

**Impact of Hunger on School Participation in Title 1 High School Seniors**

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**Abstract**

The purpose of this study was to examine the impact of hunger on school participation in Title I high school seniors. The study was conducted in a large urban Title I school district in Texas where the majority of the population falls into a lower socioeconomic group. The guiding question states, “Can hunger caused by food insecurity cause high school students, specifically seniors, to have a low participation rate in extracurricular activities?” The baseline data was collected around the socioeconomic status of the focus district. This data was cross-referenced with the qualitative student self-report survey data from a sample of 34 high school seniors who attended the focus district. The study found that the subject group surveyed were less likely to participate in extracurricular activities and as an average only participated in .08 of these activities per high school senior. The state average is 2 extracurricular activities per high school senior. Within the focus group, students who were food insecure were less likely to participate in extracurricular activities than students who were not food insecure and that hunger had a negative impact on student participation in extracurricular activities and academic performance.

*Keywords: hunger, lower socioeconomic status, food insecurity, Title I, extracurricular, high school, seniors*

**Dedication**

I dedicate this to my wife for her trust and patience. I also want to thank my son for believing in me and thank my daughter for reminding me to stop and play once in a while.

### **Acknowledgement**

I would like to acknowledge the guidance and encouragement of my faculty advisor, Dr. Mary Ann Manos. I would also like to acknowledge the administration of the focus district for helping me gather the necessary data. Finally, I would like to acknowledge the Senior class of 2023 that participated in this self-report survey. Just knowing these individuals, their perspectives, and their personalities gave me the drive to dive into this research to see what makes them tick.

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## **Chapter 1 - Introduction to the Problem**

According to the Texas Education Agency, there were 8,161 schools in the state of Texas (2022). Of those, just over 50% of them or 4,547 schools carried the designation of Title I and provided all students with free meals during the school day. In order for a school to be considered for Title I funding, at least 40% of the school population must be economically disadvantaged and have a lower (SES) socioeconomic status (US Department of Education, 2018).

As lower SES is conducive to food insecurity in the home, Title I districts which had higher levels of lower SES families also had lower student attendance rates than higher SES students (Zhang, 2003). Demographic data also suggested that children from homes within the lower SES also experienced higher levels of school absenteeism and did not experience the “typical” life of a high school student such as participating in extracurricular activities, which was important for adolescent development (Irvin, Meece, Byun, Farmer, & Hutchins, 2011). Hunger in students, associated with lower SES was directly related to lower attendance, behavior problems, and poor academic performance (Coughenour, Conway Kleven, Gakh, Stephen, Chien, Labus, & Whaley, 2021).

According to research from Bäckman, the link between school failure and life-course failure was well established in the criminology literature from studies on high school dropouts to areas with increased delinquent behavior. This cycle between systemic hunger and poverty may have led to poor development of certain Title I high school students (2017). Research from Sweeney, Bushway, and Paternoster (2009) suggested that these developmental flaws included poverty, social exclusion, ill-health, also crime and delinquency. Not only was the inherent risk for poverty, social exclusion, and ill-health prevalent but crime and delinquency was also

dramatically higher among youth who exited education before having reached an upper secondary/high school diploma. (Bäckman, 2017)

### **Background, Context, and Theoretical Framework for the Problem**

In order for schools to have provided a truly equitable experience for all students, certain conditions must be met that exist at the foundation of human developmental needs. These conditions that must be met, fell outside of the jurisdiction of the school districts and external support was scarce (Noguera, 2011).

Maslow's theory already suggested that without the basic needs of survival, a person is far less likely to have focused on their long term goals, especially education. The student's deficiency needs must be preceded by the student's growth needs, otherwise a failed academic role may later lead to a failed societal role (Noltmeyer, James, Bush, Bergen, Barrios, & Patton, 2020). According to cognitive scientist Piaget, cognitive development occurs in stages and if these stages are not met or a child is deprived of certain stages, there can be developmental issues in specific parts of the brain (Bjorklund, 2018). According to research from McLean and Syed, Erickson stated that human development spanned over a lifetime and humans were motivated by a need to achieve competence in our lives. Each stage of development is met with a conflict or task that needs to be resolved and these moments continued to shape the growth of the individual (2018). In many cases, poverty-oriented illnesses affected the psychological and physical development in humans (Eaton, Muntaner, Bovasso, & Smith, 2001)

Thomas Jefferson advocated for schooling for all children by proposing a bill to state funded schools every five to six miles. Jefferson felt "education for all" was a way to give children the opportunity for educational growth instead of forcing their childhood experiences purely on religious doctrine (Peden, 1954). Jane Addams took education further and founded

Hull House and ensured that the poverty stricken community and immigrants had their right to education as well as a myriad of other social programs (Gross, 2009).

Educational reformer and slavery abolitionist, Horace Mann sought out to counter the deterioration of public schools as a result of greedy politicians cutting funding for education. Eventually this reform resulted in an established state board of education (Peterson, 2010). Booker Washington provided reform for higher education opportunities for poor children. He believed that educating poor black students was the only way to prove to white Americans that they had value and place in their society, which led to an improved equality in political and civil rights (Washington, McTigue, Woodruff, & Harlan, 1981). Finally, Mary McLeod Bethune impacted the reform of education by starting the first schools for African American Girls, which was considered to be the most marginalized group in education. Bethune believed that education was the key factor for not only the advancement of race but sexual equality as well (McCluskey, 1989).

According to the U.S. Department of Education, for a school to use Title I funds for all students, at least 40% of the enrolled students within the district must have been below the poverty line and considered to be from “low-income” families. The funding provided two to three meals a day (2018).

Programs such as SNAP or Supplemental Nutrition Assistance Program gave families in need, money for food in the home. According to the SNAP Food Benefits of Texas Health and Human Services (2022) with certain eligibility requirements, a family of four could receive \$835 a month if their collective income was less than \$3644 a month (\$43,728/year), roughly 23% (2022). According to a recent economic report, households in the lower income bracket spent as much as 27% of their income on food for the household (USDA ERS - Food Prices and

Spending, 2022). It should be noted that in 2018, food secure households spent on average 21% more on food than the typical food insecure household (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2019; USDA ERS - Food Prices and Spending, 2022) In the focus district, 67.4% of the students were considered to be economically disadvantaged and 56.2% of the students population were considered to be at-risk of dropping out of school (Seguin ISD, 2022).

### **Statement of the Problem**

According to the American Psychological Association, lower Socioeconomic Status (SES) affected overall human functioning and development. In particular, lower SES had negative effects on education (2017). Stress caused by lower SES led to psychological issues such as anxiety and stress which contributed to delinquency and attention problems (Santiago, Wadsworth, & Stump, 2011).

