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Needs assessment for an extension teacher professional development program on food insecurity experienced by children in their classrooms

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**Needs assessment for an extension teacher professional development program on food
insecurity experienced by children in their classrooms**

by

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A creative component submitted to the graduate faculty

in partial fulfilment of requirements for the degree of

MASTER OF SCIENCE

Major: Agricultural Education

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The student author, whose presentation of scholarship herein was approved by the program of study committee, is solely responsible for the content of this creative component. The Graduate College will ensure this creative component is globally accessible and will not permit alterations after a degree is conferred.

Iowa State University

Ames, Iowa

2019

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Abstract

Food insecurity is a growing problem among United States youth. Rutherford County, Tennessee has a higher than national average rate of food insecurity, which leads to one in four children suffering from hunger. The basic need for food impacts children's learning. Teachers nationally and in Tennessee expressed that students in their classes worry about where their next meal will come from, and that this leads to an inability to focus in class. Data from a needs assessment collected through a Qualtrics survey indicates that Rutherford County teachers working in elementary, middle, and high school classrooms report ways that food insecurity affects both students and themselves as educators. Eighty percent of respondents expressed they have provided at least one or more food items for students in the past month. Seventy-eight percent of teachers "strongly agreed" with the statement that students had trouble focusing on learning due to hunger. These and other findings from the needs assessment can be used to refine curriculum for a teacher professional program related to school-based food insecurity among children. A local program would help to improve Rutherford County education by combating food insecurity during the school day by helping students to be focused and ready to learn, as well as contributing to their general well-being.

Chapter 1: Introduction

Food insecurity is a growing problem within Rutherford County Tennessee's public schools. Rutherford county, like the state of Tennessee, has "a food insecurity rate higher than the national average" (Melton, 2017, p. 1). According to the USDA Economic Research Service (ERS), the definition of food insecurity is, "is a household-level economic and social condition of limited or uncertain access to adequate food" (2017). This issue may occur from limited access to supermarkets, restricted vehicle access, low income, or limited nutrition knowledge. "With 1 in 6 adults and 1 in 4 children reported to suffer from hunger in Middle Tennessee, Rutherford County is no exception to the harsh reality of hunger and food insecurity" stated Powers and Bennett (2016, p. 1). Fugeli (2017) states the basic need for food makes it difficult to educate. Food insecurity leads to Rutherford County students likely being inattentive and less ready to learn. When food insecure children do not get enough to eat, "they see smaller gains academically, and they struggle to learn, concentrate and adapt to their surroundings" (The Annie E. Casey Foundation, 2018). There are more than 33,000 people in Rutherford County lacking food security (Hineman, 2019). Only 14% of Tennessee's students have access to summer meals which are on the federal free and reduced lunch program (Hineman, 2019).

Purpose

One way to address these issues is through teacher professional development. This type of programming is usually noncredit bearing and may or may not be mandated by the school district of the state (Caffarella and Daffron, 2013). Topic span pedagogy to regulations that teachers must become updated on. The purpose of the creative component is a needs assessment, conducted to prepare curriculum for teacher professional development in the area of food

insecurity related to children.

A teacher professional development program will be developed based on the needs assessment for the program titled, Rutherford Web of Nutrition (RWON). A needs assessment establishes an educational need which is a “discrepancy or gap between what presently is and what should be” (Cafferlla & Daffron, 2013, p. 134). The setting for the needs assessment was public education. Altschuld and Eastmond (2010) state additional sectors should be considered when the needs assessment is public education. This includes considering teaching professionals close to the classroom, regarding levels of curriculum, and students. According to Altschuld and Eastmond, there “are no simple answers” to what events place an assessment into motion (2010, p. 113). Questions asked about hunger issues within their elementary, middle, and high school classes. Based on their experiences approaching classroom and school building food insecurity responses from the needs assessment, adjustments may be made to the size and complexity of the units in the RWON curriculum helping to make the program more effective and efficient.

Audience

The needs assessment examined key areas of teacher knowledge, attitudes and behaviors with respect to food insecurity among children in their classrooms and schools. The audience for the need assessment was 2,800 Rutherford County public educators teaching in all grade levels. Their responses were obtained through the use of the Qualtrics survey software.

Rutherford County teachers recognize there is a problem with food insecurity in their classes, but we did not know the specific status of their knowledge, attitudes or activities with respect to food insecurity. Teachers throughout the county provide snacks and meals for their students who are hungry so that their students are attentive and not sluggish during class. There

are school wide programs some are implementing to combat this issue, but there is currently no uniform national solution.

Background

Rutherford County schools are the fourth largest within Tennessee behind Nashville, Memphis and Knoxville (Rutherford County Schools, 2019). Total enrollment for county added 16,000 students and opened thirteen new schools. Rutherford County schools are serving as a model for others in the area of planning, safety and academics. According to the Rutherford County School's fact book, there are forty-seven schools within Rutherford County Tennessee (2019, p. 5). Twenty-two point seven percent of students within this school district are defined as economically challenged (2019, p. 5). Sixty point three percent of students are white, 20.2% are African American, 14.1% are Hispanic, 4.9% are Asian and .3% are Native American or Alaskan. The graduation rate in 2018 was 95.3% (2019, p. 5). The projected school budget for 2019-2020 was estimated at \$423,000,000 (2019, p. 10). There are five main industries within Rutherford County. These include industries dealing with construction, manufacturing, health care, supply chain management and information technology (2019, p. 8). The school system is developing student opportunity to have connections with leaders in business through planning Schools within Rutherford County have plans for developing opportunities for students to connect with business leaders through post-secondary education and industry certifications (2019, p. 8).

Chapter 2: Literature Review

Across the country, different organizations have stepped up to address food insecurity including Food Forward (2019) and No Kid Hungry (2019). In April 2019 in Tennessee, this issue was brought to the forefront with local musician, Brad Paisley. Paisley and his wife suggested a grocery store offer free food in Nashville to fight this issue (Associated Press, 2019). Tennessee has also started gleaning which is a process of gathering crops leftover from farmers' fields. Gleaning and programs like Food Forward and No Kid Hungry help make important contributions to combating food insecurity.

