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Helping High School Students Succeed Academically by Meeting Their More Basic Needs

Karen Eyler Martin

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Helping High School Students Succeed Academically by Meeting Their More Basic
Needs

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Dedication

To my husband, Jeff Martin, and our daughters, Kirsten and Hanna. I could not have taken on and completed this monumental task without your love, support, and encouragement. The three of you have been my rock and my own private cheering team! You have celebrated and shared in my successes and have helped me wipe my tears of frustration. When I look at the three of you, I know I am looking at what love truly is. I also want to dedicate this to my mother, Diane Eyler, who has encouraged me tirelessly and has bragged about me endlessly!

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Abstract

In this action research, I seek to show the connection between breakfast consumption and student academic achievement. Students skip breakfast for a variety of reasons, including not allowing enough time and not having enough resources for it. Others eat what they can obtain, including snack foods that are highly processed. In addition, school districts have gotten away from making their meals from scratch, and instead, use a third-party catering service that often serves food that is cheap and easy to heat up, which often means it is highly processed and does not have the same nutritional content as whole foods. Maslow's hierarchy of needs shows how obtaining food is a basic need, but nowhere does it claim that the food needs to be nutritious. The researcher of this study explores how districts that serve whole foods and made-from-scratch meals affect student academic achievement as well as how breakfast consumption of grade 12 students in morning English Language Arts (ELA) classes affects their academic achievement.

Many people have heard that breakfast is the most important meal of the day, but does it matter what a person eats? I surveyed, interviewed, and observed 20 grade 12 students to determine if what they eat for breakfast has an impact on their academic achievement in ELA class. Studies have shown that many factors affect a student's academic achievement, including eating meals with his or her immediate family as well as the student's mental health and what intrinsic and extrinsic factors help to motivate him or her (Utter et al., 2016, 2019; Deci, 1071; Gagné and Deci, 2005; Morris and

Zental, 2014). Generally, students tended to be better motivated and had better grades and attention in class if they ate something for breakfast. Further study needs to be conducted to determine if what a teenager consumes for breakfast makes a difference in that person's attention in class as well as in that person's academic achievement. If schools can provide whole foods that are processed as little as possible, not only will there be less wasted, but students will have the fuel for their brains and bodies to tackle the academics they need to grow into productive members of society.

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Chapter One

Introduction

Teaching is a messy, wonderful, heart-breaking, rewarding profession. Educators plan, learn, perform, and control what they can but sometimes feel as though their efforts are never enough. Educators often become much more than simply teachers to their students and truly become one of the only trusted adults in their students' lives. However, even the most prepared and caring teachers come up against reluctant learners, often not discovering until well into the school year what is happening in those students' lives that is impacting their education. Sometimes the students present themselves as not seeing a purpose for what they are studying. Sometimes they will fall asleep in class. Sometimes they get mean and combative. Oftentimes these students are not having their basic needs of food, shelter, water, rest, security, and safety met. "Maslow (1943) initially stated that individuals must satisfy lower-level deficit needs before progressing on to meet higher level growth needs" (McLeod, 2020, p. 2). In order for a person to strive toward self-actualization, the baser physiological needs must first be met. For some students, these basic physiological needs are going unfulfilled and are interrupting the growth of the person.

Would students learn more readily if their basic needs are better met? Sarah would come to school most days hungry. She was able to procure some food from the breakfast items in the cafeteria since she was on the reduced-price program; however, it was never quite enough and it often consisted of simple carbohydrates, such as a bagel or

a bowl of cereal, that did not stay with her until lunch. One day Sarah swallowed her pride and asked her first period teacher for something to eat. The teacher, Mrs. Smith, happened to have a fruit and a cheese stick that Sarah could have. From that day, Mrs. Smith kept food in her room just for Sarah so that Sarah's brain and body had the fuel it needed to help Sarah learn and get her to lunch. Sarah's grades improved as a result, and she and Mrs. Smith developed a close relationship. This story is based off of true accounts of students needing food in the morning because their homes do not have anything, or at least not much, and often the food they have consists of simple carbohydrates and is highly processed. How can teachers expect these students to learn when their stomachs are growling?

There is a distinct achievement gap between income classes of students. The efforts to close this achievement gap "have included reducing class sizes, creating smaller schools, expanding early-childhood programs, raising academic standards, improving the quality of teachers, and encouraging minority students to take higher level courses" (Editorial Projects in Education Research Center, 2011, as cited in Mason & Dye, 2017, p. 46). Experts in the field have only recently started examining the needs of the students to see if that is an area where work needs to be done. Although this study has collected some data about student income levels along with academic achievement, the study does not examine that aspect of student life.

I teach in a rural high school situated west of Harrisburg, Pennsylvania across the Susquehanna River. The high school has approximately 1150 students. I teach three sections of grade 12 English (general English, or level 2, predominantly vocational-technical school students) along with other courses such as Theater Arts and College

Composition. Historically, I have taught college preparatory British Literature as well. In the past I have noticed that while my college-preparatory students have not normally come to my class hungry for food (some come hungry for attention and personal contact), several of my general English students during the morning periods do.

During the 2018-2019 school year, the majority of one class consisted of vocational-technical school students who were self-proclaimed haters of studying English Language Arts (ELA). They resisted reading the assigned literature as well as writing the assigned essays, claiming they could not see a point to our activities. As a result, I tried to complete everything in class justifying its worth. I have to wonder if a good breakfast would have helped their intrinsic motivation to learn.

During the 2019-2020 school year, some students ate breakfast in class. Often, they shared their food with one another. They did not seem to be any more motivated than any of my other level-two students, but my opinion might be biased. Granted, often the food they consumed in class was not of high nutritional value and sometimes consisted of a biscuit sandwich from a local convenience store, or a box of snack cheese crackers, or a bag of potato chips – food that is calorie-dense and nutritionally deficient. If they would have consumed more than “junk” in (highly processed, calorie dense, nutritionally deficient), would they have given me more than “junk” out (inattention, poor attitude resulting in poor grades)? Although Galioto & Spitznagel (2016) found that breakfast consumption has an effect on memory, particularly delayed recall, their study did not discover the effects it had on motivation or achievement of any kind.

Problem of Practice

High school students with little to no intrinsic motivation in regards to their education might not be getting their basic physiological needs met. Educators and administrators within those educational facilities are concerned with students obtaining an education, but students often need so much more than the basic reading, writing, and arithmetic. These seemingly unmotivated teens come to school with bigger problems than they ever reveal. Sometimes they are hungry, sometimes they are tired or afraid. School is their safe haven and it is where they can obtain a hot meal for free or cheap and interact with adults who care about them. When they are not having these basic needs met at home, they have a difficult time finding the motivation to complete the educational part of school.

In the recent past, research has shown that students usually need to be motivated in order to do well, and that intrinsic motivation is often strong in the early years of a child's life (Deci, 1971; Gagné & Deci, 2005; Martela et al., 2019; Ryan & Deci, 2000; Taormina & Gao, 2013). By the time the child reaches high school, that intrinsic motivation has been quelled. Often student motivation is linked to what is happening in the classroom. Many teachers use extrinsic motivators to coerce students to do what they want them to do. Most of the time, these motivations are positive in the form of rewards and grades (carrot), but sometimes they are negative in the form of punishment for not doing the required activity (stick). Intrinsic motivators come from the needs and drive of the student. Zeldin (2018) refers to the cognitive engagement, or personal investment and willingness to master difficult skills of the student and how the student must be cognitively challenged in order to help him reach his developmental potential (p. 358).

Zeldin et al. (2018) found from Corso et al. (2013) and Gottfried et al. (2011) that, “Upwards of 60% of students are chronically disengaged from school, bored, and disinterested, with insufficient motivation to learn” (p. 359). Maybe that lack of motivation is not boredom or disinterest, but unfulfilled physiological and safety needs.

Perhaps the problem does not lie with whether the students need a “carrot” or “stick” to motivate them; perhaps they need a real carrot to eat. They may need to feel safe and cared for before they are asked to learn. Maslow’s hierarchy of needs starts with the basic physiological needs of food, water, warmth, and rest. In order for higher needs to be met, often the basic physiological needs must be met first. If a student is hungry, that person will not be ready to learn nor will he or she be ready to satisfy the need of a feeling of accomplishment. In addition, if the student does not feel safe at home, safety being a second-tier need, that student again will not be able to have the need of a feeling of accomplishment met.

Phillips (2018) completed a study about how needs of employees and whether they are being met has an impact on the work environment. She stated that when the most basic needs of an employee are not being met, this person’s stress is high and he or she will most likely not be productive and have higher incidents of absenteeism (p. 20). She concluded by stating, “Not coincidentally, employers who prioritize health, wellness and safety often report higher returns on investment from these efforts due to helping employees meet multiple levels of need” (p. 21). The same can be said about school-aged children. If the teacher provides a safe environment and helps students who might be hungry get something to eat, those same students will be more likely to be more productive in the classroom. Unfortunately, some parents do not wholly care for their

children in today's world because they are too busy trying to make ends meet, or perhaps they never fully came to the realization that their children depend on them. When families are helped, whether it is economically or in matters of safety, their students will do better in school which will set them up for success later in life.

Maslow's initial hierarchy of needs theory is too simple to fully explain human motive and motivation, but it is a good place to start. The deprivation of a need is often overarching to other feelings and needs within a person, but it does not prevent the person from realizing and fulfilling higher needs (Hale et al., 2019; Kenrick et al., 2010; Phillips, 2018; Wahba, & Bridwell, 1973). Hale et al. (2019) applied Maslow's hierarchy to that of medical students and related it to their high burnout rate. They stated that "modern-day theorists have amended this conceptualization of the needs to coexist with one another, stating that humans still possess higher order needs even if their rudimentary ones are not met" (p. 109). They explained that populations living with scarcity were able to achieve self-actualization. "Maslow emphasized again and again that behavior is multi-determined and multi-motivated" (Wahba & Bridwell, 1973, p. 515). Higher-order needs can still be realized and sought even if lower-order needs have gone unfulfilled.

To help describe the dynamics in my classroom, I need to express that today's classroom is often divided into tracks to try to better prepare students for life after high school. One of those tracks is considered "business" or "general" and the school where I am employed is no exception. My level two students, also known as general classes, consist mostly of low-achieving students who are often marginalized by the education system. They often struggle to succeed academically and often come from working-class families, sometimes with only one parent. Sometimes they struggle with food insecurities

even when food is available through the school cafeteria, but other problems arise from these offerings.

School lunch programs are designed to provide students with a nutritious midday meal at a low cost, typically for \$3.00 on average. Many districts have expanded this program to include breakfast, and in some cases, snacks. However, what is being served to the students? Who decides? School food service directors (FSDs) manage the daily operations of cafeterias throughout district schools and are responsible for setting menus, as well as the ordering, preparation, and distribution of the food (Gabrielya et al., 2016). Often a catering service outside of the school district is hired to fulfill this responsibility. Not only are these services under strict regulations, but they also have competition from packed lunches and open campus opportunities for students to travel elsewhere to eat. However, the food served is often processed and high in simple carbohydrates to help prolong the shelf-life of the food and keep costs down. If nutritious, high-quality food is served to the students, will they be able to focus better on their academics and earn better grades? In short, will more nutritious foods help students better access their intrinsic motivation?

Theoretical Framework

Within this action research, I used self-determination theory (SDT), Glasser's choice theory, and Maslow's hierarchy of needs theory to help examine student motives as they relate to tier-1 and tier-2 needs and motivation that relates to these needs in general. According to Jing, Shuwen, & Zaidi, (2017),

Marx once said: 'Anyone who does not at the same time work for his own needs and the need of the organ, it cannot do anything'. Need is the impulsion of

incentives, only by starting from people's need can we seize the fundamental help to arouse the enthusiasm of work and positivity of the enterprise staff.

This can be stated about all people, young and old, in school or not.

Self-determination theory is a broad framework that helps explain human motivation and personality. Humans have “natural developmental tendencies” of integrating new experiences and challenges into a sense of self (or personality development), but they do not operate automatically. “[T]he social context can either support or thwart the natural tendencies toward active engagement and psychological growth, or it can catalyze lack of integration, defense, and fulfillment of need-substitutes” (Center for Self-determination Theory, 2020, Meta-Theory section). When used in conjunction with choice theory and Maslow’s hierarchy of needs, human motivation can be studied. Furthermore, studies have been conducted to show how intrinsic and extrinsic factors impact a person’s well-being. “Intrinsic goals are thought to satisfy the basic psychological needs for autonomy, competence, and relatedness (Deci & Ryan, 2000), and satisfaction of these three needs has been shown to mediate the positive correlations between intrinsic aspirations and well-being (e.g., Niemiec et al., 2009)” (Martela, Bradshaw, and Ryan, 2019, p. 3). Combining SDT with choice theory and Maslow’s hierarchy of needs should give a sufficient framework to explain adolescent motivation and well-being.

Choice theory has an overarching impact on this study because it helps to explain human behavior and relationships. A large part of the teaching profession is building relationships; if the students do not trust their teacher, they will be hesitant to follow him or her into unfamiliar territory, whether that territory includes Shakespeare or algebra.

One of William Glasser's axioms states, "All Total Behavior is chosen, but we only have direct control over the acting and thinking components. We can only control our feeling and physiology indirectly through how we choose to act and think" (Choice Theory Psychology, n.d., Ten Axioms section). Helping teenagers learn how to act and think in various situations is one of the goals of education. If these teenagers do not have the motivation to act and think because their motives are quelled through hunger or fear, they might not succeed academically. Showing how unfulfilled basic needs of these students have impacted their motivation to learn and academic achievement is a goal of this study.

According to the basic concepts of choice theory, all behavior is purposeful. When a person gets what he or she wants, this behavior satisfies one of five basic needs, which in turn, provides motivation for all that person does (Glasser Institute for Choice Theory, n.d.). Figure 1.1 shows the most basic need being that of survival, which includes food, water, shelter, safety, reproductive sex (propagation of the species), and anything else one needs to sustain life. The second tier includes relationships that make a person feel like a part of a group or community. Glasser lists his needs from basic to abstract. "Pre-eminent in choice theory is the principle that all motivation of human behavior springs from current innate needs and more specifically from human wants. Human needs and wants thus energize the behavioral system for the purpose of impacting the world so as to shape it in a very personal and internally satisfying manner" (Wubbolding, 2017, p. 18). Hopefully feeding hungry students will allow teachers to lead student behavior to learning to help positively shape their world.

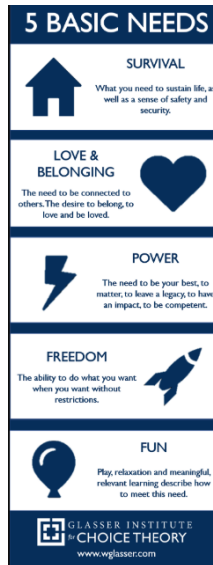


Figure 1.1 Glasser’s Choice Theory

Knowing where students’ needs lie and knowing how to meet those needs, as well as how those needs affect the learning process, is the basis for this study. From Glasser’s choice theory, using Maslow’s hierarchy of needs theory further helps determine student needs and how to satisfy those needs. One can compare Figure 1.1 to Figure 1.2 and see that Maslow’s hierarchy of needs does not differ significantly from Glasser’s choice theory. Choice theory, however, considers both wants and needs of the person whereas Maslow only considers needs.

Maslow’s hierarchy of needs theory has been utilized to help explain human motive and motivation for decades. Since its inception, it has been questioned and altered, but it is still used as a theoretical framework to try to explain human ideas of deprivation/domination and gratification/activation (Wahba & Bridwell, 1973). Most studies questioning Maslow’s hierarchy identify a basic physiological need and a basic safety need (Hale et al., 2019; Kenrick et al., 2010). Even though studies have set out to show Maslow’s hierarchy is flawed, for the purpose of this study, I utilize it because I am

not setting out to prove or disprove it, only to use it as a tool. For this study, I have primarily looked at physiological needs. Physiological needs are fairly straightforward and are essential for survival. Granted, there are anomalies, such as a person craving a certain type of sustenance because of vitamin deficiency, illness, or some other condition. I am looking at the basic need of survival to fill one's empty stomach in order to get on with other activities. In the realm of safety, "... a central part of a functional analysis of any behavioral proclivity is an assessment of the perils and prospects associated with performing different behaviors within any particular ecological context" (Kenrick et al., 2010, p. 296). Again, basically put, when someone feels threatened or unsafe in any way, that person will guard one's self first and foremost, often through the fight or flight mechanism. For the purpose of this study, I have briefly considered students' feeling of safety and belonging in my classroom, but only so far as hunger is concerned. Choice theory considers wants as well as needs and helps to better explain the psychological process needed to succeed academically.

Research Questions

Providing services for students who need them might help increase their intrinsic motivation, but to what degree? Once the basic needs are met, the teacher can move on to higher order needs to aid students in academic success, meaning students will improve their rate of assignment completion as well as improve the quality of their completed assignments.

To conduct this action research, I have determined students' relationship with breakfast and their self-described attitudes towards education. In addition, I have assessed student engagement and learning in my ELA classes and with the help of these students,

have studied possible connections between engagement and their basic fulfillment of food. To determine student engagement, I have examined their frequency of completed assignments as well as quality of completed assignments based on a standard high school grading scale of 93-100% being an A, 86-92% being a B, 77-85% being a C, 70-76% being a D, and 69% and below being a failing grade. In conjunction with classroom assessment, I have researched school districts and catering services in three states to learn how they provide students with needed healthful food through innovative breakfast, lunch, and snack programs. I have examined these programs to see how the districts are meeting the basic needs of their student body with nutritious foods, and if this, in turn, is increasing student motivation and academic success.

The research questions that drive this study are as follows:

1. What are the characteristics of a successful program that address Maslow's hierarchy of needs that my investigation can uncover to use in WSSD to increase student motivation and academic success?
2. How will meeting students' basic needs of food from Maslow's tier-1 help them increase their motivation, engagement, and academic success in the ELA classroom?

These specific questions address the fundamental problem of my ELA classroom involving student motivation and responsibility. If the data shows that giving students better services to meet their basic needs before and during the educational process will allow them to access intrinsic motivation, they should also be able to increase their academic success. Observing what other districts have implemented and the effects on

the student population will be useful to determine programs to help students within the West Shore School District (WSSD).

