The Benefits of a Whole-School Approach to Growth Mindset on Both Staff and Students

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Abstract

This qualitative research study examines the question: how can the philosophy of growth mindset be applied to various grade levels of an elementary school and what are the benefits of a whole-school approach to growth mindset? Data for this study was collected through semi-structured interviews with two elementary school educators working for Dufferin Peel Catholic District School Board located in Mississauga, Ontario. These educators have experience integrating growth mindset principals into their classroom and worked at a school that is dedicated to a whole-school approach to growth mindset from Kindergarten to grade 8. These interviewers were chosen based on convenience sampling; data was collected through semi-structured interviews. Interviews were recorded, transcribed and coded to find existing themes. The themes that emerged were: the importance of student’s foundational knowledge to create a positive classroom atmosphere, the combination of teacher- and student-directed strategies, teacher experiences prepared the integration of growth mindset and finally, the beneficial effects of growth mindset on students both academically and emotionally. Implications and recommendations for the educational community are discussed.

Key Words: Growth Mindset, Fixed-Mindset, Whole-School Approach, Resiliency
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Chapter 1: Introduction

1.0 Research Context

A mind-set is a specific assembly of assumptions, expectations, and beliefs held by an individual that frames a way of thinking. Consequently, mindsets affect how persons regard the world around them, and also how they view themselves. The mindsets one possesses drives their behaviour in innumerable ways. For example, mindset can minimize or maximize an individual’s potential, help one reach their goals, or cause them to quit a task when faced with adversity. Recently, there has been a surge of research into the topic of mindsets in education, spearheaded by Dr. Carol Dweck (2012).

Dr. Dweck has introduced a new concept to education entitled growth mindset. Growth mindset is “a belief system that suggests that one’s intelligence can be grown or developed with persistence, effort, and a focus on learning” (Ricci, 2013). It shows that students can be taught that their intelligence is malleable and can develop and change over time with persistent effort. Growth mindset encourages students to learn from their mistakes, persevere through frustration and indulge in a challenge. Students are encouraged to adopt a mindset that focuses less on the importance of end-results, by focusing on the process of achieving it, and the challenging work along the way. Growth mindset helps to eliminate self-doubt, and encourages students to think optimistically about the task at hand. Research has shown how the introduction of growth mindset can improve students’ psychological well-being and their academic achievement in the classroom (Rattan, Good & Dweck, 2012). Students who adopt a growth mindset or ‘malleable way of thinking’, show improvement in their motivation, learning, problem solving skills, and achievement outcomes (Rattan, Good & Dweck, 2012).
Growth mindset can be contrasted with fixed mindset, which is “a belief system that suggests that a person has a predetermined amount of intelligence, skills, or talents” (Ricci, 2013). Dr. Dweck promotes elimination of fixed mindsets from the education system as it hinders student potential by instilling a belief they cannot improve themselves, or grow their intelligence. These students often fail because they believe they cannot perform a task; therefore, they do not put forth the effort they are capable of to complete the activity assigned to them. Students with a fixed mindset impair their budding potential because they refuse to push their limits or place themselves outside their comfort zone. The research shows students who hold fixed mindsets are likely to give up when faced with a challenge and draw conclusions about their ability to complete a task (Rattan, Good & Dweck, 2012).

Students with fixed and growth mindsets have been compared in multiple research studies over recent years. These studies show that students with growth mindset were more motivated to learn as they became accountable for their success and therefore began to exert more effort when confronted with a difficult task (Blackwell, Trzesniewski & Dweck, 2007). Dr. Dweck and her colleagues have proven, the effectiveness of growth mindset in the United States where her research shows meaningful and applicable change in student motivation and success. From these studies, programs have been developed to teach educators how to introduce the concepts of growth mindset in “kid-friendly” language. These programs also demonstrate how educators can encourage students to become more inquisitive, risk taking and view mistakes as learning opportunities instead of failures. Programs such as ‘Brainology’ and ‘Mindset Works’ are examples of current programs being implemented in Ontario schools. Imperially, the earlier these concepts are introduced, and the more exposure students have to the program, the more likely they are to become affected by the model of growth mindset.
1.1 Research Purpose

The purpose of this study is to examine literature on the effectiveness of growth mindset in the elementary classroom and conclude as to the feasibility of integrating this philosophy into classrooms across Ontario. Secondly, this paper will survey various educators’ implementation of growth mindset strategies and their perspectives on the effectiveness growth mindset has had on their students. Finally, this study will examine how a school-wide approach to growth mindset can affect student achievement and academic growth. It will uncover the various ways growth mindset is used for multiple age groups, and the effectiveness of school-wide approaches. These findings will be shared with the educational research community to improve student morale, achievement, and mental health.

1.2 Research Questions

The main research question is: How can the philosophy of growth mindset be applied to various grade levels of an elementary school and what are the benefits of a whole-school approach to growth mindset?

Supplementary questions this paper will focus on include:

- How do educators introduce growth mindset to their students? What factors and considerations do they focus on?
- What specific strategies and approaches do educators believe are most effective for supporting students?
- What experiences prepared educators for this work, and how did they develop an interest and competence in using growth mindset?
- What changes have educators seen in their students academically, emotionally, and developmentally?
• What outcomes have educators observed from their work implementing growth mindset?

1.3 Background of Researcher

The topic of growth mindset interests me because I want to create and teach in an environment where all students thrive and strive to reach and surpass their goals and expectations. In my past experience, I have seen too many students give up because they believe the task in front of them is too difficult. As educators, it is our responsibility to help students push past these negative feelings and perpetuate the ideology that progress can be achieved with persistence and hard work. Growth mindset is an ideology that can be adapted to students in a variety of age levels and abilities; therefore, is a vital topic that teachers should become educated on.

I also believe growth mindset is a key element of building an inclusive classroom. Growth mindset not only encourages students who are struggling to become more academically proficient, it also promotes positive thinking, encouragement of others and oneself, as well as perseverance when faced with a problem. These are traits that make-up an inclusive classroom that promotes the respect of all students. Growth mindset also eliminates students from labelling themselves as “smart” or “dumb” as it encourages everyone to try their best at everything they do, and contribute what they can. Growth mindset focuses on a student’s strengths in order to help them reach their full potential, stay in the classroom, and grow to be successful both in and out of their school environment. This research topic will help prepare me to support all learners in my classroom and lead them toward academic success and develop life skills that can be applied in a variety of settings.
1.4 Overview

In responding to the research questions, I will conduct a qualitative research study by interviewing two classroom teachers who are currently working at the same elementary school teaching different grade levels. Through these interviews, I will learn their perspectives on growth mindset and how they employ the concepts of growth mindsets in their classrooms. I will discuss the importance of a whole school approach, and how this has affected students in their school. In Chapter 2, I examine the existing research and literature on the topic of growth mindset in education. In Chapter 3, I describe the research methodology, including information about the sample participants of this study. Chapter 4, reports my research findings and analysis. I discuss the significance of the research findings in light of current research on growth mindset as an academic tool used to motivate students and improve their academic success. The final Chapter 5, speaks to the implications of my research findings for my own teaching career and the educational community at large. It also articulates a series of questions for future study and research.
Chapter 2: Literature Review

2.0 Introduction

This chapter will present my review of published research and literature in regards to growth mindset and its use in the modern classroom. Included will be information on the effects that growth mindset has on students, and how teachers are implanting the program in their classrooms. I will define growth mindset, give an overview of the methods used to employ it in the classroom, and report research on its effectiveness and limitations in the classroom setting and also for whole school applications.

2.1 Defining Growth Mindset

Growth mindset is an educational philosophy that teaches students that their intelligence can develop over time. Growth mindset encourages students to focus on improvement instead of final grade averages, or the “right answer”. The goal of this method is to promote learning, development, and perseverance; so students are more likely to succeed when faced with adversity. The theories of growth mindset are based on years of research done by Carol Dweck, Lisa Blackwell, and their colleagues at Stanford University. These individuals have conducted numerous research studies that prove students with a growth mindset, display greater motivation in school, better grades, and higher test scores (Mindset Works Inc., 2015). Individuals who possess a growth mindset believe their intelligence develops by always putting their persistent best effort into tasks. Struggling through a difficult problem is seen as an opportunity to grow because mistakes are viewed as opportunities to learn and improve themselves. These individuals tend to emphasize their learning goals and opportunities; thereby, rebounding quicker from failure (Mangels, Butterfield, Lamb, Good & Dweck, 2006). Individuals who have a fixed mindset, believe intelligence is a stable characteristic, one which you are born with and cannot
be grown or developed. They believed mistakes indicate a lack of ability (Moser, Schroder, Heeter, Moran, Lee, 2011). Fixed mindset focuses on performance goals, leading individuals to become vulnerable to negative feedback as well as constructive criticism. They are more likely to disengage and give up when presented with challenging learning opportunities (Mangels, Butterfield, Lamb, Good & Dweck, 2006).

Dweck has investigated and proven that what people believe about themselves has an profound impact on their actions. Students believing, they can develop their intelligence and abilities, take more and greater risks when compared to those who believe their intelligence is fixed. Individuals with a fixed mindset believe their willpower and intelligence is limited. This mindset results in poorer self-control and more reliance on others, as they do not appreciate that their knowledge is a self-generating resource (Mangels, Butterfield, Lamb, Good & Dweck, 2006). Individuals with a fixed mindset perceive challenges and mistakes as threats to their ego and self-esteem; thereby, rejecting opportunities rather than accepting them to improve.

2.2 The Science Behind Growth Mindset

The brain can be likened to exercising a muscle in the body for greater strength and resilience. The more one exercises the brain, by exerting themselves to preserve through difficult problems, the more their intelligence will develop. Repeatedly making mistakes and learning from them, results in a greater number of critical neuron connections to be formed in the brain; thereby, spiking and maintaining greater intelligence. Individuals who possess a growth mindset benefit from their mistakes, as they persevere and learn from their failed attempts. Those with a fixed mindset shut down when they make a mistake; thereby, corrupting the opportunity for growth because those critical neuron connections are not being formed in the brain. This statement has been proven by a study performed in 2006 by Mangels, Butterfield, Lamb, Good
and Dweck. It measured event-related potential which are electrical brain signals produced by external or internal events (Moser, Schroder, Heeter, Moran, Lee, 2011). They found that “compared with fixed-minded individuals, growth-minded individuals allocated more attentional resources to corrective information following error feedback and were more likely to correct their mistakes on a surprise retest” (Moser, Schroder, Heeter, Moran, Lee, 2011). Both groups of individuals were able to correct their mistakes but those with growth mindsets were able to correct significantly more errors that those with a fixed mindset (Mangels, Butterfield, Lamb, Good & Dweck, 2006). Brain waveforms also displayed higher levels of brain activity and confidence in individuals possessing growth mindset when they corrected a previous mistake during the retest (Mangels, Butterfield, Lamb, Good & Dweck, 2006). This shows that individuals with a growth mindset value learning from their errors, as they learn from their mistakes instead of becoming frustrated.