Food Nutrition Programs in the School

Every year, students are sent home with school meal applications according to the USDA National School Lunch Program (2013). Anytime throughout the year, parents may also ask for an application from their district or school since income can change within the home. Eligibility for the program is based on income guidelines. After an application is submitted to the school, it is reviewed by district officials or the local school. There are some families that automatically qualify students for this program. If adults are already receiving assistance from the Supplemental Nutrition Assistance Program, (SNAP Ed), another USDA program that is income based, then their children automatically qualify for free school meals, which may include breakfast. Families who also receive assistance through Temporary Assistance for Needy (TANF), a United States Department of Health and Human Services program that is income based, are automatically eligible for free school meals (USDA National School Lunch Program, 2013). To help schools with this process, the USDA offers sample prototypes for meal applications and additional instructional information that schools may use both in paper or online

based on what the school district decides to use (USDA National School Lunch Program, 2013).

In a 2017 blog there was a note, "I was hungry. I just couldn't think" (Fugeli, 2017) that spotlighted issues that schools and teachers are facing. They recommended looking at No Kid Hungry which is a program that is working with the free and reduced lunch but is also helping to fund school breakfast, summer, and after school meals to resolve hunger within schools. There is also information on the topic through their website to educate educators on the issue. This website is useful, but there is no mandated or broad-scale professional development for teachers.

Food Forward is fighting hunger and preventing food waste (Food Forward, 2019). They have a detailed website, but only service parts of California. This program does not provide betterment for teachers to resolve the issues with sensitivity issues for children and families facing this.

Through the years, government intervention has been part of agriculture and education within the United States. Cooperative Extension resulted from the Smith-Lever Act of 1914 due to the boll weevil dilemma of 1904. During this time, the U. S. Department of Agriculture sent “agents” to work in cooperation with farmers through demonstration education. This type of education made universities understand that farmers were interested in what they were offering. In the following decade, universities began to use leaflets and bulletins for dissemination of information. Unfortunately, these documents had scholarly language that farmers could not understand. Through observation, professors saw how farmers adopted change as long as university educators were placed in local areas, Cooperative Extension. Extension has been leading in how it can develop evaluation capacity through, “using strategies such as collaborative evaluation practice, national workshops, and Web-based instruction” (Braverman et al., 2008, p. 2). Extension is unique by having its online journal with the *Journal of Extension* which provides

information on evaluation and its own topical interest group in the American Evaluation Association. Cooperative Extension Service is an outreach or extension of the USDA and the land-grant institute to the people within the state providing technical or educational information. Within Tennessee, the land-grant institutes are the University of Tennessee Knoxville and Tennessee State University. The creation of Cooperative Extension Service helped individuals assist themselves using cooperative education. New federal legislation in 1963 led to significant changes in the curriculum for agricultural education. This legislation was established by the Vocational Education Act of 1963. This act helped to expand the discipline from what was known as agricultural education to now include nonfarming agricultural courses. Some of these courses included forestry, natural resources, agricultural services and sales, horticulture, food processing, agricultural mechanics, and small animal care. These nonfarm courses were received well by urban and suburban schools and expanded what the discipline included. The act placed the federal government in authority on operating programs within agricultural education. States within this act were given the ability to decide the requirements for what the programs instructed (Moore, 1994, p. 4).

Mobley (2012) conducted a needs assessment focused on the capacity of Extension educators to support teachers on food security. By using, “untapped training opportunities by Extension professionals, “food insecurity in schools can be treated by training teachers using an online Extension training program” (Mobley, 2012). Mobley assessed the needs of his intended audience by using a 16-question survey. He found that Extension educators would be key in gaining client understanding of hunger within their classes. He also found that the knowledge base Extension educators have could become the basis for program initiatives.

Remley (2017) conducted a needs assessment addressing how food pantries could

address chronic diseases. To understand the need, Remley developed a 12-question tool for Extension educators to use with managers of food pantries. This tool allows Extension educators to direct pantry directors to the necessary resources for making a change helping deal with food insecurity and the chronic disease that sometimes accompanies it. Remley (2017) stated, “Extension professionals can help combat diet-related chronic diseases in food-insecure groups through education of food pantry personnel.” The need for an assessment is necessary for figuring out exactly what resources were needed for certain food pantries.

Coffey, Canales, Moore, Gullickson, and Kaczmariski (2014) studied how individuals struggle both physically and emotionally with hunger. They implemented a needs assessment that consisted of a survey and focus groups investigating why some individuals do not get food insecurity assistance and others do. They found that Extension was in the best position to equip the community to combat food insecurity through educating the community. Education can “disseminate research outcomes and increase community awareness” (Coffey et al., 2014).

Chapter 3: Methods

The needs assessment survey was conducted using an online Qualtrics survey (v. 2019) consisting of eleven questions that asked teachers about hungry students in their classrooms, activities in their schools, and also asked some personal information using an open-ended comment area (see Appendix II). This study received on 9/25/2019 an exemption letter from the Iowa State University Institutional Review Board (IRB) (see Appendix I).

Confidential responses were collected from participating teachers from this survey. The survey and an email cover letter were sent to 2,800 Rutherford County public school teachers using email addresses obtained from school websites which were free and open to the public. This survey was sent four times between September 26, 2019 to October 9, 2019.

Once responses were gathered, they were analyzed to assess what the teacher professional development program needed to train teachers on how to deal with food insecurity in their classes. Responses were analyzed to assess what the teacher training program needed to train teachers on how to deal with food insecurity in their classes.

Chapter 4: Findings

Three hundred twenty-two surveys were completed with 100% completion rate. Surveys that were partially completed were removed from the subject pool. The return rate was 11% because three hundred twenty-two useable surveys of two thousand eight hundred were returned.

Q1.1 asked teachers to select their level of agreement about students who may be experiencing food insecurity in classes they taught in the last 12 months about the following statement: students have trouble concentrating in class due to hunger. This question had 1.63% of teachers who disagreed strongly with this statement (Figure 1).