According to Bowen and Hitt (2016) extracurricular activities had helped students gain a higher sense of accomplishment which led to higher attendance and increased chances of graduating. Studies suggested it was more common that students in Title I school districts were less likely to participate in high school activities even though those same activities offered increased motivation to press forward through graduation (Zhang, 2003).

### **Purpose of the Study**

The purpose of this study was to determine the direct connections between poverty induced hunger and high school participation for economically disadvantaged high school seniors.

Previous studies showed high school participation led to an increase in attendance, grades, physical and emotional health (Bowen & Hitt, 2016). Due to food-insecurity, a large percentage of high school seniors missed beneficial and data-proven factors that contributed to

their chances of successfully completing high school (Coughenour, Conway Kleven, Gakh, Stephen, Chien, Labus & Whaley, 2021; Irvin, Meece, Byun, Farmer, & Hutchins, 2011). This study offered insight into what a high school campus can do to more precisely manage students affected by hunger.

### **Research Question**

What connections existed between household food insecurity and high school participation in extracurricular activities of low SES high school seniors?

### **Rationale, Relevance, and Significance of the Study**

Data showed that households with children under the poverty level were more likely to experience food insecurity than houses without children underneath the poverty level (Coughenour, Conway Kleven, Gakh, Stephen, Chien, Labus & Whaley, 2021). The problems due to hunger induced poverty ranged from physical and psychological to educational. Unless students could overcome a track record of failure, these problems created a systemic overload of issues that lived with these students long into adulthood and created deeper rooted costs into the collective societal future (Bäckman, 2017).

The focus district intended for this study had a graduation rate of 89% for the past five years starting from the 2019-2020 school year, which put this district in the bottom 50% of Texas school districts (Texas Public Schools, 2022). Due to the Coronavirus pandemic, the state waived statistics from the 2020-2021 school year. A major contributing factor for a student not graduating was chronic absenteeism. The focus district had a chronic absentee rate of 10.8% which was well above the statewide average of 6.1% (2022). Data reported from Texas Education Reports showed that ex-students of the focus district that did not receive a high school diploma received nearly 30% less income than those who had high school diplomas, over the last

three years (Texaseducationinfo.org, 2022). According to the Associate Principal of the focus district, there was not much done by the district to offer this insight to upcoming high school students (personal communication, October 28, 2022). Data from the U.S. Census Bureau in 2018 showed that students from food-insecure homes had a lower chance (26%) of participating in extracurricular activities than students from food-secure homes (38%). A coach at this particular focus district claimed the football team alone saw a 75% decrease in this cohort's participation, going from about 60 freshmen to 15 seniors over the course of four years (personal communication, November 16, 2022). The study intends to investigate the nexus of poverty and extracurricular involvement in high school seniors in the focus district.

### **Nature of the Study**

This study used a mixed method of qualitative and quantitative research to determine the quality of life for high school seniors within the focus district. Qualitative data was gathered to determine the student's day to day food intake, their perceptions of what quality food was and what was an adequate amount. This was gathered through an administered student self-report survey.

This study further investigated any relationship between these particular high school seniors and their participation and involvement in extracurricular activities.

### **Definition of Terms**

The following terms were used throughout this study about the problem of food insecurity and the effect of hunger on high school participation in lower SES seniors.

**Academic performance** - Indicates the student's achievement of short and long term educational and scholastic goals (Merriam-Webster, 2022).

**Attendance** - For extracurricular participation and graduation, the action of going to school or being present in class at least 90% of the time (SISD 2022-2023, 2022).

**Behavior** - The particular way in which a student acts in response to a certain situation (Merriam-Webster, 2022).

**Chronic absenteeism** - Students who were absent at least 10% of the school year (Texas Public Schools, 2022).

**Discount rate** - an unwillingness to wait longer periods of time for a larger reward and more likely to wait a shorter amount of time for a smaller reward (Castillo, Jordan, & Petrie, 2018)

**Deficiency needs** - Basic needs that arise when faced with the reality of their absence, in this particular case; psychological, health, and safety needs (Noltemeyer et al., 2020).

**Delinquency** - Behaviors that are not compatible with learning (Studyorgi.com, 2022).

**Extracurricular** - Student activity, such as sports, lessons, and clubs, that falls outside of the normal day to day activities and curriculum of school (Merriam-Webster, 2022).

**Equity** - Being fair, impartial, objective and unbiased in the treatment of a group or individual (Merriam-Webster, 2022).

**Food insecurity** - being unable to afford balanced meals, cutting the size of meals, or being hungry because of too little money for food (Merriam-Webster, 2022).

**Food security** - The measure of availability of nutritious food and a family's ability to access it (Merriam-Webster, 2022).

**Growth needs** - The student's want to strive towards self-realization, knowledge, and understanding (Noltemeyer et al., 2020).

**High school seniors** - Students are considered to be seniors if they have earned at least 18 credit hours (SISD 2022-2023, 2022).

**Lower Socioeconomic Statue (SES)** - Economic and sociological quantitative indicator that describes a group that lives underneath the poverty line in which they lack access to important resources and social position in relation to others (American Psychological Association, 2017).

**Predecessor** - Groups, families, or individuals that were affected by poverty before the groups, families, or individuals that potentially face the same poverty (Merriam-Webster, 2022).

**SNAP** - Supplemental Nutrition Assistance Program that provides government funding to families in need of financial assistance for nutritious food (SNAP Food Benefits, n.d.).

**Systemic hunger** - Hunger that is derivative of the way the US economic, educational, and governmental systems have been set up (Feedingamerica.org, 2022).

**Title I** - Federal education program that supports low income students (Texas Schools, 2022).

### **Assumptions & Limitations**

The assumptions and limitations of this study revolved around the self-report data collected.

The assumptions are as follows:

It was assumed that the number of students surveyed answered truthfully and thoughtfully.

- Demographic data was available for the participants.
- Students were in attendance at the target school.
- Schools were in session during the study period.
- Students were fluent in English, as all survey materials were in English only.
- Students completed the survey online during classes.

The limitation are as follows:

- Students could have failed to complete all survey questions.



- Students could have been removed from school attendance due to administrative action for negative behavior.
- Students completed the survey online during classes.
- Students could have been disenrolled.

### **Organization of the Remainder of the Study**

Phase I - Included the history of the problem with poverty and education and the reforms taken to counter the issues.

Phase II - The setting was established in the focus district High School, a Title I high school in South Texas, Guadalupe County.

Phase III - Qualitative and quantitative data was collected from the focus district High School seniors regarding hunger and extracurricular participation.

Phase IV - Data was collected, analyzed, and reported regarding the connections between lower SES students and hunger with participation in extracurricular activities.

