2018

What's My Motivation? Teaching Strategies for Fostering Student Perseverance in the Classroom

Adam R. Satterlie
Bethel University

WHAT'S MY MOTIVATION? TEACHING STRATEGIES FOR FOSTERING STUDENT PERSEVERANCE IN THE CLASSROOM

A MASTER'S THESIS

SUBMITTED TO THE FACULTY

OF BETHEL UNIVERSITY

BY

ADAM SATTERLIE

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

MASTER OF ARTS

DECEMBER 2018

BETHEL UNIVERSITY

WHAT'S MY MOTIVATION? TEACHER STRATEGIES FOR FOSTERING PERSEVERANCE IN THE CLASSROOM

ADAM SATTERLIE

December 2018

APPROVED

Advisor's Name: Meghan Cavalier, Ed.D.

Program Director's Name: Molly Wickam, Ph.D. MBA

Abstract

Motivation is a hot topic in education. It is not uncommon for many students give up when challenges arise, while others rise to the occasion to overcome challenges. This literature review addresses many studies showcasing the benefits of academic perseverance, pointing to the need for all students to possess this trait. In understanding this, the research uncovers ways in which teachers are able to influence their students to overcome such challenges and persevere to complete academic activities. These strategies focus primarily on two different areas: fostering autonomy and intrinsic motivation in the classroom and teaching self-regulation strategies for overcoming challenges.

Table of Contents

CHAPTER I: INTRODUCTION

Upon entering a career in education, I discovered there were ways in which I was motivated throughout my own educational experiences that were ineffective in motivating other students I worked with. As a student in school, I was able to achieve a great many things, largely because I was able to persevere through repetitive tasks, such as practice, in many areas of my academic and artistic life. Yet the students I interacted with as a paraprofessional and later as a teacher did not share a similar desire to persevere through the day-to-day tasks necessary to find success in school. Moreover, it appeared that other teachers had positive experiences in school similar to my own. There seemed to be a disconnect between staff experiences in schools and student experiences, particularly with those who showed a significant lack of effort in class.

Were these apathetic students less intelligent than the others around them? Were they lazy? It would not appear so. Was there hope for change? These were among the questions I initially asked. They then shifted beyond the behaviors or personalities of the students to contextual factors. What is hindering struggling students from even putting forth minimal effort? Are they afraid of failure? Is it a lack of trust? Is something going on outside of school that is affecting them negatively in the classroom? Then came more personal questions: Am I helping or hurting? Could I be a trigger for students, leading them to shut down and stop trying? These initial observations and questions began my research into the topic of motivation.

Rationale

Motivation is a broad topic. For the sake of brevity and specificity, this review will focus primarily on what Farrington, et al. (2012) refer to as academic perseverance, which is closely linked to Duckworth, Peterson, Matthews and Kelly's idea of grit (2007). These ideas point to motivation as not just a means of achieving a short-term goal, but also in a long-term approach to

completing tasks. There are two basic forms of motivation emphasized: intrinsic, which means that a task is performed because it is valuable in itself, and extrinsic, meaning the task is performed because there is a reward outside the task itself (Murphy & Alexander, 2000). The form that has been shown to be more beneficial to academic perseverance is intrinsic motivation (Smith & Skrbis, 2017), as this appeals more to what students find interesting.

Many studies have focused on individual traits that are seen in students that empower them to be more capable of overcoming challenges over an extended period of time. Some of these processes include the ability to delay immediate gratification for the sake of a long-term goal of greater value. This trait has been closely linked to personality (Farrington, et al., 2012). While there is evidence that this is innate, things can be done to help those who do not have an intrinsic desire to push through challenging academic tasks. While initially, this thesis examines benefits of academic perseverance, it quickly moves from traits and benefits toward educational responses to student motivation and lack of motivation.

Academic persistence as a trait has great benefit to the individual. Simply put, when a student shows a stronger sense of perseverance during an academic task, he or she is more likely to complete work, both in the long and short term (Farrington, et al., 2012). Long-term goals are more highly attainable for those who continue to persevere; students who persevere in long-term goals are then more likely to achieve a higher GPA in school and more likely to achieve beyond school (i.e. college admittance, college graduation, career) (Farrington, et al., 2012). GPA is a strong predictor of future outcomes beyond that of academics. This evidence suggests that how students perform in class is more important than what classes they are taking in school.

Deci and Ryan's (2000) research on Self-Determination Theory (SDT) lays a foundation that stresses the importance of meeting student needs in the classroom. In seeing the benefit of

meeting not just physical, but psychological needs, this paper attempts to connect practical strategies and behaviors teachers can use to encourage motivation through meeting basic student needs. Creating a positive classroom climate is an important practice to enable academic perseverance. A growth mindset is another important aspect that teachers are using to empower their students (Laursen, 2015; Dweck, Walton, & Cohen, 2014, Martin, 2015). Farrington et al. (2012) point to the challenges presented in academic mindset, and as there are disagreements even among researchers. Students can share about the struggles they face, but there is not always a clear practical strategy for teachers to undertake to prevent further negative outcomes and encourage positive behaviors.

Along with these ideas is the value of setting and pursuing goals to motivation. What value might there be for setting challenging goals compared to ones that are simpler or easier to attain? What would be the ideal time length for goal achievement? What value does intrinsic or extrinsic goals have on motivation?

While meeting basic student needs may be essential in empowering students who are struggling to persevere, there are other cognitive factors that may be beneficial to address. Thus, part of this literature review seeks to find ways in which teachers can instruct their students to take ownership of their learning through cognitive strategies and other forms of self-regulation. Thus, this literature review seeks to determine the value in teaching students coping strategies for dealing with potential triggers or stressful situations that may otherwise lead them to give up.

Among other ideas to consider in motivation is its cultural variance (Vibulphol, 2016; Piña-Watson, B., López, B., Ojeda, L., & Rodriguez, K. M. (2015; Aydin, 2015; Crow & Kastello, 2016). Does motivation work differently across cultures, or does it remain constant?

While there are many things that vary, such as parental involvement, there remain practices that are accepted across cultures and demographics (Deci & Ryan, 2000; Crow & Kastello, 2016).

In an ultimate sense, this literature review is not intended to answer all questions of academic perseverance and apply everything perfectly, but to bring ideas together in a way that can help equip educators set up their own classrooms and practices in ways that will foster academic perseverance among students in order to develop positive habits that will enable patterns of success beyond the classroom.

Definitions of terms

Key terms in this paper:

Academic perseverance: "a student's tendency to complete school assignments in a timely and thorough manner, to the best of one's ability, despite distractions, obstacles, or level of challenge" (Farrington, et al., 2012, p. 9).

Autonomy: One of the three psychological needs presented in Self-Determination Theory. Autonomy refers to a person's desire to self-organize, to be a causal agent of one's own life, and to be in agreement with one's sense of self (Deci & Ryan, 2000).

Competence: One of the three psychological needs presented in Self-Determination Theory. Competence refers to an individual's desires to gain mastery of a task (Deci & Ryan, 2000).

Delay of Gratification: the setting aside of immediately accessible rewards for a larger reward at a later time (Bembenutty & Karabenick, 2004).

Extrinsic motivation: a form of motivation in which the task is performed because there is a reward outside the task itself (Murphy & Alexander, 2000).

Grit: "perseverance and passion toward long-term goals" (Duckworth, Peterson, Matthews & Kelly, p. 1087, 2007).

Intrinsic motivation: a form of motivation in which a task is performed because it is valuable in itself (Murphy & Alexander, 2000).

Relatedness: One of the three psychological needs presented in Self-Determination Theory. Relatedness refers to one's desires for feeling connected to others, to feel cared for, and to care for others (Deci & Ryan, 2000).

Self-regulation: "self-generated thoughts, feelings, and actions for attaining academic goals" (Zimmerman, p. 73, 1998).

Statement of the Topic

While there are many questions directed toward reasons for negative behaviors or lack of academic perseverance, it seems more advantageous for teachers to look at what they are able to control. The primary question guiding this literature review is this: What strategies can a teacher employ to foster academic perseverance in the classroom? To answer this question, there are other questions that need to be addressed. First, what practices do teachers currently use that have been shown to be successful in increasing effort for students? In contrast, what has been less effective? In what area have teachers hindered or helped student perseverance? While it would appear that educators typically have their heart in the right place and a strong desire to help their students, there may still be behaviors displayed that have generated negative responses of motivation in the classroom. The research may be broad, as many theories contain subtle differences in terminology and emphasis (Murphy & Alexander, 2000); a goal of this review is to collectively view ideas of motivation to determine what strategies are effective to use in the classroom as an educator.

CHAPTER II: LITERATURE REVIEW

This chapter will focus on research and studies of student grit in an academic setting, and ways that teachers can best influence students to persevere through academic challenges. The first part of this chapter will focus on the short and long-term benefits of student grit. The second section will discuss the different ideas around what influences students to persevere, and the final section will focus on the roles that teachers have and the strategies they can use to best influence students to grow in their abilities to persevere in a challenging academic setting.

Grit and Self-Control With Students

Benefits of Grit and Self-Control

Grit can be defined as "the degree to which students stay focused on a long-term goal despite obstacles" (Farrington, et al., 2012, p. 20). Self-control is the extent that a student would forego a short-term temptation in order to prioritize a greater pursuit (Farrington, et al. 2012). Grit and self-control combine to form a more complete picture of academic perseverance.

Laursen (2015) links research showing the many benefits of grit and the connection to Dweck's research on academic mindset. Some students have a growth mindset, which enables them to believe that the effort they put into the work will help them to improve on a particular task or subject. Other students have fixed mindsets, which leads to belief that improvement has nothing to do with the effort put in, but only on natural ability (Laursen, 2015). Students who possess a growth mindset are more likely to persevere when given a challenging task. Farrington et al. (2012) states that students with a growth mindset are more likely to be focused in school, and have more perseverance to finish a task, even after failure. In light of this, it should be no surprise that students with a growth mindset typically receive better grades than those with fixed

mindsets. Other sources (Snipes, Fancsali, & Stoker, 2012) state that growth mindset may be the most important aspect in developing grit.