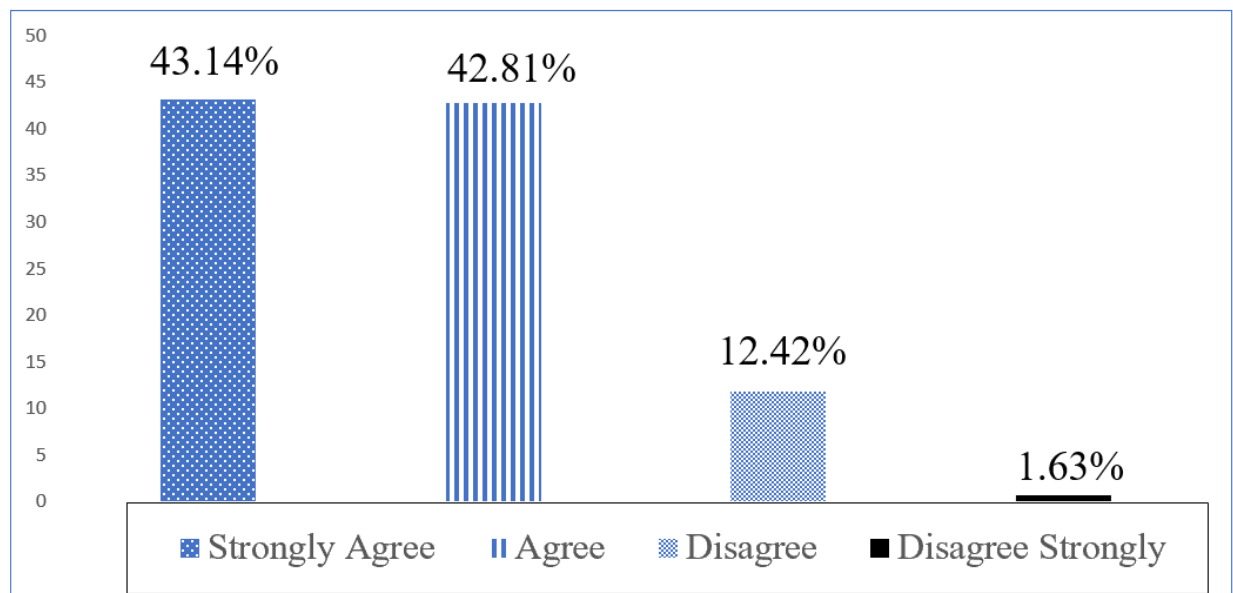


Figure 1 Q1.1 Teachers were asked to select their level of agreement with a statement regarding students who may be experiencing food insecurity in classes they taught in the last 12 months were having trouble concentrating in class due to hunger.

Q1.2 – asked teachers to select their level of agreement regarding whether students focused better when hunger was not an issue. Teachers selected their level of agreement at the following levels: 77.67% strongly agreed, 21.36% agreed, 0.97% disagreed, and zero reported they disagreed strongly (Figure 2).

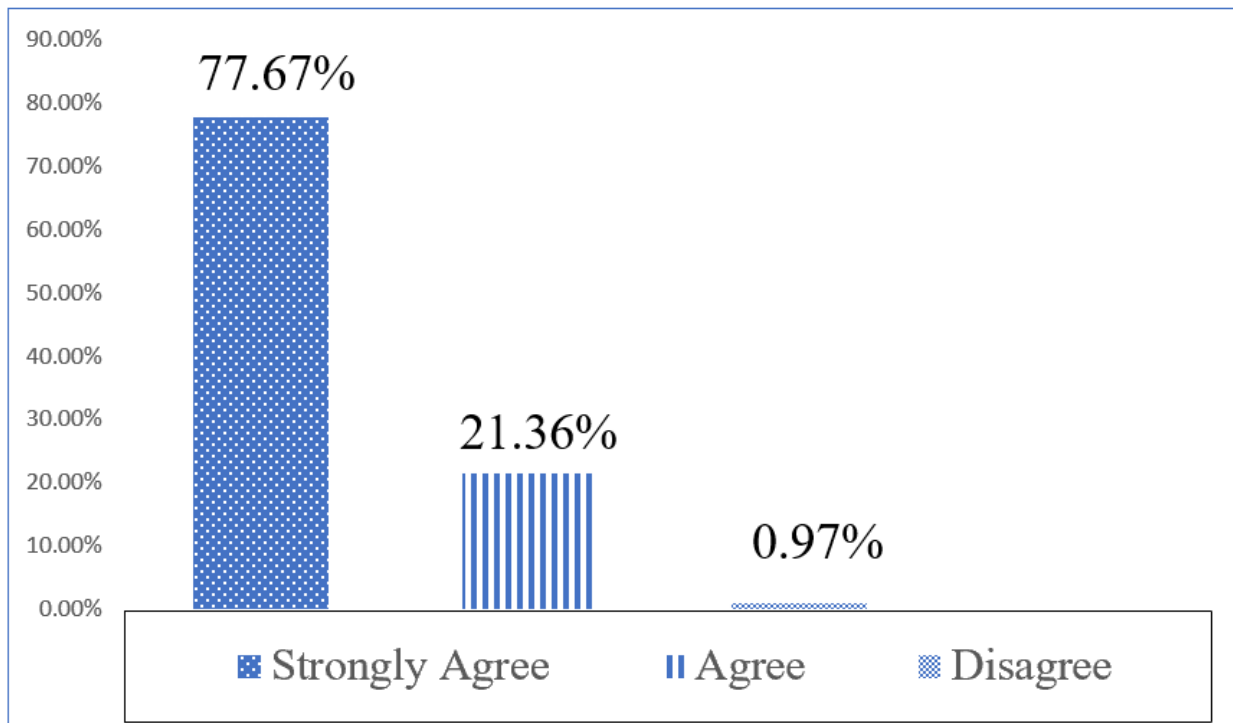


Figure 2 Q1.2 Teachers were asked to select their level of agreement with a statement regarding whether students focused better when hunger was not an issue. Zero disagreed strongly.

Q1.3 asked teachers to select their level of agreement with a statement regarding the extent to which they considered students to be irritable when students were hungry. Teachers selected their level of agreement to this statement at the following levels: 60.19% strongly agreed, 38.19% agreed, 1.62% disagreed, and zero disagreed strongly (Figure 3).