A different study built upon Mangels, Butterfield, Lamb, Good and Dweck in 2011, examined “error-related negativity (ERN) and the error positivity (Pe), two widely studied ERPs [event-related potential] elicited during error processing, that relate to adaptive behavioral adjustments following mistakes” (Moser, Schroder, Heeter, Moran, Lee, 2011). This study accessed the relationship between mind-set, and self-monitoring ones performance and reaction to mistakes. This study concurred with the previous research stating that growth minded individuals have enhanced attention to corrective feedback following their mistakes and had less errors in the future. This study also showed “growth mind-set is associated with heightened awareness of and attention to errors as early as 200 ms (milliseconds) following error commission” (Moser, Schroder, Heeter, Moran, Lee, 2011). Individuals who possess a growth mindset are immediately able to self-correct and make adjustments to the task at hand for a more
successful result. These people have “superior functionality of a very basic self-monitoring and control system. The finding that mind-set was associated with Pe and not ERN [error related negativity] suggests that growth mind-set is specially associated with enhanced error processing” (Moser, Schroder, Heeter, Moran, Lee, 2011).

2.3 Parental Role in Growth Mindset

Parents have an immense amount of influence over the way their children perceive themselves. Most children adopt beliefs from their parents, starting at a young age to be raised in a very controlled environment. For example, many children adopt their parent’s religion and cultural language because they are exposed to it on a regular basis and it becomes ingrained in their subconscious. A 2016 study has shown that children learn mindsets from their parents at a very early age - which is especially true for a fixed mindset. Children are more likely to recognize a fixed mindset when they are exposed to it in comparison to growth mindset. The research states that “children’s perceptions of their parent’s failure mind-sets also predicted their own intelligence mindsets” (Haimovitz & Dweck, 2016). When a child’s guardian had a fixed mindset they were significantly more likely to believe their own intelligence was fixed (Haimovitz & Dweck, 2016). The research also showed that parents who believed failure was debilitating were more concerned with their child’s grades and school performance rather than their learning capacity and overall improvement. The pressure put on student abilities lead children to believe their intelligence was fixed, as their parents, were less likely to react with support when their child was faced with a challenge (Haimovitz & Dweck, 2016).

Many parents wonder what they can do to help their children receive a good education. A common misconception held by parents is that they should boost their child’s self-esteem by praising their children’s intelligence and skills in order to lead them to pursue greater success
(Haimovitz & Dweck, 2016). Here, parents are encouraging their children to develop a fixed mindset “because these parents react to their children’s failures by focusing more on their children’s ability or performance than on learning” (Haimovitz & Dweck, 2016). Research has now shown that parents should stop this method and instead encourage their child to think about their intelligence and abilities as something they can grow and develop. In one study 85% of parents who were polled believed that praising their child’s abilities (ex. their intelligence) when they performed a task well was necessary to make to make them feel they are smart and to validate their efforts (Mueller & Dweck, 1998). Educators need to show parents how failure can be beneficial to student learning and explain how they should react to their child’s setbacks to maintain their motivation and learning, instead of discouraging it.

2.4 The Significance of Phrasing and Words

Parents are not the only individuals who can affect how a child perceives themselves and their intelligence. Research has shown that children are extremely sensitive to praise and the way a child is praised for completing a task can have a positive or negative effect on their overall motivation (Cimpian, Arce, Markman & Dweck, 2007). This places educators in an extremely important role, as they have the power to change how a student approaches their education and difficult tasks. Research shows that “praising the whole person (e.g., “You are a good boy/girl”) after success on a task, fostered helpless responses to subsequent mistakes - more than praising the process through which success was achieved (e.g., “You found a good way to do it”) (Cimpian, Arce, Markman & Dweck, 2007). Praising a child based on the work they have done, and the effort they have put into a task, is non-generic and more specific; therefore, yielding a better response from that child. Specific praise helps to shape the child’s conceptions of their abilities and take ownership for their work that is being assessed.
Dr. Dweck has performed a research study involving 400 students, 10-11 years old, on six different occasions. In this study they randomly assigned the students praise groups where half would be praised for their intelligence, and the other half would be praised for the process and the work they had displayed. Each time the researchers received the same results - students who were praised for their intelligence did not want to take on more challenging tasks as they did not want to fail after they had already succeed at a more simple task (Muller & Dweck, 1998). When these children were given a difficult activity their confidence was shaken and many lied about their test scores as they were ashamed they had not done as well as before. Muller and Dweck stated in their research that “praise after success can have a variety of negative effects when it leads children to believe the praise to be insincere and when it leads them to feel pressured to produce future and good performance” (Muller & Dweck, 1998).

This supports the claim that students who are praised for their intelligence, become vulnerable when faced with a difficult task, and discouraged when faced with confusion. These students are likely to sacrifice valuable learning opportunities if these tasks do not ensure the child will have a good performance outcome (Muller & Dweck, 1998).

Research has shown that generic praise and non-generic praise are equally rewarding to a student; however, on the “postmistake measures, children who received generic praise exhibited significantly more helpless behavior than children who received non-generic praise (Cimpian, Arce, Markman & Dweck, 2007). Generic praise implies that the student excels at a specific task; therefore, if the student “fails” at that task or makes a mistake, they can become saddened, upset and quit. These students often fail to persevere through their mistakes in order to learn how they can fix the problem, and repair their mistake. Language is also important when teachers introduce content to their students. For example, when a teacher begins a new unit stating “were
starting with an easy question,” this may deter many students who immediately do not understand the content or get the question wrong. By changing the educator’s language, one can change the way the students perceive themselves, their education, and how they approach mistakes (Sparks, 2013).

Constructive criticism is necessary for student growth and helping them improve in the future; however, it should be done with a positive twist. For example, if a student did poorly on a test, the teacher should constructively discuss with them what went wrong, the concepts they did not understand and figure out next steps to helping them do better in the future (Dweck, 2013). Teachers should also rely on the word “yet.” Dweck believes the word “yet” has a very powerful effect on students as the teacher is continuing to encourage the student to keep trying. For example, the student may not be a master at a topic “yet”, but one day they can be!

2.5 Personality

Personality plays a major role in how a student performs in school. For example, some students are dedicated to their studies while others remain aloof, content with passing grades demonstrating minimal effort. It is a common believe that personality cannot be changed; however, this idea is challenged in regards to growth mindset. Dr. Dweck argues that personality can be changed with the introduction of growth mindset or “malleable” mindset, to adjust ones personality overtime (Dweck, 2008). By teaching students their intelligence is malleable, teachers are changing student’s core beliefs, which shape goals, strivings, and reactions to their surrounding environment. By introducing growth mindset to students, teachers are changing their “mental representations of the nature and workings of the self, of their relationships, and of their world” (Dweck, 2008). This changes the way students approach problems, think about their ambitions, and themselves.
The research study conducted by Blackwell, Trzesniewski, and Dweck in 2007, regarding malleable intelligence intervention, further proves personality can be changed through growth mindset. In their analysis, they studied students making a transition from elementary school to junior high school. The experimental and control groups both received 8 classes which introduced the students to various study skills. On top of the study skills the experimental group also learned their brain is like a muscle that can grow and get stronger with use as the brain forms new connections each time learning occurs (Blackwell, Trzesniewski & Dweck, 2007).

The students in the controlled group showed little improvement in motivation and no improvement in grades, while those who learned about growth mindset improved significantly in their grades and had greater changes in their motivation (Blackwell, Trzesniewski & Dweck, 2007). Examples of their improvement included showing more care in their homework, studying more often and putting more effort into their classroom learning. This theory was also tested by Aronson, Fried and Good in 2002, with college students. Similar to the 2007 study conducted by Blackwell, Trzesniewski, and Dweck, the experimental group was introduced to a malleable way of thinking - told the brain is able to make new connections throughout one’s life and from this is able to grow in response to these learnings. At the end of the semester, the malleable group displayed a greater value of academics, a greater enjoyment of their academic work, and obtained higher grade-point averages (Aronson, Fried & Good, 2002).

2.6 The Significance of Self-Talk

A very important concept of growth mindset is teaching students positive self-talk. Students taught to self-talk become more productive, as they learn to harness their minds, work through challenges, and control their behavior (Mraz & Hertz, 2015). Students become optimistic, as they develop/learn to use phrases to help them deal with challenging situations in a
positive way. Students learn phrases such as “I have done it before - I can do it again!” or “I can use tools in the classroom to get me started” – self-talk to replace self-doubt. Students learn to be resilient and persistent, to encourage themselves to try multiple strategies before giving up. Students also learn flexibility, and to utilize multiple options when problem solving. Finally, students learn empathy, a concept very important for group work and social development. Students acquire the “self-talk” skills needed to empathize with others, as they learn how to take a different person’s perspective to see how their actions affect others. Positive self-talk enables students to develop academic perseverance which initiates and sustains a high level of focus and effort when perusing academic goals even though there may be obstacles, setbacks and distractions in their way.

2.7 The Effects of Environment on Students

Many scholars have put forth research that suggests intelligence can be taught to students, as they can learn to think in new ways. A key way of teaching students how to expand their intelligence is by designing an environment which cultivates perseverance. Sternberg and Horvath stated that intelligence is defined as including: “metacomponents (thinking skills), knowledge-acquisition components (learning), and performance components (certain kinds of perceptual skills)”, that can be taught to individuals (Sternberg & Horvath, 1998). The environment which a teacher creates plays an immense role in the success of growth mindset. “The best environment for learning is one that forces students to work through a succession of wrong answers and predispositions until they get to real learning” (Miller, 2013). Growth mindset can only occur in a classroom where teachers encourage students to take risks and nurture the idea that errors lead to real learning. Many students expect to obtain the right answer quickly, with minimal effort, and get discouraged when this fails to occur. If teachers do not
explain that errors and grappling with the material leads to academic growth, it is more likely the students will become frustrated and quit. “Intelligence is not a matter of being smart – it is the capacity to view difficulty as an opportunity to stop, reassess, and employ strategies for making sense of problems” (Miller, 2013).