While self-control is often linked with success and attributed to grit, it is the length of time that sets them apart. Duckworth, et al. define grit as "perseverance and passion for long-term goals" (p. 1087, 2007). Research began when it was noted that among people of equal intelligence, some succeeded more than others. This led to more research on the connections between personality and achievement (Duckworth, Peterson, Matthews & Kelly, 2007). Does grit change as people grow older? A Likert-type scale was developed and tested over people of different ages and educational levels to see whether age could predict grit. The results showed a connection between educational levels achieved and overall grit. Those who had achieved higher levels of education tended to score higher on the grit scale. It was also noted that age also could predict grit levels, with the highest grit scores coming from the highest age range. A likely connection would be that those who have had more life experience better understand that quitting and starting over will not likely lead to success. It was also determined that those who recorded higher levels of grit generally made less career changes than those with lower levels of grit (Duckworth, et al., 2007).

Many studies have shown a positive relationship between grit and self-control in an academic sense. Some, such as the marshmallow test have predicted behaviors years in advance. The marshmallow test (Mischel, Shoda, & Peake, 1988) has revealed connections between students who wait for their second marshmallow rather than eating the one presented before them and higher SAT scores. The students are told that if they do not eat the marshmallow in an amount of time in which the student would be alone in the room, then another marshmallow would be given. This study was done with preschool children. While the initial research was

conducted with young children, the results showed predictable behavior years down the road. Bembenutty and Karabenick (2004) connect later studies on follow-ups to the marshmallow test to show that even over twenty years after the preschool test, the children who were able to delay gratification (delay in eating the marshmallow until the adult returned) still had a higher ability to delay gratification and to cope with stress than those who were unable to delay.

Can Grit Be Changed?

Can a student who appears to lack academic perseverance change? Does the marshmallow test provide fatalistic evidence that some people are more naturally bent toward delay of gratification while others will continue to struggle with this indefinitely? Grit is closely connected to individual personality traits, which are hard to affect with outside influence, but research shows that students can learn to go against their natural personality bend to persevere in an academic sense (Farrington et al., 2012).

Many of the follow-up marshmallow tests provide answers to this question. Metcalfe and Mischel (1999) showed that at some level, students can improve their ability to delay gratification with the right strategies. A strategy used in some marshmallow tests was to have the children imagine that the marshmallow was something else, such as a cloud, which could be partially explained by hot and cool systems (Metcalfe & Mischel, 1999). A hot system is emotional and often reactive, while cool systems are more complex, slower, and more abstract (Bembenutty & Karabenick, 2004). In the marshmallow test, if a student is thinking about how tasty the fluffy marshmallow would be, a hot system is engaged, leading to a stronger impulse to eat the marshmallow immediately. In contrast, those who elect to delay gratification are often implementing a cool system, typically by looking toward the more distant goal (Bembenutty &

Karabenick, 2004) or by focusing on descriptive characteristics that have nothing to do with its taste, such as comparing it to another object (Metcalfe & Mischel, 1999).

Similar to the marshmallow test and extended research, much can be said about academic success and student engagement. Lee (2014) studied data from the Program for International Student Assessment 2000 to determine the correlation between student engagement (as measured by behavioral engagement linked with emotional engagement) and academic performance. While she acknowledges that research regarding emotional engagement is not unanimous, her conclusions favor a positive connection between both behavioral engagement and emotional engagement with reading scores. Behavioral engagement scores were composed of four categories: "working hard, working despite difficulty, trying one's best to acquire knowledge and skills, and putting forth one's best effort" (Lee, 2014, p. 179).

Classroom Strategies and Practices

Farrington, et al. (2012) mentions three strategies that may be adapted to help promote academic perseverance. First, teachers can teach perseverance like they would teach a learning strategy. Teachers may also try to change the learning context to provide for an environment that allows for students to achieve success and produce more grit. Thirdly, teachers can change their own teaching practice or methods to help students develop learning strategies (Farrington et al., 2012).

Academic Mindsets and Motivation

Academic mindset is an important component through which academic motivation can be improved upon. Farrington, et al. (2012) has listed four mindsets that are linked to improved academic perseverance and ultimately higher academic success. These include students feeling as if they belong to a school or area, students believing that if they put forth more effort, success

will follow, students believing they will succeed, and if a student believes that what he or she is learning is valuable.

What can a teacher do to foster ideas about increasing the value of a learning task? Research has shown a clear connection between valuing high-level construal of academic goals with overall meaningfulness, motivation, and self-concordance (agreement that a person is being true to oneself and living out one's deeply held values (Davis, Kelley, Kim, Tang, & Hicks, 2015). High-level construal of goals refers to the higher, big-picture reasons to pursue a goal. They ask the question *why* a goal is pursued (Davis et al., 2015). Low level construal of academic goals focus on *how* a goal is pursued (Davis et al., 2015). A study was conducted by Davis et al. (2015) with college students to test whether thinking about a goal with a high-level mindset would affect overall meaningfulness of a task, motivation to complete the task, and increase the feelings of self-concordance. Students who had been led to focus on the high-level reasons for achieving their academic goals (such as graduating and getting a better job versus getting a good grade) found their goals to be more meaningful, had greater motivation to complete them, and felt a higher sense of self-concordance (Davis et al., 2015).

A second experiment was conducted that resembled the first. Students were asked to write about a personal goal in terms of high-level (why) and low-level (how) mindsets toward their goals (Davis et al., 2015). Then, students were asked if they wanted to receive tips for their academic goals. These were used to measure behavior toward an academic goal, with the expectation that a student with higher motivation, or who valued the goal as more meaningful would elect to receive a greater number of academic tips. However, the results showed little to no correlation between high-level construal of academic goals and the number of tips a student viewed (Davis et al., 2015).

This study has many positive connections between mindset toward goals and motivation; however, it is not without its limits. First, the study was conducted with predominantly white, wealthy college students (Davis et al., 2015). Would the results change with a different demographic? Also, in the second experiment, while the results still show an increase in motivation, value, and self-concordance, the results did not translate well into testing behavioral differences. This does not mean that thinking about goals in a broader, long-term way does not lead to behavior that reflects greater motivation but could simply mean that trying to quantify behavior in this way does not accurately reflect the increased motivation or value placed on a goal with this mindset (Davis et al., 2015).

Based on attribution theory, Smith and Skrbis (2017) followed Australian secondary students via survey over several years. Australia promotes generally meritocratic ideals in schools, in that they focus on hard work, individual responsibility, and self-motivation. The underlying belief in this is that opportunities for young people are determined by one's own academic performance, regardless of socio-economic status (Smith & Skrbis, 2017). The study began with middle school students and ended years after schooling ended. Due to the longevity of the study, Smith and Skrbis were able to uncover dispositions of students as they changed over time. Initially, students most commonly attributed their success to intrinsic factors, such as hard work or ability, while extrinsic factors were less commonly attributed to success (2017). Over time, most beliefs became weaker, especially "the belief in the importance of 'having educated parents' and 'popularity among pupils'" (Smith & Skrbis, 2017, p. 452). Among the attributes to increase during later waves was 'competing with others' and 'having good habits.' In congruence with previous research, the belief that unstable and controllable internal factors, such as hard work and a positive attitude, was linked to educational achievement.

Attributions that were negatively linked included the belief that having wealthy or highly-educated parents, having a supportive family, or obeying teachers determine educational success. While the first two typically attribute success to something outside of oneself, thus relinquishing control of a situation, it may be surprising that obedience to teachers also correlates negatively with educational attainment. Smith and Skrbis point to a possible reason why belief that attributing success to obedience to teachers is negatively correlated. It removes opportunity for students to be more autonomous (2017). These connections reinforce the belief that attributing success to something within the person's control, such as effort, is a better indicator and predictor of success than attributing success to social or relational causes, such as having a supportive or educated family.

What result might extrinsic rewards have for students to persevere through challenging tasks? Research has shown that extrinsic rewards, particularly monetary ones, lead to a decrease in intrinsic motivation for people to work on a task when given other options (Deci, 1972). Research has been conducted with adults in this way when involved in an experiment to solve puzzles. Some participants were told that there was a monetary value to solving each puzzle, while others were not offered any incentive to complete the puzzles. After the allotted time, participants were given eight minutes of free time in which the time they devoted to working on solving more puzzles was recorded without the knowledge of the participant. The time each adult in the study spent on trying to solve the remaining puzzles was used to measure their intrinsic motivation, since there was no other incentive for them to complete any puzzles. The results showed that those with the monetary incentive to solve the initial puzzles spent about half the time working on puzzles in their free time as those who had no monetary incentive to solve the puzzles.

Autonomy, Competence, and Relatedness

How then should extrinsic motivation be used? Is there still value in it? Research shows that extrinsic motivation when connected to performance will lead to a decrease in intrinsic motivation, as people will perceive that they are doing the task strictly for the reward (Deci, 1972). What then is its place in schools? It is certainly still of value, but in a different way.

To take a closer look at benefits of extrinsic rewards in comparison to intrinsic motivation, it is helpful to examine more closely self-determination theory (SDT). Deci and Ryan (2000) have determined that SDT differs from many other motivational psychology theories in that it concludes that individuals have three universal innate psychological needs: competence, autonomy, and relatedness. Relatedness refers to the desire a person has to be connected with and cared for by others. Autonomy relates to a person's desire for self-concordance, that their actions are true to their sense of self. Competence connects to a person's desire for mastery in a given task. Many other theories may categorize these as acquired motives, but Deci and Ryan (2000) hold to these as needs, meaning that if one of these three is neglected or thwarted, the person cannot develop as a psychologically healthy individual. In this framework, a healthy person whose psychological needs are all met, will engage in whatever activities he or she finds interesting or important. But what will lead to their valuing of an activity? It would often be influenced by previous experience, in which the basic needs of the individual were being met, or others were being thwarted. The meeting of these needs correlates to intrinsic motivation, which is connected to improved learning, performance, and well-being (Deci & Ryan, 2000). In contrast, research has shown a negative correlation between monetary rewards, a clear extrinsic motivation, and positive behaviors after the reward was given (Deci & Ryan, 2000). This kind of reward has also been found to decrease creativity and deep processing.

Deci and Ryan provide a reason for this, stating that such "rewards and threats undermine autonomy and thus lead to nonoptimal outcomes, such as decreased intrinsic motivation, less creativity, and poorer problem solving. In contrast, providing choice and acknowledging feelings can enhance the sense of self-initiation" (2000, p. 234). These results are consistent in schools as well as businesses.

In relation to competence, feedback can play a powerful role. Positive feedback can satisfy the need for competence, leading to growing intrinsic motivation. Negative feedback often will lead to more negative results in regard to intrinsic motivation than if no feedback had been given (Deci & Ryan, 2000). Also, if a person receiving positive feedback does not believe to be responsible or deserving of it, or if the recipient of feedback perceives it as controlling or autonomy thwarting, intrinsic motivation will not increase (Deci & Ryan, 2000).