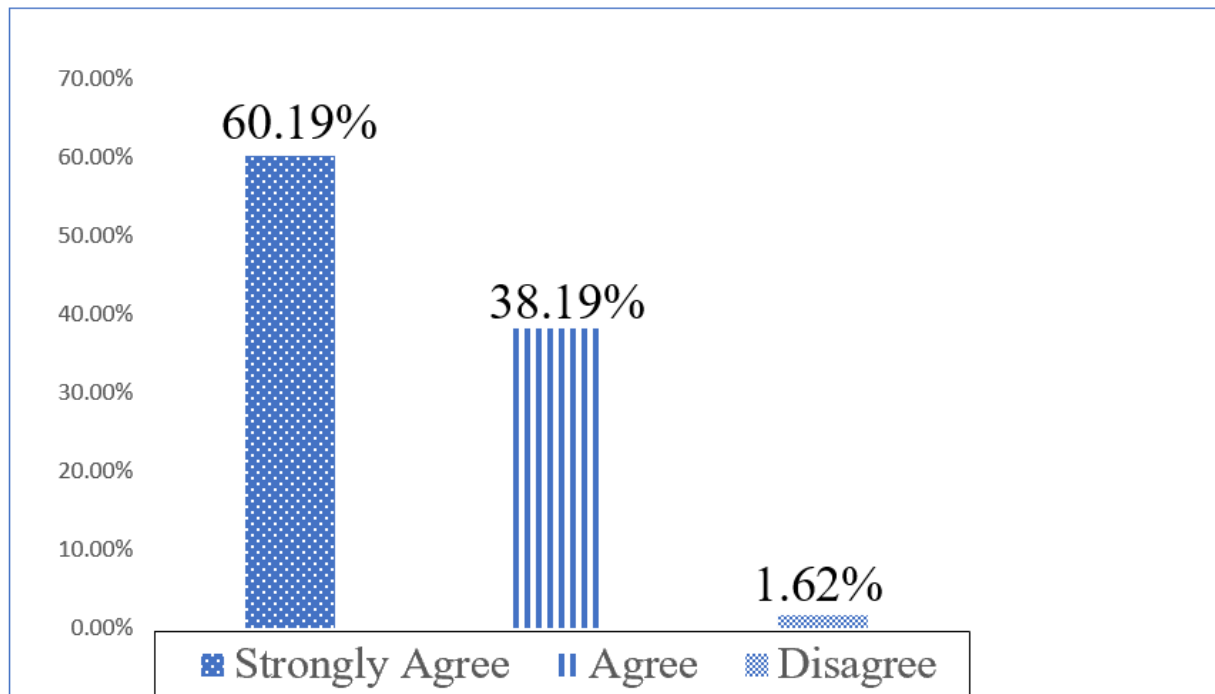


Figure 3 Q1.3 Teachers were asked to select their level of agreement on students whether students may be irritable when they are hungry. Zero disagreed strongly.

Q1.4 asked teachers to select their level of agreement about whether students at recess may be sluggish and tired when hungry. Teachers selected their level of agreement with this statement at the following levels: 45.22% strongly agreed, 45.22% agreed, 9.13% disagreed, and 0.43% disagreed strongly (Figure 4).

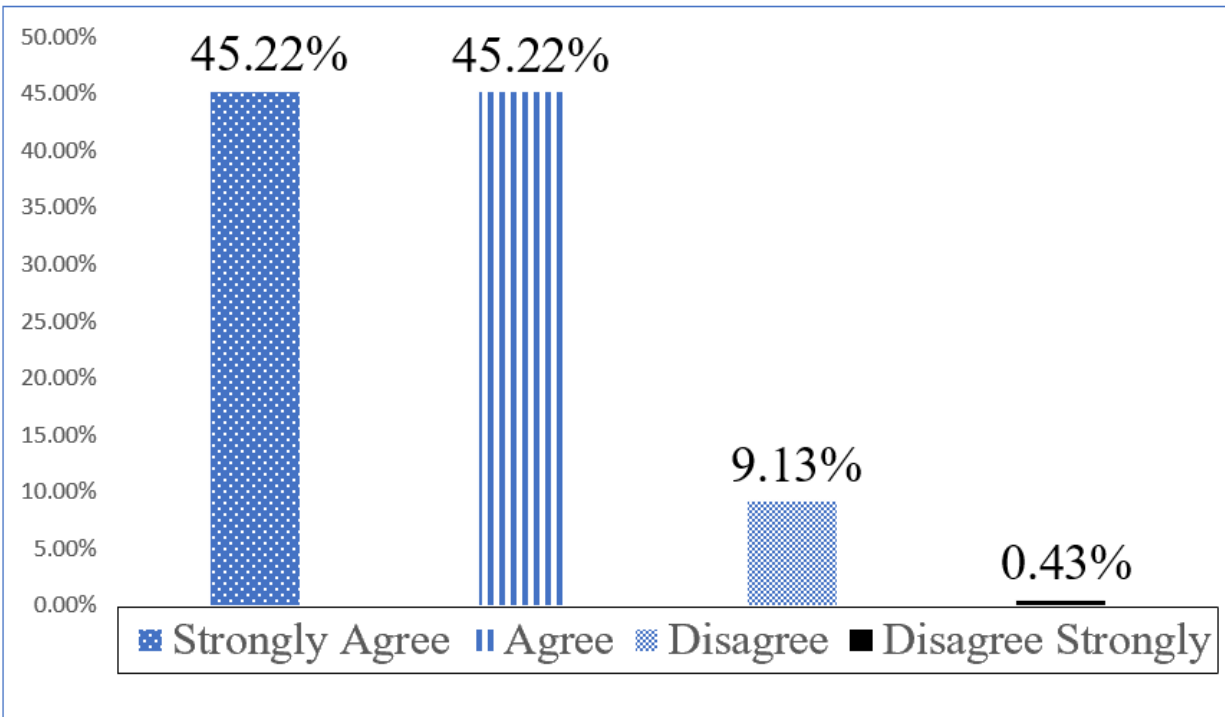


Figure 4 Q1.4 Teachers were asked to select their level of agreement regarding students at recess who may be sluggish and tired when hungry.

Q1.5 asked teachers to select their level of agreement regarding students who might be absent from class more often when they were hungry. Responding teachers selected their level of agreement to this statement at the following levels: 27.31% strongly agreed, 36.54% agreed, 33.08% disagreed, and 3.08% disagreed strongly (Figure 5).