The classroom environment must also support inquiry in order for growth mindset to take hold of students. When students become irritated, they seek to find any answer in order to solve their frustration and move on from the task at hand. Individuals with fixed mindsets can shut down inquiry and the process of investigation, as they become upset making errors time and time again. Teachers must create an environment where students can move past this frustration, as “true learning depends on our tolerance threshold, upon how long we can wrestle with doubt” (Miller, 2013). Sheridan Blau supports this claim as he believes teachers should foster confusion and perplexity in their students. “In a classroom where intellectual problems and confusion are honored as rich occasions for learning, students and teachers will be more inclined to confront and even seek rather than avoid the textual and conceptual problems that offer the richest opportunities for learning” (Blau, 2003).

In many instances students do not ask questions, and stagnate with their confusion instead of trying to work through it. Teachers need to create an environment where questions are welcomed, to dispel any predetermined thoughts that asking for help meant one was less smart. Teachers need to normalize difficulty by probing their students with questions such as where are you struggling, what strategies have you tried, or how are you working toward solving these problems? Sheridan Blau claims the major difference between productive learners and non-productive learners is not their intelligence; rather, their willingness to endure confusion. He claims that confusion is a key step in developing critical thinking skills (Miller, 2013).
“Confusion often represents an advanced state of understanding, the student who is confused in frequently the one who understands enough to see a problem” (Blau, 2003).

If teachers create an environment that encourages questioning, and controlled discomfort, students will learn that intelligence is about transformation and that some discomfort is evitable in this process (Miller, 2013). If students feel comfortable in their classroom, they can more easily tone down their ego and not seek the “easy way out” - replacing it with a passion for inquiry and quizzicality. Tips for teachers to create a “growth-mindset” atmosphere include: inspiring learners to embrace challenges, teaching strategies and tactics for students to power through difficulties, designing tasks and activities that pertain to student interest.

2.8 Teacher Integration of Growth Mindset

Growth mindset has successfully been integrated into classrooms across North America. Teachers can learn to integrate growth mindset through programs such as Mindset Works, a program developed based on the principals of growth mindset and created by Eduardo Briceno, Carol Dweck, and Lisa Blackwell. This program has its own “Brainology” curriculum which provides 6-12 hours of online instruction and activities for 5-12 weeks (Sparks, 2013). The software targets grades 5-9; however, the program can be tweaked to be introduced school wide. Lessons include: “brain development and learning, fixed vs. growth mindsets, and different strategies students can use when they hit difficulty in a particular subject or problem” (Sparks, 2013). Teachers learn to teach their students about the brain and how it can change with continued effort. Teachers are given lessons that explain to students that when they try their best, and grapple with difficult problems, the neurons in their brain form new connections leading to enhanced intellectual abilities (Dweck, 2013). Currently this program is being used in 600 schools around the United States and has recently been bought by Scholastic Incorporated.
Teachers can also encourage growth mindset by ensuring students understand that tests do not measure their intelligence or their potential to achieve in the future (Dweck, 2013). Teachers should also introduce units as tasks the entire class will master, with the teachers’ guidance. As previously discussed, teachers should also give growth minded praise and feedback instead of praising students based on their achievements.

In order to implement growth mindset, teachers need to believe they can change their students’ mindsets by not categorizing students as smart and less smart. Research has shown that when “a teacher has a fixed mindset about the students, the students maintain their achievement rankings over the year. The ones who came into class as high achievers stay high, and the ones who came in as low achievers stay low” (Dweck, 2013). Teachers with a growth mindset break these trends, as many of the low achievers become high achievers after having the opportunity to develop various new skills, boost their confidence and learn to stay motivated.

2.9 Conclusion

This chapter has outlined the benefits of growth mindset on students in the classroom. Research has shown that having a growth mindset can change a student’s personality and academic achievement as they become more likely to take risks, become more resilient, and have a positive outlook on mistakes. Scientific findings show individuals with a growth mindset are more likely to increase their academic achievement as they accept mistakes as a learning opportunity and use it to discover new learning. All of the information provided in this chapter support the ideology that a whole-school growth mindset would benefit student achievement and cognitive abilities. In the next chapter, I will introduce the methods of data collection and research methodology that was used in this paper. I will give a review of the general approach.
used in this paper, as well as an introduction to the participants, their background, and the stipulations to qualify as participants.
Chapter 3: Methodology

3.0 Introduction

Chapter Three will introduce the methods of data collection and research methodology used in this paper. I will first give a review of the general approach used in this paper as well as the research procedures and data collection methods. Next, I will provide an introduction of the study of the participants, as well as their background, and the stipulations to qualify as participants. This chapter will end with an explanation of the ethical considerations applicable to this study and a discussion of the strengths and limitations of this research paper.

3.1 Research Procedures

This paper is a qualitative research study: therefore, exploratory in nature. It includes a review of the literature investigating the research on the topic of growth mindset, its implementation in classrooms and its impact on students. This study aims to compare and analyze various educators use of growth mindset in the classroom, and discover if a whole-school approach is beneficial for students. Qualitative research is the most appropriate method for this study as it gathers detailed information about the experiences and opinions of individuals (Creswell, 2012). Through qualitative research I seek to understand the success of growth mindset in Ontario schools, how this has affected student motivation and how teachers have employed its methods in their classroom. I hope to provide insight into growth mindset and seek to explain the benefits of a whole-school approach on students. Qualitative information will be found through face-to-face interviews with two classroom teachers in the Dufferin Peel Catholic District School Board. These participants were chosen based on carefully crafted criteria suitable for this topic of study. Each participant answered specific interview questions about the topic, and their personal experiences using and implementing growth mindset with students. Their answers were recorded, and later
transcribed and coded to find commonalities and important themes. These findings were then compared to the existing research located in the literature review.

3.2 Instruments of Data Collection

This study seeks to understand the beliefs and practices of a specific group of educators: therefore, semi-structured interviews were deemed the best method of data collection (DiCicco-Bloom & Crabtree, 2006). Semi-structured interviews were chosen as they permit the interviewer to devise a set of questions, while allowing additional discussion and questions to emerge during the process of the interview (DiCicco-Bloom & Crabtree, 2006). Thus, the interview is flexible for both the interviewer and the respondent (Jackson, Drummond & Camara, 2007). I developed a list of questions that was covered with each participant in the study in the same order. This allowed the interviews to cover specific topics but also allowed the participant to stray off topic and include information they felt was important to the study. There was the inclusion of open-ended questions so the interviewee could provide new understanding, points of view, or opinions on the topic. Each interview was conducted one-on-one, and began with questions about the educator’s background and progressed into their teaching methods, background and whole school approach to growth mindset. The interview concluded with next steps for educators who want to continue to implement growth mindset in their classroom. I provided each participant with the questions prior to the interview, and transcribed their responses. Please refer to Appendix B for the full list of interview questions.

3.3 Participants

Two educators were interviewed, both interviewees worked for Dufferin Peel Catholic District School Board located in the Region Peel in Ontario, Canada. The participants met the following criteria in order to take part in this research study:
1. They are currently working and employed in the education system and have been for a minimum of seven years. This ensures that these educators have seen how growth mindset principals and practices can inspire change in students in comparison to students without a growth mindset.

2. They have been implementing growth mindset for a minimum of two years. This ensures that participates have used growth mindset with various students. This is important as the educators can speak to and explain multiple experiences.

3. The educators must be working in a school that has developed a whole-school approach to growth mindset. This ensures that the participants have seen how a whole-school approach can affect student mind-sets.

3.3.1 Recruitment of participants

Candidates for this study were found by leveraging my existing network of peers and colleagues to select the qualified participants. The recruitment of participants was done through purposeful sampling. Each participant needed to adhere to the specific criteria listed in 3.3 and consent to be involved in this study. Consent was achieved by retrieving the proper documentation listed in appendix A. Each participant agreed to be interviewed in a 40-60 minute block at the end of the school year so they were able to reflect on their past year utilizing growth mindset. The interviews partook off school-grounds where the I read aloud each question, and give the participant the opportunity to respond, ask questions or elaborate on the topic.

3.3.2 Participant bios

Jennifer: Participant 1

Jennifer has been working for 17 years as an educator in Dufferin Peel Catholic District School Board at an elementary school located in Mississauga Ontario. Her current school has a
population of 300 students with mixed ethnicities and socio-economic status’. She currently teaches Grade 3 (2015/16 school year) but has also taught Grades 4, 5 and 6. The entire school utilizes growth mindset in their classroom as a main focus as well as three-part math. They participant in monthly learning teams where they discuss their whole-school approach to growth mindset and strategies to implement in their classroom.

*Katelyn: Participant 2*

Katelyn has been working for 27 years as an educator in Dufferin Peel Catholic District School Board located in the Region Peel in Ontario, Canada. She currently teachers Grade one (2015/16 year) although she has taught every Grade from JK-grade 6 in her career. Katelyn works at the same school in Mississauga with her co-worker Jen. She also participates in the whole-school approach to growth mindset and three-part math. Katelyn participates in monthly learning teams where she discusses how she is implementing growth mindset into her classroom as well as the whole-school approach.

3.4 Data Analysis

Data analysis is a strategy that helps the researcher come to a general conclusion from facts and findings (Merriam, 2002). Data analysis can be defined as the way in which data is arranged, understood, and hypnotized (Thorne, 2000). In this study, data analysis occurred during the data collection process, this helped my own understanding of the research questions. During data analysis researchers start with specific words, phrases or themes which is then compared to other data samples. The goal is to find common patterns throughout the information so the researcher is able to find cohesions and draw conclusions from the data (Merriam, 2002). This paper will conduct an analysis of the information obtained in the interviews as well as existing research. After completing the two interviews, the material was uploaded to a computer,
listened to, and transcribed. Answers were categorized under the appropriate question, making comparisons easier and more efficient. Each transcription was coded to find common themes, and compare and contrast participant responses. I coded the transcriptions to find common themes, practices, and opinions reflected in the participant’s answers. The raw data was collected and used to answer research questions, compare to current research and test previous hypotheses.

