to approach new tasks due to fear of failure or immediate surrender (Andersen & Nielson, 2016).

Students with a growth mindset believe that their talents are qualities that are malleable through effort. These students attribute their successes to hard work and effort. Students with a growth mindset approach failure and setbacks in a different way. They do not think that a failure is a sign of weakness or unintelligence rather a learning experience. Students with growth mindsets are open to continued practice and attempts because they know the end goal is attainable with hard work and perseverance (Yeager, 2012). With growth mindset, students take ownership of their personal learning goals which leads to positive school based attitudes. Growth mindset allows students to not put a cap on their abilities or be confined by their current levels and abilities. Students are open to trying new things and attempting difficult tasks because they know that with dedication and perseverance they will be able to eventually achieve.

Growth mindset has individuals think of their brains as malleable objects. Malleability means that with exercise or learning, the brain is able to adapt or even grow stronger (Spitzer &

Aronson, 2012). This malleable brain opens up the opportunity for students to take risks. Students with this mindset know that failure is part of the process and is not the end of their learning.

Spitzer and Aronson (2012) found in a study that low achieving seventh grade students who discussed intelligence as a malleable developable muscle, showed evidence of more growth mindset theory and displayed less downward trajectory in their middle school grades than the control group. These students were able to focus on perseverance rather than showing off their intelligence. The students who were in the growth mindset intervention group not only showed less likelihood of a downward trajectory for grades but even less stress and greater classroom level academic achievement. The mindset intervention lessened the disparity that existed despite socioeconomic disadvantage. This leads us into the next section of the literature review which discusses the use of growth mindset with academic success.

Growth Mindset and Academic Success

Growth mindset and grit are directly associated with grades and academic growth. Students who demonstrate growth mindset earn higher grades than those who do not (Laursen, 2015). Students who demonstrate the ability to use feedback after failure as a constructive tool rather than shut down are more likely to persevere and achieve more academically than their peers. However, student success needs to be addressed appropriately. Students need to be provided with feedback that is focused on the process so that students learn to attribute success to their effort.

In a study by Skipper and Douglas (2012), depending on the type of feedback, student's later performance was influenced. Students who received task or process-related feedback as opposed to person or self-related feedback were more likely to deal with future setbacks in a

positive way. Past research has studied the effect of types of feedback on success over the course of multiple assessments but has not provided students with daily feedback and reflection that develops growth mindset. The use of computerized feedback and growth mindset feedback is not impactful according to a study by Baldrige (2010). Instead, this study will determine if systematic and explicit growth mindset human feedback will impact student success.

Growth mindset needs to be explicitly taught and also used regularly to be successful (Yeager, 2012). With the use of systematic feedback and instruction on brain malleability, students showed more positive attitudes and increased ability to see change in others (Yettick, 2014). The findings also highlighted that students who were in the control group showed extremely low levels of success even though they had learned the skills one month prior. Consistent instruction and feedback is important in the success of growth mindset in children.

Growth mindset can be instructed through computerized intervention programs, feedback and also lessons utilizing literature (Laursen, 2015; DeRitter, 2014; Sharma, 2015). In multiple studies, growth mindset has been assessed through simple pre and post surveys. The surveys included questions about task directed activities, student self perception and peer related questions (Baldrige, 2010). Surveys were used in most of the available research. None of the studies analyzed included growth mindset intervention through the use of student self reflection in conjunction with feedback.

Growth mindset is important today because of the growing educational gaps that exist in our student body. Students are led to believe that their innate abilities are all they will ever be able to achieve and this attitude even extends to adults and educators. When we box children in this way, they are never able to make significant gains because they contain a mindset that tells them that this level of academic achievement is impossible (Saunders, 2013). Along with

excellent instruction, the belief that everyone is capable of achieving academically is needed for student success.

Reading Fluency & Reading Success

Academic success can be defined in many ways. In this study, academic achievement or success is being measured through reading fluency. Reading fluency is the ability to read text rapidly, smoothly, effortlessly, and automatically with little required thinking about the process of reading (Bashir & Hook, 2009). At this point in reading, fluent readers are able to read without taking pauses to decode words. Smooth and effortless reading is reading done with ease. When students are able to do this then they are able to access information by reading or comprehending the text. Automaticity is the ability for students to automatically recall words without having to identify any parts in the word individually. When reading fluently, students are chunking into meaningful phrases and also including inflection or tone in their reading. This conveys to a listener that the reader is comprehending context while actively reading.