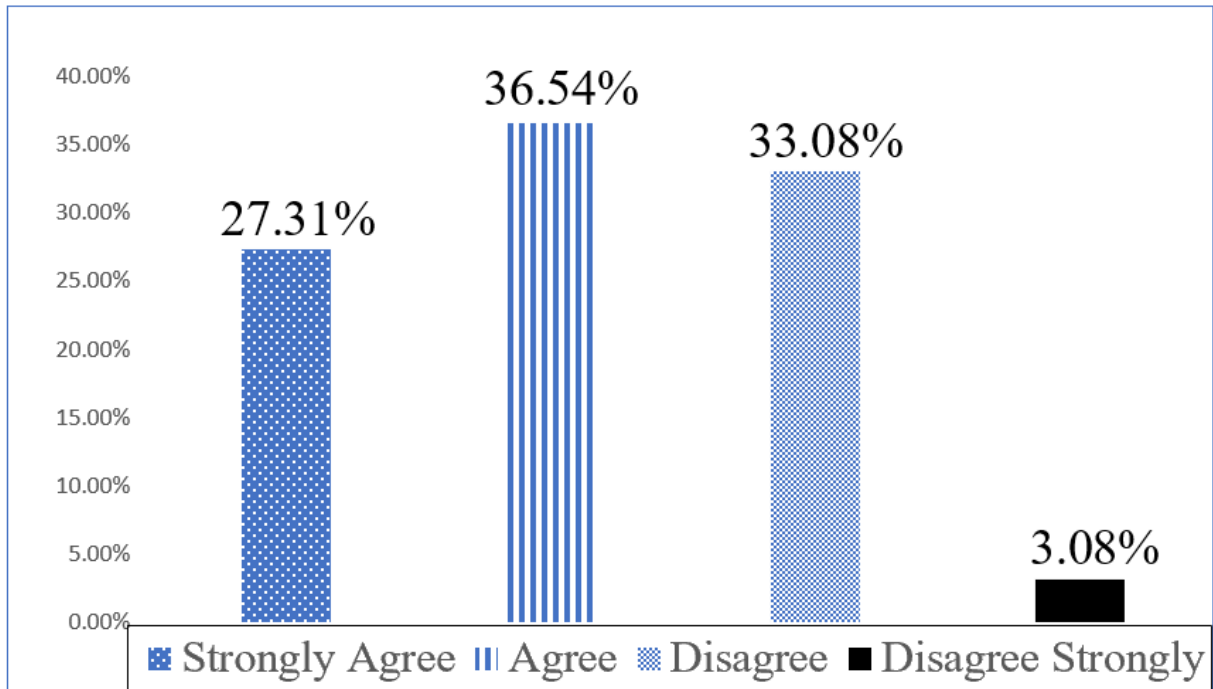


Figure 5 Q1.5 Teachers were asked to select their level of agreement regarding students who might be absent from class more often when they were hungry.

Q2 asked teachers how many times in the past month did a student who was believed to be hungry ask for food right before, during, or after class (Figure 6). About seventy percent of teacher respondents said they had at least one student who asked for food in the past month.

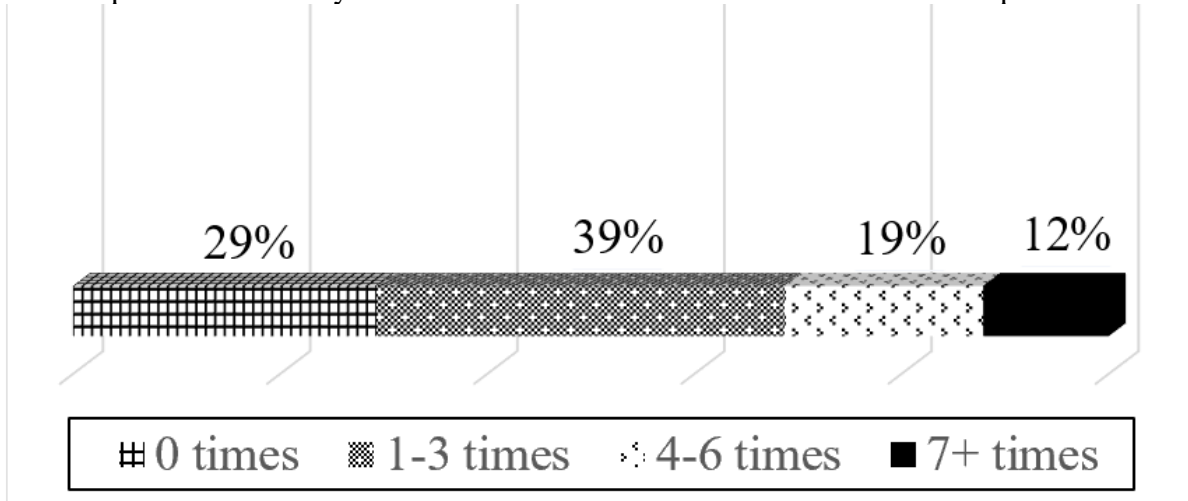


Figure 6 Q2 Teachers were asked how many times in the past month had a student who they believed was hungry asked for food right before, during, or after class.

Q3 asked teachers how many students total in the last school year had they provided snacks/food before, during, or after class (Figure 7). Eighty percent of teachers had provided at least one student food/snack in the last school year either before, during, or after class.