3.5 Ethical Review Procedures

This research study has been granted ethical permission from the University of Toronto, Ontario Institute for Studies in Education. This paper follows the ethical review approval procedures for the Masters of Teaching program. All participants were given a consent form which thoroughly explained the details of the MTRP and the interview procedure. Each participant was notified of the topic of the research study, and voluntarily took part in the interview process. Participants were encouraged to ask questions throughout the process, and were notified they could refuse to answer an interview question or withdraw their participation at any time. Participants were able to review the transcripts personally, to clarify or retract any statements they said during the interview, prior to data analysis.

Each participant and student mentioned in this study was kept confidential by assigning a pseudonym to keep their identity safe. Participants were asked to sign a consent letter located in Appendix A, giving permission to use their statements in the research study. All recorded data and information will be stored on a password protected computer for five years, after which it will be destroyed. During the preparation and writing process the only two people who will have access to this information will be myself and my research instructor Angela MacDonald-Vemic. There are no known risks with participation in this study.

3.6 Methodological Limitations and Strengths
There are of course, some limitations to methods used in this research study. The first is that the sample size is small and the paper was undertaken within a time constraint of two years. This limits the amount of data that could be collected, resulting in the possibility of inaccurately representing the result of a whole-school approach to growth mindset. Mitigation of limits consisted of careful participant selection and well-crafted questions and interview techniques. Secondly, this study was limited to the direct interview method to gather information from the participants. Potentially, some participants may have felt various degrees of discomfort or stress in divulging certain information to the interviewer, as it is an unnatural social situation (Jackson, Drummond & Camara, 2007), resulting in the possibility of inaccurate accounts. To mitigate such feelings, I employed interview techniques to enhance comfort and reduce stress. I also focused on listening and body language skills to employ adjusted techniques to increase truthfulness from the participants. Alternatively, for example, the written survey data collection method, can sometimes generate a heightened sense of anonymity: possibly resulting in more truthful answers. Qualitative analysis also has its own limitations, exploratory research and the interview method can sometimes result in interpretative claims or themes (Collins, Onwuegbuzie & Jiao, 2007). This method also relies on the lived experiences of its participants, which can also be difficult to capture and analyze, resulting in skewed interpretations (Collins, Onwuegbuzie & Jiao, 2007).

There are many strengths of the methods used in this study. The first is that interviews allowed the participants to give detailed responses to the carefully thought out questions. This benefited the study, as I was able to better understand growth mindset was being used since the participants were able to elaborate their responses based on my direct questions. Interviews also allowed me to be more selective with my participants. I was able to carefully craft specific
criteria that each individual had to adhere to. This ensured all participants were dedicated to using a whole-school approach in their school for a number of years, and were knowledgeable about the subject. Using the qualitative research method was also beneficial as it added a humanistic commitment, allowing me to study growth mindset from the teacher’s perspective (Bullough & Pinnegar, 2001).

3.7 Conclusion

In this chapter I explained the research methodology that was used in this paper. I began with a discussion of the research procedures including an explanation of qualitative research and its purpose in this research study. Following this, I described the data collection method of semi-structured interviews and its benefits in regards to this study. Then I introduced the participant criteria and background information of the participants who volunteered to partake in this study. After this I described data analysis and described how I analyzed the data that was collected throughout this research study. Proceeding this, I discussed the ethical issues present in this study such as consent forms and confidentiality. Finally, I explained the limitations and strengths of this research study. In the next chapter I will be outlining the results from the interviews I conducted with all three participants. I will be identifying commonalities and themes discovered in their answers and compare their responses to the existing literature on growth mindset.
Chapter 4: Research Findings

4.0 Introduction

This chapter presents and discusses findings from the interviews I conducted with two elementary school teachers committed to the integration of growth mindset in their classroom. Both participants were employed at the same elementary school located in Mississauga, Ontario. Their school is unique, as it utilizes a whole-school approach to growth mindset. The interviews were conducted at the end of the school year in June 2016, to benefit from their full year reflection on their experiences integrating growth mindset into their classroom and the transformations observed. I conducted these interviews to help answer my main research question regarding my study into growth mindset: how can the philosophy of growth mindset be applied to various grade levels of an elementary school and what are the benefits of a whole-school approach to growth mindset? I will draw comparisons between the two participants’ experiences implementing growth mindset, as well as the impact the program has had on student performance, mental health and student response to challenges. I will also compare the participants’ experiences with growth mindset to the existing research that has been reviewed in Chapter 2 of this study. Findings are organized into four main themes:

1. The introduction of growth mindset concepts is extremely important to build students’ foundational knowledge and to create a positive classroom atmosphere where growth mindset is accepted and sustained.

2. Teacher- and student-directed strategies proved to be beneficial in supporting the development of growth mindset in students, examples include praise and environment.

3. Previous experiences have prepared the participants to introduce growth mindset to their students and continue to sustain growth mindset philosophies in their classroom.
4. Participants observed that growth mindset has had beneficial effects on students academically and emotionally as shown through their work and day-to-day interactions with peers.

These themes are broken down further into sub-themes to demonstrate the effects that a whole school approach has on students’ overall achievement and motivation. Each theme begins with a brief description, followed by a report on the data uncovered in the interviews. A comparison of the participants’ experiences with growth mindset will be presented. The importance of each theme will be emphasized, including how it compares to the existing literature on the topic. Finally, the findings for each theme will be summarized and a discussion on its contribution to research will be presented.

4.1 The Introduction of Growth Mindset Concepts is Extremely Important to Build Students’ Foundational Knowledge and to Create a Positive Classroom Atmosphere Where Growth Mindset is Accepted and Sustained.

Before growth mindset can be introduced to a group of students, educators must gather a wide range of resources to support this type of student learning. Such resources allow students to effectively commence the development of the skills necessary to achieve a growth mindset. Teachers must help students build on their existing skills to develop a schema they can use later use in difficult situations. A foundational knowledge is necessary for students to successfully germinate the seeds for a growth mindset that will be further developed and cultivated throughout their educational career and beyond. The participants from this study created resources with their colleagues to help students develop a growth mindset, which they found to
be extremely useful. They also utilized teacher modeling, role-play and positive language to aid their students.

4.1.1 The participants’ use of the “power of yet”, and “pathways to success” resources was successful in helping students develop a growth mindset.

The teachers in this study introduced the “power of yet” and the “pathway to success” to their students. The power of yet is a resource that aids students in transforming their statements from negative or neutral assertions into positive ones. These statements are questions, success criteria, or statements that end with the phrase “yet”, to allow students to understand that, although they may not understand the content in that very moment, they will eventually, with hard work, practice, and determination. Katelyn believed the power of yet helped her class immensely. She stated,

As a class we came up with positive statements for how they could overcome difficult situations when they were filled with doubt. Positive statements encouraged the students to keep trying when things were difficult. They thought in terms of ‘I can do it’ or ‘I’ll try again’; which became our class criteria for overcoming challenge.

Jen concurred, stating, “these practices showed the students how they were going to change their way of thinking and self motivate.”

The pathway to success is a similar practice to the power of yet. The pathway to success was a resource that was developed by the entire staff; a copy is presented visually on a bulletin board or poster in every classroom in the school. Katelyn stated, “we developed a pathway to success poster with different steps from 1-10, the kids referred to this poster to stay on the path and strived to get to the top, which said “I got it”, instead of being at the bottom where it said “I
can’t do this”, which is a negative statement.” The pathway began at number 1 as the most negative statement, where students have not yet attempted the task because they believe they do not possess the skills or knowledge to complete it. As the student moves up through the pathway, the phrases began to become more positive until they gradually reach number 10, and complete the task. “This resource helped the students visualize themselves working through a problem and push past their self-doubt”, stated Jen. The educators in this school found this tool to be extremely helpful when a student was struggling because they could see where they were situated on the pathway. This visual helped the teacher gauge the students’ understanding and frustration and, more importantly, it guided the student to visualise how they can work through the difficulties in front of them. “This poster helped the students find encouragement and become more positive about their own efforts”, stated Katelyn.

These resources concur with the findings in current research that states students need to learn how to reform their thoughts to become positive, to help them persevere through challenges. The positive results seen by the teachers in this study support the research done by Mangels et al. (2006) that suggests the effectiveness of growth-oriented learning goals and positive statements as they help students rebound quicker from failure. Their research states that a focus on positivity in the classroom helps students push their limits and challenge themselves. The pathway to success and power of yet also coincide with the research that states teachers need to normalize difficulty in order to help students learn to solve problems (Mangels et al., 2006).

4.1.2 The participants use role-play to teach students how to rebound from failure and to approach challenging situations.

Both participants stated they use role-play and drama to introduce and discuss the principals of growth mindset. It gave students an opportunity to practice solutions and self-talk in
Whole-School Approach to Growth Mindset

a safe atmosphere, because they are of sound mind and are not blinded by frustration. Katelyn stated:

Role playing is great because a lot of challenges arise when the students don’t have the experience to understand. We can practice situations that might be challenging for them so they can practice strategies and see how we should handle that situation. This gives the students a chance to practice before these situations come along.

This provided the students with foundational knowledge to identify when they are frustrated, why they are having difficulties, and work toward finding a solution to push past their negativity and complete the task in front of them.

The research by Dweck (2008) argues that personality can be changed with the introduction of growth mindset, as one’s personality can be subject to adjustment overtime. These teachers are utilizing Dweck’s research by teaching their students that their intelligence is malleable, and providing them with resources and skills to change their student’s core beliefs - which shape goals, strivings, and reactions to their surrounding environment (Dweck, 2008). Activities such as role play change the way students approach problems and provide them with the skills to respond in a way that supports growth.

4.1.3 The participants use teacher modeling to demonstrate growth mindset principals to students, as well as supporting personal and professional development for teachers.

Both participants believed one of the best ways to introduce and promote growth mindset in the classroom was through teacher modeling. This allows the students to see growth mindset at work. Jen stated:

We should demonstrate growth mindset with our colleagues and students. It is important that adults have a growth mindset as well and learn from the challenges that arise in our
own lives, inside and outside of school. It is also important for students to see growth mindset at work, and see that it works for everyone.

Through teacher-modeling, students saw how self-talk can be beneficial, and learned that everyone, even the teacher, can become frustrated sometimes.

The participants believe that this approach was beneficial for educators, as well as students. Katelyn stated:

Growth mindset is important not only for kids but for adults as well. When I go to a workshop, learn a new curriculum piece or a new way of doing something, I think it’s important for myself as an adult to understand that; okay, somethings are a little bit scary in the beginning, but if you embrace it you can overcome it.