Researcher Positionality

For Phase 1, I examined what food offerings/programs other school districts are providing to meet their students' basic physiological needs. As a part of a larger committee within my district, I communicated with the assistant superintendent to discuss how the district can better serve our students through an enhanced meal and snack program to give them the best chance of success in life. A result of my observations and discussions will be to design and implement a plan to provide nutritious, whole foods for our students. I hope that meeting students' basic, physiological needs through nutritious food offerings will give them more ownership in what they do and how they learn in ELA, which in turn, will foster more excitement and a deeper understanding of the material, thus awakening and engaging their intrinsic motivation.

For Phase 2, I have performed this action research with my own students. Since I am the classroom teacher, I performed this action research study as an insider and need to be aware of how my perceptions can influence the shape of the research I have conducted. Specifically, I need to be aware of my reflexivity – “self-awareness and taking into account the potential impact of one's values, worldview, and life experience and their influence on the decisions made and actions taken during the research process” (Efron & Ravid, 2013, p. 57). Part of my job is to divulge at least some of my beliefs because I am an empathetic human shaping the minds of other humans; however, I have tried to stay as objective as possible when addressing my students. This is a difficult task when the teacher is allowed into the students' lives through the students' words and

actions in the classroom. To read that Johnny comes from a broken home where he has not had contact with his father for years and his mother could no longer care for him and his siblings so now, he lives with an aunt and uncle is heartbreaking. It can be difficult for the teacher/researcher to remain objective.

My role as the teacher is that of an insider, my values include that education is an important aspect in a person's life, my beliefs are that every child has the capacity to learn when provided the basic necessities, and my experiences show me that generally students want to learn and will do so if they are not concerned with other needs in their immediate lives. Formal education is almost a luxury for some students and is nearly a foreign concept because of their day-to-day struggles. However, formal education is a necessity in much of modern society.

As far as hierarchy and status are concerned, I am sometimes in a different socio-economic class from many of my students. I did not always live as upper-middle class, so in some respects, I can empathize with my students. Since I am a middle-aged woman and am the teacher (with all of the education and degrees associated with this profession), my students understand that I am ultimately the one who is in control of what happens in my classes and I do not tolerate bullying or hurtful actions of any kind. My students know that I work hard to make my room a safe place for all. In addition, if someone is hungry, I will give my own lunch to the person, or I will buy lunch in the cafeteria for that student. (I've bought lunch for students in the past before their paperwork for free/reduced meals took effect.) Because I care and act on my feelings, my students respect me and will often work hard for me, even if they don't understand the rationale behind what I am asking of them. I want them to be physiologically ready as well as

psychologically ready for the material I present in ELA so they can know my expectations and be able to have discussions about the objectives they are exploring.

The scope of my study is multi-faceted. I want to enhance my professional growth and skills, plus I want to present my findings and help implement change within my district (Efron & Ravid, 2013).

Research Design

This study consists of two phases that can occur simultaneously: Phase 1 which involves a researched-based study focused on improving outcomes for students by understanding and meeting their basic needs for healthful foods, and Phase 2 which entails a case study of grade 12 ELA students. The study is grounded in Participatory Action Research (PAR) and is an observational study using a phenomenological approach where I will utilize a mixed-method approach through the use of interviews, surveys, my personal reflective journal, and student or episodic artifacts and documents (student projects, essays, exams, portfolios, my lesson plans, and student self-assessment). “Phenomenology is a study of ‘everyday life and social action’” (Schram, 2003, p. 71 quoted in Meriam & Tisdell, 2016, p. 26). I am conducting the research in my own classroom in order to advance my practice and improve my students’ learning (Efron & Ravid, 2013). However, since some of my research will be completed in conjunction with my membership of a district-based committee and communication with the assistant superintendent, my findings will also be used across WSSD to provide needed nourishment and improve the learning capabilities of many students of all ages.

I teach in a rural high school located in south-central Pennsylvania with approximately 1150 students and 80 full-time staff members. In 2018, 78% of the

graduating class went on to higher education institutions and approximately 12% enlisted in the military (West Shore). It is one of two high schools in the district and is by far the more rural of the two. Average class sizes are in the mid-20s with the maximum size being 32. My sampling will consist of students from my senior classes who obtain permission from parents or guardians to be included in my data collection, so it will be a volunteer sampling. Many of my grade 12 students come from the ten percent who do not attend post-secondary education of any kind. They are often from homes where education is a low priority. Although they do not see the reason to learn about literature and grammar (among other subjects), they see the value of a high school diploma and at least want to attain that goal.

On a daily basis, teachers are inundated with decisions and requests, dealing with stress associated with large class sizes, student behavior plans, student behavior issues, student education plans, state standards, standardized testing, professional development obligations, etc. Students, too, experience stress in school as well as at home. They cannot help but bring their emotional issues with them to the classroom. Since physiological needs are the most basic, these are often in the forefront of the student's mind (figure 2). Needing to eat and feel safe is often foremost in some students' minds.



Figure 1.2 Maslow's Hierarchy of Needs

I surveyed and interviewed my students first to gather more information about their background and lives in general. Learning the needs of my students and establishing trust with them set up class dynamics that have laid the foundation for learning for the school year.

Phase 1 included work within a district-driven committee where I have researched meal programs in school districts from three states. The district-driven committee, Curriculum Council, addresses curriculum concerns, but also addresses other needs within the district, including needs of both faculty and student body. Some of the students are from disadvantaged or underprivileged families and are then often marginalized in school. School is the safest place they belong during the week, and sometimes that is not as safe as it could be. I have researched how the district can increase its efforts to provide for not only marginalized students, but all students so their basic needs are being better met, giving them a better chance of academic success.

In addition, Phase 1 utilized surveys and interviews to gather data from school districts and catering services to learn about the programs they have in place to meet the basic needs of their students. The data I gathered and examined will be used to create a proposal to WSSD for implementation of a new program to meet the basic needs of the students, which in turn, will help to increase student motivation and academic achievement.

For Phase 2, the classroom-based portion of the study within PAR, I gathered data through surveys, interviews, curriculum guides, and student or episodic artifacts and documents (student projects, essays, exams, portfolios, my lesson plans, and student self-assessment). According to Alam et al. (2014), "Survey is a type of quantitative research

instrument that is used not only for data collection or information about an issue or phenomena, but a series of comprehensive steps for collecting information to describe, explain or compare knowledge, attitude and behaviour in certain circumstances” (p. 171).

Surveys have helped me know where my students’ attitudes were when we began, part way through the study, and when we finished. Artifacts and documents such as student essays and performance assessment have “... provide[d] a more authentic way for students to respond to these items, as well as the freedom to decide how to approach the task and how to structure and organize their responses” (Efron & Ravid, 2013, p. 149).

Probably one of the largest data collection devices I used is my observation journal about this journey. I have recorded the changes I made, the reactions I received from my students, my reactions, and the students’ comments. I also conducted interviews of several of my students to add a narrative quality to my study.

Observations studied through SDT (self-determination theory) have given me a better idea of student intrinsic motivation since this concept is difficult to observe. SDT helps define

intrinsic and varied extrinsic sources of motivation, and a description of the respective roles of intrinsic and types of extrinsic motivation in cognitive and social development and in individual differences. Perhaps more importantly, SDT propositions also focus on how social and cultural factors facilitate or undermine people’s sense of volition and initiative, in addition to their well-being and the quality of their performance. (Center for Self-determination Theory, 2020)

The RQs were born out of the need for student physiological needs to be met in order to increase their intrinsic motivation to help them achieve academic success.

Data Collection and Analysis

For both the school district program portion and the case study, my study has lent itself to a mixed-method data collection approach. In Phase 1, I used a mixed-method data collection approach. I collected quantitative data through research and surveys and collected qualitative data through interviews of personnel of school districts and catering services from three states that have implemented successful healthful meal programs. I gathered qualitative data during this portion by interviewing food service administrators from other schools, seeing where WSSD demographics lie, and how WSSD can improve services for our own students.

My quantitative data collection in Phase 2 included surveys and questionnaires of my students. I observed several of my students in the morning classes, interviewed them, and coded and analyzed the data I collected by categorizing student responses to make sense of them. I observed students and reflected on their patterns of behavior.

Significance of the Study

Educators are always trying to find ways to motivate students to learn all they can and be the best version of themselves through the acquisition of information and skills. Ensuring basic student needs are being met should increase student motivation and involvement in their education, or at least in the ELA classroom where this study took place. Learning should not be a passive activity. In fact, classroom engagement, the active participation of students in the learning environment, involves three dimensions of

engagement – “affective (emotional), cognitive, and behavioral” (Fredricks, Blumenfeld, & Paris, 2004, cited in Wang et al., 2014, p. 2).

Although the findings of this study might be applicable to other schools, it is in no way meant to be generalizable and is specific to WSSD, specifically to my classes at Red Land High School. Other educators and administrators might find this study useful because their environment might be comparable. Some of the findings might be transferrable to other places to meet a perceived need.

Limitations of the Study

Each person is obviously different, having different goals for being and staying in school, and different ways of learning and processing information and material.

Approaching teaching in a secondary classroom by meeting student basic needs for healthful food is supposed to help motivate students and give them the opportunity to increase involvement in their own education by taking their focus away from hunger and putting that focus on learning. A limitation includes the fact that differences from person to person can be so diverse that it might be difficult to provide the right kinds of services. Students identified as having a need might fear having a stigma attached to that identification and may resist any offer of help.

Gutierrez (2021) found that students do attach stigma to free and reduced-price meals at school and are hesitant to participate in the program. She found that Universal Free Meals (UFM), a program that provides free meals to all students in New York City regardless of household income, increases student participation in school meal programs and decreases the stigma. At the time of data collection of this study, WSSD provided free meals to all students, which should help alleviate any perception of stigma according

to Gutierrez. WSSD has a breakfast and lunch program in place that offers students a balanced meal by national standards for public schools, but students do not always like the choices or the choices are not always as healthful as they seem. For example, one lunch offered at RLHS includes breaded cheese sticks, marinara sauce, chick peas, and a choice of fruit and milk. The meal is processed, offering foods with high simple carbohydrates, and is calorie dense.

Organization of the Dissertation

Teaching can be a rewarding, heart-breaking, exhausting profession. Many students will take all a teacher will give them, physically and psychologically, tangibly and metaphorically. Teachers gladly give of themselves, but sometimes their efforts do not seem to be enough; if the students' basic needs are not being met, those students will not flourish academically. The teacher researcher has collected data to show the connections between basic needs being met and academic success in high school students.

Chapter 2 of this dissertation includes a review of the most pertinent scholarly literature that helps to explain this problem of practice. Chapter 3 details the action research methodology, both qualitative and quantitative, and provides the framework for the research design and data analysis. Chapter 4 displays and reports the data findings, and relates the findings to the problem of practice through analysis of the collected data. Chapter 5 summarizes the findings and major points. The results of this participatory action research will be contextualized with recommendations for future studies.

List of Definitions

Self-determination theory – According to the website of the Center for Self-determination theory,

SDT articulates a meta-theory for framing motivational studies, a formal theory that defines intrinsic and varied extrinsic sources of motivation, and a description of the respective roles of intrinsic and types of extrinsic motivation in cognitive and social development and in individual differences. Perhaps more importantly, SDT propositions also focus on how social and cultural factors facilitate or undermine people’s sense of volition and initiative, in addition to their well-being and the quality of their performance. (Center for Self-determination Theory, 2020)

Choice theory – “every individual only has the power to control themselves and has limited power to control others” (Glasser Institute for Choice Theory, n.d.).

Maslow’s hierarchy of needs theory - Maslow wanted to understand what motivates people. He believed that individuals possess a set of motivation systems unrelated to rewards or unconscious desires. Maslow (1943) stated that people are motivated to achieve certain needs. When one need is fulfilled, a person seeks to fulfill the next one, and so on.

1. Biological and Physiological needs - air, food, drink, shelter, warmth, sex, sleep, etc.
2. Safety needs - protection from elements, security, order, law, limits, stability, etc.

3. Social Needs - Belongingness and Love, - work group, family, affection, relationships, etc.
4. Esteem needs - self-esteem, achievement, mastery, independence, status, dominance, prestige, managerial responsibility, etc.
5. Cognitive needs - knowledge, meaning, etc.
6. Aesthetic needs - appreciation and search for beauty, balance, form, etc.
7. Self-Actualization needs - realizing personal potential, self-fulfillment, seeking personal growth and peak experiences.
8. Transcendence needs - helping others to achieve self-actualization.

(McLeod, 2007, pp. 2 & 4)

Intrinsic motivators – behavior that is driven by rewards internal to the individual, such as the feeling of a job well done.

Extrinsic motivators – behavior that is driven by rewards that is outside of the individual, such as a raise in salary or a good grade.

Chapter Two

Literature Review

Teachers encounter all types of students from many backgrounds when they enter the classrooms, and many of these students are looking for more than academic knowledge. So many students do not have their basic needs of food, water, shelter, and safety met, and the worst of these are already marginalized because of socioeconomic class, race, or other factors. When someone's basic needs are not being met, it is difficult for that person to find the motivation to do much of anything else. There are students who go to school for a hot meal and some place safe to spend their day. Add to the stress of unfulfilled needs the normal stressors of school, such as relationships, assignments, and graduation requirements, and high school students find it more difficult than ever to find, let alone channel, their intrinsic motivation. Relationship building can be tenuous at best when a person's basic physiological needs are not met. That does not mean these students have no friends, but when they come to school hungry and apprehensive about their surroundings, it is difficult for them to build trusting relationships. If schools can identify these students whose basic needs are not being met, and then implement a program that helps fulfill those needs, students will be able to find and engage their intrinsic motivation as well as confidently react to positive extrinsic motivators to be academically successful, also helping them build relationships that can contribute to their academic success.

The purpose of this study is to determine if implementing a program to help meet the basic needs (Maslow's tier-1 hierarchy as seen in figure 1.2) of students will improve their academic success. Through a two-phased process, I studied my own classroom as well as other school districts that have implemented programs to address student need and motivation. For the work outside of WSSD that includes a focus on other districts (Phase 1), I conducted and analyzed research of successful programs in various school districts, and then examined what is working with these programs and why. I conducted interviews to ask specific questions about implementation of the programs and the effect they have on the student body beyond fulfilling basic needs of survival. This will be the groundwork for eventually developing and implementing a similar program in WSSD. I am especially interested in students in grade 12, since that is usually the grade I teach. Many of my marginalized students, often from a lower socioeconomic class, find difficulty in focusing on academics because they often do not see the need for literature, but more importantly, they do not have access to nutritious foods.

For the study in my own classroom (Phase 2), I surveyed and interviewed students to discover if and how the food they eat, particularly breakfast, affects their internal motivation and academic success. The following research question drives this phase – the case study: How will meeting students' basic needs from Maslow's tier-1 help them increase their motivation, engagement, and academic success in the ELA classroom?

The following research question drives Phase 2: What type of district-based services can be designed to address basic needs for students, such as the basic needs for food, to help the students reach academic success? Sub-questions include the following and helped to drive Phase 1: What programs have been already developed and

implemented in other school districts and what type of success have they had? How have the programs helped students outside of simply meeting basic physiological needs? School districts have seen tier-1 needs in their student population and have researched, developed, and implemented programs to provide services for the students. I contacted these programs to understand their characteristics, and I interviewed personnel of these districts to discover what type of success they have experienced, especially with student motivation and academic success. Observing what other districts have implemented and the effects on the student population will be useful to recommend programs to help the students of WSSD.

Major Themes/Variables Relating to PoP

Humans are complex with many factors affecting their attitude and behavior. In conjunction with basic need fulfillment, this study examined intrinsic motivation of the students and what role socioeconomic factors and family relationships play after need fulfillment. When studying intrinsic and extrinsic motivation, Deci (1971) found that money, although a motivator for people who understood its value, took away the person's intrinsic motivation for the task at hand. When verbal praise was utilized, people tended to want to do well and did not have the feeling that their participation was being bought thus increasing their sense of well-being. In my study, I focused on whether students are being more academically successful after their basic needs are met. Will verbal praise as an extrinsic motivator, according to Deci's (1971) findings, encourage the students to participate in class and complete assignments? Will basic need fulfillment be enough with verbal praise (and the idea of a good grade) be enough to help students use their intrinsic motivation? Morris and Zentall (2014) found that praise, whether ambiguous or

explicit, encouraged 5- and 6-year-olds to want to continue to do well. They found that explicit acknowledgements were not necessary for praise to influence the child's motivation in a positive way. In addition, they found that gestural praise was viewed similarly to verbal praise by the children, but gestural praise produced benefits for positive self-evaluations in the children.

What role does parental relationships and involvement with the adolescent play in intrinsic motivation and academic success? Utter et al. (2016, 2019) found that when students are eating meals with their families, they tended to have stronger relationships, and the teens tended not to suffer from depression as much as their classmates who did not partake in such activities. Can this be extended to motivation in academics?

Educators nearly always do what they feel is right for their students, but also need to examine what curriculum ideology to which they are adhering and if a change in their ideological approach can help their students. An educator's pedagogy can fall squarely in one ideology, but often it is spread among several. Ideologies are not meant to be followed exclusively because people are very different with very different needs which can change from day to day. Popkewitz (2009) researched how inclusion and exclusion are interconnected much in the way I am envisioning the way the four curriculum ideologies, scholar academic, social efficiency, learner centered, and social reconstruction, exist (Schiro, 2013). Popkewitz claimed that inclusion and exclusion are not binaries or dichotomies; rather, they are a mixture that can help to produce policies and programs that can eliminate exclusions and produce an inclusive society. Teachers try to eliminate exclusions and create an inclusionary atmosphere in their classrooms in

order to create future citizens that will be a part of a hopefully inclusionary society. The feeling of safety and belonging are key.

Theoretical Framework

Maslow's Hierarchy of Needs

Maslow's hierarchy of needs pyramid has been used for decades, almost since its proposal in 1943 to show how a human cannot easily grow and develop without fulfilling his or her basic physiological needs of hunger, thirst, warmth, shelter, and safety first. Taormina and Gao (2013) define physiological needs and what they include: "Thus, physiological needs can be operationally defined as the lack of chemicals, nutrients, or internal (e.g., exercise/health) or environmental (e.g., temperatures) conditions necessary for the body to survive, such that the extended absence of these things could lead to psychological stress or physical death" (p. 157). A need, then, is the dearth of a necessity.

Researchers have noted how people can delay gratification of lower-order needs while fulfilling higher-order needs (Wahba & Bridwell, 1975). This does not mean that the needs are out of order or that one need is valued over any other, only that a person has a physiological need that is sufficiently lacking to the point that it is affecting the person psychologically (Taormina & Gao, 2013). Kenrick et al. (2010) discuss the core of Maslow's theory of motivation by presenting two important ideas. The first idea is that humans utilize "multiple and independent fundamental motivational systems" (p. 293). The second idea explains how these motivational systems form a hierarchy where some motives take precedence over others. Their study took Maslow's pyramid and reworked it to add fundamental human motives based on life-history development and to layer the needs, motives, and goals to show a better relationship and intermingling of the tiers.