## **Chapter 2 - Literature Review**

### **Introduction**

The cognitive development approach to the topic of poverty, hunger, and development has been explored for generations, cognitive theorists such as Maslow, Piaget, and Erickson have researched the appropriate needs for proper development in children and adults (Bjorklund, 2018; Noltemeyer et al., 2020 ). Within the setting of education, current research has begun to connect poverty and hunger to issues such as chronic absenteeism and juvenile delinquency (Coughenour, 2021).

### **Historical Framework**

In 1784, Thomas Jefferson advocated for a bill that would diffuse knowledge to a broader amount of the population (Peden, 1954). He proposed a bill that would establish state funded schools every five to six miles that would teach the fundamentals of reading, writing, and arithmetic (Peden, 1954). Jefferson wanted to prepare the future generations with the essential knowledge of reading, writing, and arithmetic in hopes of developing a more enlightened community, as opposed to the traditional bible education, which he thought the judgements of the youth that age were not equipped yet for religious inquiry (Peden, 1954).

Further building a more accessible education throughout history, in 1895 Jane Addams pushed the idea of having university men reside in the poorer districts of Chicago in hopes to build up the intellectual involvement of the community (Gross, 2009). From there, in 1889 she and a colleague opened the doors to Hull House, which was a social experiment of sorts, was a settlement house that housed and helped educate the lower SES citizens of Chicago (Gross, 2009). One of the culminations of Hull House was that nutritious food needed to be a part of students' education (Lee, 2011). The work at Hull House around food was designed to inform,

educate, and broaden society's views on equity and justice within the community and education (Lee, 2011).

Continuing in the spirit of public education, Horace Mann, was an advocate for a free public education for all children at the secondary level (Peterson, 2010; Cremin, 2022). He believed that in a democratic society, education should be free and universal for all, it should also be equitable and all students should be given the same opportunities to grow intellectually (Cremin, 2022). Mann was also the first secretary of the state board of education in 1837. He and the board came up with six fundamental principles of pedagogy,

(1) that a republic cannot long remain ignorant and free, hence the necessity of universal popular education; (2) that such education must be paid for, controlled, and sustained by an interested public; (3) that such education is best provided in schools embracing children of all religious, social, and ethnic backgrounds; (4) that such education, while profoundly moral in character, must be free of sectarian religious influence; (5) that such education must be permeated throughout by the spirit, methods, and discipline of a free society, which preclude harsh pedagogy in the classroom; and (6) that such education can be provided only by well-trained, professional teachers. (Cremin, 2022)

Mann made the connection between humanity and education and established a foundation that gave all children the opportunity to be educated (Cremin, 2022). This article further examined the research of inequality in education and built a foundation for universal opportunities for students of all social classes (Cremin, 2022).

One step further was Booker T. Washington and Mary McLeod Bethune established the first schools for black children when education was mostly for white children and boys

(McCluskey, 1989; Washington et al., 1981). McCluskey spoke of Bethune's practical approach to education as she understood the racial and gender based limitations placed on all black people, especially black girls at the time (1989). She understood that lack of equality affected their notions of self-sufficiency which resulted in negative education and development effects on this social group (McClusky, 1989).

It wasn't until 1965, under President Johnson, when the Title I of Elementary and Secondary Education act was established that financially supported public schools whose population was 40% underneath the poverty line. According to the U.S. Department of Education (2018) these funds were meant to give lower SES students the same opportunities as children who were not affected by poverty, furthering lower SES student's opportunities to not have their educational development affected by hunger.

### **Theoretical Framework**

Cognitive theorists claimed that students affected by poverty and hunger were not as developed as their wealthier counterparts (McLean & Syed, 2018; Noltemeyer et al., 2020). Hunger interacted with learning primarily when early childhood development was affected by the lack of psychological needs met, which resulted in lower cognitive function typically focused on gaining greater growth needs (Noltemeyer et al., 2020).

In 1954, Maslow created the Hierarchy of Needs as a psychological study of child development, Maslow categorized the specific needs a child needed in order to develop successfully (Noltemeyer et al., 2020). As there were many children in the United States that have had at least one or more deficiency needs such as food insecurity and poverty, many of them did not develop their growth needs appropriately as a result (Noltemeyer et al., 2020). According to Maslow, growth needs were imperative to excelling in areas such as academics,

society, athletics and only existed if their physiological needs were met first (Noltemeyer et al., 2020). This psychological deficiency would manifest as a lack of concern for participation in extracurricular activities as a means of growth (Noltemeyer et al., 2020).

According to Bjorklund (2018) Piaget advocated for developmental stages to occur throughout a human lifespan. If these stages were not met at the right developmental level, the brain would not grow properly into the next stage of maturity (Bjorklund, 2018). Cognitive psychologist, Erikson, developed his theory on the eight stages of development that humans had to balance throughout their entire lifespan (McLean & Syed, 2018).

One particular stage, *intimacy v. isolation*, described the tension between the need to share yourself with another person or being unable to as a result of not having the developed skills to understand your own sense of self (McLean & Syed, 2018). This lack of intimacy was a result of never developing a sense of trust from an early stage and this lack of intimacy translated into other forms of isolation (McLean & Syed, 2018). As this cognitive development continued from childhood to adolescence, there were certain criteria that had to be in order for the obligation and urgency of education to be developmentally established as essential (Bjorklund, 2018). This isolation developed early on when psychological needs, such as hunger, had not been met and a fragile sense of self culminated into a lack of confidence in the self and others which would nullify any effort to be a part of any extracurricular or academic growth (McLean & Syed, 2018).

### **Recent Studies**

A study from Eaton, Muntaner, Bovasso, and Smith (2001) found that there was a variety of physical, depressive, and anxiety disorders that were associated with a lower SES. According to the American Psychological Association, schools in lower SES areas tended to be

undersourced and the students had higher dropout rates and lower attendance rates (2017). As there was data regarding poverty, hunger, and the issue of attendance, there was limited recent data on the effects of hunger and participation in extracurricular activities.

Early foundational research also suggests that poverty and hunger can have negative effects toward the physiological and psychological development of children and adults (Eaton et al., 2001). Eaton and his colleagues suggested that life in the lower socioeconomic status was more stressful than their counterparts, and stress was a large component of dysphoria; the cardinal symptom of depression disorder, especially (2001). They went on to say that this is more common in adolescents, young adults or the typical age group of high school seniors (Eaton et al., 2001).

In previous psychological studies, poverty related stress was shown to cause anxiety, depression, and social problems such as delinquency and attention disorders (Santiago et al., 2011). More data covering the specific nexus that lies in between the issue of poverty and hunger and participation in high school extracurricular activities have been a challenge to uncover. However the literature on the history of cognitive development did make a connection between the effects of lower SES and cognitive developmental issues (Bjorklund, 2018; McLean & Syed, 2018; Noltemeyer et al., 2020).