The educators believe growth mindset helps teachers see the benefits of growth mindset, keep themselves in good mental health, and take risks within the classroom when preparing new lessons.

The research states that, in order to implement growth mindset, teachers have a growth mindset themselves and must believe they can change their students’ mindsets. They must believe growth mindset works in order to implement it properly in their classroom (Ricci, 2013). Teachers who believe growth mindset will work, implement it in their own lives as well. This finding compliments teacher modeling. Teachers that exemplifies a growth mindset, find their students will more likely follow suit. The research states that teachers with fixed mindsets about their students, more likely results in students that do not change their academic average throughout the year and stay stagnant (Ricci, 2013). Teachers who display a growth mindset and give their students unlimited opportunities to succeed, break these trends, as students learn to
develop their skills in various subjects, have a renewed sense of confidence, and learn to stay motivated.

4.2 Teacher- and Student-Directed Strategies Proved to be Beneficial in Supporting the Development of Growth Mindset in Students, Examples Include Praise and Environment.

Growth or “malleable” mindset has a plethora of resources available to use in the classroom to guide teachers and students in its methodologies. Strategies such as self-talk and praise have had tremendous results on students as noted in the research. These strategies can be teacher-directed or student-directed. Examples of teacher-directed strategies include the creation of a positive classroom environment, the encouragement of parent education, and praise based on effort. Growth mindset does not leave all of the power in the hands of the teacher. These strategies can also be student-directed as students begin to encourage one another, and internalize growth mindset principals. Despite being fostered within a community, growth mindset is an independent journey, and the student must ultimately decide if they are going to have a fixed or malleable mindset.

4.2.1 The participants’ found self-talk and praise positively aided student’s development of a growth mindset.

Self-talk is an extremely effective approach for helping students develop a growth mindset and become resilient learners. Self-talk helps students talk themselves through a problem and persevere through frustration. Katelyn said,

I found self-talk to be really valuable for the students because in the beginning if they were challenged, I would point out the pathways to success, or their positive thinking statements so that then, they would be reminded to try again. Eventually I didn’t have to point it out anymore, they became so familiar with it that self-talk had internalized for
Teaching students to self-talk is heavily discussed in existing research. When students learn how to self-talk, they become more productive as it motivates them to work through challenges, control their behaviour, and ignore negative stimuli (Mraz & Hertz, 2015). Students become optimistic when faced with a problem when they replace their self-doubt with positive words that push them to complete the task. Positive self-talk helps students develop academic perseverance which sustains a high level of focus and effort in the pursuit of academic goals, despite obstacles, setbacks and distractions (Dweck, Walton & Cohen, 2014).

Praise also has a significant influence on student achievement, as it profoundly effects how students respond to challenges in front of them. The participants agreed that students must be praised based on their effort instead of their intelligence. After learning about growth mindset the teachers focused more on how they praise the students in their classroom, as well as how the students praise each other. Jen stated:

Instead of saying “you’re smart” we might rephrase it to say, “you did really well with that kind of math” or “you showed really good effort today.” The students even remind other students to have a growth mindset when they are struggling with something. The kids helped each other out with growth mindset and they became more positive with each other, recognizing that mistakes and challenges are okay. They were also more aware of going back and assessing their work as well as self-reflecting on their work after it was completed.

Katelyn also found praise to be extremely important, stating that she had to learn how to praise students for their effort rather than their performance. She said that it is important to give praise but also critical to give constructive feedback. She commented:
It is okay to ask the kids, “what do you think, what are your strengths and what do you need to work on?” This is important instead of immediately accepting what they hand in and responding with positive praise. Positive feedback, and constrictive criticism is okay. Growth mindset gives us the science to explain why it is okay to tell a child that this might not be your best work and you can do better.

Both participants saw a change in their students when they were praised based on effort instead performance. They saw positive and encouraging bonds begin to form between peers, and students began to take more pride in the effort they put forth to solve a problem, or complete a task, rather then in the marks they received.

Research has shown that children are extremely sensitive to praise. The way a child is praised can have a positive or negative effect on their overall motivation and how they approach a challenging situation in the future (Cimpian, Arce, Markman & Dweck, 2007). Praising a child based on their effort and process has been shown to yield better response from students in comparison to praise based on the result of the task (i.e., high marks or grade averages). Constructive criticism is also supported by research as a means to encourage growth.

4.2.2 The Participants’ observation of student’s ability to approach challenges.

Both participants agreed that one of the most effective strategies in helping students develop a growth mindset is teaching them to accept challenges. The educators stated that teaching students to embrace challenge, and accept feedback as well as constructive criticism is extremely beneficial for students. Jen found:

Growth mindset helps kids embrace challenge and see it as a good thing, the students start to realize setbacks can help you grow academically and personally. Growth mindset helps us teach to our kids that mistakes are not a bad thing, and that ‘smartness’ is
something that can grow and we can all develop a skill or strategy more if we show effort.

Katelyn concurred with her colleague, commenting that:

We teach students that challenges are a part of life and it is how we approach those challenges that is important. We can’t give up in the face of adversity, students learn from their mistakes and learn that they may not be good at everything, but they have to try their best.

The research supports the views held by these participants. Sheridan Blau (2003) found that productive learners are not necessarily the most intelligent students, but rather are those who persevere through problems and display a willingness to endure confusion when it presents itself. By encouraging students to take on challenges these teachers are teaching their students to become productive learners. The research also states that feedback is critical for students, but should be done with a positive twist for example, discussing a test with a student going over what they did well but also what they need to work on to do better in the future (Mraz & Hertz, 2015). Both educators are aiding their students in developing their ability to persevere though a challenge and accept feedback so they are able to better their work.

4.2.3 Participant’s use parent-teacher communication to increase the success of growth mindset inside and outside of the classroom environment.

Parents play a significant role in the development of their child’s mindset; therefore, participants found it to be very helpful to educate parents on the science behind the concept and encourage them to help their child grow their mind at home. The participants agreed it was extremely important to develop parent-teacher communication to enable parents to follow the same models of praise, constructive criticism and positive reaction when mistakes are made at
home. When there is consistency between home and school the students are more likely to develop and sustain a growth mindset. Jen found: “it is important to educate our students families on growth mindset because they really don’t know the difference between fixed and growth mindset. A lot of families are just looking at marks and not recognizing that the child should be challenging themselves, making mistakes and growing from them.” Katelyn concurred with this statement, she said:

Providing parents with knowledge about growth mindset helps them become more engaged and understand their own child’s learning. When parents hear something like growth mindset but are not provided with any information about it they become skeptical and don’t think it can help their kid. Parent workshops or informational nights makes sure we are all on the same page. This helps us help the kids in the long run because the students have a sense of consistency at home and at school.

The participants’ school had an entire night dedicated to growth mindset and teaching parents about this topic and the activities they were doing at school to promote resilience. The participants both stated parents were appreciative of the information that was provided for them and wanted to become more involved in the project. This helped the students grow their intelligence and become exposed to challenges both inside and outside the classroom. The school also provided notes inside the monthly news letters around the topic of growth mindset. It included videos, information, and activities parents can do at home to help their child in the development of a growth mindset. The participants both stated parents of all grade levels were excited about the whole-school approach, and felt that it was incredibly important for the students at the school to develop a sense of resiliency and independence.

The research supports the partnership between parents, educators and teachers. Many
children develop the same mindset as their parents or are influenced by their domestic environment (Dweck, Walton & Cohen, 2014). Eighty-five percent of parents praise their child based on their abilities and intelligence, which encourages their child to develop a fixed mindset as they focus more on their child’s failures and performance, rather than how they approach a challenge (Dweck, Walton & Cohen, 2014). By educating parents on the effects of praise, and the importance of constructive feedback and positive reactions to mistakes and challenges they are more likely to raise children who have a growth mindset.

4.2.4 The participants observed environment as a key factor in the promotion and sustainment of growth mindset in students.

Both educators believe that environment is an extremely important aspect to fostering a community of learners. If students do not feel safe, they will less likely take risks, try their hardest, or make mistakes without feeling upset or shamed. Katelyn said, growth mindset helps children feel more confident and secure in the learning environment because they feel like they are being respected for their efforts and not just for their final product. They know it benefits them when they work through challenges and can use strategies like the power of yet or the pathway to success that have been introduced to them.

Jen also concurred that environment is a key tenet to the development of growth mindset in students. She conveyed, “growth mindset has given the students more confidence, they recognize that all people make mistakes so no one in my class is really afraid to discuss their opinions or give answers because they realize mistakes are apart of learning.”

The safe atmosphere growth mindset provides gives students an opportunity to participate and become involved in their classroom. It helps students overcome the fear and anxiety that
goes along with answering a question wrong. Both teachers saw increased participation during their lessons after the introduction of growth mindset as students became increasingly confident in their skills. Once the students understood the concept “everyone makes mistakes”, they broke down barriers and focused on learning instead of always getting the right answer. Jen remarked:

> there is more of a sense of belonging because the students realize people all have strengths and weaknesses. They also encourage each other more, especially when they see someone struggling through something they have struggled through. The student will go up to them and try to help by saying saying ‘you need to remember to have a growth mindset’, or by pointing them to the pathway of success.

Growth mindset creates a greater sense of classroom comradery and community. It breaks down barriers between the perceived “smart” and the “less-smart” students because they become unaware of these labels and begin to understand everyone’s skills lie in different areas.

The research shows that environment can have a tremendous impact on student learning. Teachers who create an environment that cultivates perseverance and risk taking see an increase in student achievement (Dweck, Walton & Cohen, 2014). “The best environment for learning is one that forces students to work through a succession of wrong answers and predispositions until they get to real learning” (Miller, 2013). This shows that growth mindset teachings can only occur in a classroom where the teacher welcomes risk taking, mistakes and resiliency. By setting up a safe classroom space that encouraged risks and welcomed mistakes, the participants saw an increase in participation as well as confidence.
4.3 Previous experiences and Existing Support Networks Have Prepared the Participants to Introduce Growth Mindset to Their Students and Continue to Sustain Growth Mindset Philosophies in their Classroom.

Before growth mindset can be successfully introduced to a group of students, the teacher must have their own understanding of growth mindset principals. This can be achieved through individual research, professional development, ministry workshops and more. Each year Dr. Dweck and other researchers release new findings, classroom instruction techniques and effective practices surrounding growth mindset. It is important for educators to stay current on the existing research and integrate new theories and philosophies into their classroom. This way they can integrate new and improved theories, and teaching strategies into their classroom.