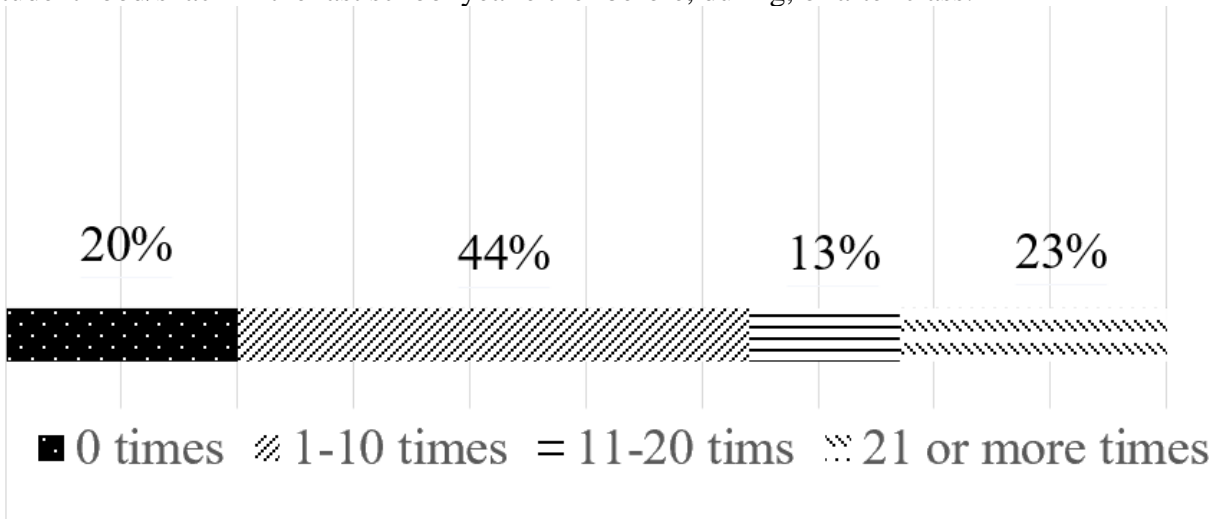


Figure 7 Q3 Teachers were asked how many students total in the last school year had they provided snacks/food before, during, or after class.

Q4 asked teachers how they would rate their knowledge about parent/guardian access to supermarkets (Figure 8). Responding teachers rated their knowledge on parent/guardian access to supermarkets at the following levels: very low 24.52%, 32.17% low, 29.62% medium, 10.51% high, and 3.18% very high.

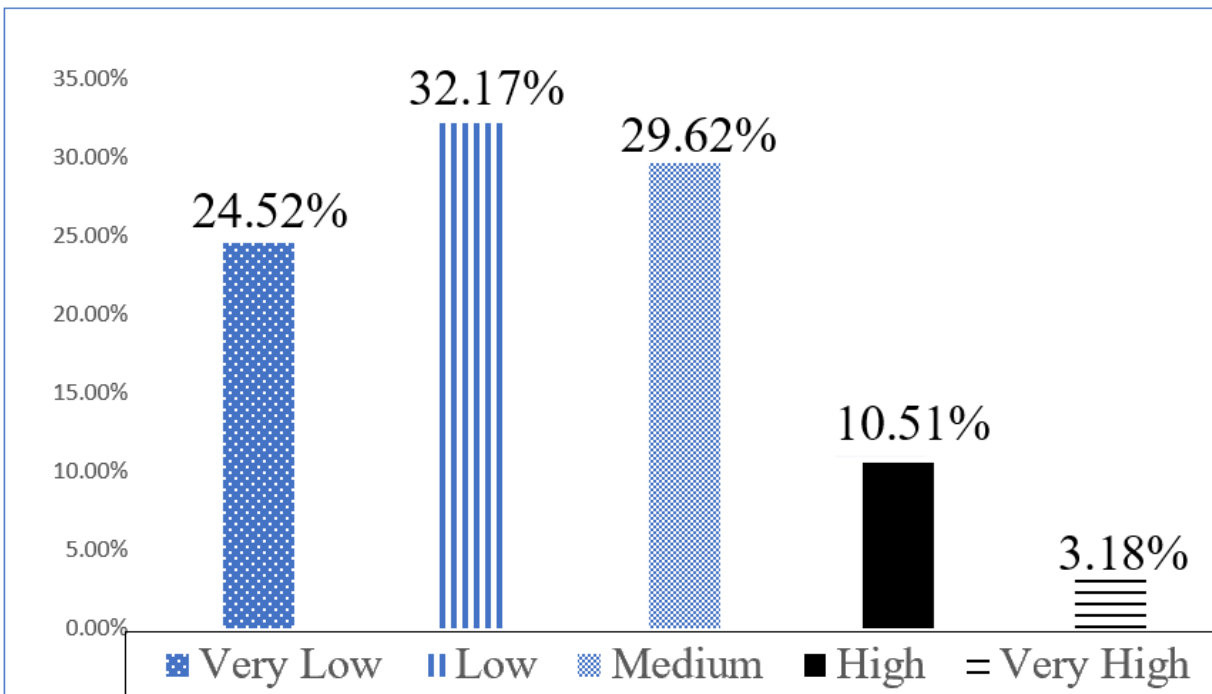


Figure 8 Q4 Teachers were asked how they would rate their knowledge about parent/guardian access to supermarkets.

Q5 asked teachers how they would rate their knowledge about parent/guardian knowledge about healthy food. Responding teachers rated their knowledge on parent/guardian knowledge about healthy food at the following levels: 21.97% very low, 28.34% low, 37.26% medium, 11.15% high, and 1.27% very low (Figure 9).