In 2018, Castillo, Jordan, and Petrie developed a study that presented how children with a higher discount rate; an unwillingness to wait longer periods of time for a larger reward and more likely to wait a shorter amount of time for a smaller reward, were less likely to graduate from high school. If a student who had grown up poor has a quick opportunity to make a little amount of money at the cost of their opportunity for education or extracurricular activities, they

were more likely to lose sight of their long term goals associated with high school participation and eventually more money (Castillo et al., 2018).

Participation in school activities was also related to the student's home environment, as well as their socioeconomic status,

I find it obvious that school absenteeism is mainly related to two explanations:

one being familial circumstances, for example, irresponsible parents, low incomes and related disadvantages; the other being the schools which may not be well organized to meet a pupil's need. (Zhang, 2003, pg. 11)

Zhang (2003) also states that many times these parents would not self-report their income to the district, a necessary step in order to allow their children to eat free in-school meals. This was a problem associated with the stigma of being poor and the judgment from the negative perception (Zhang, 2003).

Conditionally, there was a stigma associated with being poor (Nichols, 2020). Nichols' research studied the connection between homeless and low-income adults that frequented soup kitchens with their constructed social identities (2020). His research also focused on the management of this stigma and how it affected future generations (Nichols, 2020). What he found was that most homeless and low-income adults did not want to be associated with attendance at the soup kitchen nor did they want to be associated with any other poverty stricken individuals that frequent the soup kitchen due to negative and deviant perceptions associated with these particular identities (Nichols, 2020). The research, thus far, observed a connection between the trauma and stigma associated with poverty and a lack of educational obligation caused by this association.

## **Conclusion**

Federally-funded Title 1 provided free lunch funding at the high school level. Teachers at the high school knew many students refused free breakfast and free lunch because of friends and the stigma of being poor. This researcher wondered if hunger and a poor stigma had an impact on school attendance and student participation in extracurricular activities? Because school attendance had a direct impact on the student's eligibility to participate in school activities, the research intended to study if inefficient developmental needs, which were brought on by hunger, created a psychological boundary between the need to excel in education and extracurricular activities.



## **Chapter 3 - Methodology Design**

### **Introduction**

Poverty induced hunger played a large role in the lives of many students within the focus district, based on the quantitative data. According to cognitive research, children who grew up in poverty, living in the lower SES had issues in many cognitive development areas. Qualitative data was essential to investigate any relationship of hunger and socio-emotional development that potentially impacted a student's desire to participate in extracurricular activities.

### **Statement of the Problem**

According to the American Psychological Association, lower Socioeconomic Status (SES) affected overall human function and development. In particular, lower SES had negative effects on education (2017). Stress caused by lower SES led to psychological issues such as anxiety and stress which may have contributed to delinquency and attention problems (Santiago, Wadsworth, & Stump, 2011).

According to Bowen and Hitt (2016) extracurricular activities had been shown to help students gain a higher sense of accomplishment which led to higher attendance and increased chances of graduating. Studies suggested it is more common that students in Title I school districts were less likely to participate in high school activities. On the other hand, those same activities may have offered increased motivation to press forward through graduation (Zhang, 2003). What was the connection between childhood hunger and involvement in school-sponsored interscholastic sports? The study sought to investigate that possible link.

### **Purpose of the Study**

The purpose of this study was to determine any possible direct connections between poverty induced hunger and high school extra-curricular participation for economically disadvantaged high school seniors.

High school extra-curricular participation led to an increase in attendance, grades, physical and emotional health (Bowen & Hitt, 2016). Due to food-insecurity, a large percentage of high school seniors were missing beneficial and data-proven factors that contributed to their chances of successfully completing high school (Coughenour, et al., 2021; Irvin, et al., 2011). This study investigated what a high school campus can do to more precisely include extra-curricular offerings for students who were affected by hunger.

### **Research Questions and Hypotheses**

What connections existed between household food insecurity and high school participation in extracurricular activities of low SES high school seniors?

### **Research Methodology**

The main researcher chose a mixed method approach for this research. As Creswell and Creswell explained, the first-phase of quantitative research guided the study and the qualitative phase of the study allowed for the researcher to take more depth to the quantitative meaning. “[T]o integrate the qualitative interviews and the quantitative data.” (2018, pg. 143). In this specific study, The main researcher used student survey data along with the socioeconomic data of the focus district and extra-curricular participation data from the high school.

Data analysis used the following data:

1. Statistics on the number of high school students that participate in extracurricular activities by cohort.

2. Data on the number or percentage of high school students who did not graduate with their cohort by reason of dropping out or graduating early.
3. Qualitative survey self-report data from 54 high school seniors in the focus district.

### **Research Design**

This study utilized a mixed method approach and evaluated quantitative data from regional statistics targeted towards a Title I district's level of poverty, SNAP benefits, household income, food expenditures, extracurricular activity participation, and graduation rates.

Qualitative research was implemented through student surveys and was designed to enumerate the quality of life of a selected group of high school seniors. The paradigm of qualitative research investigation worked well in the study due to the nature and function of the survey to document if hunger had a sociological impact on the student's ability or willingness to participate in extracurricular activities. According to Creswell and Creswell, it was used as a broad explanation for behavior and attitudes, and it may be completed with variables, constructs, and hypotheses (2018).

### **Target Population, Sampling Method, and Related Procedures**

The target population of this study were high school seniors attending a Title I school district in South Texas. Over the span of four weeks, the survey was issued to as many high school seniors that were able to participate. One-third of the surveys returned were given to the seniors in Advanced Placement classes while the rest of the surveys issued were returned by students enrolled in the main researchers class. These students were given the same information and consent restrictions as the on-level group. Of the 144 students directly taught by the main researcher, forty-two completed the survey. This was largely due to the lack of return of the

parental consent forms that were issued to the students during the pre-phases of the research. These participants of this study were surveyed anonymously.

### **Instrumentation and/or Sources of Data**

Quantitative source data was collected from public information connected to the public education system of Texas. Qualitative data was collected from student surveys using the Likert Scale (1-5, strongly disagree to strongly agree). Survey questions were as follows:

1. The student has missed less than 10% of the required school days to attend, according to the Texas law. (10% = 18 days) Y/N.
  - a. If YES, please explain why. (optional)
2. I often eat breakfast from the cafeteria? I often eat lunch from the cafeteria?
3. Within the last 30 days, I have gone the entire school day without eating breakfast or lunch.
4. I often eat breakfast at home.
5. I often bring my lunch from home.
6. The food I eat at home is considered highly nutritious.
7. I have many food options at home.
8. I am satisfied with my daily food intake.

### **Data Collection and Baseline Data**

Baseline data was centered around the socioeconomic status of the focus district. Statistical data based on the amount of students from lower socioeconomic households in the focus district was compared to national and statewide averages. Further data collected from the University Scholastic League (UIL) determined the amount of seniors who participated in extracurricular activities.

### **Field Test**

There was not a need for a field test.