4.3.1 Participants felt supported in implementing a whole-school approach to growth mindset by fellow teachers and administration.

The teachers in this study were initially unfamiliar with growth mindset and participated in much professional development in order to properly implement growth mindset principals into their classroom. The participants were in a unique position, as their entire school committed to growth mindset as an integral part of their educational community. Since then, the participants have remained interested in the topic and have increased their knowledge and understanding by sharing with their colleagues.

Both participants felt supported in their work on growth mindset as the administration made it a central tenant of the school community. The entire staff was provided with training on how to successfully integrate growth mindset ideologies into their classroom teachings. One of the ways this was done was through school learning teams, which have been focusing on growth mindset for the past three years. Jen believed the whole school approach was extremely
beneficial when she remarked, “as educators we were able to get ideas on how to implement some of the growth mindset strategies in our classroom by talking together and sharing our ideas.” Katelyn shared this view, as she felt prepared by having learning teams that met regularly to discuss various strategies and ideas for developing a growth mindset ourselves and learning how we could do it with our students. Being a part of learning teams helps me with how I am going to approach it in the classroom because we get to network with each other and share our experiences and ideas. It also helps me with my personal growth and understanding.

Every teacher in the school was supplied with a book of growth mindset activities by the principal. This helped the whole-school approach, as it provided continuity throughout the school regarding terminology, strategies to battle frustration, self-talk, and more. The book was used as an introduction for all staff that could be referenced during learning team meetings.

Both teachers agreed that an entire school should utilize the same resources to promote a sense of continuity and familiarity as the students move through the grade levels. The participants believe that a whole-school approach helps students transition through grade levels because the growth mindset methods are constant and familiar towards the development of positive attitude, resiliency, and challenge acceptance. Jen stated,

I don’t have to teach my students the way to self-talk and use the right language anymore, the posters are consistent within the classrooms so they know how to use it and refer back to it more independently. I’m sure as we go along its going to be easier and easier for us because they have already started to develop that growth mindset within the previous classroom.
Katelyn concurred with her colleague as she felt the whole-school approach positively affected her practice as the teachers in the school were consistent with their practices and were willing to share new ideas and findings. Katelyn stated:

I feel very supported in implementing growth mindset strategies and philosophies because it's been a focus of our learning teams and lunch and learns for so long. We all know the language being used, and the science behind it. I feel supported just because it's all around me and it's becoming the norm. Everyone is including it in their classroom, children in this school who hear the words growth mindset know exactly what you are referring to.

The research shows that students who are introduced to a growth mindset have an enhanced attention span, are more susceptible to corrective feedback, more willing to take on challenging tasks and correct significantly more previously made errors in comparison to those with a fixed mindset (Moser, Schroder, Heeter, Moran, Lee, 2011). The research has done studies on growth mindset’s effects on students. Credible methods included randomized studies, conducted utilizing large groups of similarly aged students broken into controlled and non-controlled groups. However, there is a gap in the research as no study has explored or studied the effects growth mindset has on students when the entire staff is dedicated to its implementation, and the students are introduced to these concepts from Kindergarten until Grade 8. The research is also missing the benefits of a whole-school approach for educators and the effect it can have on staff morale.
4.3.2 Participants believed experience was an asset to successful growth mindset integration in the classroom.

These educators felt that experience prepared them for their use of growth mindset. Jen has been working 17 years as an educator and Katelyn has been working 27 years as a classroom teacher. In their interviews, both teachers were able to reference previous experiences with students that have helped them see the benefits and challenges growth mindset presents. They also stated that growth mindset was not an entirely new concept for them when it was introduced to their school community, even if the term itself was unfamiliar. Katelyn stated, “growth mindset is like the age old concept of learning from your mistakes, now we have the science to support what we have been encouraging, and we are able to explain our teaching methods to parents so they can understand.” These teachers have embedded growth mindset teachings into their classroom for years, but now they are provided with the science to support their teachings and take it a step further in the classroom. The popularity and success of Dweck’s theories (2012) also provides these teachers with a wide range of resources that they can use to further expand their practices. Katelyn stated “we have always done it [growth mindset], It is the nature of our job to encourage and inspire our students, growth mindset gives you the reasons to why you are doing what your doing and strategies to improve. It brings growth mindset into the forefront and puts a bigger focus on it. Growth mindset is something that should be embedded into all classrooms all of the time.”

The research supports the participants’ opinions that experience aids their positive practice and growth mindset integration. Wiswall (2013) found that experienced teachers improve their teaching methods over the course of their careers. The data collected showed that as teachers gained more experience they became better at classroom management and were
superior at motivating their students in comparison to new teachers (Wiswall, 2013). The study suggests classroom experience as a main tenet to improvement as well as on and off the job training. This supports the participants in their opinion that experience had aided them in their successful implementation of growth mindset in their classroom as both educators have been teaching for over 10 years.

4.4 Participants Observed Growth Mindset Has Had Beneficial Effects on Students Academically and Emotionally as Shown Through Their Work and Day-to-Day Interactions with Peers.

The research shows incredible results from students who have a growth mindset. The participants have seen the beneficial effects on students as they have increased their academic abilities, became more resilient, put more effort into their studies and became more positive thinkers. They found the more a student is introduced to growth mindset concepts, the more positive change is seen academically and emotionally.

4.4.1 Participants observed that growth mindset increased students’ willingness to take risks.

The participants stated that students who have a growth mindset are more willing to challenge themselves and take risks when aware that mistakes and difficulty help the brain grow. The educators in this study have seen an increase in risk taking, effort and participation in their classrooms since they started to incorporate growth mindset principals. Katelyn stated “students are willing to take risks, try a little harder and not give up. They often end up finding out that they can do things that they didn’t think they could do before, learning has definitely increased that way.” Students in her classroom are more willing to push their limits and are often surprised by what they can do. She continued to say,
the students acknowledge when something is hard, before they would say ‘this is too hard’ and therefore they were not going to do it or thought that they couldn’t do it but now they know yes, it is hard so they are going to have to work hard at it, and they know it might take them a bit longer but they are going to try.

Jen saw similar result in her classroom since the introduction of growth mindset. She stated “growth mindset is an effective tool for student performance because they learn from their mistakes and display increased efforts and persevere with some challenges.”

Growth mindset is directly correlated with increased performance in the existing research. Students with growth mindset are more motivated to learn as they became accountable for their success and therefore, began to exert more effort when confronted with a difficult task (Blackwell, Trzesniewski, & Dweck, 2007). These results demonstrate how growth mindset gives students the power to become inquisitive, take risks and view mistakes as a learning opportunity instead of failure. By encouraging students to take risks these educators have helped their students discover their untapped potential as instead of giving up when faced with adversity, they push themselves to make new discoveries.

4.4.2 Participants observed value in students’ ability to approach challenge and failure

Resilience is a trait that is missing in many struggling students. They do not want to challenge themselves because they quit when a task becomes too difficult. Growth mindset seeks to built up student’s resilience so they can discover new capabilities and push themselves to reach their full potential. Katelyn said:

Many students give up in the face of adversity, this is because it wasn’t always a skill we instilled in students. Growth mindset helps us change that. My students are now learning how to be resilient, they now have the ability to overcome obstacles and challenges and
the ability to know when to seek assistance or when to try to figure something out for themselves. Growth mindset helps students understand that every time you attempt something that is difficult it actually helps improve your own brain function so learning something new or trying something new seems to be exciting instead of scary.

She observed students are willing to persevere through challenges because they want to grow their brain and make new connections. This is something that students did not do prior to the introduction of growth mindset. Jen had similar views, stating, “the students show increased effort. Growth mindset helps them persevere when setbacks occur and it makes them challenge themselves more, particularly when they encounter a difficult problem. They embrace it more and try to solve the problem.” The students in her class exhibit less stress as they are no longer nervous about mistakes. Instead, they view it as an opportunity to grow, which replaced their feelings of failure.

Resiliency is not only important for academic life, but also for developing well-rounded students who learn to solve problems, become independent, and test their limits. Katelyn said: teaching kids resilience and perseverance is a huge benefit because sometimes they give up too easily and we don’t want to encourage them to rely on others to help them all the time. Sometimes things are going to be tough and you have to use their brain power to figure out the answer. This is not just for their academic life but it also helps their day-to-day life. We are seeing that students are able to embrace and approach challenges, they are able to stick with things that frustrate them for longer and this can only increase over the years.

If a student develops a growth mindset, they develop a newfound way to approach difficulties and mistakes. They can use their resiliency and ability to overcome a challenge and
Whole-School Approach to Growth Mindset

apply it to the many obstacles life can bring. Not only are these educators shaping young minds, but they are also providing them with the necessary skills to reach their goals and make their dreams a reality in the future. The research supports these educators as many studies have shown that the introduction of growth mindset can improve students psychological well-being and their academic achievement in the classroom (Rattan, Good & Dweck, 2012). Students who adopt a growth mindset showed improvement in their motivation, learning, problem solving skills, and achievement outcomes over long periods of time (Rattan, Good & Dweck, 2012). Students with a growth mindset can be contrasted with students who hold a fixed mindset. The research shows students who hold fixed mindsets are more likely to give up when they are faced with a challenge. These students draw conclusions about their ability to complete a task and do not display a sense of resiliency or determination when faced with difficulty (Rattan, Good & Dweck, 2012).

4.4.3 Participants found an increase in student positivity and confidence following the introduction of growth mindset.

Both educators saw an increase in student’s confidence as they began to develop a growth mindset over the course of the year. Students became more positive when faced with a difficult task as they believed they could find a way to accomplish the task in front of them. Katelyn stated:

students are more positive, they use positive self-talk without encouragement from the teacher, I hear them on their own when they are stuck on something. They say things like ‘its okay I can try again,’ ‘I have to try harder,’ or ‘I can use a different strategy.’ This lessens their frustration and increases their confidence in their own abilities. Students also encourage each other, I find them helping each other work through problems or come up
with positive self-talk strategies.

Katelyn saw an improvement in classroom relationships as the students were willing to help each other and wanted to see their peers succeed. These students have completely changed their behavior, Katelyn stated “prior to the introduction of growth mindset, students would read the question and refuse to try the task if they believed it was too difficult.” Jen saw similar results in her students, as she stated:

growth mindset gave the students more confidence and showed that everybody has different strengths and abilities we can build upon. Growth mindset gives students the confidence to try. The changes that you start seeing are small, but eventually it effects the academics because they are willing to challenge themselves with bigger, more difficult tasks.