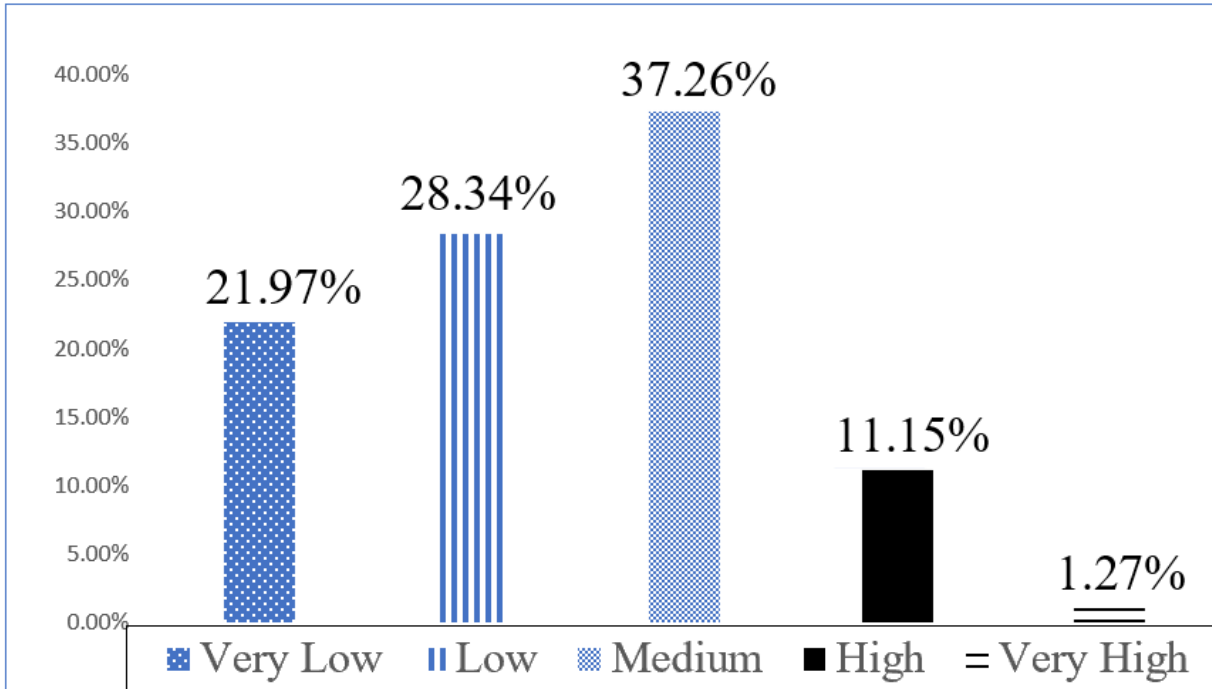


Figure 9 Q5 Teachers were asked how they would rate their knowledge about parent/guardian knowledge about healthy food.

Q6 asked teachers how they would rate their knowledge about private or public programs that parents/guardians may access to feed their families. Responding teachers rated their knowledge on private or public programs that parents may access to feed their families at the following levels: 14.33% very low, 35.99% low, 40.45% medium, 8.60% high, and 0.64% very high (Figure 10).

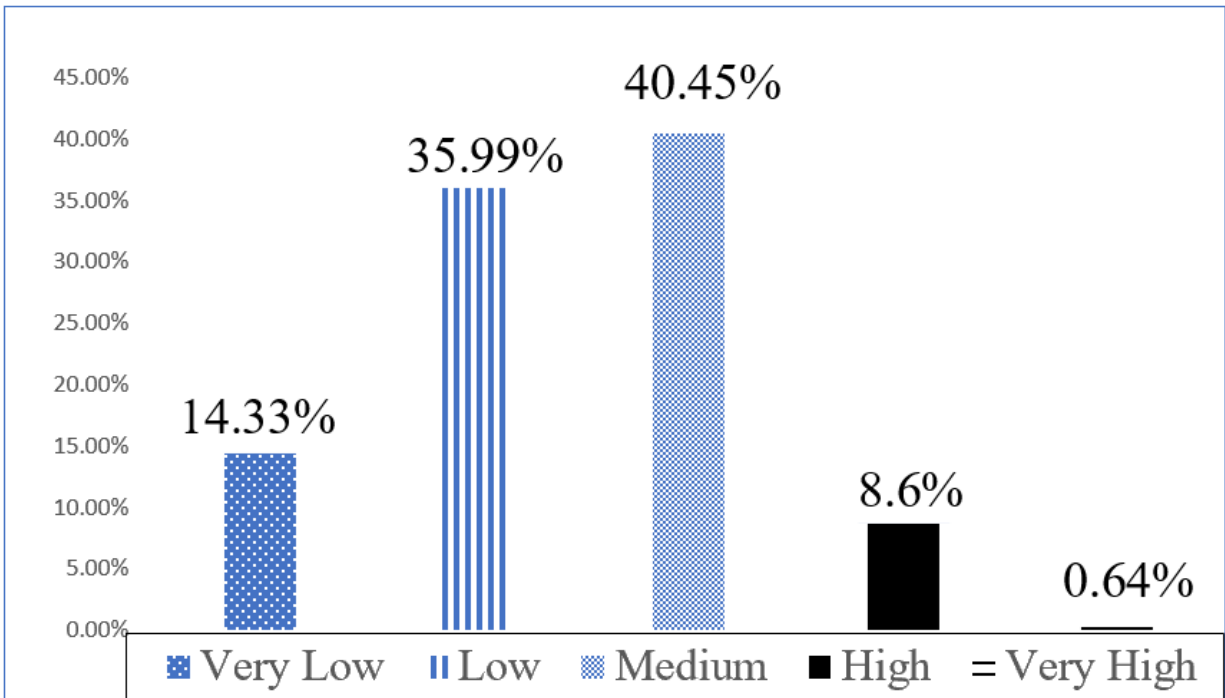


Figure 10 Q6 Teachers were asked how they would rate their knowledge about private or public programs that parents/guardians may access to feed their families.

Q7 asked teachers to select programs their school provides in addition to free and reduce lunch, to address food insecurity at school (Table 1). Thirty-eight point thirty-seven percent responded that their school used a school food pantry.

Table 1

Food Insecurity Interventions for Students that Teachers Noted were Active in their Schools.

<u>Intervention</u>	<u>Percent</u>
School pantry	38.37%
Classroom pantry	13.08%
Fresh produce from school garden	6.98%
Share table	8.43%
Obesity education	10.47%
Illness prevention	6.98%
Other please comment	15.70%

Note: Multiple responses were permitted. Responses did not add to zero.

Q8 asked teachers to check the category that listed the number of years that they have been teaching or working with K-12 students (Table 2).

Table 2

Years Teachers Have Worked Directly with K-12 Students.

<u>Years</u>	<u>Percent</u>
0-5	23.94%
6-15	35.59%
16-25	30.42%
26-30	.05%
30+	.03%

Q9 Most teachers who participated were female, 85%.

Q10 had teachers select what grade band they taught during the last 12 months. Forty-one percent of participants taught elementary, 26% taught middle, and 32% taught high school.

Open-ended Comment Area

Q11 – This question asked teachers to respond in an open-ended comment box about their experience in the school with students who were hungry in their classes. Twenty-nine percent of all grade bands responded to this question.

Only 0.02% of high school and 0.01% of elementary teachers expressed that they felt food insecurity was an issue mainly characterized by nutrition, and not hunger. Among the responses, this comment was included:

In my class, I don't think there is an issue as much with students not having enough food, as there is a lack of education about healthy, unprocessed foods. The lunches and snacks that my students bring from home are usually highly processed, high in sugar and salt, and definitely not helping them to be at their best in the classroom.