Regardless of which pyramid is used, if student basic needs (immediate physiological needs such as hunger and thirst, and safety/self-protection needs) are not being met, these students will more likely not be able to satisfy higher needs, will not be able to utilize their intrinsic motivation, and in turn, will not be academically successful, or not as academically successful as they could have been if their needs had been met.

Self-determination Theory

Researchers such as Kenrick et al. (2010) have discovered that Maslow's hierarchy of needs are not stacked where a lower need must be fulfilled before a higher one is met; rather, they are interrelated. A person's motivation is not dependent on the hierarchy of needs, per se, but on the most pressing needs being met. Some researchers were able to utilize the more accessible hierarchy and research it using other theoretical frameworks, such as self-determination theory (SDT) (Patrick, 2014; Hale, et al., 2019; Lečei & Vodopivec, 2014).

Patrick (2014) discussed SDT and its relation to Maslow's hierarchy of needs when regarding human relationships, specifically marriage. She showed how other research highlighted relationships such as the interplay between motivation and mindfulness. Through her discussion of the findings of other studies that used SDT and Maslow's hierarchy of needs, she showed how mindfulness is a major component that has more motivation which has been internalized. This internalized motivation helps the person operate in a more willful way to increase his or her capacity to be attentive and responsive to his or her partner's psychological needs, including being able to adapt his or her responses when conflict arises. Since relationships and conflict are a part of classroom dynamics, Patrick's findings are applicable to this study.

SDT and Motivation

SDT, founded by Edward L. Deci, developed from his work with Richard Ryan in 1985, in which they studied the effect extrinsic motivation had on intrinsic motivation (Center for Self-determination Theory, 2020). Motivation, according to Ryan and Deci (2000), means to be moved – to have impetus or inspiration – to do something. Intrinsic motivation, then, is the desire to do something because it is inherently desirable, while extrinsic motivation is the desire to do something because it leads to an independent outcome – something outside of the person is acting on him or her to make him or her want to do the action and complete the task (Ryan & Deci, 2000).

Deci's (1971) earlier studies using laboratory and field-based settings focused on the impact of extrinsic motivation on a person's intrinsic motivation, especially when a monetary reward was offered. His first hypothesis, that intrinsic motivation decreases when money is the extrinsic motivator, was not proved; in fact, the experiments produced conflicting results. However, his second hypothesis, that when insufficient extrinsic motivators are offered, the person will access his or her intrinsic motivation instead, was provided indirect support by the experiments. This is related to my study which explores how students access their internal motivation if and when their basic needs are being met. External motivators in the classroom include grades through formal and informal assessments, but grades have proven ineffective to create an impetus within the student for academic success. Gagné and Deci (2005) found that intrinsic motivation was a matter of autonomy and was a choice, so the person completed whatever task was at hand because they wanted to do it. They explained that SDT defines needs as universal necessities "as the nutriment that are essential for optimal human development and

integrity (Ryan et al., 1996). According to this definition, something is a need only to the extent that its satisfaction promotes psychological health and its thwarting undermines psychological health” (p. 337). This definition of SDT shows how SDT complements Maslow’s hierarchy of needs and will help me study how the fulfillment of student needs is related to their intrinsic motivation.

Choice Theory

Combining Maslow’s hierarchy of needs and SDT with Glasser’s choice theory seemed like a complete way to study needs and motivation. Choice theory has an overarching impact on my study because it helps to explain human behavior and relationships. Much of what teachers do is build relationships with students. Good relationships between the teacher and students create a welcoming and accepting atmosphere in the classroom, which in turn, builds trust and a feeling of safety. If little to no trust is established between the teacher and the students, the students will be reluctant at best to dive into unfamiliar material and ideas. According to the Glasser Institute for Choice Theory (n.d.), a person should adopt the seven connecting relationship habits of choice theory to strengthen relationships. These connecting relationship habits, according to the institute’s website, include supporting, encouraging, listening, accepting, trusting, respecting, and negotiating differences. When the teacher builds a relationship with students, those students are going to feel safe, thus helping to fulfill their tier-2 need of safety and belonging. Using these seven habits, in addition to helping teenagers learn how to act and think in various situations while helping them feel safe and accepted, are included in the goals of education. Building relationships and determining if and how the basic needs of adolescent students are being met can help these teenagers be

academically successful. Meeting and fulfilling basic needs of these students to impact their intrinsic motivation is a goal of this study.

Glasser's choice theory has been utilized in many studies to show how relationship building affects the whole person. Lečei and Vodopivec (2014) explored how educators, once they have professional training and knowledge, can use Glasser's choice theory to improve their pedagogical practices. They showed how elements of choice theory can be used when working with preschool children through professional development for the teachers and other professionals within the preschool institution. The authors found that knowledge of choice theory helped educators by offering an explanation to the behavior of children, changing teachers' previously held beliefs about children's behavior and the motivation behind what they do. In addition, it can help educators decipher the attitudes of their students to further establish good relationships with them in order to create a good learning environment for all. Finally, they found that professional development in choice theory creates a certain quality of life professionally for the educators involved. When they continue with the professional development, they can learn how choice theory affects all levels of education, not just kindergarten, to further help them develop their own educational programs.

Historical Perspectives and Social Equality

Each person has the opportunity to act on and develop his or her intrinsic motivation, usually with extrinsic motivation also playing a major role (Deci, 1971; Gagné & Deci, 2005). Can these motivations be developed and accessed if the student's basic needs are not being met? Before Maslow published his initial theory of human needs in 1943, some researchers in psychology, such as Sigmund Freud and John B.

Watson, focused on problematic behaviors such as psychoanalysis (“all people possess unconscious thoughts, feelings, desires, and memories” (Cherry, 2020, April 24, para. 1)) and behaviorism (“all behaviors are acquired through conditioning” (Cherry, 2019, September 24)) (Cherry, 2020, June 3, para. 1).

In his initial theory, Maslow adhered to the idea that because human needs are similar to human instincts, they play a major role in motivating behavior, and summarized his main points in thirteen statements (Cherry, 2020, June 3). Eventually, his theory of needs would be developed to show the relationships among the needs in a pyramid graphic. Over the years, researchers have been studying the hierarchy of needs theory to test its validity, and to adjust it to more accurately depict what happens in humans as they develop, grow, and interact with others.

Kenrick et al. (2010) were a part of the movement to further develop Maslow’s theory to better represent human motivation. The researchers examined Maslow’s hierarchy and reconfigured its structure by considering more modern theories in human psychological development. Instead of stacking the tiers on top of one another, which represented a separation of the needs, the researchers layered the needs to show overlap and how the needs are interrelated. In addition, they examined the content in the various tiers, combining, adding, and reconfiguring as they saw necessary. For example, although self-actualization is a part of human nature, the researchers did not consider it a need, so they replaced that tier with the highest goals of humans in a biological sense – that of choosing and keeping a mate and parenting. They stated that reproducing is the highest biological need and goal of humans and self-actualization can be conflated within those areas. The researchers considered modern theoretical developments as they examined

Maslow's hierarchy of needs, including evolutionary biology, anthropology, and psychology. They found that Maslow's tiers make sense at a functional level, but the higher orders needed to be reworked to remain consistent in addressing biology and psychology.

Even earlier than Kenrick et al. (2010), Wahba and Bridwell (1973) saw a need to reconsider the needs pyramid. They reviewed and evaluated the empirical research related to Maslow's theory to determine its validity. Their findings were inconclusive "partly because of the nature of the theory which defies empirical testing, and partly because of the conceptual, methodological, and measurement problems of the research reviewed" (Wahba and Bridwell, 1973, p. 234). They also concluded that part of the problem involves defining what a need might entail. Is it physiological or psychological, or both? Does it come about because of a deficiency, or is it always present even after the deficiency is satisfied? How intense does the need have to be in order to be considered a need? Maslow's need hierarchy theory was considered not able to be tested when Wahba and Bridwell published their study in 1973. The researchers determined that the word "need" was not sufficiently identified and defined. They also could not determine how to identify, isolate, and measure different needs. They questioned why needs should be presented in such a fixed hierarchy.

Historically, Maslow's pyramid of needs showed the idea of cognitive priority where more basic needs took precedence over any other need, and until the more basic needs of hunger and shelter were met, no higher need could be addressed (Kenrick et al., 2010). Now researchers know that need satisfaction and motivation are much more complicated. For example, class attendance is affected by need fulfillment or lack thereof

regardless of whether the student is in high school or is a medical resident (Filippello et al., 2019; Hale et al., 2019). When someone is hungry, regardless of the intensity of the hunger, that person will not ignore every other need until the basic need of hunger is fulfilled. In addition, SDT and choice theory help to explain the idea that needs intermingle with motivation and can be fulfilled out of any type of earlier perceived order. Where the hierarchy of needs and choice theory show needs and their fulfillment, SDT addresses intrinsic and extrinsic motivation along with autonomous and controlled motivation (Gagné & Deci, 2005). Autonomy, then, is when the person acts with a sense of will especially after having the experience of choice. When an individual's needs are met, that person better understands the choices he or she has, which also affects the individual's intrinsic motivation.

Nothing is ever as clear cut and simple as we would like it, especially when dealing with human psychology and behavior. Not just researchers, but also parents and their school-aged children have known that many factors affect student motivation and academic success, one factor being teacher behavior. Many if not most teachers have an idea of what their goals are for their classes and will try to behave in a way that produces the most positive atmosphere for their students to have the best outcome as possible (Filippello et al., 2019). However, those same teachers usually do not have any say about what subject they teach, when they teach their classes, and who is in their classes (Gonzalez et al., 2017). Their self-efficacy and behavior are not determined entirely by their own minds, which can have an impact on their students through the relationships they build. In fact, according to a study done by Urhahne (2015), teacher behavior plays a major role in the relationships the teacher develops with his or her students.

The study examines if teacher behavior is an arbitrator in teacher-student relationships and how teacher judgment affects students' motivation and emotion. Urhahne studied 246 sixth-grade students and 13 English teachers by having the students complete a basic communications skills English test first, and then a self-description questionnaire where the students rated their enjoyment of English class, their test anxiety level, and other factors relating to perception of teachers' behavior. The results Urhahne obtained showed that teacher judgments on not just student motivation but also emotion were facilitated by teacher accessibility. The teacher's behavior towards a student and judgment of that student can have a profound influence on the motivation of that student. Positive relationship building is important in fostering student motivation.

Studies have shown that teacher behavior in the classroom has a profound impact on student motivation (Filippello et al., 2019; Gonzalez et al., 2017; Urhahne, 2015), but this behavior can also include teacher perception of the students based on socioeconomic status and race. Marginalized students tend to have many more unfulfilled basic needs than other sectors of the school population. Does this mean that they also are not using intrinsic motivation to help them be academically successful? It is difficult for marginalized students to succeed in the classroom when the teacher and classmates do not consider a person of color as having the proper culture, and therefore, no relevant input to the class. Yosso (2005) explained through the work of Bourdieu and Passeron (1977) the traditional thinking that people of color and people from lower socioeconomic classes do not have a valuable culture, and therefore do not have the cultural capital to offer society in general. However, teachers need to learn to set preconceived cultural ideas aside and realize, "Culture as a set of characteristics is neither fixed nor static"

(Gómez-Quiñones, 1977 qtd. in Yosso, 2005, p. 76). Teachers, and all people, need to learn how to evaluate within context without judgement, which is difficult to do without practice. When teachers build relationships with their students, they are getting involved in their students' lives on a deeper level than mere academics. When those connections are made, teachers often learn that marginalized students' cultures are in fact complex and valuable and therefore can better understand where the class may be remiss in excluding that particular student. Marginalized students often feel invisible, at best, but this can change with the help of the teacher. Once connections are made and relationships strengthened, teachers often make it their responsibility to see that their students' needs are being met and try to make sure their cultural capital is not being ignored.

When practices stop working for the people involved, as has happened in many schools, often the change is so subtle that no one realizes it is happening. The public assumes that education remains static and that, if it worked for them, it will work for their children and grandchildren. So many people believe, "Educators most often assume that schools work and that students, parents and community need to change to conform to this already effective and equitable system" (Yosso, 2005, p. 75). This is the way we have done something, the way we have always done something, and others need to conform to this way which is an archaic way of thinking. A person's need knows no race, religion, or gender and society is always changing, so too should the schools.

Life is not just or fair and the world's wealth is finite. This does not mean that programs cannot and should not be implemented to help those who cannot provide for themselves. Success is not, or at least should not, be determined by one's socioeconomic standing in society. Deci (1971) found that money is a great motivator after the person is

old enough to understand its meaning. He also found that money robs a person of his or her intrinsic motivation whereas verbal praise increases intrinsic motivation. Will meeting someone's basic needs be sufficient enough to allow for someone to want to do well in school? The poorer of my students during the COVID-19 pandemic in the spring and fall of 2020 had to take on more work hours to help provide for their families, thus taking from any time they might have committed to school. Any motivation they may have had to participate in virtual lessons evaporated because of time constraints and family responsibilities. In fact, their most basic needs were being threatened. Their lack of motivation was a form of school refusal that Filippello et al. (2019) researched, but it was imposed on the students by circumstances beyond their control leading to limited academic success. One can only imagine what it did to their feeling of well-being.

Related Research

Many studies have been conducted to show student motivation through the lens of self-determination theory (SDT), Maslow's hierarchy of needs, and choice theory, but none have utilized all three theories simultaneously. A person's basic psychological and physiological needs are very important to help him or her realize and implement his or her intrinsic motivation (Filippello et al., 2019; Gagné & Deci, 2005; Lečei & Vodopivec, 2014; Utter et al. 2016; Zeldin et al., 2019). For example, a student's lack of motivation can lead to school refusal and many absences.

Filippello et al. (2019) researched whether student perception of teacher psychological control and support played a factor in school refusal behavior and the impact on academic achievement through the study of behaviors that included avoidance, escape, attention-seeking, and gratification. They hypothesized that student perception of

teacher support could have a positive influence on student behavior while students' perception of teacher psychological control could have a negative impact, thus increasing absences and decreasing academic achievement. The researchers found that student perception of teacher psychological control or support played a major factor in student school refusal behavior, which in turn, had an impact on student academic achievement. If the student perceives the teacher as having a negative behavior, such as showing disapproval or ignoring students who do not reach standards, then the student may experience self-doubt, feel excluded from school, or experience feelings of shame or guilt. In turn, the student will start to avoid school resulting in school refusal. In sum, they found that a school environment that could not satisfy the students' basic psychological needs could possibly contribute to the students' development of school refusal behavior, and ultimately, to poor academic achievement. The researchers showed a direct correlation between need fulfillment or frustration and school refusal behavior. Absenteeism can be tied to student motivation as well as student perception of teacher behavior. When the student has a positive experience with teacher behavior, this can lead to restoring the student's positive attitude and helping the student find his or her intrinsic motivation which will lead to academic success which is in direct correlation with my study.

Depression can be a factor in low motivation. Pieters and Heilmann (2010) studied second-generation Latina-American women who complained of depressive symptoms such as a feeling of sadness, distress, and numbness. With these negative feelings, they experienced a lack of motivation. One participant described her feelings: "I get so down. And it takes a lot. I have to be like really, really strong to get up and do

things. It's an awful feeling" (p. 284). Although Pieters and Heilman studied adult women with families and jobs, symptoms of depression are the same for teens.

Crandall et al. (2020) set out to show how Maslow's hierarchy of needs can be used to predict depression in adolescents, especially when the lower needs of the adolescent are not being met. In a six-year span of time, the researchers gathered self-reported data from 500 adolescents and their parents in the Flourishing Families Project, a longitudinal study to determine what factors contributed to the increase of depressive symptoms in teenagers. The researchers found that some factors, such as economic stressors in the family, did not contribute as much to teen depression as they had originally thought. They did, however, find that Maslow's pyramid can partially explain adolescent depression. For example, the researchers thought teens might feel a sense of belonging and purpose when they were employed. In addition, when teenagers lived in unsafe neighborhoods, they often learned early in life to positively problem-solve for themselves. One limitation was that the study was conducted in six waves over several years, and as a result, not all independent variables were measured during each wave; rather, they were measured as they became available. A second limitation was that data about adolescent depression was collected through participant self-reporting. If a participant reported the highest scores possible for depressive symptoms in the second section (or wave) of the study and those symptoms worsened later, the participant had no way of reporting the worsening of symptoms because he or she already reported the symptoms as being at their worst early on.

Extrinsic motivation encompasses the aspiration for power and social adherence, while intrinsic motivation encompasses the aspirations for self-expression and mastery

(Martela et al. 2019). To demonstrate this, Martela et al. examined aspirations that have traditionally been studied, “namely, financial success, fame, and image as extrinsic goals; and personal growth, health, close relationships, and community as intrinsic goals” (p. 2). The use of intrinsic motivation is deemed positive because the person’s basic needs are assumed to have been met, and that person wants to accomplish the task at hand. The researchers studied more than how basic physiological needs affect motivation and goals, though. They added to this list of aspirations four new ones – “power, social adherence, self-expression, and mastery” (p. 3) – and examined three additional goals – hedonism, spirituality, and safety – to see what kind of motivation each fulfills. The researchers predicted that these particular aspirations and motivations would exhibit the qualities of intrinsic and extrinsic motivation.

To study intrinsic and extrinsic motivation, the researchers used classical exploratory factor analysis and multidimensional scaling that plots the data on a graph where one axis represented the intrinsic/extrinsic dichotomy and the other axis represented physical-self versus self-transcendence. Finally, they used “Browne’s (1992) circular stochastic modeling approach” (p. 4) to examine and confirm if the aspirations followed a circumplex, or polar, structure. They used two random samplings, the first containing 196 participants and the second containing 341. The findings yielded what the researchers expected – self-expression and mastery would fall into intrinsic aspirations, while power and social adherence are included as extrinsic motivations. The researchers found that while self-expression was expected to yield positive relations with positive effect when examining aspirations with well-being, self-expression actually was neither positively nor negatively correlated with either well-being or ill-being indicators. They

found that mastery had a significant negative association with stress. These findings will indirectly help my study since well-being and self-expression are large parts of adolescent life and effects motivation. The lack of fulfillment of basic physiological needs will also affect a feeling of well-being and self-expression. Since all participants came from the United States, the study does not account for cultural differences. Another limitation of the study is its cross-sectional nature; the researchers were not able to make connecting inferences in the relationships between aspirations and outcomes.