### **Pilot Test**

There was not a need for a pilot test of the self-report survey.

### **Management of Variables**

The survey was delivered online. Students had to have availability of dependable and appropriate technology for survey completion. Students must have had time in the day to complete the survey, as they may not have had dependable technology at home. Students were able to read English to complete the survey. Students' answers were complete and accurate. Self-report was accepted as accurate. No further validation of student answers was done. Students that displayed chronic absenteeism were not included in the survey sample or report. This type of sample may have skewed the data somewhat, however, this data was not counted in the final sample data. The survey was completed at a time when the student sample was most likely to attend high school classes, so any work/study students were present. All students were volunteers.

All survey prompts and qualifying responses were reported verbatim.

All qualifying survey responses were also reported in percentages of agreement.

Survey qualitative, open-ended responses were also analyzed for patterns, trends and repetitions in the answers.

### **Internal validity**

The relationship between hunger and cognitive development played an important role in the Title I high school senior's desire or obligation to participate in the extracurricular activity community. The students participating in this survey were high school seniors from the Title I

focus district and aligned with the general population of this research as they all had the opportunity to participate in extracurricular activities.

### **External Validity**

The students were high school seniors of a public school setting in a Title I school district. The participants of the survey were cross referenced with the school's attendance log and students considered to be "chronically absent" will not be included. Chronic absenteeism was considered to be any student that missed more than 10% of their required school days.

The data will be collected from a smaller size sample group. In the interest of expanding the demographics of the control group, the main researcher considered having students from more intellectually demanding classes participate. One-third of the surveys will be given to students in Advanced Placement classes while the other surveys were issued to students enrolled in the main researcher's, on-level, classes.

Any student survey that was listed as incomplete was discarded from the final data. The percentage of student surveys returned and completed was noted in the survey data report.

### **Expected Findings**

The findings of this research indicated there is a direct relationship between poverty induced hunger and lack of student effort to participate in extracurricular activities.

### **Ethical Issues**

All information was kept confidential. The main researcher received no reward, monetary or otherwise for the study. Students were not aware of the investigation linking poverty (Title I status) and their involvement in high school extra-curricular offerings. No indication of any linkage was implied - directly or indirectly in any study materials. All data was kept on a password protected laptop owned by the main researcher.

## **Chapter 4 - Research Methodology and Actual Data Analysis**

### **Study Setting**

The study setting was conducted to a group of high school seniors at a public high school in South Texas. The focus district was a Title I school which means that at least 40% of the student population fell below the poverty level and qualified for free or reduced breakfast and lunch. Those who qualify for Title I funding are allowed free breakfast and lunch at the school on any given school day. In the focus district, at the time of the study, 67.4% of the students were considered to be economically disadvantaged.

### **Population**

The senior class consisted of approximately 480 students. To minimize the population, the main researcher directly utilized the 144 on grade level students in his class. Twelve students were from advanced level, college credit classes. These students were given the same information and consent restrictions as the on-level group. Of the 144 students directly taught by the main researcher, forty-two completed the survey. All of the advanced students returned their survey for a total of 54 surveys. Of those fifty-four surveys returned, 20 of them had missed the maximum of school days permitted to participate in extracurricular activities. Thirty-four surveys were used as data for this study.

### **Other Researchers**

The main researcher designed, implemented and analyzed the study data. No other researcher was involved in the study.

### **Study Timeline**

In late-August 2022, the main researcher began gathering socioeconomic data on the number of Title I schools belonging to the same state as the focus district. Along with this data,

the main researcher also examined how students from lower socioeconomic districts responded to poverty induced hunger, including physical and psychological health. The baseline data was collected around the socioeconomic status of the focus district. This data was cross-referenced with the qualitative student self-report survey data.

### **Data Gathered**

Each student was able to answer the survey questions in private and anonymously. Fifty-four students completed the three-part survey for this study. The three parts and the data gathered were:

- Assent questions
  - *Do you agree to participate in this survey?*
  - *Have you missed more than 10% of the required school days? (10% = 17 school days)*
  - *How many extracurricular activities do you currently participate in?*
- Demographic questions
  - *Are you a male or a female?*
  - *How many people live in your house?*
  - *How many people in your household work away from the house?*
- Likert scale research
  - *I often eat breakfast FROM the cafeteria.*
  - *I often eat lunch FROM the cafeteria.*
  - *Within the last 30 days, I have gone the entire school day without eating breakfast or lunch.*
  - *I often eat breakfast at home.*



- *I often bring my lunch from home.*
- *The food I eat at home is considered highly nutritious.*
- *I have many food options at home.*
- *I am satisfied with my daily food intake.*

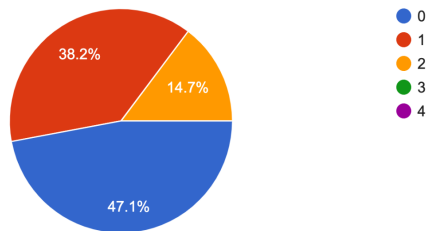
### Data Analysis

Data revealed that according to the 34 usable surveys, the average participation rate for just one extracurricular activity was just under 70%. Meaning, for every student who participated in the self-report survey, the chances of them participating in at least one extracurricular activity was less than 1, .68. Almost 50% of the population scored a 0 for participation in extracurricular activities. The Likert scale was based on a dynamic of 1-5. Low was considered 1-2, mid to high was considered 3-5.

### Figure 1

*How many extracurricular activities do you currently participate in?*

How many extracurricular activities do you currently participate in?  
34 responses

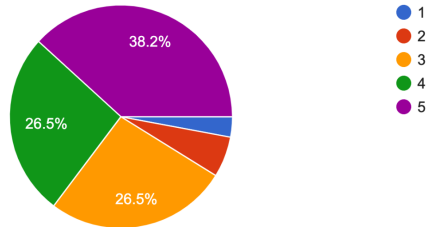


Out of the 34 respondents, 16 (47%) claimed to not participate in any extracurricular activities, 13 (38%) claimed to participate in at least one extracurricular activity and 5 (15%) claimed that they participate in 2 extracurricular activities. There were zero respondents who claimed to participate in any more than 2 extracurricular activities. Demographic questions revealed that 53% of respondents were female while 47% were male.

**Figure 2**

*How many people live in your house?*

How many people live in your house?  
34 responses



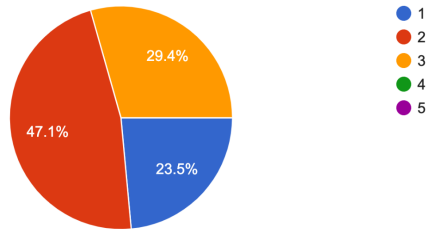
Household size varied with 1 (3%) respondent having lived with one other person, 2 (5%) respondents lived with 2 other people. Nine (27%) respondents lived with 3 people, 9 (27%) more respondents had 4 people in their household and 13 (38%) respondents lived with at least 5 other people.