Relatedness has also had influence on intrinsic motivation, although it may be a smaller role than that of autonomy and competence (Deci & Ryan, 2000). The connection is apparent through research that has been conducted: when children work on an interesting activity in the presence of an adult who ignores the child, intrinsic motivation goes down. Infants will be more likely to explore if they have healthy attachment to a parent. Research shows and suggests that greater intrinsic motivation is stronger when students perceive their teachers as being warm and caring, thus leading to Deci and Ryan's viewpoint that when relatedness is strong, intrinsic motivation flourishes (2000).

Is There Value In Extrinsic Motivation?

With a clear preferability toward intrinsic motivation, and a deeper understanding of the psychological needs proposed, it is worthwhile to reexamine if there is a place for extrinsic motivation in SDT. Deci and Ryan (2000) conclude that there are different levels of

internalization of an extrinsic motivation that determine the amount of autonomy one experiences when being motivated extrinsically. They break it down into four categories: external regulation, introjection, identification, and integration. External regulation is what most people see in classical conditioning, in which people perform a desired task for a reward or to avoid a negative consequence. Data points to this having a negative effect on autonomy (Deci & Ryan, 2000). Introjection is similar, but it is the individual who is administering his or her own reward or punishment. Identification occurs when the individual acknowledges the value in a behavior and accepts it as their own. The motivating factor would still be extrinsic, in that the behavior is not done out of enjoyment, but for the benefit that it might provide. Integration is the most internalized form of extrinsic motivation, and it occurs when the individual sees the value in the behavior and identifies with it, but also "integrates those identifications with other aspects of self" (Deci & Ryan, 2000, p. 236). The extent to which an individual is able to internalize an extrinsic goal, the more autonomous and less pressure the individual will feel toward it.

With much learning in schools being extrinsically motivated, especially during early stages of development, it is important for teachers to support the internalization of extrinsic motivation. Deci and Ryan state that "people will tend naturally to internalize the values and regulations of their social groups" (2000, p. 238). In these groups, relatedness and competence may be supported naturally in interaction with others as well as in feelings of competence by internally regulating the values of the group. But Deci and Ryan point to the need for autonomy as essential for the individual to move toward identification or integration of an extrinsic goal (2000). To support this, individuals need opportunities to freely process the values of his or her social groups to accept or alter them. Placing added external pressure may slow down their ability to internalize and accept a given value into his or her sense of self.

Other research has backed up this hypothesis, including studies in which it was determined that the extent to which parents were able to provide autonomy support, structure, and to be involved in their child's academic life directly correlated to the child's value placed on school-related activities (Deci & Ryan, 2000). Other studies (Williams & Deci, 1996; Deci, Eghrari, Patrick & Leone, 1994, Deci & Ryan, 2000) have pointed to ways in which facilitating internal regulation of extrinsic motivation leads to a deeper internalization, allowing for the higher levels of regulation, identification and integration. In one study (Deci, Eghrari, Patrick & Leone, 1994), people were given three means of facilitating their internalization of regulating uninteresting activities. They were given a meaningful rationale, giving the task value or importance, their feelings that this was indeed an uninteresting task were acknowledged verbally (relatedness), and the fact that they had choice in the matter was emphasized (autonomy). After experimentation, the three factors were shown to help the internalization of their regulation of the target activity. Deci and Ryan (2000) have thus concluded with other data that when supports for the three psychological needs in SDT are present, not only will there be more internalization of extrinsic motivation, but it will more likely not just be surface level, but will be integrated into self.

Deci and Ryan (2000) also elaborated on the importance of psychological well-being. They point to evidence that students who have introjected regulation, a highly extrinsic motivation, to succeed in school may appear to be equally motivated as someone who has identified and accepted the values of the tasks in school, but they may have a vastly different psychological well-being. The former student's level of regulation has been connected with higher anxiety and more negative coping strategies, leading to lower performance. Studies have also shown that school dropouts are more likely to score lower on identified, integrated, and

intrinsic regulation, meaning these students' external regulation of extrinsic motivation has not been accepted into their own sense of self (Vallerand & Bissonnette, 1992; Deci & Ryan, 2000). In following studies, autonomy support from parents and teachers resulted in more autonomously motivated students, a stronger sense of competence, and reduced dropout (Vallerand, Fortier, & Guay, 1997; Deci & Ryan, 2000).

What might be negative consequences of the three fundamental psychological needs prescribed by SDT? Just when looking at parents and their children, the consequences lead to less intrinsic forms of motivation or even amotivation. Often, when needs are not met at a young age, the person lacking will substitute it for something else to find their worth. A common pursuit of these individuals is a highly extrinsic form of motivation, such as money or fame. Along with strong extrinsic aspirations, need thwarting also predicts a negative well-being (Deci & Ryan, 2000).

Words also have a powerful place in intrinsic motivation. When used as a positive verbal reinforcement, such as the experimenter making a comment about how fast the participant completed the puzzles, the participant's intrinsic motivation increased, which connects positive feedback to intrinsic motivation, since the participants do not feel that they are doing the task for the reward of verbal praise, but are rather seeing the positive value in the work (Deci, 1972). However, when threatened with either negative feedback or punishment, the intrinsic motivation decreased among participants. This is likely because participants connect a negative or positive value toward a task due to their own perceived competence or lack thereof. There is still a small danger in positive feedback. If too much feedback is given, intrinsic motivation may drop, due to the perception that the reward is the feedback, or the participant may perceive that the verbal affirmation is not genuine (Deci, 1972).

What do these results mean in terms of teaching? Certainly in the workforce, payment is necessary, but rewards that are based on performance do not increase the intrinsic motivation needed for students to work beyond what is expected of them when there is no external reward. Receiving a salary will motivate employees to continue their work, meeting the lower hierarchical needs, but will not necessarily motivate them to excel in the higher order needs, such as self-esteem or self-actualization (Deci, 1972). Many of these ideas can be used in education to help shape the way we use extrinsic motivation.

Teaching Strategies

According to Farrington, et al. (2012), there are many strategies that teachers can use to promote positive academic mindsets, but some research is inconclusive as far as best practices may be concerned. This is due to the significant number of variables at work in this topic. Some practices may only work the first time or may degenerate in effectiveness over time. Some may work for particular ages and not for others (Farrington, et al., 2012).

Achievement Goal Theory

One such area of divided research is regarding achievement goal theory, which has much to say about motivation and its benefits. There are two predominant viewpoints into the types of goals one may pursue in an academic setting. Some research endorses performance goals, citing the benefits of ultimately leading to higher achievement, while other research backs up mastery goals, citing the benefit of increased engagement and interest (Senko, Hulleman, & Harackiewicz, 2011). In general, mastery goals focus on growing in competence, while performance goals focus on demonstration of one's competence via competition among peers. Mastery goals often connect with students' perceptions that teachers care about them, leading toward a more positive classroom climate. While initially, it may seem like two oppositional

schools of thought with pros and cons on either side, there are many smaller factors that affect the research. First, each side has negative responses to goals that emphasize avoidance. Both mastery-avoidance and performance-avoidance (i.e. goals that focus on avoiding a negative outcome in comparison to others, or a perceived incompetence) led to negative results regarding student motivation, particularly in Western cultures (Senko et al., 2011). They have also been shown to be connected with students' perceptions that their teachers care about them, which typically show increasing positive classroom climate. Performance-approach goals and mastery-approach goals show various, yet predominantly positive results.

Knowing that both goals have some positives, how should an educator go about implementing goals in schoolwork? Should teachers emphasize mastery goals, in which students have more autonomy to pursue information they deem important, increasing overall interest, or should they emphasize performance-oriented goals, which have shown to connect closer with the standards that are determined to be more important, and sacrifice overall student interest? There is not just one answer, but several pieces to highlight. First, some explanations (Senko, et al., 2011) point to potential reasons for why performance goals are often more linked to academic achievement. Performance goals are often thought of as more challenging, leading to higher academic achievement for those who are able to persevere, while mastery goals are often less demanding, and thus may lead to students not pushing themselves to reach high standards. Research has suggested that when mastery goals are made more challenging, there is higher achievement, but student interest is typically lessened the more ambitious the goal (Senko et al., 2011).

Fostering Growth Mindset

There are many practices teachers can implement in order to promote a growth mindset in the classroom. Laursen (2015) points to a basic idea: talk about it. He also points out that effective ways to develop a growth mindset include focusing on positive feedback toward a student's effort rather than a student's intelligence or talent. Another way to produce more engaged and motivated learners is through student choice. When students have a choice in the matter, they are more likely to take ownership of their learning and move toward mastery rather than performance. A third way listed by Laursen (2015) is by creating authentic learning through real-life problems.

Another means by which teachers may encourage a growth mindset would be to allow for more opportunities for students to succeed. Students for the past forty years have been stuck where they are in terms of success because of their prior knowledge and acquired skills (Martin, 2015). Many students will relatively easily earn As and Bs, while others can put in as much effort as possible and still not achieve the desired grade. How are we able to empower our students to succeed when it is not showing up in the grade books? Teachers can focus on academic growth more than that of academic achievement (Martin, 2015).

In connection with growth mindset, teachers can empower students to set goals for achievement. When students are setting and achieving goals that are relevant to themselves, they are more able to be motivated internally and intrinsically (Martin, 2015). Some studies advocate for a self-reflection to accompany the initial growth goals that students set.

A study in Thailand looked at two different teaching styles to determine what could be the most promising means of motivating Thai students to learn English (Vibulphol, 2016). In this qualitative study, a number of high school classrooms were observed throughout different regions of Thailand. The two different teaching styles noted were 'autonomy support' and

'autonomy controlling' (Vibulphol, 2016). In the classrooms observed, controlling styles were more common. Strategies in controlling classrooms include learning together as a whole class, "giving immediate feedback, and using external sources of motivation" (Vibulphol, 2016, p. 66). While every class implemented controlling strategies, only the classes with high levels of motivation used autonomy support strategies. Teachers who implemented these strategies were more likely to keep their students engaged throughout the whole class period. Different ways that these teachers used autonomy support styles was through playing music, using language that was hospitable for the students, creating small group activities that would foster discussion, connecting the topic to what the students cared about, and using authentic materials in the assessment (Vibulphol, 2016). While it showed that most students in the study were at least somewhat intrinsically motivated by the subject (learning English), there was still around 20 percent of the class with little to no motivation. With these students, little changed between teaching styles. While this study is helpful in seeing motivation strategies, more research is needed in order to apply these principles broadly. Contrary to expectations, the level of achievement was not directly connected to students' motivation, as typically students had relatively high motivation, but lower achievement (Vibulphol, 2016).