Need satisfaction can have an effect on student boredom and burnout, which may have an impact on academic success. I am reminded of so many students (usually marginalized by the school) who see no need to learn about literature, let alone British literature. Is their self-proclaimed boredom a result of burnout from too many responsibilities, or from a lack of food or safety in their homes? Sulea et al. (2015) attempted to show a connection between student boredom and burnout with personality traits and need satisfaction through SDT. The satisfaction of a person's innate psychological needs is important to that person's development and well-being. This particular study examined students' need for autonomy (regulating one's own behavior), competence (interacting effectively with one's environment), and relatedness (connecting with fellow students). Although autonomy does not directly relate to the fulfillment of basic physiological needs and the effect it has on intrinsic motivation, competence and relatedness have an effect on students and can affect their motivation and achievement. In addition to analyzing need satisfaction and intrinsic motivation, the researchers wanted to show how personality traits can play a role in a person's sense of well-being.

They used five relatively stable personality traits along with psychological needs that are influenced by society and their environment. The sample consisted of 212 female and 43 male students in Romania in their third and fourth years of college. The study was voluntary, done with the permission of the professor of the class, and no reward was given to the students who participated. The researchers found that four of the five personality traits (neuroticism, extraversion, agreeableness, and conscientiousness) were linked to a person's sense of well-being. They were surprised that the fifth personality trait, openness to experience, was not related at all to a student's sense of well-being. The researchers explained that this might be because of the way the questions were framed, or potentially because the students have a high level of openness to experience that is related to their academic pursuits which makes them more open-minded. Their findings of connections between personality traits and engagement were not surprising except that engagement is not related to extraversion. Conclusions related to psychological need satisfaction were as expected; ultimately, the researchers concluded that need satisfaction might actually go well beyond personality traits. The first limitation is that it is based on a cross-sectional convenience sample; therefore, the results might have been different with a more varied group of participants. In addition, a longitudinal study needed to be performed to verify their results and show a better causality of the relationship between personality traits and need satisfaction.

Humans are complicated with basic needs to be filled, motivation to utilize or not depending on a myriad of factors, and consequences based on behaviors. Lombas and Esteban (2018) integrated three theories grounded in SDT into a single model to evaluate empirical data. They wanted to determine if basic psychological needs function as a

variable when examining how the satisfaction of these needs is directly linked to well-being and indirectly linked to self-determined motivation. The researchers randomly chose 673 participants with a mean age of 14 years from five secondary schools within a target area. The researchers found a link between basic physiological needs satisfaction and psychological consequences. When the participants' motivation and well-being were measured at the same level, the effect on their self-determined motivation was positive. Students who experienced this positive relationship tended to devote more time to their studies and, as a result, were more academically successful. Since the study was not experimental in design, it did not consider causal directionality but used cross-sectional data.

When adolescents have support, whether through remediation or family cohesion, they tend to be healthier both physically and mentally. In fact, regular family meals improve the emotional well-being of the adolescents in the family. Utter et al. (2016) collected data through a nationally representative survey of the health and well-being of secondary school students in New Zealand called *Youth '12*. They were able to use data from a total of 8,500 secondary school students ranging in age from 14 to 17 years old with slightly more females (54%) than males. The *Youth '12* survey used a 2-stage sampling design where 125 schools were randomly selected, and 12,503 students were randomly selected from those schools. The researchers found that the more families ate evening meals together, the lower the depression rate was among adolescents. They found that infrequent family meals were more common for older students, for students who identified as Pacific Island, Maori, or other, and students living in high deprivation areas. When the gender of the students was considered, the researchers found that a lower

frequency of family meals resulted in higher depressive symptoms for females. The study assumed that healthy family relationships would build through meals together; however, researchers did not consider whether depressive symptoms in the adolescents actually kept these young people from joining their families for meals. Finally, they claimed that perhaps part of an adolescent's mental well-being might be because the parents are present and the family has well-established routines.

In a similar, much smaller study in 2019, Utter et al. narrowed their scope to nine adolescents with at least one parent or caregiver. The researchers provided the families with meal plans, recipes, and ingredients for five meals per week during a four-week period. The participants started the study by completing a survey that served as a baseline, then completed surveys and open-ended interviews as follow-ups. They found that not only did the families strongly adhere to the program and increased their family meals from their baseline by at least two per week, but the adolescents in the study experienced lower depression and had stronger feelings of well-being which affected other parts of their lives as well.

Support from both family and school can empower students and increase their engagement through instructional contexts. Zeldin et al. (2018) conducted a two-phase study. Phase I of the study highlighted student voice in decision-making when those same students have the contributions of supportive adults. Phase II consisted of a case study at an exemplar high school in which researchers observed these elements through the organizational context of the school. They examined the students' perspective on their own engagement, identifying those experiences that seemed most pertinent and powerful because they sparked motivation, curiosity, and experimentation. The researchers aimed

to create an explanatory framework for youth engagement and empowerment. In Phase I, the researchers examined “associations between school instructional climate and school engagement” (p. 360). To obtain a diverse sampling, they invited students from three large high schools who were enrolled in a district-required health class, as well as students from eight district-operated alternative programs designed to help students who were credit-deficient or chronically absent. Of the students available, 603 participated in the survey.

The focus for Phase II was a small alternative school. The researchers found that youth voice had a unique and influential role in decision-making. When having a voice was an option, emotional and cognitive engagement were both directly affected. Teacher support and positive student-teacher relationships had a large impact on the students’ engagement. Phase II results showed that students thrived when they had some kind of control over their environment and took ownership of their own learning. When adults and youth create goals together, student voice becomes a powerful tool in student motivation, creativity, and engagement. Although the study accounted for school type, as well as gender and ethnicity of the participants, their analysis was limited because their sample size was too small for multi-level strategies.

Teacher stress is another factor when considering student need-assessment and relationship-building. Gonzalez et al. (2017) studied correlation between teacher self-efficacy and job-related stress by examining the influence that assigned subject matter has on these two areas. In addition, they examined whether a relationship exists between teacher self-efficacy and job-related stress, particularly how standardized testing creates job-related stress. While their findings indicated that teacher self-efficacy was not tied to

whether they were assigned high-stakes subject matter courses, quantitative data revealed that teachers' self-efficacy levels were affected by the demands of high-stakes testing. In fact, high-stakes testing affected every teacher because of how it disrupted the school's schedule and created a tense atmosphere. Overall, teachers who taught high-stakes subject matter were under more stress than their counterparts.

Finally, as teacher stress increased, their self-efficacy decreased. Most of these statistically significant changes were seen among high school teachers and are not surprising. Teacher self-efficacy and job-related stress have an impact on relationship-building, which in turn has an impact on student behavior and motivation.

Summary

The fulfillment of basic needs has been studied in areas such as psychoanalysis and behaviorism even before Maslow developed his famous pyramid. Since Maslow's research, the pyramid of needs and motivation has been edited and changed to better represent human physiological needs, psychological needs, and their overlap. It has since been used to examine adolescent depression, medical student wellness, marriage health, and general student motivation and engagement. Studies have examined motivation using SDT and basic needs through self-determined motivation. However, no one to date has used SDT and choice theory with Maslow's pyramid to examine student motivation as it is linked to basic physiological needs fulfillment, which is what this participatory action research has tackled.

This action research examined programs that addressed and met student basic physiological needs that are already in place in school districts in Colorado, New York, and Pennsylvania. This then led me to assess how the students' needs are met and how it

may affect their intrinsic motivation, engagement, and academic success. Not only has motivation been studied through SDT and Maslow's hierarchy of needs, but researchers have also examined student motivation as a result of family connections, and being given choice and rewards for motivation. This action research incorporated what other studies have found, such as how family relationships and poverty play a role in student academic achievement.

Chapter Three

Research Design and Methods

“The nourishment of body is food, while the nourishment of the soul is feeding others.”
-Ali ibn Abi Talib

Overview of the Study

Diana lumbered into my classroom one morning, frowning more than usual.

“Good morning, Diana!” I chirped. Diana glowered at me. “What’s wrong?” I quipped.

After a momentary intense stare, Diana replied, “Mrs. Martin, I feel weird asking you this... There’s no food in my house. My mom is stupid. Do you have anything I can eat? I’m really hungry.”

“Do you like bananas? You can have this. It’s just right for ripeness!” I offered.

“Yeah, they’re ok,” she shrugged. “Thank you.” With that, Diana took the banana back to her seat and ate it. For the rest of the class, she was a bit more attentive than usual. I was wishing I had more for her.

This was the first of many mornings where Diana would ask me for food. I tried to keep something healthful as well as calorie and nutrient dense for her to help get her to lunch. I never asked her why she didn’t eat breakfast in the cafeteria.

One day, the anatomy and physiology teacher came to my classroom to ask me about Diana, what kind of student she was, and what kind of person she is. This teacher learned that Diana aspired to be a nurse and wanted to recruit her for the upper-level college preparatory course that would start at the change of the semester and that might

change Diana's life. Diana enrolled in that course and became an integral part of it by giving a fresh perspective to discussion since her experiences were different from those of the others in the class. She had never been enrolled in a college preparatory course before and thrived. Thankfully, this particular course took place in the afternoon, after Diana was able to eat lunch. Did the morning snack I provided give this student a push to take a chance academically? I can only hope that it did.

In order for students to be academically successful at the high school level, they need to access their intrinsic motivation but cannot do so if their basic needs are not being met. This study is framed by Maslow's hierarchy of needs theory in concert with self-determination theory and choice theory. Through these theories, this study explored how the desire to do something (intrinsic motivation), especially in academics, is tied to the fulfillment – or lack of fulfillment – of that person's basic needs. If the student's most pressing needs are being met, this person's intrinsic motivation to do well academically is anticipated to be higher.

If Maslow's basic needs from his hierarchy of needs theory (such as food, warmth, and safety from tiers one and two) are not being met, students have a difficult time focusing on academics in school. When a child's basic needs are not being met, that person is at a greater risk for depression, school refusal, and absenteeism (Crandall et al., 2019; Davidson & Beck, 2019; Filippello et al., 2019). A lack of engagement, poor attendance, and depression are factors that can significantly affect a student's motivation and academic success. Addressing the root of physical needs of food as well as psychological needs of safety are factors for increasing student engagement and academic success.

In addition, food being consumed by students needs to be more healthful than simple carbohydrates and fats. If they are putting “junk” into their bodies, it should be no surprise that they are putting out “junk” when they are asked to access their intrinsic motivation to complete academic work. According to the USDA website myplate.gov, teenagers need to consume the following:

Table 3.1

USDA Serving Guidelines for Adolescents Aged 14 to 18

	Girls 14 to 18 years old	Boys 14 to 18 years old
Fruits (in cups)	1 ½ to 2	2 to 2 ½
Vegetables (in cups)	2 ½ to 3	2 ½ to 4
Grains (in ounces)	6 to 8	6 to 10
Protein (in ounces)	5 to 6 ½	5 ½ to 7
Dairy (in cups)	3	3

These quantities are based on a 2,000-calorie diet (depending on height and weight). Are students consuming the USDA recommended quantity of various food groups? If they are not and if they are consuming more simple carbohydrates, is their diet affecting their intrinsic motivation and academic success?

Research Design

The study is a mixed-methods, two-phased study that explored ways to better provide basic needs to adolescent students in a medium-sized school district (with approximately 1200 students). Phase 1 includes data from school districts from three states and examines the meal and snack programs and their success with increasing

student achievement. Data gathered was examined for evidence of correlation between meeting the needs of students by providing nutritious, whole foods and student overall academic success (including passing grades, assignment completion, and attendance). Phase 2 is a case study using a phenomenological approach about grade 12 ELA students who were surveyed and interviewed to obtain information on socioeconomic status, age, overall grade point average, how often they eat breakfast, and other characteristics. This approach was selected because the context of the course, meeting in the morning, is critical in understanding motivation at this particular point in the day and with this particular group of students. In addition to surveys and interviews, observation (recorded in a personal journal), students' completion of assignments, and student grades were data gathering modes that helped determine if students viewed themselves as academically successful and were, indeed, successful. Data analysis determined if there was a correlation between student needs as reported in the survey and interviews, and actual academic success.

I emailed and called 15 people connected with the food service of school districts and catering services. The school districts were chosen based on the information they provided on their website about their food service. If the district provided information that indicated that they utilized a food service similar to that used by WSSD, I eliminated them from my pool of possibilities. I was also able to find through the Internet a food service that uses whole foods and dishes made from scratch to service several school districts. That particular contact was able to tell me of other similar services I could access online. I was not able to find a school district within Central Pennsylvania that made their meals from scratch. The districts I did choose were chosen based on their meal

programs that were described on their websites. I was looking for districts that claimed to successfully serve their students meals made from whole foods that were processed as little as possible. (In other words, the meals were made from scratch with locally sourced foods.) Many of the districts were of a similar size and demographic to that of Red Land High School. From those phone calls and emails, two people responded to me and agreed to interviews, one from a school district and one from a catering service. I found information online about nine school districts that provide healthful meals made from whole foods in their cafeterias. It was difficult to find districts that do not use a catering service where profit is the main concern, but once I was able to talk with one person who provides made from scratch meals to schools (N. Kahn from Red Rabbit), that person was able to direct me to other online resources.

In Phase 1, I researched how other districts fulfill student basic needs, specifically the need of nutritious food. Since my research has been completed as a part of Curriculum Council, a district-wide committee, my findings are ongoing after this study and eventually will be used across WSSD to improve the intrinsic motivation of many students of all ages, backgrounds, and demographics.

The research questions that drive this study were as follows:

1. What are the characteristics of successful programs that address Maslow's hierarchy of needs that an investigation can uncover to use in WSSD to increase student motivation and academic success?
2. How will meeting students' basic needs from Maslow's tier-1 help them increase their motivation, engagement, and academic success in the ELA classroom?

The case study of Phase 2 utilized action research using a phenomenological approach. Phenomenology was selected because I was looking at student self-awareness, or lack thereof, and if meeting the basic needs (of food) for these students would increase their self-awareness and connect with their intrinsic motivation while in school. I utilized data from students from periods one and three grade 12 ELA classes, both of which meet before lunch. Because some of my low-achieving students seem to go without the necessities of life, I can assume through inductive reasoning that other students in the school do the same. I collected and used data from my students to see if there was a correlation among the areas of socio-economic factors, motivation, and the fulfillment of physiological needs. Through observation, interviews, and surveys, I determined if there was a connection between the fulfillment of a student's needs and that student's intrinsic motivation academically.

Phase 1 focused on data I gathered from programs and catering services used in school districts within the United States that better support students and fulfill their basic needs with whole foods that are not as processed as traditional school meals. I interviewed personnel within school districts as well as within catering services about their innovative programs and what these programs mean to the students they service.

Phase 2 was conducted within my classroom using about 20 students. I studied student attitudes toward ELA and school in general as well as student academic involvement. I explored how students view their own life situation through how their basic needs are being met and how that affects their learning and desire to learn. The role of the researcher is one of insider, but I still hold a position of authority and need to be aware of my biases. Phases 1 and 2 happened simultaneously, but Phase 1 was started

earlier than Phase 2 to gain a foundation of what types of programs are working for other districts and for an idea of how to help the students within WSSD.

Sampling Plan and Participants

For Phase 1, I utilized information and data collected from public school districts and catering services from three states, Colorado, New York, and Pennsylvania where successful programs are implemented that are focused on providing nutritious foods to the student body to meet student needs. I interviewed the Director of Strategic Partnerships at Red Rabbit which is located in New York City, and the Head of Programs, Grants and Communication located in the Boulder Valley School District. In addition, I researched programs from Colorado (Chef Ann Foundation and the Boulder Valley School District), Pennsylvania (the breakfast program of the Philadelphia School District), and a national program (FoodCorps). These programs were chosen because they offered whole foods during meal times to their students and staff and did not employ a catering service.

The US Department of Agriculture (USDA) has developed a National School Lunch Program (NSLP) through the Food and Nutrition Service where it has set guidelines for what constitutes a healthful school meal. The NSLP “was established under the Richard B. Russell National School Lunch Act, signed into law by President Harry Truman in 1946” (FNS). It was designed to provide nutritious low- and no-cost meals to students each day. Schools can stay within those guidelines yet still offer a meal that is highly processed thus affecting the attention and attitude of the students who eat the meal.

For the case study of Phase 2, I questioned and observed 21 of my grade 12 students enrolled in my periods one and three courses because of convenience, because I have developed a relationship with them, and because they meet before lunch. My class size is generally between 20 and 30 students who live in planned communities (developments), trailer parks, and on acreage in a rural setting. Sometimes several generations live within the same dwelling. Their parents and guardians range from welfare recipients to farmers, mechanics, and lawyers.

It is important that I study students in the morning because so many go without breakfast even though the school cafeteria provides this service free of charge at the time of this study. Some of these students are eligible for and participate in the free and reduced lunch program under more normal circumstances (when there is no pandemic) which means that breakfast is either free or reduced in price as well; however, WSSD has been providing free meals to students regardless of family income because of hardships the COVID-19 pandemic has created. My speculation for students going without breakfast is that many of these students do not arrive to school in time to get breakfast before class. Because my general English class students tend to be academically underachieving, meaning some of them habitually fail to complete and turn in assignments while others rush through the assignments to merely get something on paper, my sample was from the general English classes that occur in the morning.

This study is to determine if there is a relationship between student consumption of a nutritious breakfast and student motivation and engagement. I sought data to better understand student attentiveness as a result of consuming breakfast in the classroom resulting in academic success. The students in the general English classes frequently are

from poor, working-class families that typically do not have much food, let alone nutritious food, in their homes. Often these students do not take an interest in anything related to academics and often claim to hate reading and writing.

Through exploring students' food options and consumption in addition to developing relationships and trust with my students, prior to the study, I anticipated that more of my students will have improved motivation and engagement when their tier-1 needs are met. According to findings from Corso et al., (2013), student engagement includes “three interrelated ‘modes’: engaged in thought, engaged in feeling, and engaged in action (see Fredricks, Blumenfeld, & Paris, 2004)” (p. 52). Being engaged in thought involves a student being psychologically involved in the mastery of the material where self-control along with planning, monitoring, and evaluating one's thinking show engagement in thought. Being engaged in feeling involves the student's feelings toward and relationships with others in the school, such as with the teacher and peers. The student's sense of belonging and safety are involved. Being engaged in action involves the student's attendance to class, the following of rules, and the concentration on academic tasks (Corso et al, 2013).