Household employment data indicated 8 (24%) respondents claimed that only 1 person in the household is employed. Sixteen (47%) respondents claimed that 2 people in the household are employed and 10 (29%) respondents claimed that 3 people are employed. Zero respondents claimed that more than 3 people in the household are employed.

**Figure 3**

*How many people in your household work away from the house?*

How many people in your household work away from the house?  
34 responses

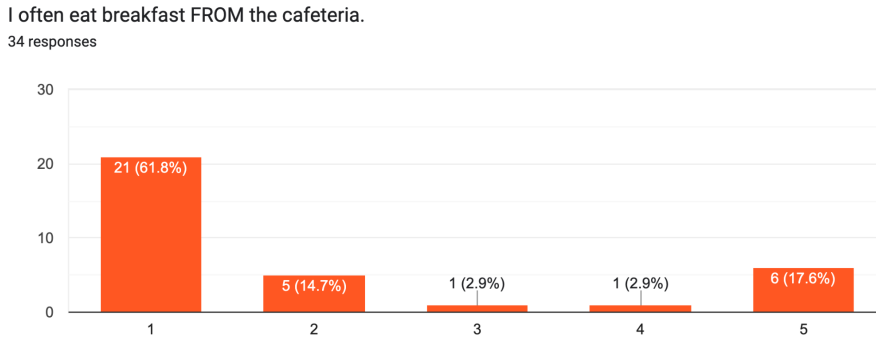


When comparing these two data points, it is evident that there are more people in each household that are unemployed versus employed.

Statistical data regarding the food security of the population is as follows.

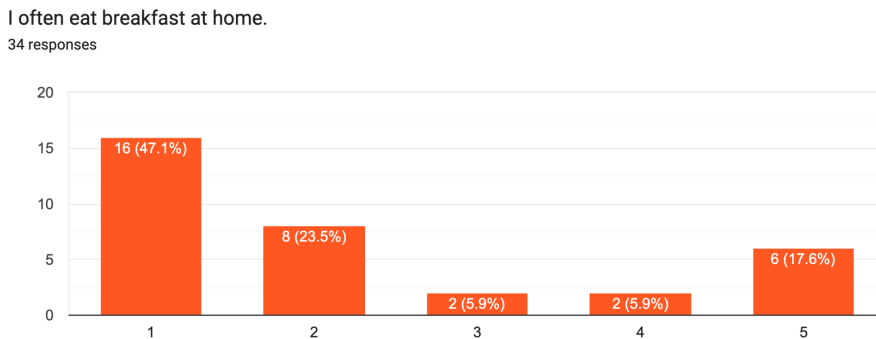
**Figure 4**

*I often eat breakfast FROM the cafeteria.*



**Figure 5**

*I often eat breakfast at home.*

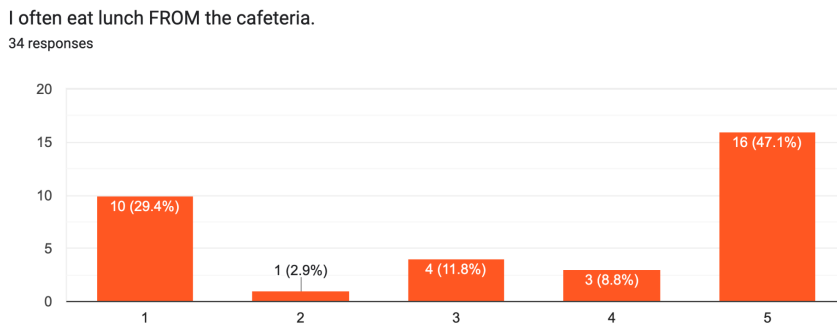


Figures 4 and 5 demonstrated the relationship between each student's response regarding eating breakfast from either the cafeteria or from home. A range gap between 5:1 or 1:5 suggested that the student is either eating breakfast at home or in school. A range between 2:2,

1:1, 1:2 or 2:1 suggested that the student is rarely or never eating breakfast in the morning. There were 17 instances, or half, that suggest the student is neither eating breakfast at home nor in school. This may be due to the stigma associated with eating from the “free” meal line or the lack of time to get to their first class.

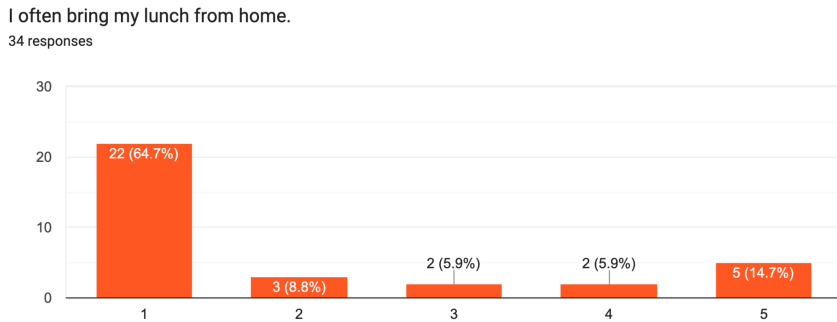
**Figure 6**

*I often eat lunch FROM the cafeteria.*



**Figure 7**

*I often bring my lunch from home.*



Figures 6 and 7 demonstrated the relationship between each student's response regarding eating lunch from either the cafeteria or from home. The data suggested that the majority of the students (68%) were eating lunch from the school more often than bringing food from home. The

data also suggested that (74%) 25 students were rarely or never bringing lunch from home. Data from 6 respondents (18%) would suggest the student subjects were rarely or never eating lunch at all. Regardless of the social stigma, the majority of students from the population relied on the cafeteria for lunch. One-third of the survey respondents scored a 3:3 or higher; eating both breakfast and lunch at the school.

Fourteen students (42%) scored a 3.0 or more when asked whether or not they have been an entire day without eating breakfast or lunch within the last 30 days.

Data regarding the quantity and quality of the food at home suggested that most students were content with the amount and nutrition value. The median population score regarding whether the food they get at home was nutritious or not was 3.0. Food options at home scored a 3.6 and overall food intake satisfaction scored a 3.5.

### **Training for Data Coding**

No training was needed for data coding.

### **Eliminated/Ignored Data**

Initially, the main researcher was to obtain data from students in the credit recovery program. There was a lack of ability and resources to obtain this data due to the nature of these programs. These programs are a mixed cohort of classes who receive simultaneous and supportive information from the classroom monitor. Students are working to take classes they have failed or missed. They do so via online programs/classes. If the self-report survey were given to these students electronically, seniors would not be able to be identified.