In connection to autonomy support strategies, other studies point to minimizing negative practices that hinder motivation and maximizing practices that support student autonomy (Patall et al., 2018). Providing tasks that appear to have little meaning, providing uninteresting tasks, focusing on external consequences of following instructions rather than explaining the bigger picture of a task, and using controlling or pressuring language are all shown to thwart student autonomy (Patall et al., 2018). Through an in-depth study of daily student motivation, ways that teachers interacted with students that most positively affected their motivation and sense of

autonomy was through their perceptions that teachers were thinking for and planning for student preferences, were giving explanations to tasks that appeared to be useful, allowing for responses to questions, and how much they perceived freedom of choice (Patall et al., 2018). The primary ways that negatively affected student autonomy and motivation was through teachers use of controlling messages and use of uninteresting or unimportant activities. While teachers will often employ autonomy controlling or autonomy thwarting practices, this research provides encouraging data. While autonomy supportive practices yield positive results and autonomy thwarting practices yield negative results, when both are used within the same period, student autonomous motivation has shown an increase (Patall et al., 2018).

There is some disagreement about the importance of autonomy in practice, as is apparent with the data showing a high number of teachers employing a predominantly controlling teaching style. Why do teachers, when most research points to a high need for autonomy, use a high number of controlling practices? First, teachers who adopted autonomy controlling practices tended to believe that their students did not have the necessary skills to succeed in an autonomy supportive setting (Hornstra, Mansfield, van der Veen, Peetsma & Volman, 2015). This plays itself out frequently as teachers tend to focus on even more controlling practices when they perceive that a student is unmotivated, contrary to research that points to less controlling environments fostering more intrinsic motivation. Rather than focusing on ways to foster intrinsic motivation, these teachers who implemented autonomy controlling practices perceived their at-risk students to have a greater need for relatedness than for autonomy. They pointed to the importance of creating a warm classroom climate and building a positive relationship with the student. Most teachers who did not use controlling strategies did not mention this need. While SDT focuses on three factors (autonomy, competence, and relatedness), it may be that

students who are at-risk have a higher need for relatedness than for autonomy. More research may be needed to study the differences between students of various socio-economic or at-risk status (Hornstra et al., 2015).

Scaffolding And Motivation

Belland, Kim and Hannafin point to motivational design as an area for improvement in teachers' abilities to motivate their students, particularly in problem-based learning (2013). It is often assumed in authentic, problem-based learning that students will naturally be motivated to work hard and continue on their research, but there are many challenges to this idea. As previously mentioned, teachers often employ a controlling style of teaching, which can hinder student motivation. Poor designs lead students to thinking that a task is too challenging for them to succeed, or that there is no value in completing the task (2013). If this is the case, the only motivation students have is to outperform their peers rather than pursuing it for the sake of learning (2013). Belland, Kim and Hannafin point to six ways that scaffolding should be connected with engagement and motivation: to create task value, to emphasize mastery goals, to promote belonging, to promote emotion regulation, to create expectancy for success, and to emphasize autonomy (2013).

Task value refers to whether or not students believe a task is worth the time and effort to complete. A way that teachers can scaffold learning in a way that makes the task worth completing is to link it to the students' current roles, such as that of a family member or citizen. This is a stronger motivating factor than linking it to a future career, such as a professional athlete, since not everyone will share that role, but everyone is a citizen or a family member (Belland, et al., 2013). Another way of increasing interest, and thereby increasing task value, is to allow for students to choose an aspect of a larger problem in which they can focus. Driving

questions are useful tools in keeping students aware of the direction they are going, particularly on longer projects. When that is the case, it is wise to continue to post the driving question with each step of the process.

Teachers can increase task value by using appropriate and understandable language for the task at hand or the content to be learned (Belland, et al., 2013). If students have no framework for what is being said, it will be much more difficult for them to be interested in the topic. It also helps to explain why these things are important. Simply stating that this should be interesting to them will reduce their own autonomy, by making it seem less like a choice (Belland, et al., 2013). Another means of encouraging interest linked with attainment value (that is, the motivation for students to believe that what they are learning is important enough to retain) is to reflect on what is important to them about their learning (2013).

The second means of promoting engagement and motivation is through creating a culture of belonging (Belland, et al., 2013). This is especially important with group work. One way to encourage this is by having students create shared goals for the group that connect to the overall goal of the project or problem they are solving. Another way is by connecting their shared goals to individual social goals. Thirdly, teachers can find creative ways to co-construct the standards by which to measure student work. Allowing students to have a role in classroom and small group decisions helps lead to a sense of belonging.

Another challenge that students have toward motivation is dealing with their own emotions toward a subject. Not all students will have positive experiences with a given task, but the teacher can create an atmosphere that promotes emotion regulation (Belland, et al., 2013). When students run into challenges with open-ended problems, negative emotions will surface. What can a teacher do to help students overcome? Belland, et al. point to two key ideas found in

research: to emphasize controllability of actions and to promote reappraisal of failure (2013). By looking at controllability, students can discover what pieces of the problem they have control over, thereby empowering them to overcome and minimize the negative emotions that can come from helplessness or external locus of control. It is thus important for teachers to remind students of what they can control in a situation. In reappraisal of failure, students can look back and determine what factors led to their failures. This also helps shape students' perceptions of controllability, creating more positive emotions for students (Belland, et al., 2013).

Various practical scaffolds that teachers can use to help promote emotion regulation and controllability include use of a peer to model positive responses to failure, visual examples of how failure is a natural part of learning, and providing an alternative reason for a student's negative emotions (Belland, et al., 2013). One way that teachers may scaffold for their students in this way is by using a checklist for their students to record what they would do if their task failed. Using a peer or student to model what they did to overcome a challenge is also an effective way to promote controllability in other students. A third way of accentuating controllability is through the portrayal that failures are natural and an important part of learning. Teachers can push against the orientation that all failure should be avoided, which can be detrimental to learning (Belland, et al., 2013). Lastly, to help students perceive that their failures were due to something they could control, teachers can help by providing alternative reasons or examples for students' struggles. Accompanying these reasons, teachers can offer potential solutions to their problems, showing what the student could do differently going forward (Belland, et al., 2013).

Research has shown that there is a greater benefit when students attribute successes to effort and strategy use over external factors or luck (Belland, Kim & Hannafin, 2013). For this to

be effective, students need to find success or mastery through strategies. A way for teachers to enable this is by having students reflect on the strategies used to determine their effectiveness. In reflections, students will then determine whether or not they would use a particular strategy in the future. A way to scaffold this would be through prompts or check boxes. Then students can discuss what was effective and determine as a whole class what strategies are most effective.

One challenge in scaffolding is that it can reduce autonomy by limiting student choice, which often hinders student motivation and effort (Belland, et al., 2013). Among ways to increase autonomy, and thus increase student motivation, are use of noncontrolling language, meaningful cognitive choices, and self-directed learning. Since controlling language has negative effects to autonomy and self-regulation, there are many subtle ways that teachers can state things in ways that will sound less threatening and less controlling. Word choice and phrasing are important in creating an autonomy-supportive environment. Student choice is another important factor that can improve motivation. Problem-based learning is an effective way to engage students in choice and can be effective in offering multiple positions from which students can identify and select. Lastly, teachers can employ scaffolds that can empower students to direct their own learning. Ways to effectively do this may be to display effective processes that the students themselves have determined are effective, and thereby allowing them to choose the best option; to create supports for students to set and reach small target deadlines and goals; and to set up a clear way for students to evaluate their own work (Belland, et al., 2013). Although much of this research and conclusions focus more specifically with problem-based learning and computer scaffolds, the principles can still be utilized in traditional classroom settings (Belland, Kim and Hannafin, 2013).

Group Work And Motivation

What role might working in groups have on motivation? From the research that currently exists, there is not a lot of agreement. Some research points to group work yielding better results than that of an individual student, but this work is not empirically recognized, and other studies have not yielded similar results (Yeon-Koo & Yoo, 2001). Rather than there being an explicit benefit to group work, there are better practices to implement into group work. Yeon-Koo and Yoo (2001) have compared two types of evaluation for groups: Relative Performance Evaluation (RPE) and Joint Performance Evaluation (JPE). With RPE, students are judged individually, driven by competition. This can be seen in educators who implement a grading curve (Belanger, 2016). JPE is driven by competition between teams. In the corporate world, there are many positive examples of JPE significantly increasing revenue and decreasing product defects for various businesses (Yeon-Koo & Yoo, 2001). A key component to this is peer sanctioning. When peers are evaluating their fellow team member's contributions to the team, with real consequences and rewards at stake, motivation to work with team members is higher than with RPE (Yeon-Koo & Yoo, 2001). Belanger (2016) attempted to understand a small piece of the puzzle. In light of some of the benefits of group work, Belanger (2016) wanted to compare the motivation and performance of his chemistry students at West Point when they were allowed to choose their own groups as opposed to when they were assigned groups for the semester. Belanger's hypothesis was that choosing partners would increase motivation to learn. However, the results showed the opposite. When students were allowed to change groups, the number of students who strongly agreed to the class increasing their motivation to learn decreased. The data is small, and thus cannot be applied universally, and it is worth noting that only one student in the class actually changed groups when given the chance (Bellanger, 2016).

Classroom Climate And Motivation

While the research may be broad and at times inconclusive as far as individual teacher strategies, there are certainly areas in which classrooms and entire schools can improve the classroom climate and thus foster improvement in student engagement. Common reasons for at-risk students to drop out of school are low achievement, poor interactions between teachers and students, and classroom climate that fosters student disengagement (Lessard, Kisber, Fortin, & Marcotte, 2014). In a qualitative study, students who were at risk for dropping out of school were interviewed with the intent of better understanding how one student can persevere and graduate while another may drop out. Results in both instances pointed to a strong value being placed on teacher relationships (Lessard, et al., 2014). Other areas that were mentioned as important to student perseverance included teachers who were dynamic, enjoyed their jobs and their students, and fostered autonomy (Lessard, et al., 2014). While many variables are outside the teacher's control, these are clear areas in which the teacher can make a positive difference.