In order to learn to be a fluent reader, many factors need to be considered. Students need to practice with word and letter recognition, a strong background in phonological awareness and also semantic, morphological and syntactic knowledge (Bashin & Hook 2009). Since many areas of literacy need to be mastered in order to read fluently, instruction should be targeted and students also need many tools in order to be successful.

Reading fluency is important to reading success and academic success because it is the connection between reading words and really understanding them. When students are effortlessly and automatically reading, their mental effort is moving from being on the process of reading to the content. Students are finally able to gain information from a text when their effort moves away from the process of reading (Bashir & Hook, 2009). There is more processing available to

make sense of text, which is the point of reading. When students are able to make sense of reading, they move onto reading to learn what is at the root of all content areas.

An important factor to be considered when beginning a reading intervention, is a student's attitude towards learning to read. If reading is seen as a daunting and difficult task, then learning to become a fluent reader will be increasingly difficult. When students continue to foster their negative thoughts towards learning to read, then their ability to learn or even their abilities will decline (Helgesen, 2016). Changing mindset allows students to move onto embracing the tools they need to learn to read. When students believe they are capable of reading complex texts fluently, then they are more able to achieve academically.

Summary

Student academic achievement is a broad subject, and in this study it will be targeted through a very important component: literacy. Reading fluency, as mentioned above, is the key to accessing information from words. When students are able to read fluently, they gain access to the meaning within a text. For students to be able to tackle the huge task of learning to be a fluent reader, they need the mindset that they will be able to achieve whatever they set their determined minds to do. A growth mindset allows students to see their learning process as a positive one in which failures are expected and welcomed along the way. Students with this mindset learn from their failures and continue persevering towards their academic end goals.

CHAPTER III

METHODS

The purpose of this study was to examine the effectiveness of growth mindset feedback on the reading fluency development of on and below level third grade students. Reading fluency development was measured by their performance on the Fountas and Pinnell Reading Benchmark assessment system 2 (F&P BAS) (Fountas & Pinnell, 2016). Growth mindset feedback was administered using a digital survey through Google Forms.

Design

This study was based on a quasiexperimental pretest-posttest design using a convenience sample. A pre-test was administered using the Fountas and Pinnell Reading Benchmark assessment system 2 (Fountas & Pinnell, 2016) to determine the starting reading level of each student receiving the treatment. Students were administered treatment through Google surveys and received reading fluency instruction and practice assessments weekly. After the treatment period, all of the students were reassessed to see if their reading fluency increased using the F&P BAS 2 kit. This will help determine whether growth mindset improvement affects students' performance on Fountas and Pinnell Reading Benchmark assessment from spring 2018 to fall 2018.

Participants

The participants in the study were a convenience sample of 12 third grade students at a public school in Crofton, Maryland. The selected elementary school's population has students from diverse ethnic and socio-economic backgrounds. Many students are from military families. The sample consisted of 7 females and 5 males ages eight and nine. Of the students, seven had an Individualized Education Plan (IEP), and two students were identified as English Language

Learners (ELL). The sample consisted of 5 Caucasian students, 3 African American students 2 Asian students, and 2 Hispanic students.

In this sample, 4 of the students were reading on grade level and 8 students were reading below grade level at the start of the study. Reading instruction occurred in groups of similarly leveled students. Reading instruction for all participants included fluency practice, comprehension skills and some higher level questioning on the student's instructional F&P BAS reading level.

Instruments

Fountas and Pinnell's Benchmark Assessment System 2 (2016) contains two assessments for each alphabetic level. Each student is assessed in October after the school year starts until their independent reading level, instructional reading level and their frustrational reading level are determined. They are then reassessed at the middle and end of the school year. For the purpose of this study, student's second grade spring and third grade fall assessments were used to measure growth. The F&P BAS measures overall reading ability using a combined score of reading fluency (accuracy, rate and intonation) and comprehension. This measure will be comparing growth in the reading fluency that is measured by a percentage calculated by dividing correct words read per minute over total words read per minute.