The increased confidence seen among students gives them the ability to approach new situations, build on existing skills and learn new ones. Their confidence and newfound positivity powers their increased effort and motivates students to try hard and do well. Students now understand that mistakes are a positive experience and therefore they can push the limits of their knowledge and better themselves academically, developmentally, and emotionally.

There has been a lot of research into how confidence can shape a student’s learning experience. The research shows students who do well in certain subjects do not want to take on new challenges because they are afraid of failing or doing poorly. These students want to keep their status as the “smart” student in the class and therefore they do not want to participate in tasks that jeopardize their label. Their confidence may seem high, when performing a routine task but it quickly disappears when a tough task arises. Research has found that brain waveforms display higher levels of brain activity and confidence in individuals who possess a growth
mindset when they make a mistake (Mangels, Butterfield, Lamb, Good & Dweck, 2006). This suggests that these educators have encouraged their students to work harder and increase their brain activity by providing them with challenging tasks and encouraging them to complete them instead of giving up. By creating a classroom environment where mistakes are seen as positive, educators can diminish this issue and instead build student confidence so they are able to take more risks and try new things.

4.5 Conclusion

Through my analysis, four main themes have emerged from the research and interviews. My first finding was the importance of providing students with a strong foundational knowledge when they are first introduced to growth mindset. They need to be provided with a range of resources to reference when they are struggling with a problem. These resources help shape students’ perception of themselves as well as their sensitivity to mistakes and challenges. Frequently used resources aid students in internalizing growth mindset principals to lessen reliance on visual aids and/or verbal prompts.

Secondly, I found the participants’ main growth mindset strategies were a mixture of student- and teacher-directed approaches. Both were effective in supporting the development of growth mindset in students. The participants introduced their students to strategies and approaches throughout the year; however, ultimately the students adopted a growth mindset on their own to apply to their studies when challenged or frustrated. The participants explained that, as educators, they needed to create an environment that encouraged growth mindset to assist students in applying their pre-taught strategies on their own, as they could not force students to have a growth mindset.
Thirdly I found the significance of teacher collaboration and the effectiveness of a close-knit group of educators to share and explore growth mindset principles and practices as a community. Participants found a whole-school approach benefitted students with consistent application of growth mindset and also benefitted the educators in the school to feel supported by their colleagues and administration. The whole-school approach can increase staff morale and keep teachers up-to-date with the latest research surrounding growth mindset as they can share strategies, approaches and activities with their peers. These findings helped to indicate a gap in existing research that examines the benefits of a whole-school approach for staff as well as students.

Finally, I found that growth mindset had many positive effects on participants’ students, both academically and emotionally. The participants were able to explain how their students’ academics and peer relationships changed positively throughout the year as students increased familiar and application of growth mindset. Their students became increasingly more resilient as their confidence rose throughout the year. Students were more willing to take risks and help their peers, and developed a positive attitude toward school.

When I began this research paper, I thought that many schools made growth mindset a central tenet to their educational community. What I have discovered is that the school referenced in this study is unique, as every teacher in the school is focused on growth mindset as a common goal. The data from my interviews surprised me as I found that not only were students benefiting from the whole-school approach but the educators were also receiving many benefits. Teachers in the school have developed growth mindsets alongside their students which has changed the way they view education, as well as their daily life both inside and outside the
classroom. The whole-school approach has also fostered a positive community of educators who can collaborate and teach each other how to integrate growth mindset in their classrooms.

Next in Chapter 5, I will further discuss recommendations of a whole-school approach for teachers and formulate this into next steps for further research.
Chapter 5: Implications

5.0 Introduction to the Chapter

Chapter 5 expands upon my research findings in response to the question, “how can the philosophy of growth mindset be applied to various grade levels of an elementary school and what are the benefits of a whole-school approach to growth mindset?” I discuss the overall implication of this research study and the significance of my findings. I begin by reviewing my key findings on the integration of growth mindset in the classroom. Then, I discuss the implications of said findings on the educational community and my own practice as an educator. Finally, I will make recommendations to be used by other educational professionals, such as teachers, schools, and school boards. These recommendations will help educators integrate growth mindset principals into their classroom, as well as develop a whole-school approach. Finally, I will suggest areas that would benefit from further research.

5.1 Overview of Key Findings and their Significance

The findings of this research study support the ideas residing in existing literature. Four main themes emerged from the research.

1. The introduction of growth mindset concepts is extremely important to build students’ foundational knowledge and to create a positive classroom atmosphere where growth mindset is accepted and sustained.

2. Examples of teacher- and student-directed strategies that proved to be beneficial in supporting the development of growth mindset in students, examples include praise and environment.

3. Previous experiences have prepared the participants to introduce growth mindset to their students and continue to sustain growth mindset philosophies in their classroom.
4. Participants observed that growth mindset has had beneficial effects on students academically and emotionally as shown through their work and day-to-day interactions with peers.

Growth mindset cannot be introduced to group of students without strong foundational background knowledge. Students need to be provided with a range of strategies and resources they can draw upon when they are struggling with a difficult problem. Without this background knowledge student will struggle through difficulties and become frustrated, defeating the purpose of the philosophy which is to help students persevere through challenges. The two participants in this study created and utilized visual aids and verbal prompts and activities for their students to use when they introduced growth mindset. Visual posters such as the pathway to success helped students envision themselves working through a problem and push past their self-doubt. Teacher-modeling, role-play and the use of other resources such as videos also helped students develop a strong foundational knowledge of growth mindset and a repertoire of skills and resources used to approach problems. Growth-oriented learning goals and positive statements help students rebound quicker from failure. By providing students with this foundational knowledge and range of strategies they teach their students that their intelligence is malleable. Growth mindset resources and a strong background knowledge provide students with the understanding and skills to change their core beliefs—which shape goals, strivings, and reactions to their surrounding environment (Dweck, 2008).

In order for students to understand the purpose behind their struggle and be motivated to push past their frustration, participants explained to their students how their brain works, and that mistakes cause their brain to grow and expand. This helped students see mistakes and frustration positively which increases their participation and risk-taking. Their newfound knowledge of
growth mindset concepts and strategies help students change their disposition toward mistakes which in turn helps them react positively to mistake and difficulties. The participants in this study utilized a mixture of student and teacher directed approaches to introduce and sustain growth mindset practices in their classroom. Both were equally effective in supporting the development of a growth mindset in students. The participants agreed it was extremely important to develop parent-teacher communication to enable parents to follow the same models of praise, constructive criticism and positive reaction when mistakes are made at home. Environment was also a key tenent in the development of growth mindset as these educators needed to create a space that supported mistakes, praised effort and reinforced risk-taking. If students did not feel safe in their environment they would not participate in class and in turn would not develop a growth mindset.

According to participants, their students learned how to self-talk, utilize resources around the classroom on their own and began to encourage each other to have a growth mindset when they saw their peers becoming frustrated. The participants felt student-centered approaches such as self-talk was extremely helpful in developing a growth mindset. Once the students were able to self-talk they began to persevere through frustration on their own as it helped them ignore negative stimuli and complete the task in front of them (Mraz & Hertz, 2015). They saw positive and encouraging bonds begin to form between peers, and students began to take more pride in the effort they put forth to solve a problem, they also supported one another. As the students became more comfortable with the concepts and practices of growth mindset, the participants could take a back seat as they no longer had to remind their students to use positive language or take risks. The participants built a solid foundation with their students that was internalized and no longer needed to be referenced everyday. The participants explained that, as educators, they
needed to create an environment that encouraged growth mindset to assist students in applying their pre-taught strategies on their own, as they could not force students to have a growth mindset. Once these strategies were internalized, students utilized their growth mindset without realizing it as their self-talk, encouraging language, and positive response to mistakes became habitual.

The participants in this study frequently discussed the importance and effectiveness of teacher collaboration at their school. They found a whole-school approach benefitted students with consistent application of growth mindset and also benefitted the educators in the school to feel supported by their colleagues and administration. The whole-school approach helped these teachers share strategies, approaches, and activities with their peers. They stated it increased staff morale, created a sense of comradery and teamwork in the workplace and provided consistent strategies to be used school-wide. These educators also discussed how the whole-school approach had many positive effects on their students but also on how they as teachers approach problems. These educators stated that utilizing a growth mindset in the classroom also inspired them to gain a growth mindset as well.

Finally, growth mindset had many positive effects on students both academically and emotionally. Students who possess a growth mindset are more willing to take risks and challenge themselves as they are aware difficulty helps their brain grow. The participants saw an increase in student participation when they introduced growth mindset because students were no longer afraid of being wrong in front of the class. Students also become more resilient when faced with a challenge or failure. Students exhibited less stress and anxiety as they were no longer nervous about making mistakes as they saw it as an opportunity to grow, which replaced their feelings of failure. Students with growth mindset are more motivated to learn as they
became accountable for their success and therefore, began to exert more effort when confronted with a difficult task (Blackwell, Trzesniewski, & Dweck, 2007). Students who have a growth mindset showed improvement in their motivation, learning, problem solving skills, and achievement outcomes over long periods of time (Rattan, Good & Dweck, 2012). The participants in this study also saw an increase in student confidence and positivity. Students leaned how to deal with their feelings of frustrations and learned how to push past it and succeed. The participants stated that growth mindset gave their students the confidence to try, and approach new situations. This newfound confidence also aided students in developing a stronger sense of motivation toward school work.

5.2 Implications

The findings from the experiences of two educators in the Dufferin Peel Catholic District School Board have implications on the wider educational community regarding the integration of growth mindset in individual classrooms, and the development of whole-school approaches to growth mindset.

5.2.1 The educational community

Firstly, schoolboards play in extremely important role in the development of growth mindset and growth mindset practices in educators. The research states in order to successfully implement growth mindset in the classroom, teachers must possess a growth mindset themselves. Educators should have a growth mindset when approaching challenges in the classroom as well. Teachers need to take risks with their lessons to provide new learning for their students, and continue to develop their professional development as educators. Many educators struggle in specific subject areas such as mathematics, they need to utilize their growth mindset so they are able to re-teach themselves math concepts and grow their understanding of curriculum. The
participants from this study believe that in order to be role models for their students they need to be educated on how to face adversity and persevere though challenges. This will help the mental health of educators but also aid them in being successful teachers who can provide the best education possible for their students.