Search Institute (1990, 2017) has conducted research and listed forty attributes that lead to positive student growth leading to a healthy, whole individual. These are referred to as 'developmental assets.' Search Institute breaks down these forty into twenty external assets and twenty internal assets. The external assets include things like family support, empowerment, boundaries and expectations, and constructive time use. The internal assets are broken down into commitment to learning, positive values, social competencies, and positive identity. Much of the external assets that are included are linked to family relationships, but many spill into the school system. The internal values are harder for an outsider to shape, but often there are ways that students can improve upon these areas with the help of positive external factors. While teachers cannot control all that goes on in the home, there are other areas that they can affect, such as

being an adult who can develop a positive relationship with the student, a caring school climate, safety, clear school boundaries, and high expectations (Search Institute, 1990, 2017).

There are many practical ways that teachers can use the ideas presented here to create a positive environment for learning. A practical strategy that has worked well is the use of consistent, specific, individualized feedback. Koth (2016) uses a chart to document daily points to reward secondary students based on expected outcomes for daily work (e.g. classroom participation, staying on task, talking in turn). This chart is then shared with parents and students in a timely manner. Students can then see the specific quantitative reasons for the points received for classroom participation. This helps increase motivation by providing a greater source of autonomy by providing less pressure to complete a task a certain way, allowing students to take ownership of their learning and behavior while also utilizing the competition that already exists between peers. As parents are included, they are able to have a more active role in their child's learning, which correlates with higher student motivation (Koth, 2016). The challenge with this strategy is that to maximize the benefits and create the best possible classroom climate, the feedback must be consistent, specific, and accessible to the individual student and parents in a timely manner.

In addition, providing structure has been shown to be a way of creating an environment conducive to motivation. Structure supports students' needs for competence (Skinner & Belmont, 1993). Ways to promote an environment with optimal structure, as opposed to chaos, the opposite of structure, is to maintain clear communication of expectations to the students while responding to students in a consistent manner (Skinner & Belmont, 1993).

Learning Strategies

Another way to look at improving grit in students is to employ learning strategies (Farrington, et al., 2013). This helps students through improving self-efficacy, which leads to more academic perseverance. This is a broad category, as learning strategies are often quite varied. However, they all consist of a form of metacognition, in which students actively take control of their learning by monitoring their own learning, then applying an appropriate strategy for the situation Farrington, et al., 2012). The success of learning strategies is often connected to academic mindset. Students who value work or who have confidence that they can succeed are more likely to use learning strategies. Inversely, students who lack the positive academic mindsets are less likely to use learning strategies when struggling (Farrington, et al., 2012).

Self-Regulation

Among such strategies is self-regulation. Self-regulated learning refers in large part to cognitive strategies that steer students toward success and is defined by Zimmerman (1998) as "self-generated thoughts, feelings, and actions for attaining academic goals" (p. 73). However, this series of processes is not exclusive to study habits. Zimmerman (1998) connects self-regulation processes to that of expert athletes, musicians and writers, as well as in expert students. The self-regulation processes used by many successful writers, athletes, and musicians, among others, include goal setting, task strategies, imagery, self-instruction, self-evaluation, self-consequences, environmental structure, and help seeking (Zimmerman, 1998). In setting goals, it has been shown to be more beneficial to make specific short-term goals a greater priority than long-term goals, as it offers more opportunity for feedback and clarity (Zimmerman, 1998). Connected closely with short-term goals is the use of self-consequences. According to Zimmerman, the rewards may look very different depending on the discipline, but it is often

connected to completing the short-term goal, with research showing a benefit to using positive rewards as being more successful than negative ones.

Self-monitoring and self-evaluation are also important processes for the successfully self-regulating learner. Self-monitoring refers to tracking one's own performance or accomplishments (Zimmerman, 1998). This process often involves written documentation of work. Self-evaluation focuses more on setting specific standards and evaluating them periodically (Zimmerman, 1998). This could be seen in as simple a way as a student checking over work before handing it in.

Research regarding self-regulation shows that higher achievers typically use more of these self-regulative strategies and are likely to use them more frequently than lower achievers (Zimmerman, 1998). While these are excellent indicators and predictors of student success, what can be done for students who are less inclined to use these strategies and more predisposed to give up? Zimmerman's studies show that middle and high school students' self-efficacy relating to self-regulated learning was also connected to self-efficacy for academic achievement, which was also a predictor of final grades (1998).

As valuable as self-regulation is to academic achievement and even to becoming a lifelong learner (Zimmerman, 1998; Zimmerman & Schunk, 2007), what value is there to teaching self-regulation processes? Bandura and Schunk (1981) show a simple way that has helped with elementary students who not only underachieved in math, but appeared to lack any interest in math. Through their investigation, which consisted of self-directed learning through subtraction tests, many factors were able to be linked. The students who were encouraged to set a proximal goal on a math test (e.g. to complete five pages in half an hour), showed a much higher intrinsic interest in completing math problems than students who were given no goals, distant

goals, or were not told anything (Bandura & Schunk, 1981). This shows that setting proximal goals can be used to help build perceived self-efficacy for the student, which has been linked to intrinsic motivation and perseverance (Bandura & Schunk, 1981).

An effective way to teach students to use self-regulation strategies is through modeling. (Zimmerman & Schunk, 2007). Zimmerman and Schunk state that there are four levels of development of self-regulation strategies: observational, emulative, self-controlled, and self-regulative. The first two have some overlap but deal primarily with social factors. Students observe and cognitively understand the strategy, then move to emulation upon being able to demonstrate the strategy and practice it similarly to how it was modeled. Self-control occurs when the student moves toward internalization of the idea, meaning that the learner is able to use the self-regulation strategy without the immediate assistance of a model, but still primarily in a similar setting. The final level, self-regulation, occurs when students are able to then take these strategies and apply them in other contexts that are appropriate to the situation (Zimmerman & Schunk, 2007).

Bembenutty and Karabenick (2004) unpack the research connecting academic delay of gratification with self-regulation and future time perspective (FTP). This process of self-regulation, as seen in Zimmerman's model, can be broken into three phases: the forethought phase, the performance phase, and the self-reflection phase (Bembenutty & Karabenick, 2004). The forethought phase often refers to goal-setting, planning, interest and values. The performance phase includes attention, focus and self-monitoring. The self-reflection stage includes the processes by which a student will evaluate and respond to the action of the performance stage. Bembenutty and Karabenick (2004) state that in light of this framework, delay of gratification could be seen as a cognitive strategy used during the performance phase

(attention focusing, self-instruction, self-monitoring), but also influence the forethought phase (goal-setting) and the self-reflection phase. This model implies that self-regulation is a cyclical process, and that the continuing process of learning, including perceived successes and failures, could affect future delay of gratification positively or negatively (Bembenutty & Karabenick, 2004).

Much of these self-regulations may also be performed without the self-regulative student's metacognitive awareness. Student delay of gratification refers to the setting aside of immediately accessible rewards for a larger reward at a later time (Bembenutty & Karabenick, 2004). Simply put, a student who has a higher future time perspective will more likely apply a strategy of delaying gratification and will better plan toward achieving academic goals (Bembenutty & Karabenick, 2004). Through the aptly named Academic Delay of Gratification Scale (ADOGS), Bembenutty and Karabenick (2004) were able to quantify ability to delay gratification. Their studies revealed that three motivational factors stand out in determining the extent to which students delay immediate gratification for a greater reward to be earned later. Much depended on how much the students were interested in the alternative, how much they valued either option, and whether or not they believed that choosing the less desirable option immediately would bring about success academically. Students who did not believe that they would be successful were much less able or willing to delay gratification for the perceived reward of greater academic success (Bembenutty & Karabenick, 2004).

Bembenutty and Karabenick (2004) conclude from Zimmerman's research (1998) that students with a higher or longer future time perspective (FTP) are more likely to delay gratification than students with a lower or shorter FTP. In considering delay of gratification as a strategy, it intertwines with self-regulation and Zimmerman's (1998) model. While much

research regarding FTP is incomplete, the evidence points to delay of gratification as a strategy of self-regulation that can lead to academic success (Bembenutty and Karabenick, 2004).

As mentioned previously, not all people have the same ability to delay gratification for a future goal. Rosenbaum (1989) studied links between delay of gratification and learned resourcefulness. Rosenbaum's Self-Control Schedule (SCS) has become a useful tool in measuring a person's ability to implement coping strategies that enable an individual to not only resist the stressor and use resources to overcome challenges, but also to generate positive habits that allow for greater success in all circumstances (1989). It covers the use of cognition and self-instruction to cope with stressors, application of problem-solving strategies, one's tendencies to delay gratification, and one's perceived ability to self-regulate. People who perform well on the SCS are considered Highly Resourceful, while those who score lower on the test are considered Low Resourceful. Certain strategies have also been shown to be used more by highly resourceful college students, including planful problem solving and positive reappraisal, such as seeking out solutions through communication with others, while those with lower resourcefulness used more wishful thinking, kept to themselves more, and attempted more avoidance strategies (Akgun, 2004).

Rosenbaum points to three types of self-regulation: automatic and unconscious, non-automatic redressive self-control, and non-automatic reformative self-control (1989). Automatic and unconscious forms of self-regulation happen biologically in order to maintain homeostasis within the body. Redressive self-control refers to various coping strategies one might employ in a stressful situation, such as trying to talk to oneself, using one's imagination to transport themselves away from a stressful situation, or distracting one's attention away from the stressor. The purpose of these is to regain homeostasis in the body so that one can perform desired tasks at

a high ability. Lastly, reformative self-control is consciously an attempt to break harmful habits and start healthy ones to create a healthy behavior regarding stress. A common place that we see reformative self-control is in dieting, in which someone is exercising and eating healthy while they could be doing something more enjoyable (Rosenbaum, 1989).

Redressive self-control and reformative self-control do not need to be exclusive. Redressive self-control refers to ways to cope with situations as they are happening, in order to regain homeostatic functioning of the body. Reformative self-control focuses more on the building of habits. It has been shown that Highly Resourceful people are more likely to delay immediate gratification for the sake of a greater one in the future (Rosenbaum, 1989). Highly Resourceful people use self-control strategies and skills when dealing with stressful situations, but Low Resourceful people do not typically lack the knowledge of the skills, apply them less frequently over an extended period of time (Rosenbaum, 1989). Students who used more strategies were able to ultimately find more success academically (Kennett, Young, & Catanzaro, 2009). This research points to the need for students with Low Resourcefulness to not only be taught redressive self-control strategies, but habit-altering reformative self-control strategies for handling challenging situations (1989).