To keep track of the students involved in the study, I organized their information in a table—see Table 3.2. I was able to document the socioeconomic status of students in the study, as well as how many people live in that household. The number of people living in a household might not seem to have a bearing on the student or on this study, but when considering how older students often take care of their younger siblings, I think it has a large impact on the lives of my students.

Table 3.2

Data Collection Table to Organize Student Sample Information

Identification of student by alphabet letter and gender	Grades	Completed Assignments	Attentiveness in Class	Academic Track (general or vocational-technical school)	Eat breakfast? What? Type of dwelling (trailer, development, apartment, acreage)
A (f)	85%	12 out of 15	Tends to like to be on her phone, but does nice work on the assignments submitted.	General	Yes Egg sandwich or leftovers development

Data Collection Methods

In Phase 1, I gained insight and information through interview questions into how other districts accomplish fulfilling student basic needs for food to increase student motivation so their academic achievement improves. Gaining information from other districts and catering services helped me see what they determine is working to meet their students' basic needs to increase motivation and academic achievement.

Interview questions I used for school districts with innovative food programs across the United States:

- 1) Tell me about your nutritious breakfast, lunch, and snack program.
- 2) How do you fund this program?
- 3) Since the implementation, have you noticed an increase in student attendance and/or a decrease in tardiness?

- 4) How else have you noticed that the program has influenced your student body?
- 5) What would your advice to me be as my district is looking to implement a similar program?

I coded and documented my notes in a list to better compare what each is doing. Since the people I interviewed spoke to me over the phone and told me what they are doing and how they are doing it, it was easier for me to organize my notes afterwards into lists to more easily compare each program.

Phase 2 of the study involves a case study using a phenomenological approach to better understand aspects or phenomena that impact student motivation in my morning ELA courses. With my grade 12 students in Phase 2, I surveyed students related to the factors I am studying to get precise answers. The survey gave me a general idea of what kinds of families my students have as well as what their expectations of and experiences with school are. I had my participants take the survey online, so my results were organized for me and were easier for me to manage and code.

Survey questions had four answer options and included the following 10 statements. “(4) strongly agree, (3) agree, (2) disagree, or (1) strongly disagree survey questions:

1. I eat breakfast every morning.
2. I eat breakfast in the school cafeteria.
3. I can usually find breakfast items in the school cafeteria that I can eat.
4. When I eat breakfast in the cafeteria, I do not get hungry again until lunch.
5. When I am hungry, I don't pay attention as well in class as I could.

6. School breakfast foods have too many simple carbohydrates, such as bread-type products.
7. School breakfast foods don't really keep me full until lunch.
8. I don't take time in the morning to eat breakfast.
9. I eat a filling breakfast most mornings.
10. I often eat some type of protein (meat or egg) for breakfast.

After the survey, I selected students using a maximum variation process to represent students who are perceived to demonstrate higher and lower motivation for me to interview. One target area for data collection was to gauge the difference between students who seem motivated and those who do not. Where does the motivation come from? Where did it go with the unmotivated students? I recorded the participants' views in their own words and from their own perspectives. Interviews produce more varied data that needs to be transcribed and coded, but it creates a feeling for the humans in the study meaning that it is not as impersonal as a questionnaire on the computer.

Interview questions:

1. How do you prepare yourself for school each day?
2. What do you have for breakfast and where do you eat it?
3. What do you usually eat for lunch and where do you eat it?
4. What kinds of snacks do you eat throughout the day and after school?
5. Who lives in your household?
6. What do your parents do for a living?
7. What type of home do you live in? A two-story house, a ranch-style house, a mobile home, something else?

8. Where is your home situated? Do you live in a development, an acre or more of land, or somewhere else?

The answers to these questions led to a dialog about the student's home life to add to the demographics of the student participants as well as school expectations. The participants did not have to be honest with me, but I have developed a relationship with each and have demonstrated that my classroom is a safe place. For my data collection I used observation (recorded in a personal journal), students' completion of assignments, and student grades.

Combining data that I obtain from both phases gave me a more complete picture of student needs, intrinsic motivation, and academic success. Phase 1 gave me a macrocosmic view of the effects of a successful nutritious program on the student body of several schools where phase 2 gave me a microcosmic view of student needs, fulfillment, and achievement.

Data Analysis Methods and Research Procedure

In Phase 1, I analyzed my notes and interview transcripts from other districts and catering services through a constant comparative process moving between the transcripts, the interview notes, and my research. Initially, open codes were developed to categorize emerging themes. After open codes were developed, I returned to the data to group the open codes into axial codes (Merriam & Tisdell, 2016). I researched what types of programs in other districts seem to be working to enhance student motivation and how they were working.

Although I planned to utilize a survey to open dialogue with these districts using the questions below, the people with whom I spoke were eager to tell me all about their programs without any questions from me:

- 1) Tell me about your nutritious breakfast, lunch, and snack program.
- 2) How do you fund this program?
- 3) Since the implementation, have you noticed an increase in student attendance and/or a decrease in tardiness?
- 4) How else have you noticed that the program has influenced your student body?
- 5) What would your advice to me be as my district is looking to implement a similar program?

As the people were speaking, I took notes, then went back and looked for common threads, creating a list of common characteristics among these successful programs. After researching and considering what works for other school districts, I will have a plan to present to my district to implement in the WSSD schools.

After coding my notes from observations and interviews, I distinguished patterns among the data for my final analysis. Limitations might include biases of other educators and administrators that color what they told me about the success of the programs they have in place. What other district administrators consider successful might not be the same as what I consider successful.

In Phase 2, I analyzed surveys in concert with information from Table 3.2 that captures information about each student. I compiled and recorded student responses to the surveys through the use of the Likert scale from (4) Strongly Agree to (1) Strongly Disagree through the use of a bar graph. I took information from tables 3.2, 3.4, and 3.5 to determine the background and attitudes of my students and whether the background has any correlation to their attitudes as identified in the survey. When combined with student engagement in classroom discussion, number and rate of assignments turned in, and grades, I gained a more complete picture to answers for my research questions.

Table 3.3

Student Survey Results

Something quick (cereal)	(# of students)
Eggs or other protein	
Coffee only	
Sometimes eggs and sometimes cereal	
Convenience store food	
Cafeteria food	

After surveying students, I interviewed them to get additional information about what their attitudes of school are as well as what they eat for breakfast, what type of home they come from, and what their own attitude of school entails.

Table 3.4

Student Interview Results

Student identifier	Preparation for school	Breakfast	Lunch	Snacks	Perceived attitude
A (female)	i.e. gets up at 7:30 to be at school by 7:35. Sometimes sleeps in clothes that she wears to school	None	Cafeteria, but only chicken nuggets and bread sticks	Cookies, chips brought from home	Poor towards much of school. Frowns often. Doesn't talk much in class

During Phase 2, I recorded interviews and then transcribed them as soon as possible after they occurred. During and directly after the interview I made my own notes

on my observations of what was said and how it was said. After conducting the interview and transcribing it, I explored patterns that addressed my research questions and made notes of those in the margins. Once I had an interview with coding, I analyzed it for patterns so I could put the data into a table to see the types of occurrences I had for variables.

I took the information from tables 3.2, 3.3, and 3.4 to determine if breakfast consumption has any correlation to student grades.

Table 3.5

Student Academic Information

Student identifier – alphabet letter and gender	Rate of student engagement in classroom discussion	number of assignments turned in	rate of assignments turned in	grades
A (female)	3x in 30 min discussion	3 out of 5	60%	C/D
B (male)				

From my notes I distinguished patterns among the data for my final analysis. Limitations might include biases of administrators that color what they tell me about their students and the success of the programs they have in place, although that did not seem to be a problem. What other district administrators consider successful might not be the same as what I consider successful, so I had to be clear about what the characteristics of a successful meal program are to me. In addition, I have to wonder if students assign a stigma to any program WSSD implements. Do students in other districts see the program as a “handout” that they want no part of? How should the school address student attitude about the implementation of such a program?

Combining data that I obtained from both phases gave me a more complete picture of student needs, intrinsic motivation, and academic success. Phase 1 gave me a macrocosmic view of the effects of a successful nutritious program on the student body of several schools where phase 2 gave me a microcosmic view of student needs, fulfillment, and achievement.

Summary

Overall, I examined the current situations and motivations of students in two of my English classes as well as worked with other school districts and catering services to identify strategies to increase student success by helping students meet their basic physiological need for food (specifically nutritious, whole food that has had little to know processing beyond the normal process of cooking) and accessing their intrinsic motivation to increase academic success. By taking a 2-phase approach, I examined how the macrocosm of a school district can affect the microcosm of the classroom. Because I teach grade 12 ELA, I used students from my own morning classes to help discern student habits, demographics, and how these areas in conjunction with how a student's basic needs are being met correlate to intrinsic motivation and academic success. In utilizing various data collection tools such as surveys, questionnaires, and observation, I gained better insight into the lives of my students and how they related to the student population of districts with innovative meal programs for meeting student basic needs. My findings will eventually be applicable to WSSD at large. My goal is that my findings shape strategies to meet student basic physiological need of hunger and help students better access their intrinsic motivation in order to increase their academic success.

Chapter Four

Presentation and Analysis of Data

“You put junk in, junk comes out. You put good in, good comes out.” – Jack LaLanne

Overview of Study

Some high school students make poor choices when it comes to the foods they eat, but sometimes whole, nutritious foods are not an option. When the breakfast of a teenager consists of sugary cereal or a box of snack crackers and chocolate milk from the convenience store, teachers cannot expect that student to be academically at his or her best.

This study is two-phased: Phase 1 involved researching and speaking with people who are in charge of serving school meals that are made with whole foods to the students of that district. Phase 2 involved observing grade 12 students during morning English classes and then surveying them about their food consumption as well as their attitude towards school cafeteria food. Observations were also recorded about student engagement, grades, and assignment completion. The classes being used were grade 12, level 2 (general track), British Literature classes during periods one and three, both meeting before lunch. The high school where these classes took place is located in a rural setting where 26% of its students receive free school meals and 1.1% receive reduced cost meals (personal communication, McGowen, August 26, 2021). Administrators at the school confirmed that these numbers reflect a portion of the students who actually qualify

for free or reduced-price meals. McGowen also commented that Red Land's sister high school, Cedar Cliff (located in a suburban area), has higher numbers and even more need.

The significance of this study is to determine if children are being done a disservice by giving them highly processed foods to consume in the school cafeteria or by them eating convenience foods for breakfast. For some students, this is the only food they consume all day that has any kind of nutritional value. Just like in the home of Diana, the student mentioned in chapter three, the adults in charge of a household do not always provide the necessary food for that household for a variety of reasons. In food insecure homes, the adults in charge (often at least one parent) cannot meet all the needs of the household, so food is the budget item that is cut. Sometimes the decision is made easier because grocery stores are not readily available. Because mothers who are deprived of food are three-times more likely to be depressed, they are less likely to show affection or interact in other ways with their children (Sole-Smith, 2020, July 15). Often, the parents are the ones who go without food so their children can have something to eat, but this does not mean that the children are not affected. Sometimes the household does not have food for anyone and the parents count on their children getting food from the school cafeteria.

Within the two phases of this study are two areas of focus: 1) a wider view of district food programs that utilize whole foods, and 2) a narrower view of student routines, attitudes, and academic achievement. Within Phase 1, the areas of focus included districts and catering programs that feed students whole, nutritious foods. The areas of focus in Phase 2 included 21 grade 12 students and data that is collected from them to determine what they eat for breakfast, what their attitudes towards school

cafeteria meals are, and their grades as well as level of engagement (in the way of completed, submitted assignments) in the ELA classroom. Information about student grades, completion of assignments, and classroom engagement were obtained to determine a correlation between these areas and breakfast consumption.

Data Collection Strategy

The strategy used to gather data for Phase 1 included research online as well as many phone calls and emails to schools and catering services from Colorado, New York, and Pennsylvania. Phase 2 required surveys and interviews with grade 12 students. I wanted to learn what other school districts were doing to feed their students foods that are nutritious and processed as little as possible. The effects of the meal programs are anecdotal but show a consensus of the result of children having their basic need for food met with delicious, ethnically recognized, and nutritious foods. According to the Philadelphia School District food services website, “We can’t educate kids if they’re hungry. Eating breakfast increases cognition,” and “Eating school breakfast is associated with higher attendance, punctuality, and academic performance.”

School district meal programs I used for this study were chosen based on the information they provided on their webpages. For the most part, I tried to choose districts similar in size and demographics to Red Land. From there, I contacted individuals by phone who were able to tell me of other programs that would help further my research. Once I researched and called, I found that the districts who offer the most healthful meals to their students are larger than WSSD.

General Findings/Results

Qualitative and quantitative methods were employed to gather data that was then analyzed and summarized. Qualitative findings include the results from a questionnaire, interviews, and observations. Quantitative findings include results from a survey scored on the Likert scale with one being strongly disagree and four being strongly agree.

Neutral was not an option so that the students had to decide how they felt about what was being asked. Other quantitative data included grades of students and rate of completed assignment submissions.

Phase 1: Interviews and Research of Catering Services and School District Food Services

School cafeteria food is historically notorious for being calorie dense, nutritionally insufficient, and tasteless (or just plain bad), but the food offered does not have to be that way. Districts that were identified for this study served whole foods that were mostly locally sourced and had centralized production kitchens where everything was made and then distributed. They partnered with local farmers and vendors to offer the students and staff culturally recognizable dishes made from whole foods. They stayed away from processed, simple carbohydrates as much as possible. Even favorites among teens and younger children such as pizza and burgers were re-worked to be more healthful and less processed with less sugar, fat, and preservatives. As a result, more students participate in the meal program and less food was discarded.

Some school districts across the United States have decided to out-source their meals to catering services, WSSD being one of them. Often these catering services can reduce costs of food preparation, but at what other costs? I interviewed two people, one

from a catering service and one from a school district, and data are summarized below. In addition, I was given names of programs that advocate for better foods being served in schools and was able to find and research those programs. The findings from that research are also included below.

In a phone interview (personal communication, August 18, 2021), N. Kahn, Director of Strategic Partnerships, described Red Rabbit as a 16-year-old service that is not only a food service and catering company, but also a social justice program; part of their goal is to help underserved people. They want children to be able to see themselves represented in the school cafeteria. They serve 35,000 children daily and all of their meals are cooked from scratch. No foods remain in refrigeration for more than 48 hours. Most of the food is prepared in a central commissary kitchen. In schools where Red Rabbit has taken over the kitchen, 8,000 students are served. As far as funding is concerned, Red Rabbit is not responsible to any corporate shareholders. They have 80-90% of the student population they serve participate in their breakfast and lunch program. Generally, schools across the United States have 40-60% participation, according to Kahn.

In a phone interview with M. Rochelle, Head of Programs, Grants and Communication at Boulder Valley School District (personal communication, August 24, 2021), Rochelle explained how Boulder Valley food services prepares their meals in-house as well. They, too, have a centralized commissary (or production) kitchen where they prepare meals and then truck them to the 56 schools across the district. They have a process for sealing and storing food so that it can be kept fresh for as long as four weeks, yet they never keep anything beyond three weeks. Most of the food they serve is locally

sourced, or is sourced within the state of Colorado, such as the beef they prepare and serve. Sometimes they partner with local vendors for ethnic dishes that are better made from these vendors, such as tamales and pot stickers. Ann Cooper, who created the Chef Ann Foundation, expresses the sentiment of the program in a video that briefly describes what they do, “It ought to be a birthright in this country that every child every day has healthy food in school and no child ever goes hungry” (BVSD School Food Project, 2020, Nov. 3, 2:18). Boulder Valley has set out to accomplish just that and has set a high standard for other schools to follow.

Boulder Valley’s graduation rate has been steadily climbing since the implementation of the whole foods project. In 2009, their graduation rate was 84.3%, rising to 84.7% in 2010. In 2011, their graduation rate rose to 88% and steadily increased to 91% in 2020. Of course, more than providing whole, fresh foods contributes to academic achievement, but since 2009, graduation rates have increased. In 2007, the graduation rate was 85.7%, so it dipped by 2009. In 2021, it was an astonishing 91.1% (Report Card Committee, 2012).

Some food service programs provide thorough explanations of their programs online, so personal interviews were not necessary. These data are summarized below.

Ann Cooper has created the Chef Ann Foundation where the goal is to help transform school food to be healthier. To achieve this goal, the Chef Ann Foundation is dedicated to making sure schools provide from-scratch cooking in order to provide the healthiest and tastiest food to the students. According to the fact sheet “The Benefits of Farm to School” linked to the Chef Ann Foundation website, the benefits of locally sourced foods and from-scratch cooking in schools does the following: “Enhanced

overall academic achievement in K-12 settings, including grades and test scores; increase in opportunities for physical activity and social and emotional growth; increase in school engagement” (p. 3). Healthful foods lead to better cognitive function, better health, and improved attention spans, which can lead to better grades.

Ann Cooper served as the director of food services at Boulder Valley School Services in Boulder, Colorado for 11 years. Boulder Valley still offers healthful foods and from-scratch meals to their students, and according to M. Rochelle, head of Programs, Grants, and Communications of The School Food Project of Boulder Valley School District, it has made an impact on academic achievement of the students (personal communication, August 24, 2021). Since the program had such a profound impact at Boulder Valley School District, Chef Ann has expanded her reach to become a “champion of school food reform as an important avenue through which to improve childhood nutrition” (Chef Ann Foundation, Chef Ann Cooper President and Founder section).

Food Corps was first discussed in 2009 at President Obama’s signing of the Kennedy Serve America Act into law (FoodCorp, Who We Are, Our Story). “Six people led a process shaping what eventually became FoodCorp...” The initiative of six people led to thousands becoming involved to eventually form the organization that is now known as Food Corps. The vision of FoodCorps is to create “a future in which all our nation’s children – regardless of race, place, or class – know what healthy food is, care where it comes from, and eat it every day” (FoodCorps, Mission and Vision).

According to Food Corps:

In the United States, one in three kids are on track to develop diet-related illness in their lifetime. For kids of color, it's one in two. Children who lack a quality diet are more likely to face a lifetime of challenges: they score lower on tests, miss more days of school, advance less in their careers, and raise children who are likely to repeat the same cycle. (FoodCorps, Mission and Vision)

Just as Red Rabbit and the Chef Ann Foundation, FoodCorps strives to make school meals nutritious, locally sourced, and culturally relevant. No child should feel stigma because of the food choices he or she makes. "About 73% of FoodCorps schools had measurably healthier school food environments by the end of the school year, and in schools with more of Food Corps' hands-on learning activities, children are eating up to three times as many fruits and vegetables" (FoodCorps, What We Do, Our Impact). With a healthier diet, students are better prepared and more ready to learn.