Reliability and validity for the Fountas and Pinnell Benchmark Reading Assessment system 2 (2016) was completed through the publishing company's work with students grades K-5 from 22 different schools. Through their work, they mentioned that through the F&P BAS, 96% of students level L-Z were reading on an upward gradient for fiction and 84% for nonfiction ("Field Study of Reliability," n.d.). This provided evidence that the F&P BAS texts do increase on a gradient with higher alphabetic levels being more difficult than the ones that preceded

them. Validity was also assessed by comparing results from the F&P BAS with other assessments and across genres. The research showed that the crossover of levels from fiction to nonfiction only had a 26% relationship for levels L-Z. The test retest validity for all levels was .97.

Growth mindset was assessed and reinforced weekly for the students through a Google Forms document created by the experimenter and teacher. The form included five questions. The first question was a Likert-type scale question that read, “I believe I am a strong reader.” The next question was an effort based Likert-type scale question, “I believe if I work hard then I can become a strong reader.” The last three questions were short answer questions that served as reflective questions. There is no data on reliability and validity as this test was created by the experimenter.

Procedure

The F&P BAS served as the pretests and were administered to all students in the class. Students were grouped based on their initial reading level in below and, on-leveled groups. Instruction was delivered to both groups with leveled novels, informational texts and picture books that matched their instructional reading levels. In groups, students practiced reading fluency and comprehension. Novel excerpts were used to practice oral fluency in groups.

Students practiced their oral reading fluency with peers through centers and through peer practice. The centers included funny fluency in which students read selected short texts in funny character accents and timed fluency checks where pairs used a timer and laminated text to measure the number of words correctly read per minute.

All students were instructed each Friday to log into their Google account and complete their weekly Google survey. The students completed the aforementioned growth mindset reflection survey.

CHAPTER IV

RESULTS

The purpose of this study was to examine the effectiveness of growth mindset feedback on the reading fluency development of on and below level third grade students. The independent variable, growth mindset feedback, was administered and assessed through self-assessment and reflection questions. The dependent variable was student's instructional F&P level. At the conclusion of this study, the null hypothesis was supported as the correlations between growth mindset ratings and students' F&P growth were not statistically significant at the 0.05 level.

Figure 1 below shows students' average growth mindset changes from baseline to mid-treatment stage and from mid-treatment stage to post-treatment. Figure 2 shows the survey used to track growth mindset ratings. Table 1 shows the correlations between growth mindset change and F&P growth. Table 2 shows the correlations between post-treatment growth mindset ratings and F&P growth.

Figure 1: *Average Bi-Weekly Growth Mindset Score Change*

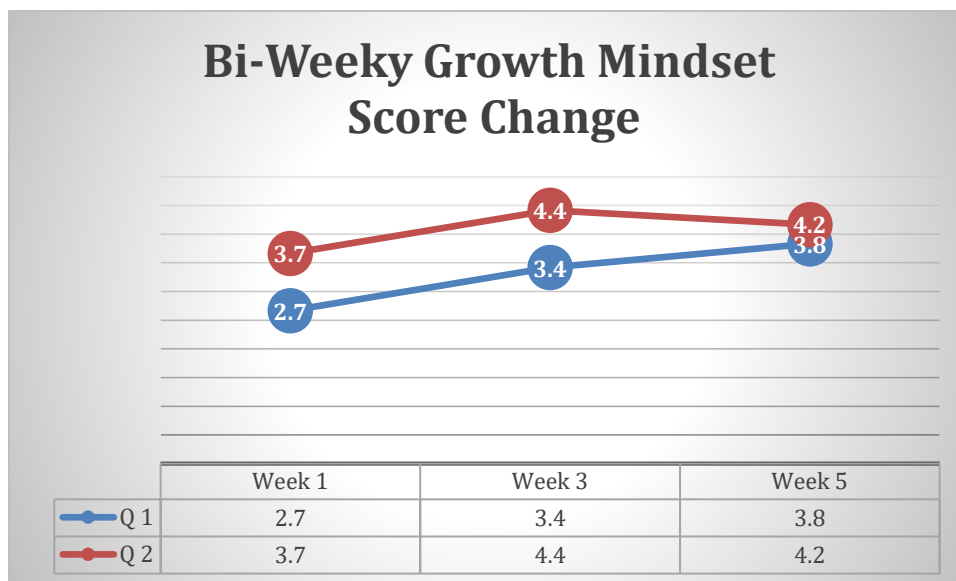


Figure 2: Survey used for Growth Mindset reflections

How can I GROW as a reader?