Kennett's (1994) research concerning self-management shows that having a high learned resourcefulness likely will lead to greater success than those who were lacking in such a trait. It is apparent that students who are more naturally gritty tend to persevere through challenges (Farrington et al., 2012), and high achievers in school are typically more academically resourceful than low achievers. Kennett's research (1994) questioned whether struggling students in college with high resourcefulness were more likely to complete a self-management program and to utilize the strategies learned in order to succeed in college than struggling

students with low resourcefulness. The results showed that students who began with a low resourcefulness were more likely to drop out of the program, but for those who completed the program, improvements were made that were consistent with those who had higher academic resourcefulness (Kennett, 1994). This shows that there is a benefit to teaching self-management to students at the collegiate level.

Specific Motivating Factors

This literature review has focused primarily on two broad areas in which teachers have the ability to affect student motivation. The first area focused on meeting basic psychological needs of students, and how to foster intrinsic motivation while maximizing extrinsic motivation, while the second dealt more with cognitive strategies that can be taught to help students, primarily in the area of competence. This final section points to other ideas that may be helpful to consider, such as other forms of motivation, as well as dealing with questions of how culture can play a role in academic perseverance.

College and Career as Motivator

In light of evidence of the achievement gap in schools, Radcliffe and Bos (2013) performed a seven-year study and program with the intent of building college and career readiness in adolescents, beginning in middle school and reaching its conclusion after graduation. The researchers used three of Conley's keys for building college readiness to structure the strategies to be implemented in the study: college knowledge, academic behaviors, and content knowledge. Radcliffe and Bos (2013) documented five goals, with eight strategies used to reach them. The goals were "to understand the nature of college, recognize that a college education may be important to his or her future successes, gain positive perceptions and aspirations about college, prepare academically for college admission, and set short- and long-

term goals that support becoming college-ready" (Radcliffe & Bos, 2013, p. 137). The means by which these goals were to be reached were rooted in Conley's three keys for building college readiness and included academic tutoring with a pre-service teacher, college presentations, visiting college campuses, and writing marathons during college visits. Tutors were asked to meet twice a week with the student and to initially focus on building relationships with their students and later shifting toward a focus on setting goals and implementing plans to achieve them.

The study consisted of two groups. The treatment group was made up of 50 sixth-grade students with diverse backgrounds who were provided with the strategies and tutors based on Conley's research (Radcliffe & Bos, 2013). Another group, the control group, was made up of 50 sixth-grade students who did not interact with any of the strategies or aids. Both groups were made up of at-risk students, as deemed by the school administration. By the end of the survey, only 31 participants remained in the treatment group due to changes in school boundaries and student withdrawal (Radcliffe & Bos, 2013). The results show that the students in the group that received these strategies were in a significantly better place to succeed in high school and to attend a college after high school than the students in the control group that did not have access to these strategies (Radcliffe & Bos, 2013). These students were more likely to write about academic goals and strategies in their goal-setting worksheets that were filled out three times during high school. While there was significant data to support the list of strategies for students to strive for college and career readiness, the biggest weakness in the data is the small sample size (Radcliffe & Bos, 2013).

Cultural Challenges to Motivation

As there are many factors that affect student motivation, what role might cultural background or ethnicity play? A study by Piña-Watson, López, Ojeda, and Rodriguez (2015) focuses on comparing and connecting two categories of factors: cognitive and cultural. This study focused specifically on Mexican American students in Texas. Cognitive factors that are used in this study include grit, academic skepticism, hope, and academic motivation. The cultural factors used in this study include familism, bicultural stress, ethnic identity, and generational status (Piña-Watson et al., 2015). The study focused on connections between these categories to see if the cultural factors had a role in affecting the cognitive factors, and vice versa. It was predicted before the study (Piña-Watson et al., 2015) that the cultural factors would play a role in being able to predict cognitive factors, such as academic motivation, for these students. Each factor was determined using a survey and Likert-type scale and administered to the students voluntarily and anonymously. Data was taken, and it was determined that the four cultural factors did affect motivation, but some were better predictors of motivation to students (Piña-Watson, et al., 2015).

The results showed that bicultural stress and familismo (the belief that maintaining a close relationship with one's family and fulfilling obligations to support family is essential), were greater factors in determining motivation than ethnic identity and generational status (Piña-Watson et al., 2015). This research supports other data that shows connections between bicultural stress and lower academic achievement. Other studies connect academic motivation to academic achievement, so it is not a large leap to make to consider that familismo and bicultural stress can positively or negatively affect student achievement for Mexican American students (Piña-Watson et al., 2015). While this is just one specific group, it is worth noting the importance of

fostering positive cultural experiences for students, as it can have a positive effect on their academic motivation (Piña-Watson, et al., 2015).

In Turkey, the topic of self-efficacy has been studied with regard to motivation. Aydin (2015) studied the perception of high school students' self-efficacy to see if there is a connection between self-efficacy, their ability to use metacognitive strategies, and their academic motivation. The study was structured in a way that it connected either self-efficacy or metacognitive strategy use with four types of motivation: intrinsic, amotivation (unwillingness to perform a task), extrinsic motivation-career, and extrinsic motivation-social. The study was conducted in three schools in Kars, Turkey with 136 female and 150 male students between ages 15 and 17 participating (Aydin, 2015). The Self-efficacy for Learning and Performance scale and the Metacognitive Self-Regulation scale (part of the Motivational Strategies for Learning Questionnaire), which is a seven-point Likert scale of twelve items, was translated into Turkish for the students to complete. The author measured the students' motivation using the Academic Motivation Scale for Learning Biology, a six-point Likert scale with 19 items, subdivided into the four motivational categories listed above (Aydin, 2015).

The results showed a strong connection between metacognitive strategies and self-efficacy (Aydin, 2015). It also showed a strong connection between self-efficacy and intrinsic motivation. This also shows negative relationship between amotivation and metacognitive strategies, intrinsic motivation, and extrinsic motivation-career. Simply put, students who are not interested in biology have no desire to have a career in a field related to biology and are less likely to apply metacognitive strategies, which may be due to their lack of self-efficacy. These factors often cannot be separated. At face value, the study reinforces that students with high self-

efficacy and effective use of metacognitive strategies will have a higher motivation to learn biology.

Crow and Kastello (2016) compared two studies with elementary students in Colorado Springs, Colorado in 2008 and in Kampala, Uganda in 2014. These two populations represent an individualistic and collectivist culture, respectively (Crow & Kastello, 2016). The objectives were to compare the disposition of the students in each culture with regard to intrinsic motivation to pursue information. Through qualitative and quantitative data, comparisons could be drawn between each group. First, through interviews, the students in both cultures highly valued play and creativity, noting play as an important contributor to founding of the Ugandan school (2016). Curiosity was also important for students to pursue information (Crow & Kastello, 2016). Over half the students in each study mentioned a creative activity such as writing or drawing as something they did for fun. Crow and Kastello (2016) connect these two items to autonomy.

There was, however, one Ugandan student who mentioned a decrease in her desire to create, citing hardships and abuse she endured at the hands of someone older than she as reasons for her lack of desire (Crow and Kastello, 2016). Other research has also shown that negative behaviors can do great harm to individual students. When a teacher is present and involved in the student's life and daily activities, findings have shown that students feel that their needs are being met, which would lead to more positive motivational outcomes (Skinner & Belmont, 1993). If a student feels that a teacher is less involved, not only does that student perceive that his or her needs are not being met, but will also perceive that the teacher is more coercive, which would lead to significantly less positive motivation in the classroom.

This indeed has interesting implications for teachers. Skinner and Belmont (1993) point to evidence that how teachers are perceived as well as their behaviors affect students'

engagement and behaviors in the classroom, but this is also a two-way street. Teachers' perceptions of student behaviors will also affect their behaviors. Thus, frequently, teachers will respond positively (positive feedback and sustained engagement) to students who are showing signs of engagement and interest in class, while responding negatively (coercion, negative external motivational practices, and neglect) toward students who are showing negative behaviors and engagement.

Best Practices For Schools and Teachers

The danger in much of the research presented is to see the data fatalistically, as something that is already ingrained in personality and cannot be changed. While there are predispositions that enable certain scholars to persevere with apparent ease, to throw hands up and admit defeat would be a strong disservice to the individuals who perhaps need the most support to persevere. Dweck, Walton, and Cohen (2014) have put together various research pointing to ways in which teachers and schools can best influence students to persevere academically. The large umbrella of topics covered includes academic mindsets, goals, belonging, affirmation, and self-regulation, which the researchers funnel into three areas: challenge, scaffolding, and belonging. Good schools will set high standards and promote a growth mindset in their students. They will provide appropriate support to their learners to cover a wide variety of social and educational needs. Good schools will create a positive environment that supports student belonging and feelings of being connected and supported (2014).

The first key factor addressed by Dweck, Walton and Cohen is that good schools appropriately use challenge (2014). Interestingly enough, while studying students who have dropped out of high school, over two-thirds of students stated that they would have worked harder had their teachers demanded more for them. Having students perceive that their teachers

have high expectations for students, especially as they transition to middle school years, is "the most consistent predictor of all motivational outcomes" (p. 23). This remained constant regardless of the varied demographics presented. This employs a 'self-fulfilling prophecy' that works at its best when implemented early in the year with consistent reinforcement. This vote of confidence provided from the front has shown to especially benefit minority students, as it promotes both a spirit of belonging and a growth mindset (Dweck, Walton & Cohen, 2014). It also typically works because when teachers engage students in this way, they give their students more attention. They are also likely to provide them with positive feedback.

While these are things we want to promote, schools often implement processes that suppress growth mindset. Along with attempting to engage students positively with practices of positive feedback, educators also need to avoid the processes that produce negative results. Negative practices will often show up when well-meaning teachers over-praise mediocre or below-average work and effort, especially in regard to minorities.

Along with having high standards for every student, teachers must also find ways to make it known to students that they have high expectations. Students must be able to perceive that their teachers believe that they are capable of achieving their high standards. This is the tight rope that teachers must walk. If academic rigor is present, it must be framed in a way that makes it seem possible and likely for success, or students may see it as overwhelming. The student needs to believe that any failure does not come from lack of ability, but a temporary challenge to be overcome with sustained effort from the student and support from the teacher.