After extensive research, I was able to code the emerging themes from the interviews and web searches conducted. I discovered that the successful programs contained 11 characteristics that are listed below.

Many of the schools and companies that work to create sustainable meals that are nutritious do so not only to feed the children, but also to treat them equitably and often educate them about nutrition and how it affects the body and mind. Schools sometimes forget that curricula consist of more than academic subjects. Teaching students where their food comes from, what it is made of, as well as how dishes (especially from different ethnicities) are prepared should be part of the education process. In addition, a recurring comment was that children are more likely to choose and eat food that they recognize from home and food that their peers are eating and enjoying.

List of characteristics of whole food programs from notes:

All school districts and catering companies with innovative food programs have

- Trained people to cook from scratch
- Locally sourced ingredients
- As little processed foods as possible
- Meals that are ethnically representative of children
- Little waste because children enjoy the food
- Fresh food offered in cafeterias
- All meals are National School Lunch Program compliant
- Meals are not expensive and are easily accessible by all students
- Many have a central production kitchen to make the meals and then truck the meals to the schools daily
- Others take over cafeteria kitchens and retrain the staff focusing on food safety and freshness.
- All claim that a quick way of preparing something is not always the best way to prepare it.

Phase 2: Surveys, Observations, and Questioning of High School Grade 12 Students

Twenty-one student volunteers from the morning grade 12 British Literature classes were interviewed and surveyed. I used a survey and a questionnaire, then followed up with observation and discussion. These 21 student volunteers answered ten closed-response questions that were scored on the Likert scale from Strongly Disagree (1) to Strongly Agree (4). Neutral was not a choice because too often people are quick to choose a “middle-of-the-road” answer. Because neutral is a non-committal answer, it was

simply not an option. After examining their answers, a bar graph (Figure 4.1) was configured to show the students' answers to ten questions.

These ten questions were designed to determine whether a student ate breakfast, if breakfast from the cafeteria kept that person full until lunchtime, the general opinion about school cafeteria breakfast choices, as well as how that student generally feels when he or she does not eat breakfast (whether he or she can pay attention in class when going without breakfast). They also answered eleven open-response questions about themselves, including their morning routines and what they usually eat for breakfast. The open-ended questions were designed to have students give their opinions about cafeteria food options and how the foods make them feel. In addition, they discussed with me what they would like to see offered in the school cafeteria, or what they already like about the cafeteria breakfast options. Student grades as well as assignment completion and submission were collected to discern some kind of correlation between breakfast consumption and academic performance.

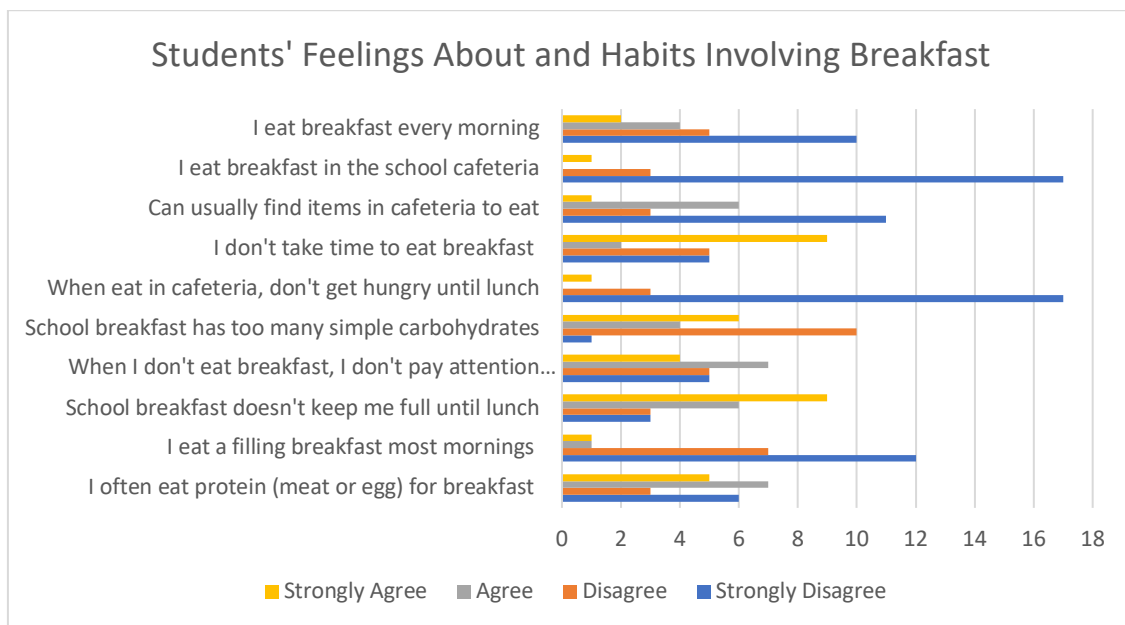


Figure 4.1 Students' Feelings About and Habits Involving Breakfast

According to Figure 4.1, a little over half of the students (52% or 11 out of 21 students, with nine students who strongly agree and two who agree) do not eat breakfast. A majority of the students (72%) also claim that school breakfast foods do not keep them full until lunch; however, when worded in a slightly different way, 95% of the students disagree with the statement that they do not get hungry until lunch when they eat breakfast in the cafeteria. What is surprising is that nearly half of the students (48%) feel they can pay attention in class even if they are hungry. Seventy-two percent of the students disagree that they eat breakfast every morning. However, only 52.5% of the student volunteers agree with the statement that they do not take the time to eat breakfast. Table 4.1 shows the information in the bar graph presented as percentages as well as raw numbers (in parentheses). Because the wording was changed slightly, students seemed to answer differently from one question to the next. For example, 28.5% of the students agree that they eat breakfast every morning, but 48% disagree that they don't take the time to eat breakfast, and only 10% of the students agree that they eat a filling breakfast every morning.

Table 4.1

Student Answers to Survey Questions in Percentage

	Strongly Disagree	Disagree	Agree	Strongly Agree
I eat breakfast every morning	48% (10/21)	24% (5/21)	19% (4/21)	9.5% (2/21)
I eat breakfast in the school cafeteria	81% (17/21)	14% (3/21)	0%	5% (1/21)
Can usually find items in cafeteria to eat	52% (11/21)	14% (3/21)	29% (6/21)	5% (1/21)

I don't take time to eat breakfast	24% (5/21)	24% (5/21)	9.5% (2/21)	43% (9/21)
When eat in cafeteria, I don't get hungry till lunch	81% (17/21)	14% (3/21)	0%	5% (1/21)
School breakfast has too many simple carbohydrates	5% (1/21)	48% (10/21)	19% (4/21)	29% (6/21)
When I don't eat breakfast, I don't pay attention very well in class	24% (5/21)	24% (5/21)	33% (7/21)	19% (4/21)
School breakfast doesn't keep me full until lunch	14% (3/21)	14% (3/21)	29% (6/21)	43% (9/21)
I eat a filling breakfast most mornings	57% (12/21)	33% (7/21)	5% (1/21)	5% (1/21)
I often eat protein (meat or egg) for breakfast	29% (6/21)	14% (3/21)	33% (7/21)	24% (5/21)

I then asked each of the student participants individually if they would eat breakfast at school if the food was more to their liking. Each student was also asked what that would mean to them – what does “more to their liking” mean?

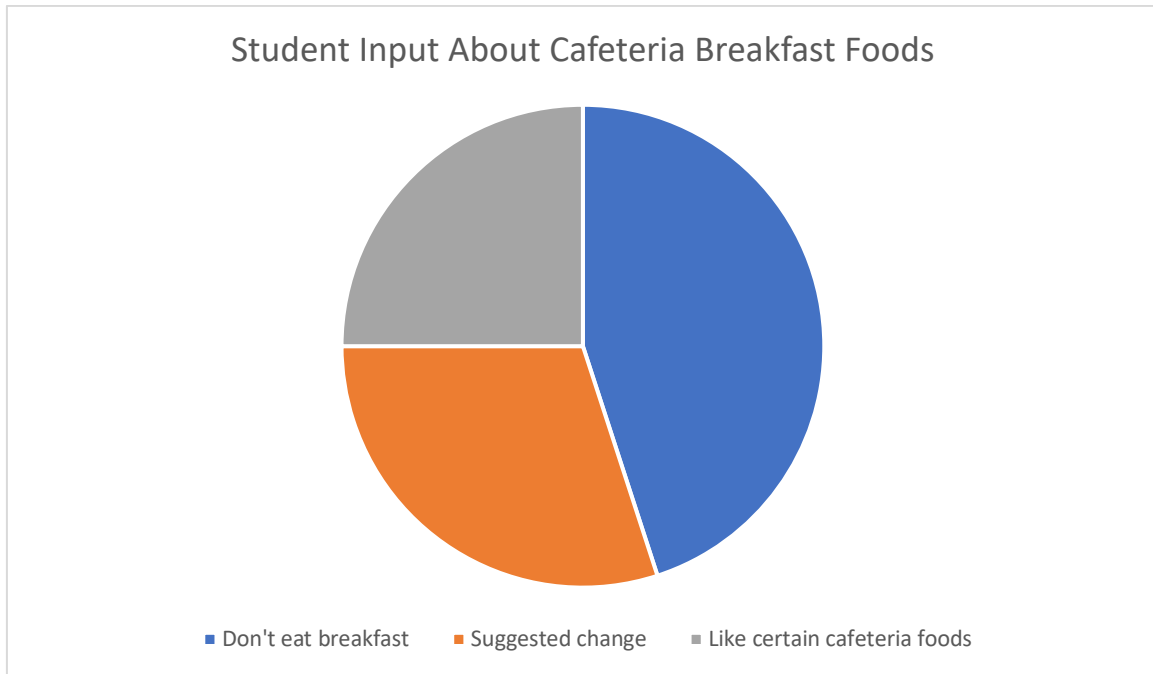


Figure 4.2 Student Input About Cafeteria Foods

If the cafeteria served more nutritious food, would it matter since students are not eating breakfast, or would they eat breakfast if more nutritious foods were served? These questions were asked of 20 student volunteers individually in the study (one student did not want to participate). Forty-five percent of those asked do not eat breakfast and do not intend to change their behavior regardless of what is served in the cafeteria. They claim that they are not hungry in the morning, or do not have time to eat and have gotten used to not eating breakfast. Thirty percent suggested a change with some of them stating that they would eat breakfast in the cafeteria if those changes were implemented. Often the changes include adding different foods or bringing back foods the cafeteria used to serve, such as breakfast pizza. Twenty-five percent like the cafeteria food.

Perhaps changing the foods offered in the cafeteria will not entice some students to eat breakfast at school let alone a healthful breakfast. However, Begdache et al. (2021) found, “One of the major modifiable risk factors for mental distress is the diet” (p. 1).

Brain development continues well into a person’s 20s, and the brain needs certain nutrients to aide in that growth (pp. 1-2). How is the brain of a teenager who does not eat breakfast grow to its best capacity? Another question that comes from the data is how do teenagers expect to excel academically if they are not feeding their brains with the nutrients the brain needs to work? Of course, teenagers do not realize the implications of poor habits, at least not until much later in life once years of bad habits have taken a toll on the body.

To better understand the effects of breakfast consumption (or lack thereof) on student academic achievement, data were explored across differing areas including student grades, rate of assignment completion, student attentiveness, and historical grades of each student. I wanted to discern if there was a correlation between what or if a student ate breakfast and their academic achievement in ELA. I also wanted to see if there was a correlation between student socioeconomic status, type of breakfast consumed, and academic achievement. The following table shows data collected from teacher gradebook, teacher observation of students, student school records, and researcher driven survey of students. Student names were replaced with a letter, but the gender of each student was recorded. The color coding shows the relationship between the student’s grade in the class and whether he or she eats breakfast as well as in what type of dwelling the student resides.

Table 4.2

Student Data from Survey, Observations, and Discussion

Student (gender)	Grades (data from	Completed assignments	attentiveness	Academic track (college prep,	Historical grades (9, 10, and 11)	Eat breakfast?

	teacher gradebook)	(data from teacher gradebook)	(data from teacher observation)	general, vocational-technical school) (data from student schools records)	(data from school records)	What food? (data from survey) Type of home? (Answers from survey)
A (F)	88%	8 of 15	Generally attentive, but has excessive number of absences that is affecting her grades.	General	Grades have ranged from 50% to 100%. Most have fallen in the 70 to 80% range. Failed 2020-2021 school year.	Does not eat breakfast Sometimes cereal or pancakes development
B (F)	99%	15 of 15	Does what she is told to do. Is very quiet. Will participate if called on.	General	Most grades have fallen between 80 and 90%.	Does not eat breakfast (sometimes cereal) trailer
C (M)	99%	15 of 15	Is quiet and does what I ask of him. Does exceptional work and does it with care.	General	Most grades have been between 50 and 90%.	Usually eats at home Cereal Townhouse/apartment
D (F)	86%	13 of 15	Is quiet and does what I ask of her. Does not	General	Grades have been in either the 70s or 90s.	Does not eat breakfast

			understand concepts easily but will not ask questions.			Home w/ aunt and uncle
E (M)	89%	13 of 15	Quiet. Participates in class often. Is not careful with assignments and misses things.	General	Most grades fall between 70 and 80%.	Does not eat breakfast development
F (M)	55%	6 of 15	Is outgoing and participates in class discussion often. Does what I ask. Many absences.	Vo-tech	Most grades fall between 70 and 88%.	Does not eat breakfast trailer
G (M)	94%	14 of 15	Quiet and does what I ask. Understands concepts easily.	Vo-tech	Most grades fall between 80 and 99%.	Does not usually eat breakfast Eggs acreage
H (M)	48%	8 of 15	Quiet and does what I ask. Missing assignments. Disorganized	Vo-tech	Most grades fall between 71 and 90%.	Does not eat breakfast development
I (f)	53%	6 of 15	Quiet and does what I ask.	Vo-tech	Most grades fall between	Does not eat breakfast

			Many absences.		70 and 84%.	development
J (M)	92%	12 of 15	Quiet and does what I ask. Will do assignments at the last possible moment.	Vo-tech	Most grades fall between 75 and 88%.	Usually eats breakfast Eggs & toast development
K (M)	98%	15 of 15	Outgoing and does what I ask. Professes not to like school	Vo-tech	Most grades fall between 86 and 93%.	Does not usually eat breakfast Eggs or cereal development
L (M)	69%	13 of 15	Easily distracted, very talkative, disruptive but not malicious. Charismatic	Vo-tech	Most grades fall in the mid-70s%	Eats breakfast Eggs/breakfast sandwich development
M (F)	39%	8 of 15	Quiet and does what I ask. Wants to do well, but is disorganized	Vo-tech	Most grades fall between 80 and 90%.	Does not eat breakfast Cereal Trailer
N (M)	89%	13 of 15	Does what I ask and participates often in class.	Vo-tech	Most grades fall between 70 and 90%.	Eats breakfast Whatever is available (leftovers) development
O (F)	93%	14 of 15	Does what I ask and participates	Vo-tech	Most grades fall between	Does not eat breakfast

			s often in class. Outgoing and organized		71 and 89%.	Coffee Development/ townhouse
P (M)	46%	5 of 15	Quiet. Disorganized. Excessive absences	Vo-tech	Most grades fall between 70 and 95%.	Does not eat breakfast acreage
Q (M)	77%	11 of 15	Quiet and does what I ask. Will participate in class if I call on her. Organized , asks questions	Vo-tech	Most grades fall between 70 and 100%.	Does not eat breakfast
R (M)	94%	13 of 15	Quiet and does what I ask. Will participate in class if I call on him. Thorough in assignment completion	Vo-tech	Most grades fall between 75 and 98%. Failed 2020-2021 school year.	Usually eats breakfast Cereal or eggs Development/ townhouse
S (F)	99%	15 of 15	Quiet and does what I ask. Will participate in class if I call on her. Wants to do well. Asks questions for clarification	Vo-tech	Most grades fall between 86 and 99%.	Usually Eats breakfast Whatever school has trailer

T (F)	99%	15 of 15	Claims not to know what she is supposed to do. Is very quiet. Is academically successful, but does not want others to know.	General	Most grades fall between 86 and 89%.	Does not eat breakfast Lives in town
	Key:	Purple highlight = grade above 90% to 100% and does not usually eat breakfast	Yellow highlight = grade in 80% range and does not usually eat breakfast	Light blue highlight = grade of 80% to 0% and does not eat breakfast	Red highlight = low grade and eats breakfast with protein	

No identifiers are included in Table 4.2 to keep the data anonymous. However, the gender of each participant is included to show possible correlation between gender and grades.

Once the data was sorted and highlighted, a few trends came into focus. A surprising occurrence that came from the data is that eight of the 20 students usually do not eat breakfast, yet they have good grades (80% to 100%) in ELA. I expected that number to be much lower. Six of the 20 students do not eat breakfast and have an average grade in ELA of 77% or lower. I expected that number to be higher. Only one student who eats a breakfast with more than simple carbohydrates is failing ELA. More research would be needed to determine why. (One contributing factor is the student's excessive

absences.) When looking at the students who have 90% to 100%, the results are surprising. Four of the 20, or 20%, eat a healthful breakfast. On the other hand, five of the 20, or 25%, do not eat breakfast. More research needs to be done to determine how the high functioning students are achieving such academic success without the proper fuel for their bodies and brains in the morning. Another interesting factor is coffee consumption among grade 12 students and whether that has an impact on academic achievement. A few of the students consume only coffee in the morning.