Twenty of the fifty-four students who agreed to participate in the self-report survey missed the allotted amount of school days that the U.I.L. (the Texas state regulatory agency for

high school extra-curricular activities . – University Interscholastic League.) will permit before not allowing students to participate in any high school extracurricular activities.

### **Mitigated Findings**

There may have been some confusion about the survey wording. Of these twenty students, 75% of them answered that they did, in fact, participate in extracurricular activities. Since it was unsound to the parameters of the qualified data and these students should have answered 0 for their “current” extracurricular activities, there may have been a lack of understanding in the word “currently”. They are still in the population of that sport and placement within that class, however, they are not actively participating in any extracurricular activities. No other events occurred that may have mitigated data results.

### **Changes in Protocol**

All of the surveys were given to the on-level student’s of the sample population and a small group of advanced students. No credit recovery students were included. Due to time constraints, all of the students were surveyed at once. No additional protocol changes were made throughout the study.

### **Data Trends and Patterns**

Overall, 50% of the population was not participating in any extracurricular activities. Of these 50%, 75% of them did not bring their lunch from home and 50% of them did not eat breakfast at home. The above data can be summarized as follows:

- 85% of the surveyed population participated in one or fewer extracurricular activities, below the State average.
- 71% rarely or have never eaten breakfast at home.
- 74% rarely or have never brought lunch from home.

- 50% of students did not eat breakfast at home nor in school.
- 40% have occasionally gone an entire school day without eating breakfast and lunch, within the last 30 days. (Scored 1-3 on Likert scale)

**Data Outliers**

Data did not display any outliers.

## **Chapter 5 - Study Conclusions and Recommendations for Future Research**

### **Conclusion**

The data suggested that most of the student population surveyed was allegedly content with their food choices at home. A large portion of the student population did not eat nor bring breakfast or lunch from home. Conclusions on the effects of hunger and high school senior participation in extracurricular activities are as follows.

- The majority of the sample of students surveyed fell below the average for extracurricular activity participation.
- The majority of the sample consumed more food at school, rather than at home - either by choice or need.

There is a high school social stigma associated with accepting free food. According to this data, after the opportunity to eat for free was presented, many students were going hungry by their own accord. However, this was much more apparent during breakfast time. Statistical data representing this is as follows.

- Half of the population reported to not eat breakfast at home or at school.
- Less than a fifth reported not eating lunch in the cafeteria or bringing lunch from home.
- 40% of the population have gone an entire school day without eating.

### **Study Strengths**

The study suggested there may be connections to a lack of participation in extracurricular activities with high school seniors who accept the free meal program. The high use of the free breakfast and lunch program was an indicator that food is not as readily available at home.



### **Study Weaknesses**

The study was weakened due to some constraints with the credit recovery population. That population could not be sampled and keep the sample of high school seniors only.

Further weaknesses that were identified was mitigating the data from the population of students who had missed 18% or more of the necessary school days to participate in extracurricular activities. One wonders, were the absences due to food insecurity or other myriad reasons for students to miss high school?

Together, these two components of data may have strengthened the researcher's main point of the study.

### **Internal Validity**

- The relationship between hunger and cognitive development played an important role in the desire to participate in extracurricular activities.
- Over 40% of the population was considered to be in a lower socioeconomic status.
- The sample population demonstrated a high rate of eating food from the cafeteria and a low rate of bringing food from their homes.
- The sample population demonstrated a low rate of participation in extracurricular activities.

### **External Validity**

- The students participating in this survey were high school seniors from the Title I focus district.
- They all had the opportunity to participate in extracurricular activities.
- Chronically absent were not included in any study done within the confines of the school day.

- The data was collected from a smaller size sample group.
- Surveys were given to the main researcher's students as well as one advanced level class, with permission from their instructor.
- All students attend a public high school.
- All students were seniors.

### **Setting Impact**

The setting was the main researcher's home campus. The majority of the students were students of the main researcher. However, there was a small portion of the population from an advanced level class and were not students of the main researcher. The same survey was given to all students.

### **Research Anomalies**

- One student admitted to me that she mis-keyed a "1" and pressed "12" for the number of extracurricular activities. No other anomalies were experienced.

### **Hypothesis and Results**

The research question and main focus of the study was, "Does hunger affect participation in extracurricular activities amongst high school seniors?" The researcher hypothesized that because there were noted developmental strains associated with hunger induced poverty, there may be a link between the lack of participation in extracurricular activities and food insecurity. Especially in a Title I or lower socioeconomic status area, such as the focus district.

The data indicated that fewer students were eating breakfast and lunch from home, relying more on the free meal programs offered by the focus district. An alarming 75% said that they were overall satisfied with their daily food intake. However, this begs the question of whether this population is aware of a satisfactory food intake. Less than 20% agreed that they did

not have many food options at home which also begs the same question for the other 80%. Do they know what plentiful food options actually exist? It is difficult to comment on something that you may have never experienced. The directional hypothesis was confirmed.

### **Recommendations for Further Research**

I would like to replicate this study in a more affluent district and compare the results to the baseline data from this study. This could offer more insight on how we should balance resources from district to district and school to school.

If possible, reducing the subjective nature of the questions from the self-report survey may create a more objective study. If the research is based on a student's opinion of what is 'good' compared to 'bad' but they have no understanding of the 'good', then what are they comparing the 'bad' too? If this study was replicated within a more affluent region, I believe that the vise-versa of this would also be true.

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Appendix A

Administrator Approval



**RESEARCH STUDY REQUEST**

Name: Louis A. Villanueva	Date: 1/18/2023	
Address:		
Phone:	Fax:	E-Mail:

1. **Study Title:** Impact of Hunger on School Participation in Title I High School Seniors

2. **Purpose of Study:** The overall purpose of this research is to learn more about connections that exist between household food insecurity and high school participation in extracurricular activities of low SES high school seniors.

3. **Statement of Problem:** Studies have shown that early onset childhood hunger can lead to social developmental issues.

4. **Research Instrumentation:** Attached to this Application - *See email.*

5. **Describe the District population and the data to be collected, including the numbers professionals, students, schools, etc. in the sample. List also any specific schools or other specific populations needed as data sources.** The population data is derived from high school seniors of the focus district. Approximately 80 surveys will be collected.

6. **Describe your plans for conducting the study including administration of instruments, other data collection activities, and the timetable you will follow:** Data collection will occur through student surveys over the course of one month.


**7. Describe the statistical or other analysis techniques to be used in the treatment of your data:** Statistical data has been collected from online demographic data.

**8. How will your finding be reported?** All findings will be reported via a masters dissertation and can be made available upon the request of the district.

**9. Describe anticipated contribution to theory or field:** This research project will help us understand more about whether or not these issues can lead to a decline in extracurricular participation in high school activities.

**10. How will this study contribute to the Seguin Independent School District?** This research project will help us understand more about whether or not these issues can lead to a decline in extracurricular participation in high school activities for the particular focus district.