The second key factor discussed is scaffolding (Dweck, Walton & Cohen, 2014). As with challenge, scaffolding must be done carefully to avoid negative results. There are different forms that scaffolding may take, including cognitive and motivational scaffolding, both with their

benefits in the classroom. With regard to cognitive scaffolding, Dweck, Walton and Cohen have also pointed to the benefit of specific feedback (2014). When replacing the common practice of grades, check marks, and other impersonal forms of feedback with specific feedback, including handwritten notes that provide practical strategies for improvement, dropout rates are typically reduced. Personalized feedback does much to support many needs of the student, including a belief that they belong, that their teacher cares, and the belief that growth is attainable. Ways that expert teachers scaffold is through asking questions to deepen student learning. Up to 90% of the feedback of an expert teacher or tutor could be in the form of a question. Their questions will be more specific and individualized to the student (Dweck, Walton & Cohen, 2014).

In motivational scaffolding, two points of emphasis are goal-setting and self-management (Dweck, Walton & Cohen, 2014). The process of goal-setting is best utilized when a student breaks up a long-term goal into a series of smaller steps. Along with this, as seen in previous research, phrasing of tasks to sound less controlling can increase autonomy, and thus increase intrinsic motivation. Intrinsic benefits, such as enhanced personal goals, deeper relationships, and contributions to the community, have been shown consistently to be stronger factors in motivation than extrinsic rewards, such as wealth, status, or good grades.

The third means by which Dweck, Walton, and Cohen point to is belonging, referring to "a sense of fellowship with peers and teachers" (p. 30, 2014). This has been seen through many studies and surveys, showing that students have strong desires to connect one-on-one with their teachers. Students who have dropped out have shared that their best days were when they connected with their teachers. In fact, one of the strongest indicators of success academically in a middle school study was the extent to which students felt that their teachers cared for them (Dweck, Walton & Cohen, 2014). This, when paired with the desire that many dropouts have

shared, that teachers had pushed them harder, point to the need for teachers to be a lot like good parents: Authoritative, yet caring.

The last thing that Dweck, Walton, and Cohen (2014) touch on is the benefits that groups can have on a student's sense of belonging. Just like many of these areas, the structure and framing of a task is important in setting a culture of learning. If the instructor is able to foster a culture of cooperation and a growth mindset among the group, great gains have been made. Some processes in which group work has been shown to be highly beneficial include using deep questions to drive discussion in the midst of different tasks, lectures, and hands-on learning. A large benefit to this is that students are able to see that their challenges faced in a particular area is also shared by classmates, and can then work together to achieve a common goal, creating for themselves an academic identity.

CHAPTER III: DISCUSSION AND CONCLUSION

This chapter will summarize the literature that has been reviewed concerning academic motivation while synthesizing and suggesting positive practices that teachers can implement to benefit their students. It will then point to the limitations of the research conducted as well as possible areas where further research would be beneficial.

Summary of Literature

The research presented in this literature review provides a clear understanding of the importance of academic motivation with the intent of using research to direct positive action from teachers and interactions of teachers with their students that would empower students to persevere when faced with challenges. Some may refer to this as academic perseverance (Farrington, et al., 2012), while others point to the terminology of academic tenacity (Dweck, Walton, & Cohen, 2014). These terms are closely linked in definition and in best practices. Regardless, the evidence points to this trait having positive benefits in academics and beyond (Farrington, et al., 2012; Duckworth et al., 2007; Mischel, Shoda, & Peake, 1988; Deci & Ryan, 2000). It was also shown that when isolated and tested, there was a clear connection to individuals who were highly successful in their field and their scores on a grit scale, providing evidence of the value of grit, or long-term perseverance. A trait connected to this is the ability to delay gratification for the sake of a more long-term goal (Bembenutty & Karabenick, 2004).

Knowing that academic perseverance is an important trait, not just for an academic setting, but for creating lifelong learners and healthy individuals, the literature review then discussed various sources of motivational research and theories that can point teachers in the right direction toward fostering growth for students in this area. The research covered in this

review focused on a two broad areas surrounding motivation: teacher strategies that can be implemented to create an environment conducive to academic perseverance, with an emphasis on meeting the needs of autonomy, competence, and relatedness (Deci & Ryan, 2000), and cognitive strategies that teachers can directly teach to their students, with an emphasis on self-regulation strategies (Zimmerman, 1998). In both of these areas, the emphasis is on fostering intrinsic motivation, which has been a consistent predictor and indicator of academic perseverance.

The research based on teaching strategies has consistently pointed to a broader approach than simply performing one task and reaping the benefits of a motivated classroom. More consistently, it has been shown that much intrinsic motivation grows when students perceive that a teacher cares for them and when a task is interesting and worthwhile (Deci & Ryan, 2000; Lessard et al., 2013; Patall et al., 2018). Among other means that enable growth mindset and encourage perseverance, a profound impact can be placed on scaffolding. When teachers appropriately scaffold a project, and connect it to student goals, students find greater success. This could look like using appropriate language that students not only understand, but language that students perceive as non-controlling, and thus allow for a more autonomy-supportive classroom that makes students feel welcome (Belland, Kim, & Hannafin, 2013).

The literature review then addressed ways that teachers can implement self-regulation strategies, often focusing on ways to help students overcome anxiety in a particular setting through cognitive strategies, including what Zimmerman (1998) refers to as self-regulation. In self-regulation, there are practices that foster benefits, such as having students set academic goals, applying strategies to complete the task, and self-monitoring and self-evaluating what they have done. Setting short term goals that students care about has shown positive signs as it

allows for consistent feedback. Task value has been an idea linked closely to setting goals; when students set proximal goals, task value increases, as does the intrinsic motivation to complete a task (Bandura & Schunk, 1981).

In the final section of the review, differentiation was made with regard to cultural variation, while also summing up much of the research with school-wide lens. Even with cultural differences, there were shared or similar values or desires, and perhaps the same three basic psychological needs of autonomy, competence and relatedness to grow in the ability to delay gratification and have academic perseverance to complete challenging learning tasks (Deci & Ryan, 2000).

Professional Application

In light of the research, it is clear that there are many strategies and behaviors that teachers can implement in order to foster academic perseverance in the classroom. For a best practice, one cannot simply follow a protocol and assume that students will be grittier. With regard to the research as a whole, a few things warrant special attention. First, especially with regard to students who are at risk, it is important for teachers to know their students. This seems simple enough, but qualitative and quantitative studies are stating that a large number of at-risk students, who drop out of school perceive that their teachers do not like or care about them (Lessard et al., 2013; Dweck, Walton & Cohen, 2014). Connections to autonomy are highly important. The environment in which intrinsic motivation flourishes most has been presented consistently to be autonomy-supportive, but the application of what this looks like based on cultural context may have some variance (Vibulphol, 2016; Deci & Ryan, 2000; Dweck, Walton, & Cohen, 2014). Teachers may implement the following practical strategies including non-controlling phrasing, offering areas for student choice, and creating an

environment in which students feel that they have a say. With regard to phrasing, this may mean that rather than telling someone to do something, a teacher may need to spend more time explaining the rationale behind a task (Belland, Kim, & Hannafin, 2013). Another important aspect to positively affect teaching is consistent, specific and meaningful feedback (Deci & Ryan, 2000; Laursen, 2015; Koth, 2016). Connecting the reason to something valued by the learner, such as improved competence in something they care about, will typically be a stronger, more intrinsic motivating factor to the student than to get a gold star, good grade, or even a lollipop.

With the basic needs being more readily met through teaching practices, teachers can directly influence motivation by teaching students self-regulation strategies that can allow them to overcome their own challenges, fostering more competence and autonomy. Many ways that this can create deeper intrinsic motivation is through students setting their own goals and monitoring their own progress (Zimmerman, 1998). Along with this progression, Rosenbaum (1989) suggests moving people toward reformative self-control. Giving students practical steps for when their anxiety is high has its value, as Rosenbaum, would state (1989), but the goal would be to have them move toward a state of reformative self-control, in which positive habits are built up that minimize the anxiety that can move students out of homeostasis.

Finally, there are cultural considerations. It is valuable as an educator to create a space in which people of differing viewpoints or cultures can have a sense of belonging and a positive cultural experience (Piña-Watson, et al., 2015; Dweck, Walton & Cohen, 2014). While there are differences in culture, there is much overlap to human desires and basic psychological needs (Deci & Ryan, 2000).

Limitations of the Research

Limitations in this research exist in areas that can be explored in more depth. One such area is the further exploration of specific groups of people. While Deci and Ryan (2000) have presented extensive evidence that autonomy, competence, and relatedness are basic psychological needs, in the increasingly global world, ways in which this may differ across cultures, with regards to majority and minority cultures, and even gender, could be further explored.

There are also other theories that were not explored in as much detail, such as social-learning theory, terror management theory, flow theory, or control theory. While much of these theories create overlap, it is worth noting that this is not an exhaustive look at all viewpoints on the broad topic of motivation. Thus, more exhaustive research could be done in synthesizing the theoretical perspectives not included in this review.

Lastly, more can be tested with specific practices that teachers employ. Much of the ideas presented here may look vastly different depending on the instructor. While many teachers believe that an autonomy supportive classroom is ideal for motivating students, they still employ many autonomy controlling practices, in particular with unmotivated students (Hornstra, et al., 2015). While this could be dismissed as hypocritical teaching methods, many teachers defend their teaching practices by stating that students have a greater need for relatedness than for autonomy.

Implications for Future Research

Areas to explore in the future would be rounding out different ideas through a more exhaustive look at specific traits of successful schools and teachers. Effects of various teaching styles in the classroom can be researched at a more practical level for a more isolated variable; more can be uncovered about practices that are have been seen to be beneficial as

well as those that have not. The research presented in this literature review has covered a wide variety of learning environments, including science classrooms, language learning classrooms, covering a full spectrum of ages, but with a wide variety of cultures and ages and subjects represented, more research can be done to confirm or enhance the research that exists (Vibulphol, 2016; Crow & Kastello, 2016; Lessard, et al., 2013; Radcliffe & Bos, 2013; Aydin, 2015). Thus, to focus explicitly and pragmatically on the theories presented may be helpful with a greater emphasis on specific ages, cultures or subject matters. Among prominent ideas that can be pragmatically studied is interest. This is an important idea in the motivation literature, and more specifics could be studied in terms of demographic, culture, age, or gender.

With regard to achievement goal theory (Senko, et al., 2011), more research can be done to see value in multiple goals. Since pursuit of performance goals often increase achievement and mastery goals typically increase motivation: can students pursue a performance goal and a mastery goal in hopes that both academic motivation and achievement will be high (Senko et al., 2011)? More research is needed to determine the effectiveness of such a pursuit.