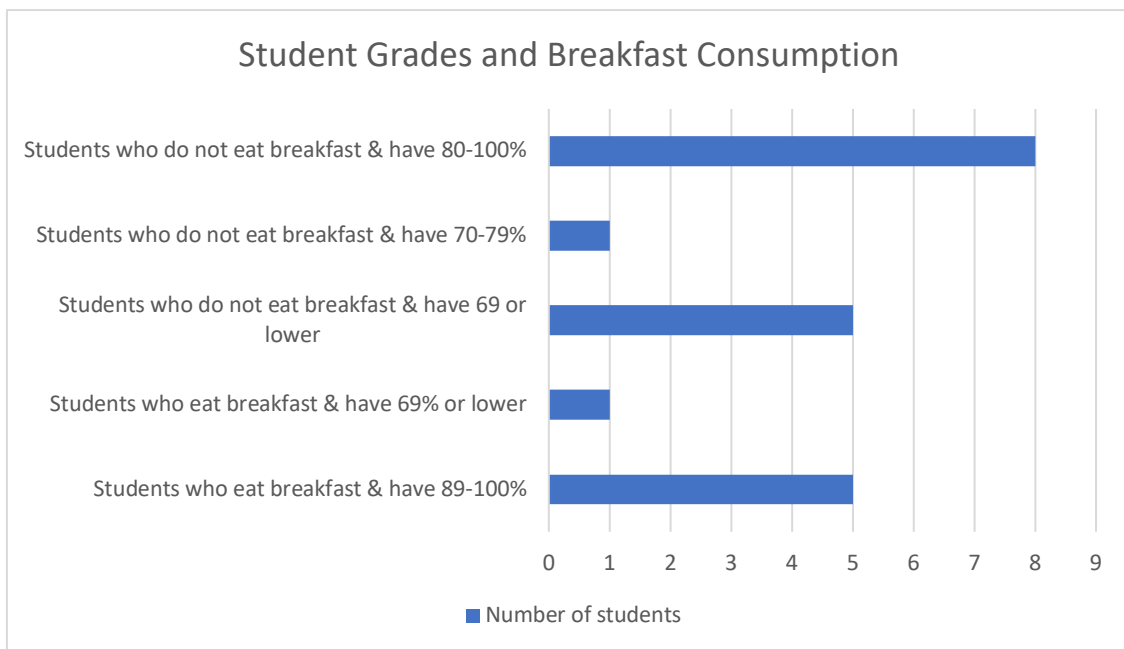


Figure 4.3 Student Grades and Breakfast Consumption

Figure 4.3 shows the percentage of students who do not eat breakfast as opposed to those who do eat breakfast and where their class percentage falls. The group of students who do not eat breakfast and have earned 80% to 100% is the largest group of the four. Forty percent of the students surveyed have a good grade (“good” meaning at least 80% or higher) and do not eat breakfast. Since breakfast has been touted as the most important meal of the day, this data is unexpected. Another area that has been taught in

school, on television, and in homes is that eating breakfast most mornings can help students experience academic success. All but one of the students who eat a healthful breakfast have earned at least 89% with most of them earning 100%. This means that 25% of the students surveyed eat a healthful breakfast and are academically successful in ELA. In direct opposition, 25% of the students surveyed who do not eat breakfast are academically unsuccessful in ELA.

Students seemed to be honest when answering the questions and when talking with me because they see a need for change in the food offered in the cafeteria. For some of the students, school cafeteria food is the only food they can count on consuming all day. There are students within the school who receive a backpack full of food to help them (and their families) get through the weekend. I know of only one student in my classes this year who participates in this program. By May 2020, one of my students who received the backpack of food was comfortable enough to share with me that many people lived in her household and this food was definitely welcomed. She and her siblings were transplants from Hurricane Katrina and have made a home in Pennsylvania with relatives. The student from the 2021-22 school year has a baby of her own and lives with her mother and her mother's boyfriend in a trailer park. She has shared tidbits about her life with me so far, and it sounds like a hard life. Not having access to healthful food is one of the many hardships this student endures.

Analysis of Data Based on Research Questions

Research Question 1

What are the characteristics of a successful program that address Maslow's hierarchy of needs that my investigation can uncover to use in WSSD to increase student motivation and academic success?

This is a large area of study and more avenues need to be examined to obtain a more complete picture, but the data obtained through this study gives a starting point to better serve the students of WSSD. The characteristics of a successful program start with a change in ideas about what constitutes a healthful meal to meet students' basic needs, which is critical to promote higher levels of functioning and attention in class. Even though the meals at WSSD are compliant with the USDA National School Lunch Program, they often do not consist of whole foods and are sometimes highly processed, such as the prepackaged waffles offered some mornings.

According to schoolnutrition.org, breakfast for school children must consist of one full cup of fruit or optional vegetable, two servings of whole grains or one serving may be replaced with a meat or meat alternate as long as there is at least one grain, and one cup of fat-free milk. The problem occurs with interpreting what a whole grain is. WSSD serves processed and packaged commercial waffles and pancakes that the students may take out of the cellophane wrapper and heat in the microwave. This constitutes a whole grain, yet it is highly processed. Successful programs make most if not all of their meal components from scratch, and the food they use is mostly sourced locally.

In general, among the 15 programs in which data were collected through interviews or document review, the largest concerns were serving students and staff food

that was fresh, locally sourced, and ethnically recognizable. All people who were interviewed stated that the initial undertaking seemed monumental, but once each program was running, they found that more students ate school provided meals, there was less waste in the cafeterias, and students performed better in school. Most claimed that they understood the problems associated with working against large vendors such as Sodexo (the vendor West Shore School District uses), but the results they experienced far outweighed any initial costs and hardships they may have incurred. Some of the districts chose to build a large production kitchen to make the meals and then deliver them to the various schools within the district. Because they want to keep the food as fresh as possible, they have had to research ways to make the food more stable until it could be delivered. Boulder Colorado, for example, found a way to package the food to keep it fresh in refrigeration for a maximum of four weeks; however, the longest they keep any food is three weeks. Another concern each of these districts addressed was that of the food being ethnically recognizable by their student population. If the district's student population consisted of many people of Latin American heritage, they tried to provide dishes that these students would know from their homes.

Generally speaking, these districts and programs researched what the children of the communities at large needed to help feed these children efficiently and effectively. They purchase supplies locally grown or locally produced, mirror the foods served in the homes of their students, and provide education to help students feed themselves well their entire lives.

Research Question 2

How will meeting students' basic needs of food from Maslow's tier-1 help them increase their motivation, engagement, and academic success in the ELA classroom?

With just a cursory glance at Table 4.1, one can deduce that the foods that at least some high school seniors are consuming for breakfast do not help to engage their intrinsic motivation. Many students do not eat breakfast, but when they do, they eat simple carbohydrates, such as toaster pastries (such as Poptarts), pancakes, or cereal, both at home and in the school cafeteria. In fact, a typical weekly breakfast menu for the school cafeteria includes the following: Monday – cherry strudel or banana muffin with yogurt cup, Tuesday – bacon, egg, and cheese on bagel or cereal bowl with graham crackers, Wednesday – breakfast pizza or cinnamon Poptart with string cheese, Thursday – confetti pancakes or bagel and cream cheese, Friday – mini cinnamon rolls or cereal bowl with graham crackers (WSSD). The students have many choices that are highly processed with many simple carbohydrates. These types of foods do not satiate hunger for very long. According to the Mayo Clinic, a healthful breakfast consists of whole grains, lean protein, low-fat dairy, and fresh or frozen fruits and vegetables (including 100 percent juice with no added sugar). Breakfast cereals should have at least three grams of fiber, a list of ingredients where sugar is not listed at or near the top, and a calorie count of less than 160 calories per serving. WSSD serves ready-to-eat breakfast cereals in 1 oz packages that range from 100 to 112 calories and have a carbohydrate content that ranges from 20 to 25 grams. The package contains the recommended serving size, which is approximately one cup. When considering the amount of plant protein per cereal, Cheerios contains the most while Cinnamon Toast Crunch and Trix contain the least.

These cereal choices fall within the USDA guidelines for school meals, but are they the best choices for students by providing the best nutrition for growing brains?

Generally, students who participated in this study had complaints about the food in the school's cafeteria. When asked about improvements, they made suggestions, but some of those suggestions were not much better than the food that is already provided. When I had the opportunity to speak with someone from Sodexo, I asked about the food that is being served. This person stated that because of the pandemic, many foods they would serve are not available. In fact, at the time, Sodexo was having problems obtaining canned fruit for the schools. The usual provider had nineteen cases of canned peaches, but that would only be enough for one school. More research needs to be done once the supply chain is restored and the cafeterias are running normally.

Other findings did not show a strong correlation between breakfast consumption and academic achievement. Students who did not eat breakfast often earned grades as high as students who ate breakfast. Overall, those who ate a healthful breakfast completed more assignments and were able to pay better attention in class.

Although student academic achievement is determined by many more factors in addition to nutrition, many students who eat breakfast tend to do better academically. They tend to complete more assignments and are usually more attentive in class. Their grades also tend to be higher. Students who do not eat breakfast tend to appear more sluggish and are not nearly as attentive as their peers. I even had a student fall asleep in class once this fall! Perhaps a lack of breakfast was not the only factor, but it was a contributing factor.

Supplemental Analysis of Data

I was able to gather data that do not directly affect the research questions, such as whether gender has a bearing on academic achievement. Based on the limited number of students I used, I can make an initial hypothesis that females tend to do better academically than males do. However, are they more likely to eat breakfast, and is that breakfast more likely to be nutritious? This research only has superficial evidence to answer and support that question. Data presented in Figure 4.4 below shows that more females eat breakfast, yet they would like to see more changes in the cafeteria food that is offered. If these changes were implemented, would female students be more likely to consume breakfast in the cafeteria, and would this, in turn, affect their academic achievement?

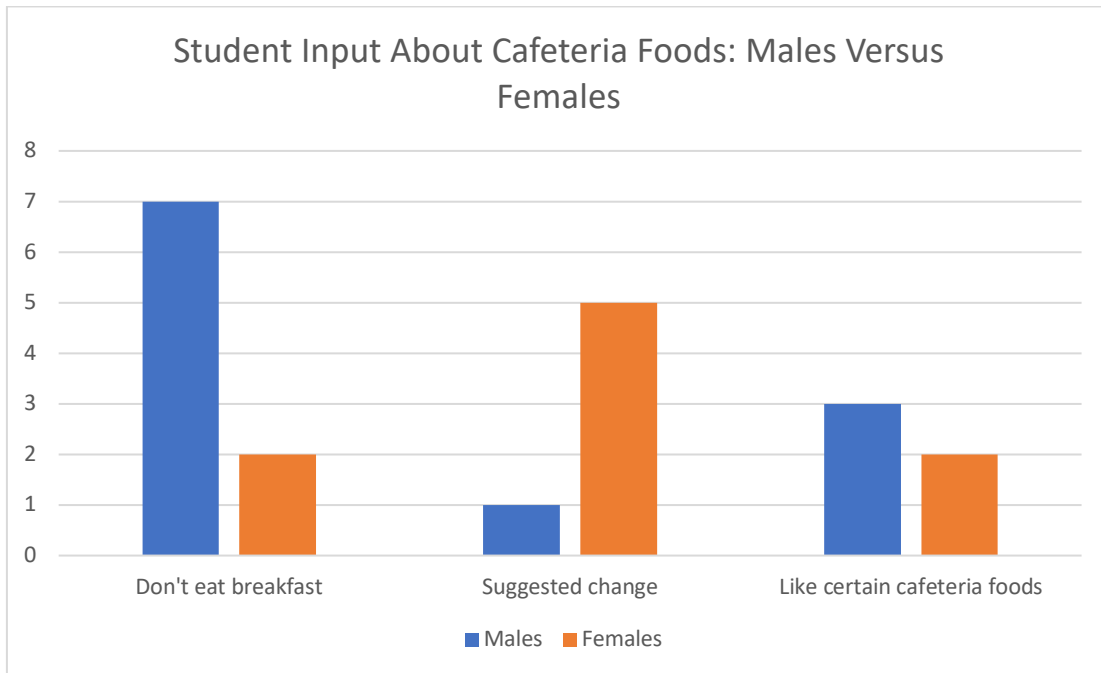


Figure 4.4 Student Input About Cafeteria Foods: Males Versus Females

Figure 4.4 also shows that more teenage males do not consume breakfast as opposed to teenage females. Many students claim that they have no time to eat in the mornings with

others claiming that they are not hungry. Although this data does not relate to the research questions of this study, it is interesting findings.

Although I would have liked to have included more about demographics of the student sample, some of the students did not know where their parents work and others did not want to answer the question about what type of house in which they reside. Based on the limited data collected, demographics do not seem to have a major bearing on academic achievement. This was unexpected because some research (deCuba et al., 2019; Bhattacharya et al., 2004) claims that underprivileged children tend to have food insecurities; however, because of the meal programs at school, poor, school-aged children tend to do better than those either younger or older (Bhattacharya et al., 2004). Before the national school lunch program was enacted, with these food insecurities often came academic underachievement. To add to the betterment of the underprivileged and minority groups, when children have a choice of foods that are ethnically familiar, they feel more accepted and will better flourish in many areas of their lives (Chef Ann Foundation, Boulder Valley School District, Food Corps).

Many factors exist in the planning and implementing of meal programs in school districts, but not always is the best interest of the students the top priority. When someone is well-fed with whole foods that the person recognizes, that person is better prepared to tackle problem solving and other avenues of life. Cafeterias that serve whole foods and dishes made from scratch tend to have less food waste, which means more students are actually consuming the meals. The dishes need to be fresh, which will entice people to eat them, which will create less waste, which will make the turn-around time for the food to increase, and that will create more support of local farms and vendors. In addition, if

students are embarrassed by being eligible for free or reduced meals or if they are unsure about the food choices, they will not eat in the cafeteria. Many of these students simply do not eat for the day until they can obtain something that is fast and cheap. Because of COVID-19 and the hardships the pandemic has created within communities, WSSD, like many other districts across the United States, offer every child a free meal at breakfast and at lunch, so hopefully, this stigma no longer exists within a student body.

The study has created more questions for future research. As I have mentioned, one major question is how demographics affects food choice and academic achievement. If a student lives in a “food desert” then how do the choices available to that student affect academic achievement? If a student lives in a poor section of the district and the family subsists on food that is nutritionally poor, will that student automatically be an underachiever? Does choice theory and Maslow’s hierarchy, when considering a person’s need for basics to survive, consider the nutritional needs of a person when that person consumes calorie dense and nutritionally lacking foods? Although some data about student demographics were collected, the information was sparse and did not prove conclusive for this study.

After this study, WSSD will need to examine the meal program it has in place and will need to decide in what direction it wants to go. Many years ago, the meals were made from scratch and they were tasty as well as nutritionally balanced. Many people, from administrators to students, bought school lunches often. The district got away from the “made-from-scratch” approach to save money. The food service director, along with the superintendent and the assistant superintendent, plan to reevaluate what is best for the

students and how they can achieve that at a reasonable cost while still offering fresh foods.

There are many factors that affect a person's (specifically a teenager's) academic achievement other than simply breakfast food consumption. A person's home life, sleep schedule, even interactions with others can affect academic achievement. Even a person's ethnicity could be a contributing factor, although no data was collected on this during this study.

Summary

Some school districts, such as the one where I am employed, have chosen to use a catering service to provide their students with breakfast and lunch daily. Often these companies are concerned about cost and expense resulting in providing food that is highly processed. School meals do not have to be poor quality, though. School districts exist where they have employed strategies to provide made-from-scratch meals that ethnically represent the student body and are tasty, fresh, and nutritious. When a student enters the cafeteria and sees dishes being served that are fresh and that the student recognizes (in that the food represents the student's particular race or ethnicity), that student will more likely choose to eat the meal and there will be little to no waste. When the students consume healthful foods, they are more likely to have better concentration in the class, earn better grades, and have better attendance.

When speaking with students, I have noticed that those who tend to eat breakfast are more alert and participate more in class discussion. They tend to complete more assignments and contribute more to group work, especially if the meal was higher in complex carbohydrates and protein. Fiber and protein take longer to digest, so blood

sugar does not spike and then crash as it does when a person eats sugary foods (Raman, 2020). Students tend to think they can function without wholesome food first thing in the morning; however, even though the findings are not conclusive at this point, they are strong enough to show a correlation between breakfast consumption and academic achievement. Helping to meet students' basic needs from Maslow's tier-1 will also help them increase their motivation, engagement, and academic success in the ELA classroom because their bodies will have the fuel they need to perform all of the functions they need to accomplish.

Chapter Five

Discussion, Conclusions, and Recommendations

But parents and schools have their priorities; making sure our kids eat right because research shows a clear connection between nutrition and student performance in school. - Jared Polis

Introduction

Chapter 5 presents the discussions, conclusions, and recommendations based on this study. The two research questions that this study addressed are as follows: 1) *What are the characteristics of a successful program that address Maslow's hierarchy of needs that my investigation can uncover to use in WSSD to increase student motivation and academic success* and 2) *How will meeting students' basic needs of food from Maslow's tier-1 help them increase their motivation, engagement, and academic success in the ELA classroom?* The data obtained from researching the first question (Phase 1) was useful in examining and recommending changes for the meal program at WSSD. Although the findings obtained from the second question are inconclusive, the data nonetheless leans toward the consumption of a healthful breakfast being important to academic achievement in teenagers. Many factors influence academic achievement, but the food a teenager consumes, or does not consume, can play a factor in how well he or she learns. Much in the way Utter et al. (2019) found family meal time to have a positive impact on teenagers in both their mental health and in their academic achievement, what teenagers eat impacts mental acuity and academics. The results of a study by Galioto & Spitznagel (2016) suggest that young adults experience a small advantage for delayed recall when

they consume a healthful breakfast, but more research needs to occur for more conclusive support.

Summary of Findings

The findings of this two-phase study have identified areas for consideration in moving forward and the need for additional research in these areas. Phase 1 focused on gaining a better understanding of common and best practices in providing healthful meals for students. Phase 2 focused on understanding eating habits of teenagers, particularly prior to and at the onset of the school day.

Findings from these two phases suggest when the extrinsic factor affecting a person is hunger, that person's most basic needs are not being met. With that, the person cannot easily move beyond a basic drive to fulfill this most basic need for food. In fact, students have asked me for food to quiet the rumbling stomach so they can concentrate and complete their assignments. Of course, student motivation is never as simple as that.

From the findings in Phase 1, one can discern that districts that serve healthful, made from scratch meals reported more engaged students, less food waste, and more student participation in the meal program. Students find the food more appealing and are more likely to try something that they have never eaten before. These students tend to be more engaged in school and develop healthy habits that continue beyond their school years.

Based on the findings from Phase 2, students can be academically successful without eating breakfast, but the question remains as to whether this achievement is easier with a healthful breakfast. Students who consume a healthful breakfast overall tend to be better equipped mentally and physically to participate in the activities of their day.

They tend to have a higher rate of assignment completion and are more engaged in class discussion. Of course, breakfast consumption is not the only factor affecting a student's academic ability; mental and physical awareness also impacts achievement.