Please answer every question thoughtfully and based on all the hard work we have been doing in class.

I believe I am a strong reader

	1	2	3	4	5	
NOT fluent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	VERY fluent

I believe if I work hard then I can become a strong reader

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What did you do to improve on your reading fluency and accuracy this week?

Long answer text

How can you become a stronger and more fluent reader? (What can you do NEXT week?)

Long answer text

Table 1: Correlations between Growth Mindset Change and F&P Growth

Spring Level		Correlation Coefficient	p Value	N
Below	Q1 Change from Week 1 to Week 5	0.370	0.367	8
	Q2 Change from Week 1 to Week 5	-0.265	0.526	8
On	Q1 Change from Week 1 to Week 5	0.577	0.423	4
	Q2 Change from Week 1 to Week 5	-0.577	0.423	4

There are positive but insignificant correlations between Q1 change and F&P growth for on and below level students ($p=.367$ for below students and $p=0.423$ for on students). There are

insignificantly negative correlations between Q2 change and F&P growth for on and below level students ($p=0.526$ for below students and $p=0.423$ for on students).

Table 2: *Correlations between Week Five Growth Mindset Score and F&P Growth*

Spring Level		Correlation Coefficient	p Value	N
Below	Q1 Week 5	-0.081	0.850	8
	Q2 Week 5	-0.568	0.142	8
On	Q1 Week 5	0.333	0.667	4
	Q2 Week 5	NA*	NA	4

There is no correlation between Week 5 Q1 scores and F&P growth for on level students. There are no correlations between Week 5 Q1/Q2 scores and F&P growth below level students.

CHAPTER V

DISCUSSION

The purpose of this study was to examine the effectiveness of growth mindset feedback on the reading fluency development of on and below level third grade students as measured on the Fountas and Pinnell Reading Benchmark assessment. The correlation of 0.05 between growth mindset ratings and students' F&P growth were not statistically significant, so the null hypothesis was supported.

Implications of Results

When reviewing the results of the study, there was no significant evidence to suggest that growth mindset reflections had a correlation with improved reading fluency. However, throughout the course of the study and through the analysis of data, the researcher noted that students were starting to approach reading tasks more willingly and optimistically. The average scores for question one, "I am a strong reader," and question two, "I believe if I work hard I can become a strong reader," increased from the pre to post growth mindset reflections. Question 2 increased from the baseline to mid-treatment phase and from the mid-treatment phase to the end of treatment. The scores for question 1 increased from pre to mid but decreased slightly from the mid and post collections (Figure 1).

Question 1 rating change had a positive impact on F&P growth, but Q2 rating change did not (Table 1). Although the correlation was not significant, the positive mindset ratings of question 1 resulted from this study could have long-term impacts on student's overall achievement and attitudes towards learning.

Theoretical Consequences

No significant impact of Growth Mindset was found through this study.

Threats to Validity

This study contained some internal and external threats to validity. One possible threat to validity external validity was the small sample size. Our study only included 12 students. A larger group of students would have provided a broader range of results and an increased likelihood of finding statistically significant correlations. In addition to this, the treatment time was short and did not allow for a students to apply new strategies for a long time. Students may have had time to learn the reading strategies but may have not had time to internalize the growth mindset yet.

A threat to internal validity was the number of students who either had an Individualized Education Program or were English Language Learners. These students had many other variables that impacted their reading growth and their growth mindset reflections and ratings. Lastly, throughout the course of this study, there were 3 county assessments that were administered. Many of the participants in the sample were struggling readers who had a difficult time with their assessment and did achieve high scores. This may have impacted some of the growth mindset ratings of students who struggled to read the lengthy text portions of these assessments.