While certain theories around learned resourcefulness point to its value at a collegiate level (Rosenbaum, 1989; Kennett, 1994; Akgun, 2004; Kennett, Young, & Catanzaro, 2009), research can be done to record best practices in how to instruct students to utilize resourcefulness strategies, such as support-seeking behaviors. With limited research in studying learned resourcefulness at a young age, it would be worthwhile to research the value of gradually teaching various forms of resourcefulness strategies to students at a young age.

There are many other factors that were not discussed that may have an effect on academic performance outside of school. It would be worth looking at ways teachers can educate families about academic perseverance with regard to work outside of school, such as

homework. It is also worth noting that for this research to be relevant, students need to be present in school. Thus, it would be worth increased study of how this information or research could be connected or separated from issues of truancy.

Conclusion

In conclusion, the research presented has helped clarify practices that teachers can implement in the classroom to encourage students to not give up, but to keep working in the face of adversity in academics. It has been seen that teachers play a large role in empowering students to persevere academically to a lifetime of learning, or tacitly giving them the perception that what they do is futile (Lessard, et al., 2013; Dweck, Walton & Cohen, 2014). This review has sought to remove blinders of frequently used negative practices and has attempted to highlight the positive practices teachers can implement to support students through the many challenges faced in school, in order that the students of today can be equipped to overcome tomorrow's challenges.

References

Akgun, S. (2004). The effects of situation and learned resourcefulness on coping responses. *Social Behavior and Personality, 32* (5), 441-448.

Aydin, S. (2016). An analysis of the relationship between high school students' self-efficacy, metacognitive strategy use and their academic motivation for learn biology. *Journal of Education and Training Studies, 4*(2), 53-59. doi:10.11114/jets.v4i2.1113

Bandura, A., & Schunk, D. H. (1981). Cultivating competence, self-efficacy, and intrinsic interest through proximal self-motivation. *Journal of Personality and Social Psychology, 41* (3), 586-598.

Belanger, J. R. (2016). Learning in the laboratory: How group assignments affect motivation and performance. *Journal of Education and Learning, 5* (1), 210-217. doi: 10.5539/jel.v5n1p210

Belland, B. R., Kim, C., & Hannafin, M. (2013). A framework for designing scaffolds that improve motivation and cognition. *Educational Psychologist, 48*(4). 243-270. doi:10.1080/00461520.2013.838920

Bembenutty, H., & Karabenick, S. A. (2004). Inherent association between academic delay of gratification, future time perspective, and self-regulated learning. *Educational Psychology Review, 16,* (1), 35-54.

Crow, S. R., & Kastello, L. (2016). The dispositions of elementary school children of individualistic and collectivist cultures who are intrinsically motivated to seek information. *School Library Research,* 19.

Davis, W. E., Kelley, N. J., Kim, J., Tang, D., & Hicks, J. (2015). Motivating the academic mind: High-level construal of academic goals enhances goal meaningfulness, motivation,

and self-concordance. *Motivation & Emotion*, *40*(2), 193-202. doi:10.1007/s11031-015-9522-x

Deci, E. L. (1972). The effects of contingent and noncontingent rewards and controls on intrinsic motivation. *Organizational Behavior and Human Performance 8,* 217-229. doi: 10.1016/0030-5073(72)90047-5

Deci, E. L., Eghrari, H., Patrick, B.C., & Leone, D. R. (1994). Facilitating internalization: The self-determination theory perspective. *Journal of Personality, 62* (1)*,* 119-142.

Deci, E. L., & Ryan, R. M. (2000). The 'what' and 'why' of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry (2)* 4. 227-268. doi: 10.1006/ceps.1999.1017

Duckworth, A., Peterson, C., Matthews, M., & Kelly, D. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology., 92* (6), 1087-1101. doi: 10.1037/0022-3514.92.6.1087

Dweck, C. S., Walton, G. M., & Cohen, G. L. (2014). Academic tenacity: Mindsets and skills that promote long-term learning. *Bill and Melinda Gates Foundation,* 1-31.

Farrington, C. A., Roderick, M., Allensworth, E., Nagaoka, J., Keyes, T. S., Johnson, D. W., & Beechum, N.O. (2012). Teaching adolescents to become learners. The role of noncognitive factors in shaping school performance: A critical literature review. Chicago: University of Chicago Consortium on Chicago School Research.

Forty developmental assets for adolescents (1997, 2007). Search Institute. Retrieved from Search Institute website: http://www.search-institute.org/content/40-developmental-assets-adolescents-ages-12-18.

Grolnick, W. S., & Ryan, R. M. (1989). Parent styles associated with children's self-regulation and competence in school. *Journal of Educational Psychology, 81* (2)*,* 508-517.

Hornstra, L., Mansfield, C., van der Veen, I., Peetsma, T., & Volman, M. (2015). Motivational teacher strategies: The role of beliefs and contextual factors. *Learning Environment Research 18* (3), 363-392. doi: 10.1007/s10984-015-9189-y

Kennett, D. J. (1994). Academic self-management counselling: Preliminary evidence for the importance of learned resourcefulness on program success. *Studies In Higher Education, 19*(3), 295.

Kennett, D. J., Young, A. M., & Catanzaro, M. (2009). Variables contributing to academic success in an intermediate statistics course: the importance of learned resourcefulness, Educational Psychology, *29* (7), 815-830. doi: 10.1080/01443410903305401

Koth, L. (2016). Motivation through routine documentation. *American Secondary Education 45*(1), 59-69.

Laursen, E. K. (2015). The power of grit, perseverance, and tenacity. *Reclaiming Children & Youth, 23* (4), 19-24.

Lee, J. (2014). The relationship between student engagement and academic performance: Is it myth or reality? *Journal of Educational Research. 107, (3)* 177-185. doi: 10.1080/00220671.2013.807491

Lessard, A., Butler-Kisber, L., Fortin, L., & Marcotte, D. (2014). Analyzing the discourse of dropouts and resilient students. *Journal of Educational Research, 107, 2.* 103-110. doi: 10.1080/00220671.2012.753857

Martin, A. J. (2015). Growth approaches to academic development: Research into academic trajectories and growth assessment, goals, and mindsets. *British Journal Of Educational Psychology*, *85*(2), 133-137. doi:10.1111/bjep.12071

Metcalfe, J., & Mischel, W. (1999). A hot/cool-system analysis of delay of gratification: Dynamics of willpower. *Psychological Review, 106,* (1), 3-19.

Mischel, W., Shoda, Y., & Peake, P. K. (1988). The nature of adolescent competencies predicted by preschool delay of gratification. *Journal of Personality and Social Psychology, 54,* (4) 687-696.

Murphy, P. K., & Alexander, P. A. (2000). A motivated exploration of motivation terminology. *Contemporary Educational Psychology* 25, 3-53. doi: 10.1006/ceps.1999.1019.

Patall, E. A., Steingut, R. R., Vasquez, A. C., Trimble, S. S., Pituch, K. A., & Freeman, J. L. (2018). Daily autonomy supporting or thwarting and students' motivation and engagement in the high school science classroom. *Journal of Educational Psychology, 110* (2), 269-288. http://dx.doi.org/10.1037/edu0000214

Piña-Watson, B., López, B., Ojeda, L., & Rodriguez, K. M. (2015). Cultural and cognitive predictors of academic motivation among Mexican American adolescents: Caution against discounting the impact of cultural processes. *Journal Of Multicultural Counseling And Development*, *43*(2), 109-121. doi: 10.1002/j.2161-1912.2015.00068.x

Radcliffe, R. A., & Bos, B. (2013). Strategies to prepare middle school and high school students for college and career readiness. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 86* (4) 136-141, doi: 10.1080/00098655.2013.782850

Rosenbaum, M. (1989). Self-control under stress: The role of learned resourcefulness. *Advances in Behaviour Research and Therapy* (11), 249-258. doi: 10.1016/0146-6402(89)90028-3

Schunk, D. H., & Zimmerman, B. J. (2007). Influencing children's self-efficacy and self-regulation of reading and writing through modeling. *Reading & Writing Quarterly*, *23* (1) 7–25, 2007. doi: 10.1080/10573560600837578

Senko, C., Hulleman, C. S., & Harackiewicz, J. M. (2011). Achievement goal theory at the crossroads: Old controversies, current challenges, and new directions. *Educational Psychologist, 46*(1), 26-47. doi: 10.1080/00461520.2011.538646

Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology, 85*(4), 571-581. doi: 10.1037/0022-0663.85.4.571

Smith, J. F., & Skrbis, Z. (2017). A social inequality of motivation? The relationship between beliefs about academic success and young people's educational attainment. *British Educational Research Journal, 43* (3), 441-465. doi: 10.1002/berj.3272

Snipes, J., Fancsali, C., & Stoker, G. (2012). Student academic mindset interventions: A review of the current landscape. *Stupski Foundation,* 1-53.

Vallerand, R. J., & Bissonnette, R. (1992). Intrinsic, extrinsic, and amotivational styles as predictors of behavior: A prospective study. *Journal of Personality, 60* (3), 599-620. doi: http://dx.doi.org/10.1111/j.1467-6494.1992.tb00922.x

Vallerand, R. J., Fortier, M. S., & Guay, F. (1997). Self-determination and persistence in a real-life setting: Toward a motivational model of high school dropout. *Journal of Personality and Social Psychology, 72* (5), 1161-1176. doi: 10.1037/0022-3514.72.5.1161

Vibulphol, J. (2016). Students' motivation and learning and teachers' motivational strategies in english classrooms in Thailand. *English Language Teaching, 9* (4), 64-75. doi: 10.5539/elt.v9n4p64

Williams, G. C., & Deci, E. L. (1996). Internalization of biosocial values by medical students: A test of self-determination theory. *Journal of Personality and Social Psychology, 70* (4) 115-126.

Yeon-Koo, C., & Seung-Weon, Y. (2001). Optimal incentives for teams. *American Economic Review, 91*(3), 525-541. doi: 10.1257/aer.91.3.525.

Zimmerman, B. J. (1998). Academic study and the development of personal skill: A self-regulatory perspective. *Educational Psychologist, 33*(2/3)*,* 73-86. http://dx.doi.org/10.1080/00461520.1998.9653292

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice, 41* (2), 64-70. doi: 10.1207/s15430421tip4102_2

Zimmerman, B. J., & Schunk, D. H. (2007) Influencing children's self-efficacy and self-regulation of reading and writing through modeling. *Reading and Writing Quarterly 23* (1), 7-25.