**11. Do any of the procedures or equipment to be used constitute a potential emotional or physical hazard to subjects? If yes, explain.** There are no potential hazards to subjects.

<b>12. Ultimate purpose of research study (publication in journal, thesis, dissertation, etc.):</b>	
The purpose of this study is to fulfill the final requirements for completing my masters degree from Greenville University.	
<ul style="list-style-type: none"><li>• ALL information must be complete with required support documentation. Incomplete requests will be automatically rejected.</li><li>• Attach copies of survey forms, observation checklists, or any other data collection instruments.</li><li>• If data will be collected on or from individual students, written permission from the parent/guardian will be required and a copy of a permission letter must be attached. The permission must:<ol style="list-style-type: none"><li>1. Be in both English and Spanish.</li><li>2. Specify the data to be collected or the student data records to be released.</li><li>3. Specify the reason for the data collection or release.</li><li>4. Identify the persons and institution to whom the information will be released.</li><li>5. Describe any feedback to be provided to the parent/guardian or benefits to the participants.</li><li>6. Have a place for parent/guardian signature and date of approval.</li></ol></li></ul>	
 _____	02/14/23
Signature for Approval to Conduct Research	Date

## Appendix B

### Parental Consent



#### GREENVILLE UNIVERSITY

Impact of Hunger on School Participation in Title I High School Seniors  
Seguin High School, Seguin, TX.

Dear Parent or Guardian,

My name is Louis Villanueva and I am a graduate student at Greenville University. I am conducting a research study at your child's school titled Impact of "Hunger on School Participation in Title I High School Seniors." All seniors are eligible to participate in this study. I am asking for your consent to invite your child to participate. The rest of this letter describes the study and what your child's participation would entail. The third page is a form for you to sign and indicate whether or not your child may participate.

The overall purpose of this research is to learn more about connections that exist between household food insecurity and high school participation in extracurricular activities of low SES high school seniors. Studies have shown that early onset childhood hunger can lead to social developmental issues. This research project will help us understand more about whether or not these issues can lead to a decline in extracurricular participation in high school activities.

Your child's participation in this study will involve filling out a quick survey. The survey will be given in a group setting with other children in his or her class, either in the classroom or in another room in the school. The survey is short and the total time away from regular classroom instruction is expected to be approximately 5 minutes. Arrangements are being made with your child's teacher to minimize time lost from classroom instruction, and to provide alternative activities for children who do not participate (Music, Art, Gym, Computers). The answers your child gives on the survey will be completely confidential. The children will not be putting their names on the surveys and no one other than the research team will see their answers.

There are certain risks or discomforts that may be associated with this research. They include: your child may get bored while completing the questionnaire, your child may not want anyone to know he or she participated in the study, and your child may lose class time while completing the questionnaire. These risks are believed to be minimal and no different than the risks encountered during a normal day at school. To help prevent these risks, the questionnaire is being kept short and as interesting as possible. Also, because your child's answers to the questionnaire will be

kept confidential and the questions do not ask for any sensitive information, having other people know he/she participated should not cause your child any discomfort.

Although there are no direct benefits to you or your child, the possible benefits to society from this research include having greater knowledge of socio-development in lower socio-economic status areas.

The results of the research study may be published in scientific journals and presented at scholarly conferences. Your name and identity or your child's name and identity will not be revealed in any publication of these results. Again, your child's answers are completely confidential. The Greenville University Institutional Review Board (the Board that is responsible for protecting the welfare of research participants) may review the data collected in this study to ensure that the research was conducted properly and risks were kept to a minimum. All records of this study will be kept in a locked office accessible only to the people responsible for this study.

### **Limits of Confidentiality**

Generally speaking, your child's answers are confidential. However, there are times when the researcher cannot keep things private. The researcher cannot keep things confidential when:

- The researcher learns that a child or vulnerable adult has been abused
- The researcher learns that that a person plans to hurt him or herself, such as commit suicide
- The researcher learns that a person plans to hurt someone else

There are laws that require many professionals to take action if they think a person might harm themselves or another, or if a child or adult is being abused. In addition, there are guidelines that researchers must follow to make sure all people are treated with respect and kept safe. In Illinois, mandated reporters are required to call the DCFS Child Abuse Hotline if they have reasonable cause to believe that a child has been abused or neglected. Please ask any questions you may have about this issue before allowing your child to be in the study.

If you have any questions or concerns regarding this study, or if any problems arise, you may call me at (210) 792-2526.

If you have any questions about your child's rights as a research participant, or in the event you believe your child has suffered an injury as a result of participation in the research project, you may contact the Chairperson of the Greenville University Behavioral and Social Sciences Institutional Review Board (618-664-6826), who will discuss your questions with you or will be able to refer you to the individual who will review the matter with you, identify other resources that may be available to you, and provide further information as how to proceed.

Participation in this study is completely voluntary. Even if you give your child permission to participate, he or she may refuse to participate or withdraw from the study at any time without penalty.

To indicate whether or not you give consent for your child to participate in this study, please complete the information on the next page, detach it, and have your child bring the signed form back to school (please keep this letter for your records).

Thank you for your consideration.

Sincerely,

Louis A. Villanueva  
Greenville University  
Department of Education, Curriculum & Instruction.

**GREENVILLE UNIVERSITY**  
Impact of Hunger on School Participation in Title I High School Seniors  
Seguin High School, Seguin, TX.

**INFORMED CONSENT FOR PARTICIPATION IN RESEARCH ACTIVITIES**

I have read this consent document and I believe I understand the purpose of the study as well as the potential benefits and risks that are involved. I agree to allow my child to participate in this study with the understanding that I may withdraw him/her at any time. I understand this study will also be explained to my child and he/she may refuse to participate or withdraw from this study at any time.

\_\_\_\_\_  
Print Name of Child

YES, I give consent for my child to participate in the Impact of Hunger on School Participation in Title I High School Seniors study.

NO, I do not give my consent for my child to participate in the Impact of Hunger on School Participation in Title I High School Seniors study.

\_\_\_\_\_  
Printed name of Parent or Legal Guardian

\_\_\_\_\_  
Signature of Parent or Legal Guardian

Date

\_\_\_\_\_  
Month and year child's birth

(ex. June, 2010)

## Appendix C

### Student Self-Report Survey

Likert Scale:

(1) Strongly disagree

(2) Disagree

(3) Neither agree nor disagree

(4) Agree

(5) Strongly Agree

1. I often eat breakfast from the cafeteria? I often eat lunch from the cafeteria?
2. Within the last 30 days, I have gone the entire school day without eating breakfast or  
Lunch.
3. I often eat breakfast at home.
4. I often bring my lunch from home.
5. The food I eat at home is considered highly nutritious.
6. I have many food options at home.
7. I am satisfied with my daily food intake.