Connections to Previous Studies/Existing Literature

This study focused on student self-reflection and ratings. A previous study by Skipper and Douglas (2012) studied the types of feedback provided to students and how they impacted academic performance. This study's focus was on growth mindset reflection and feedback rather than specific task-based feedback like the Skipper and Douglas study. The study then concluded that students who received task or process-related feedback as opposed to person or self-related

feedback were more likely to deal with future setbacks positively. The current study focused on providing feedback in addition to student self-reflection.

According to a study by Baldrige (2010), the use of computerized feedback and growth mindset feedback was found to be an insignificant impact on academic growth. This current study also found that reflections done on computerized programs and face to face feedback did not have significant impacts on reading development.

Implications for Future Research

Based on the inconclusive results of this study, it is recommended that future researchers extend this study to go through the course of an entire school year. Additionally, a larger sample size would potentially provide statistically significant results. Including a control group that also included on and below grade level students in the same classroom would help avoid additional variables that are not intended to be studied. Assessing for F&P at the middle of the school year and again at the end of the school year would also help solidify any correlation that exists between increased ratings of growth mindset and reading achievement.

Future research can be done in the area of growth mindset, self-esteem and academic achievement over the course of elementary school. Assessing areas like math as well as reading over the course of six years could provide future researchers meaningful generalizations about people in some of their most impactful years of development.

Conclusion

This study did not provide significant statistical evidence that growth mindset reflections and reading fluency are correlated. Growth mindset reflection, “I am a strong reader,” had a positive impact on student self-rating, and shows that this style of reflection may have an impact on reading fluency achievement. Further research is required to support this research question.

References

- Andersen, S. C., & Nielsen, H. S. (2016). Reading intervention with a growth mindset approach improves children's skills. *Proceedings of the National Academy of Sciences of the United States of America*, 113(43), 12111-12113. doi:10.1073/pnas.1607946113
- Baldrige, M. C. (2010). *The effects of a growth mindset intervention on the beliefs about intelligence, effort beliefs, achievement goal orientations, and academic self-efficacy of LD students with reading difficulties* (Ed.D.). Available from Education Database. (858071083).
- Bashir, A. S., & Hook, P. E. (2009). Fluency: A key link between word identification and comprehension. *Language, Speech & Hearing Services in Schools*, 40(2), 196-200. doi:10.1044/0161-1461(2008/08-0074)
- DeRitter, M. *Mindset and its impact on reading motivation*. (2014).
- Field Study of Reliability and Validity of the Fountas & Pinnell Benchmark Assessment Systems 1 & 2. (n.d.). Retrieved July 2, 2018, from <https://www.heinemann.com/fountasandpinnell/research/basfieldstudyfullreport.pdf>
- Fountas, Irene C., Pinnell, Gay S. (2016). Fountas and Pinnell benchmark assessment system 2 : grades 3-8, levels L-Z. Portsmouth, NH :Heinemann.
- Helgeson, J. (2016). Reaching the reluctant reader. *AMLE Magazine*, 3(7), 26-28.
- Laursen, E. K. (2015). The power of grit, perseverance, and tenacity. *Reclaiming Children & Youth*, 23(4), 19-24.

- Sharma, S. (2015). Promoting risk taking in mathematics classrooms: The importance of creating a safe learning environment. *Mathematics Enthusiast*, 12(1-3), 290-306.
- Skipper, Y., & Douglas, K. (2012). Is no praise good praise? effects of positive feedback on children's and university students' responses to subsequent failures. *British Journal of Educational Psychology*, 82(2), 327-339. doi:10.1111/j.2044-8279.2011.02028.x
- Spitzer, B., & Aronson, J. (2015). Minding and mending the gap: Social psychological interventions to reduce educational disparities. *British Journal of Educational Psychology*, 85(1), 1-18. doi:10.1111/bjep.12067
- Yeager, D. S., & Dweck, C. S. (2012). Mindsets that promote resilience: When students believe that personal characteristics can be developed. *Educational Psychologist*, 47(4), 302-314. doi:10.1080/00461520.2012.722805
- Yettick, H. (2014, April 15). Studies Hit on Ways to Nurture Students' 'Growth Mindsets'. Retrieved July 2, 2018, from <https://www.edweek.org/ew/articles/2014/04/16/28aera2.h33.html>