Secondly, participants indicated how valuable it would be to have resources in the classroom. They felt resources were important because it helped them properly implement growth mindset strategies in their classroom. The participants in this study were provided with a book of resources and strategies to implement in their classroom, every teacher in the school was provided with the same resource. The teachers stated this helped them become familiar with growth mindset practices and begin to bring it into the classroom and introduce it to their students. If educators are not provided with resources such as these they will feel like they are underprepared and unknowledgeable about the subject. If they are provided with resources on growth mindset principals and ideologies they are more likely to introduce the philosophy to their students.

Finally, the school from this study is very unique in its approach to implementing growth mindset from Kindergarten to Grade 8. The educators from this study stated the whole-school approach benefited students as it provided them with a sense of consistency in teaching practices throughout their educational career which helped them to internalize growth mindset principals without having to be re-taught each year. The educators in this study discussed how having a whole school approach to growth mindset has helped them personally take on a growth mindset perspective in their professional practices, and increase collaboration amongst colleagues and administration. More schools should consider to take on the whole-school approach to growth mindset for its positive effects on student learning and staff morale.
5.2.2 Personal Professional Practice

I have always wanted to create a classroom environment where all students feel they can succeed and grow their intelligence. I want to eliminate the phrase “I can’t do it” and “it is too hard” and replace it with more positive language and a more positive attitude. I want students to feel like they can approach any challenge they are confronted with, and learn how to push past their self-doubt in order to reach their full potential. I am confident that I have furthered my own understanding of growth mindset in the classroom, how to implement it successfully and about the positive effects it has on student development and academic growth. After hearing the perspectives from my participants it is clear that growth mindset not only facilitates student academic growth, but also students’ emotional well-being as well as they become more comfortable in the classroom, are able to take risks, increase their confidence, encourage their peers, and have a sense of resiliency when approaching problems. All skills that can be applied not only in academics but also life outside of the classroom as well.

I am committed to utilizing growth mindset practices in my classroom and encouraging my colleagues to do the same. I will make a commitment to work with my future administration to create a whole-school approach to growth mindset so both students as well as colleagues can benefit from its practices. I will always strive to challenge myself to continue to integrate new strategies into my classroom that will promote students sense of resiliency, and continue to challenge my students in new positive and innovative ways.

5.3 Recommendations

The recommendations that arose out of this study focus on how teachers can integrate growth mindset practices into their classroom, and why they should have a whole-school approach to growth mindset in their schools.
The recommendations are:

1. *The benefits of growth mindset should be emphasized in pre-service teacher education programs.* In order for teachers to understand and begin their teaching careers with the integration of growth mindset they should be taught about its benefits in their pre-service education. This will inspire educators to incorporate the growth mindset precepts into their future classrooms.

2. *School boards should provide educators and administration with resources and workshops that can help teachers integrate growth mindset practices in their classroom.* Many teachers feel underprepared in specific subject areas because they feel they do not have the resources necessary to bring it into the classroom. If teachers are provided with resources and activities, it is more likely they will integrate it into their practice successfully. In this study the teachers felt having a book of activities was a great tool as they felt prepared to integrate growth mindset into their classroom. It gave these educators the basic understanding they needed, and inspired them to further integrate growth mindset principals into their classroom.

3. *School boards should encourage administration to have a whole school approach to growth mindset.* The educators in this study felt supported by their administration and by their fellow colleagues as everyone in the school was integrating growth mindset into their classroom. These educators felt it was beneficial for the students as it allowed them to internalize growth mindset principals over the course of their elementary school career but it also aided staff as well. The staff felt the whole-school approach helped them discover best practices in regards to growth mindset, as they shared ideas, new research, and activities that worked in their classroom. By encouraging whole school approaches to
growth mindset, teachers learn and develop their classroom practices and students benefit from consistency as they move through the grade levels.

5.4 Areas for Further Research

Although there is a wide range of research on the topic of growth mindset there are still some areas that are in need of further research. The school from this study is very unique as growth mindset was a central tenant to their educational community. Each teacher in the school made a promise to integrate growth mindset practices into their classroom, providing a whole-school approach from Kindergarten to Grade 8. Further research should be done on the effects a whole-school approach to growth mindset can have on students when they are exposed to its practice from the beginning of their educational career to the end, in comparison to students who were not. This would demonstrate how being exposed to many years of growth mindset practices effect a student’s personality, motivation, and academic success.

The educators in this study also discussed the benefits of a whole-school approach to growth mindset for staff as well as students. The teachers claimed the whole-school approach increased collaboration, boosted staff morale, created a positive school-wide atmosphere and increased the number of educators at the school who had a growth mindset. They also stated that growth mindset practices changed the way they taught, as the students became more independent, more willing to take on challenges and wanted to participate more during lessons. Further research should be conducted on the positive effects growth mindset can have on the educators who are implementing its practices in their schools.

5.5 Concluding Comments

Resiliency, confidence, and risk-taking are all imperative skills that are necessary for human development and growth. These traits aid students in their academic growth, but also in
their emotional wellbeing as they confront new challenges throughout their life. Growth mindset provides students with the skills and outlook that allow them to be successful and persevere when faced with adversity. Growth mindset is not strictly for children, but can be used for professional development as well. Educators can take on a growth mindset when developing their professional practice as they too should take risks, find new ways to solve challenging situations and continue to grow their mind. The whole-school approach to growth mindset not only aids students in their growth, but it also helps all members of the educational community to succeed and reach their full potential.
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Appendix A: Consent Letter

Date:

Dear _______________________________,

My Name is Vanessa Wolf and I am a student in the Master of Teaching program at the Ontario Institute for Studies in Education at the University of Toronto (OISE/UT). A component of this degree program involves conducting a small-scale qualitative research study. My research will focus on the effects of growth mindset on students, and the benefits/limitations of a whole-school approach to growth mindset. I am interested in interviewing educators who have worked in the education system for a minimum of 5 years, and who have a commitment to employing growth mindset in their classroom. I think that your knowledge and experience will provide insights into this topic.

Your participation in this research will involve one 45-60 minute interview, which will be transcribed and audio-recorded. I would be grateful if you would allow me to interview you at a place and time convenient for you, outside of school time. The contents of this interview will be used for my research project, which will include a final paper, as well as informal presentations to my classmates. I may also present my research findings via conference presentations and/or through publication. You will be assigned a pseudonym to maintain your anonymity and I will not use your name or any other content that might identify you in my written work, oral presentations, or publications. This information will remain confidential. Any information that identifies your school or students will also be excluded. The interview data will be stored on my password-protected computer and the only person who will have access to the research data will be my course instructor Dr. Angela MacDonald. You are free to change your mind about your participation at any time, and to withdraw even after you have consented to participate. You may also choose to decline to answer any specific question during the interview. I will destroy the audio recording after the paper has been presented and/or published, which may take up to a maximum of five years after the data has been collected. There are no known risks to participation, and I will share a copy of the transcript with you shortly after the interview to ensure accuracy.

Please sign this consent form, if you agree to be interviewed. The second copy is for your records. I am very grateful for your participation.

Sincerely,

Vanessa Wolf
Vanessa.wolf@mail.utoronto.ca
Course Instructor’s Name: Dr. Angela MacDonald
Contact Info: Angela.macdonald@utoronto.ca

Consent Form
I acknowledge that the topic of this interview has been explained to me and that any questions that I have asked have been answered to my satisfaction. I understand that I can withdraw from this research study at any time without penalty.

I have read the letter provided to me by Vanessa Wolf and agree to participate in an interview for the purposes described. I agree to have the interview audio-recorded.

Signature: ________________________________________

Name: (printed) _______________________________________

Date: ____________________________________________
Appendix B: Interview Questions

Thank you for agreeing to participate in this research study, and for making time to be interviewed today. This research study aims to learn elementary educators’ perspectives on growth mindset and how they employ its principals in their classroom. This study will also research the benefits and limitations of a whole-school approach to growth mindset. This interview will last approximately 45-60 minutes, and I will ask you a series of questions focused on growth mindset. I want to remind you that you may refrain from answering any question, and you have the right to withdraw your participation from the study at any time. As I explained in the consent letter, this interview will be audio-recorded. Do you have any questions before we begin?

Background Information

1. How many years have you been working as an educator?
2. What grades do you currently teach? What grades have you previously taught?
3. Can you tell me more about the school you work in? (e.g. size, demographics, program priorities)
4. You have indicated that you implement the principals of growth mindset in your classroom. Can you tell me where and how you learned about this approach, and what experiences helped develop your interest in growth mindset and prepare you for this work?
5. Have you been supplied with any extra training on growth mindset? (e.g. professional development days, professional learning teams, courses etc.) If yes, how have these experiences been beneficial to you?

Teacher Perspectives/Beliefs

6. What does growth mindset mean to you?
7. What are some of the key premises of growth mindset in your opinion?
8. How would you describe your approach to growth mindset in your classroom? Has your approach changed over time? If yes, what contributed to the change?
9. What kinds of activities do you use to introduce the principals of growth mindset to your students? (ex. lecture, group work, role play etc.)
10. How do you employ growth mindset in your own classroom on a day to day basis?
11. How do you think “self-talk” and praise influence student motivation and performance?
12. Do you believe it is important to educate your student’s families on growth mindset? If yes, how do you do so?
13. In your view, what are benefits and limitations of growth mindset as a classroom tool or as a response to change student motivation?
14. In your view, why is growth mindset an effective tool to improve student performance?
15. What kinds of changes have you seen in your students since implementing growth mindset into your classroom?

**Teacher Practices**

16. How has the whole-school approach to growth mindset affect your practice?
17. Do you feel you are supported and encouraged to implement growth mindset by your administration and fellow teachers?
18. Why did you feel it was necessary to implement growth mindset?
19. How did/do your students respond to this approach? What were the outcomes of these experiences?
20. In your experience, have you had the opportunity to observe long-term outcomes? If yes, please elaborate.

**Supports and Challenges**

21. What challenges do you encounter when implementing growth mindset in your classroom and school?
22. How do you respond to these challenges?
23. What would further help you respond to these challenges?

**Next Steps**

26. What, if any, goals do you have when it comes to your implementation of growth mindset in schools?

27. What advice would you have for future teachers who are committed to implementing growth mindset in their classrooms?

**Do you have any additional comments to add?**

Thank you for your participation in this research study.