Breakfast consumption, or lack thereof, is not the only factor in a student's academic achievement based on findings from phase 2 of the study. When provided a healthful snack during class, students tended to pay better attention and participate more often in discussion. Although the data on demographics was limited, I hypothesize that the socio-economic factor of a person plays a role in food consumption and academic achievement, especially since food insecurity is an issue many are dealing with in today's society (Bhattacharya et al., 2004; de Cuba et al., 2019).

Interesting findings came from the survey of students. Seventy-two percent of the students involved in the study either agreed or strongly disagreed that they eat breakfast every morning, yet 52.5% agree/strongly agree that they do not take the time to eat breakfast. That means that 15 students disagree or strongly disagree that they eat breakfast every morning and 11 either agree or strongly agree that they do not take the time to eat breakfast. The four-student discrepancy could be students who have time but still choose not to eat breakfast. However, students who do eat some type of breakfast tend to pay better attention and get better grades. Of the nine students who claim not to eat breakfast, six said that they sometimes consume something and three consume nothing, yet all 12 of these students earned anywhere from 86% to 99% on class assignments.

Surveying students later in the school year would help to determine if the time of year makes a difference in student engagement and academic achievement. Does it take

some students more time to find a routine that works for them so that they can participate in school at their best? Perhaps some students either never find a routine, or simply choose not to eat breakfast. In regards to breakfast consumption, perhaps eating something regardless of the nutritional content is better than eating nothing at all, but there still seems to be a link between what a person eats and how well that person's brain and body work. Although Maslow's hierarchy of needs states that a person must satisfy the immediate physiological needs (see Figure 1.2), he never states the quality of ways the person meets his or her needs. Chapter four starts with a quotation from the exercise guru Jack LaLane, but is eating anything no matter how processed better than eating nothing at all? This seems to be the case with some people.

Another noteworthy finding was the attitude and actions of students towards cafeteria food. Many people claim that school cafeteria food is bland at best and inedible at worst. Only five percent, or one student out of 21, claimed to eat breakfast in the cafeteria, yet 72% claimed that school breakfast does not keep them full until lunch. One can conjecture that this is why students choose not to eat in the cafeteria, but it would only be a guess.

Perhaps food consumption does not play nearly as large of a role as one might think when considering a person's academic achievement. "[T]he social context can either support or thwart the natural tendencies toward active engagement and psychological growth, or it can catalyze lack of integration, defense, and fulfillment of need-substitutes" (Center for Self-determination Theory, 2020). A person tends to have physiological needs and with them a drive to survive. Of course, obtaining food is a major player in the drive to survive, but so much more contributes to this drive. Utter et

al. (2016, 2019) discovered that family relationships and gathering as a family at meal time specifically had a major impact on school aged children and their relationships with others as well as their lack of depression compared to their classmates who did not have meals with their families. Perhaps these same students better achieve academic success. The studies by Utter et al. did not come to this conclusion, but it is one that needs further research.

Although I have addressed the two research questions, the data obtained and conclusions drawn have created more questions for future research. These questions include the effect of demographics, and more specifically, family income and social status, on the quality of food consumed and academic achievement as well as the effect gender might play on academic achievement. Some conclusions can be made, however, and are summarized below.

Another area worth considering is whether food consumption and the type of food consumed plays a large role in academic achievement based on the gender of the students. My female students tended to do better academically, and the female students who ate breakfast tended to do better than everyone regardless of food consumption for breakfast. Do females have more drive to be academically successful? How does a healthful diet contribute to this success? Do social constructs such as gender expectations contribute to academic success of female students?

Even student boredom and burnout play a role in student motivation and achievement. Sulea et al. (2015) studied the connection between student boredom and burnout with need satisfaction and personality traits. Their findings can help show why a student might not be performing academically through the student's view of his or her

personal autonomy, but need satisfaction actually goes beyond a person's personality traits. If a student does not feel as though he or she can regulate his or her own behavior, and then is hungry too, that person does not have a very good chance of being academically motivated and successful.

Some studies linked family relationships with student academic achievement and well-being. When a student has a positive relationship with his or her family, particularly with his or her parents, that student's motivation and feelings of well-being were positive, which directly affected that student's academic achievement (Lombas & Esteban, 2018; Utter et al., 2016; Utter et al., 2019; Zeldin et al., 2018). Some of my students do not have stable home lives and often do not have positive relationships with their parents. Breakfast consumption is merely one contributing factor of many that help determine the academic achievement and motivation of a student.

When a student is lacking something such as "chemicals, nutrients, or internal (e.g., exercise/health) or environmental (e.g., temperatures) conditions necessary for the body to survive" as defined by Taormina and Gao (2013, p. 157) through Maslow's hierarchy of needs, that student has little to no interest in the pursuit of academic achievement. The data of this study shows that students with lower order needs as they are defined by Maslow as well as by choice theory can delay gratification of the lower-order needs as shown from research by Wahba & Bridwell (1975). This helps to explain how those students who do not eat breakfast can still achieve academic success, but for how long?

When I have taken the time to build relationships with my students, I have helped the students access their intrinsic motivation as it is explained through self-determination

theory (STD). Just as Patrick (2014) showed how relationship building in a marriage helps the members of the union access intrinsic motivation to operate in a more willful way to increase each member's capacity to be attentive and responsive to his or her partner's psychological needs, students in a classroom build a relationship with the teacher which helps them operate more willfully in order to become more attentive and responsive thus increasing their chances of academic achievement. As a result, how Gagné and Deci (2005) explained SDT as universal necessities in that satisfying or thwarting those basic needs determines the psychological health of the person involved, through SDT the person involved can put his or her own basic needs aside because of the relationship he or she has built with the person in charge (in this case the teacher) and can access his or her internal motivation. The need for food becomes secondary to relationship building, which can be explained through Glasser's choice theory (CT). CT stresses relationship building through seven habits that include supporting, encouraging, listening, accepting, trusting, respecting, and negotiating differences. This further helps to explain why students who do not eat breakfast are still able to achieve academic success.

An unintended result of this study helps to underscore the findings of Wahba and Bridell (1973) and of a more recent study by Kenrick et al. (2010) that Maslow's pyramid needs to be reconfigured. One observation that helps support their findings is that students, if their most basic needs are not being met, would not aspire to find a mate, or in other words, they would not date. I have seen exactly the opposite; many of my students have significant others in their lives even if they do not have the most basic of needs being met. As I stated earlier, SDT and CT help to explain the idea that needs

intermingle with motivation and can be fulfilled out of any type of earlier perceived order.

Implications for Practice

In the field of education, student attention is of utmost importance. A variety of factors can affect the attention of students, and teachers can only help to control a limited number of these factors. One factor that the school can help to control is student consumption of breakfast. If the school can provide healthful choices for breakfast that entice the students to eat that breakfast, these students will be more ready to learn and achieve academic success. Teachers should not have to provide food out of their own provisions for students. In fact, this study has shown school meal programs that have successfully adopted from-scratch meal preps and that have enticed students not only to participate in the meal program, but also to eat more of the food thus reducing waste.

Being able to turn meal preparation over to a third party is an easy solution to feed many of their students every day to which many school districts have turned. The cost and reimbursement of the meals is one major factor. According to Gaddis (2020),

According to the USDA's School Nutrition and Meal Cost Study, it cost schools an average of \$3.81 to produce each lunch served through the NSLP during the 2014-15 school year, but the federal free lunch reimbursement rate was only \$3.32. Breakfast was even more of a money pit: It cost schools an average of \$2.72 to produce each breakfast served through the National School Breakfast Program (NSBP), but the reimbursement rate was just \$1.88.

About the only way for school cafeterias to make up the difference is to encourage students to purchase à la carte menu items with their own money. The answer, then, has

become third-party catering services that can provide cheap, easy-to-serve food that just meets the federal guidelines for nutrition for schools.

These third-party catering services tend to cut corners by providing highly processed food choices that are cheap and easy to prepare but still meet federal, state, and local nutrition standards (Gaddis, 2020). At the end of the day, the profit margin is usually the most important factor for these vendors. In fact, over the years, these third-party vendors have lobbied to lower the nutrition guidelines put forth by the federal government through the National School Lunch Program. In the 1960s when many more students were eligible for free and reduced lunches, schools could not keep up and had no money to update their kitchens (Gaddis, 2020). As a result, they turned to the private sector. Since then, several schools and organizations in the United States have gotten away from vendors and make their meals from scratch. They are able to provide tasty, healthful foods at a reasonable cost to students and faculty and are still able to maintain their budget. Of course, it takes much planning, a full cooking staff, and special equipment to provide meals made from whole foods that are ethnically sensitive to the student and staff members.

When speaking with N. Kahn, Director of Strategic Partnerships at Red Rabbit, I mentioned that West Shore School District was partnered with Sodexo, a large food service company. He laughed and wished me luck getting my district away from such a large and influential company. Because of the difficulty one person faces when battling a large corporation, my recommendation is for Red Land High School to start with a snack program that offers students healthful, whole foods at no or little cost. Grants are available to start such an endeavor, but they have many steps and paperwork for the

school even to be considered. One needs time to wade through the many websites that list the many types of grants available in order to determine which are applicable to a school such as RLHS. Another recommendation is for RLHS to partner with local grocery stores and CSAs (Community Supported Agriculture) such as Spiral Path Farms. I have sent emails to Giant Foods, Wegmans, and Karns Foods, but have not received a reply at the time of this writing. Any company selling food deals with the spoilage of whole foods. Some stores such as Giant try to sell the perishable food, particularly fruits and vegetables, at a reduced cost to their customers. I hope these stores will be willing to partner with RLHS to donate fruits and vegetables for student consumption as snacks during the day. A school organization such as student council or Future Business Leaders of America could become involved, and the food could be offered before school in the lobby and throughout the day in the school store. The grocery stores would be able to use the donations for tax purposes, and the school would be obtaining whole foods for their students.

Ideally, allowing school cafeteria workers to do more than warm up pre-packaged foods is the goal. When I started working at RLHS in 2005, the cafeteria personnel made many of the items from scratch and many people purchased meals. One of the favorites was turkey day because the cafeteria personnel would roast many turkeys and would make homemade dressing. The lines for food would wrap around the perimeter of the cafeteria. The school even offered most days throughout the year a salad bar that had many fresh, whole foods options. To return to those days, the school could start with the Chef Ann Foundation. On the home page of their website, the Chef Ann Foundation states, “The Chef Ann Foundation is dedicated to promoting whole-ingredient, scratch-

cooking in schools. Scratch-cooking enables schools to serve the healthiest, tastiest meals so that kids are well-nourished and ready to learn.” The foundation was founded by Chef Ann Cooper who served as the director of food services at Boulder Valley School District in Boulder, Colorado. By 2009, she founded the nonprofit organization that helps schools provide wholesome foods to their students and staff.

As far as student academic achievement and student breakfast consumption is involved, if cafeterias are able to provide healthful, tasty foods that students will eat, these provisions will aid in student academic achievement because students will be able to focus on their assignments instead of concerned over their hungry stomachs. In addition, teachers will not feel the need to have snacks available to quell student hunger.

Recommendations for Research

Future research in the area of student breakfast consumption and its ties to academic achievement should account for student demographics and gender. In addition, a larger sample size would be helpful to ensure that the data is not skewed.

Information collected about student demographics was inconclusive mainly because there was very little data provided by the students. If the researcher can collect information about the type of family the students have, their general income, and where they live (food availability in the area), there may be some kind of connection. Poorer families do not care less for their children; however, they do not always have the means to provide well for these children. According to some research (deCuba et al., 2019; Bhattacharya et al., 2004), underprivileged children tend to have food insecurities. School meal programs tend to help alleviate these insecurities and help poor, school-aged

children do better than those either younger or older (Bhattacharya et al., 2004). The food provided needs to be healthful and made from whole foods.

Marginalized students and their relationships they build, especially with their teachers as defined by Yosso (2005) should be further studied to help determine if these relationships do actually help the students access their intrinsic motivation in the classroom.

In addition, the students' gender needs to be more closely considered. This study noticed a difference between male and female student academic achievement, especially when the females ate breakfast. If a larger sample is taken, will this still hold true? In other words, do grade 12 high school females generally do better academically than males, and why? Are these differences attributed to food consumption, family involvement and support, or something else?

Because human behavior is rarely simple to explain, many other factors contribute to a student's motivation (Bhattacharya, J., Currie, J., & Haider, S., 2004; Corso, M. J. et al., 2013; Davidson, W. & Beck, H. P., 2019; de Cuba, S. E et al., 2019; Deci, E., 1971; Filippello, P. et al., 2019; Gutierrez, E., 2021; Morris, B., & Zentall, S., 2014; Pieters, H., & Heilemann, M., 2010; Sole-Smith, V., 2020, July 15; Sulea, C. et al., 2015; Utter, J. et al., 2019 and 2016; Wang, Z. et al., 2014). Perhaps the student has been fighting with his or her family. Relationships/friendships in school can have an impact. How much sleep the student gets each night can also have an impact, especially when considering tier-1 of Maslow's hierarchy of needs. Building relationships with the students helps to increase their intrinsic motivation. When students feel safe and respected, they are more inclined to complete assignments and behave in socially acceptable ways. One student in

particular told me that he likes me and feels that I have respect for him. Since that day, this reluctant learner who has a history of disruptive behavior in the classroom is doing more than passing British Literature. Another student told me that he appreciated how I treat my students like humans. A third student has on several AM occasions asked for, and received, food from my stash. His grade in British Literature has since increased because he is more likely to complete and turn in assignments. This is in line with the findings of Deci (1971) as well as Morris and Zentall (2014), especially when considering SDT and CT. In addition, they are able to feel included instead of marginalized which further underscores the finding of Popkewitz (2009) and connects the findings to academic achievement.

Breakfast consumption is but a small part of the entire picture. While many aspects must be considered, breakfast consumption is one aspect where school officials can have an impact. By providing healthful, tasty meals made from whole foods, schools are teaching students how to eat as well as how these foods can affect the mental acuity of the person.

Changing an entire school meal program seems very expensive, but a change is needed. Student achievement and education is worth the cost, and districts that provide whole foods for their meals are showing that once the program is running, it becomes cost effective. More students eat school meals and they waste less food. Because they are eating whole foods that taste good, students are learning not only how tasty these foods are, but how much better they can participate in their day. The outcomes are worth the initial costs.

Action Plan

Initiating change in a school district can be a daunting task; however, change is needed to better serve the student body. The first action is to introduce my ideas to the Physical Activity and Nutrition Advisory Council (PANAC), of which I am a member. According to the West Shore School District website,

The District's Physical Activity and Nutrition Advisory Council (PANAC) serves as an advisory committee regarding student health issues, periodically reviewing and recommending changes to the District's Student Wellness Policy. PANAC also serves as a Food Services Advisory Council providing students, parents/guardians, and staff the opportunity to provide feedback on the District's Food Services Program. (WSSD Event Details)

Starting with the head of the committee, Dr. R. Argot, who is in charge of communicating with Sodexo and monitoring the meal program, I will share my ideas for a more innovative meal program. Together with Dr. Argot, I will at first develop a survey for the students of Red Land (that could be used in other schools in the district) to determine student attitude towards the meal program as it presently stands as well as student habits to determine where a change needs to happen.

After obtaining data from the student body, I will code the data and determine what steps to take next. One definite step will be to involve the student body starting with student council to carry out my fresh food initiative. Some of the actions that will need to occur will be contacting and partnering with local grocery stores and farms so they can utilize the schools as a place to donate fresh fruits and vegetables that are edible but not able to be sold.

Because Red Land's population is becoming more diverse, conversations about diversity have begun involving staff and students. Food, more specifically cuisine from cultures that represent the student body, is an excellent place to have that conversation. To implement a meal program where the menu represents the diversity of the student population will allow students to try new foods that their friends and classmates like. Researching and applying for grants will be integral to have funds available for needed supplies when invited guest cooks prepare breakfast for the school. With the needed funds, guest cooks will be invited many days throughout the school year. The student body will also be a source to attain guest cooks. Sharing one's culture through cuisine is one way to open discussion about diversity.

Getting student input into what is served will be an integral part of this program. Food is much more than a way to keep the biological functions of a body working; food is part of culture and is a way for people to connect and share. It is also a way for community members to become involved with the young people within the community, helping to build a sense of a united society.

Food, from the mundane modes of production, to consumption of a single meal or, to the global networks which bring foods from distant lands to one's plate, reflects and creates hegemonic relations between groups and individuals, defining 'good' and 'bad' behaviour (Magliveras and Gallin, 2015, p. vii).

Helping children find their places within their community and beyond by feeding them wholesome, whole foods is a great place to start to re-establish a school society post-pandemic. Helping them explore diversity through ethnic dishes is a nonthreatening way to open conversation about differences to encourage acceptance of these differences.

Conclusion

While gathering data, I found that programs that provide whole foods to their students not only exist, but are growing and thriving. Being able to have students enter a class ready to learn because they are not hungry is a very good start to education.

Teaching students through actions what and how to eat sets them up for a lifetime of healthful choices. It is not easy to purchase, prepare, and serve thousands of made-from-scratch meals every day, but schools across the United States are doing just that. They are buying local foods, teaching their children how delicious and nutritious whole foods are, and providing their students a good start to brain health and academic achievement.

Based on my observations, surveys, and interviews, many students are not eating breakfast before classes start. More than half of my students interviewed do not start their day with the proper fuel (food), and sometimes they start their day with no food.

Generally, those students who eat a healthful breakfast achieve better grades and complete more assignments leading them to experience academic success.

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Appendix A

Student Survey

Scored on the Likert Scale of (1) Strongly Disagree, (2) Disagree, (3) Agree, (4),
Strongly Agree

- (1) I eat breakfast every morning.
- (2) I eat breakfast in the school cafeteria.
- (3) I can usually find items in the school cafeteria to eat.
- (4) I don't take the time to eat breakfast.
- (5) When I eat in the school cafeteria, I don't get hungry until lunch.
- (6) School breakfast has too many simple carbohydrates.
- (7) When I don't eat breakfast, I don't pay attention very well in class.
- (8) School breakfast doesn't keep me full until lunch.
- (9) I eat a filling breakfast most mornings.
- (10) I often eat protein (meat or egg) for breakfast.

Appendix B

Student Questionnaire

- (1) What kinds of food would you like to see the cafeteria serve?
- (2) What does the cafeteria serve that you like to eat?
- (3) If you don't usually eat breakfast in the cafeteria, would what need to change in order for you to start eating there?
- (4) What nutritious foods does the cafeteria serve that you like? If they offer that, do you eat in the cafeteria, then?
- (5) What kinds of food do you usually eat at home?