A majority of responses spoke directly to the presence of hunger in their classrooms. Some addressed the fact that programs were available, but due to "pride" sometimes students refuse help or parents did not apply. These additional programs named in the survey included Atlas and weekend backpacks. Another response,

I have students constantly asking for food. This year, we rezoned our school system due to the opening of a new high school. I had students come from a different high school. The first early dismissal day of the year, they asked when they got their sack lunches to take home and I told them that we didn't do that.

Several of them wanted to know how they were supposed to eat that day if there was nothing for them to take home. I provided them snacks that I had in my desk but obviously could not give them entire meals from my desk. The next day they were even more sluggish than normal.

Chapter 5: Discussion/Implications

The needs assessment was designed to understand gaps in knowledge and awareness of teachers in all grade bands in Rutherford County public schools. The findings would be used to refine a professional development program in an online environment. The findings could be used to inform other curriculum, in other states, if the context and situation were similar.

The response rate was 11.5% of 2,800 teachers with 85% female and 15% male. Lower response rate could be due to many factors, but the respondents who participated were interested in dealing with this issue and included 41% teaching elementary, 26% teaching middle, and 32% teaching high school which provided information on all bands. Low response rate could include a recent Rutherford County school technical e-mail issue which caused some teachers to not receive or send e-mails. Another reason could be the timing of the e-mail survey. The survey was sent around fall break, which could have caused a lower response rate.

For Q1.5, the level of agreement regarding students who might be absent from class more often when they are hungry resulted in a higher than expected disagreement. I expected this number for disagreement to be lower since food insecurity is a significant reason students have poor attendance (Tamiru & Belachew, 2017). However, the data showed that teachers selected their level of agreement to this statement at 33.08% disagreed and 3.08% disagreed strongly. The high disagreement response could be from teachers in schools that are within none economically challenged areas. These areas would not see as much food insecurity. It could also signify that teachers need more instruction on what illness with food insecurity might include. Students being absent can result in truancy laws being broken. If the absence is over five days and not excused, then the principal or teacher has to report the absence (Rutherford County Schools, 2019). Children being sick from food insecurity issues might look like normal illnesses. A teacher

professional development program is needed for educators to understand what is happening with students possibly facing this issue.

Implication 1. The RWON curriculum, and marketing, the program likely does not need to be geared heavily toward convincing teachers that hunger is present in the schools. Also, instead of several key introductory units convincing teachers that hunger is an issue, RWON might be able to rely upon a single unit. Food insecurity seems to be something that teachers see affecting their students in all grade bands.

Implication 2. Teacher resources for developing food insecurity solutions need to be considered. RWON activities and even links to resources need to consider what can be afforded and permitted in the schools and classrooms. Teachers already spent personal money for supplies. Some food insecurity solutions may be implemented with little use of teacher resources, like a share table. RWON will include multiple solutions that each school can decide which works well for them. Some solutions will require more resources, including teacher resources while others will not. An example would be a school garden. This may require teachers who will assist and permission of buildings and grounds, and external funds over long term.

Implication 3. Before, I thought mainly elementary? Now, the data suggests that teachers from all grade bands are nearly equally interested. Based on these results, RWON will need to include solutions for high school students too, not only younger kids. This includes information for teachers to understand when high school students are hungry. Images on the RWON site also need to portray high school youth and situations early, or the high school teachers might not stay interested. High school youth sometimes also have a larger role in food provisioning and dealing with government programs than younger children. The addition of this information would help to increase RWON's ability to help more students through teacher education.

Implication 4. Teacher knowledge about parent/guardian supermarket access was low based on data. This suggests that teachers may only partly understand what can cause food insecurity and this information should be included in RWON to help educate teachers about their student's possible situations. This may also indicate that teachers may not understand parents/guardians as well, particularly from low income areas where food access, as well as funds, are insufficient. This type of teaching toward empathy can be challenging, because it involves not just information but empathy, and something to consider for the RWON environment.

Implication 5. Data from teachers reveal that they have low knowledge of parent/guardian knowledge about food nutrition. This information suggests additional information should be included in RWON to help better educate teachers on food insecurity by helping teachers to understand parent/guardian knowledge about food nutrition. Just as for teacher low level understanding of parent/guardian situations in 4, this would require additional resources within RWON as well.

Implication 6. Teacher knowledge of programs available to parents/guardians outside of federal free meals was also low from the data. This implies that program information will be included in RWON to help educate teachers on additional programs. Low teacher knowledge about their parent/guardians surprised me, since such programs have been around for a long time. I want to include additional videos to help educate.

Limitation. The lower response rate makes me more cautious when it comes to all the conclusions, but likely most of all this "starting condition" set of questions that involve the acknowledgement of hunger and food insecurity in the schools. There can be additional ways to supplement what I have learned as program development goes onward.

Chapter 6: Reflection

When I suggested this study in October 2018, it was due to me noticing there was no program available in Rutherford County schools to address hunger. With schools trying different things, I felt believe it was time to find a way to combat food insecurity through the use of a teacher professional education program. At the time, I did not know what this program would look like, but I was eager to begin researching a way to address this growing problem I was seeing as a Cooperative Extension Program Assistant in Rutherford County working with elementary aged youth enrolled in 4-H.

As I began my research, I discovered Extension was perfect to provide information for this teacher professional education program. I currently was working with Extension and saw the benefit we could provide. I also decided I could use my information technology background in connection with Extension to provide a program that is easily assessible. After brainstorming, I decided that I could create an online program (an app) and that it would be called RWON, Rutherford Web of Nutrition. On the app, Extension professionals would create content for the online pages that I would then upload and design. My initial thoughts before the needs assessment was that RWON would include information on three areas dealing with hunger in schools:

- Food insecurity. This area was defined as information on what food insecurity looks like and what are the causes.
- Food nutrition. This area was defined with information on proper food nutrition.
- Solutions. This area was defined as food insecurity solutions for the classroom.

For knowledge assessment, at the end of each section, teachers would be quizzed on content to see if they retained the cognitive material. This would become a program that teachers

would use to help them combat hunger in their classes. I had the idea that teachers would take the program annually to refresh their knowledge, and to become updated.

Program Preparation and Needs Assessment

Before starting a needs assessment to see what RWON would include, I researched similar programs. What I found was RWON would be a uniform solution for the entire county that was unique in its' goal, to educate teachers on how to combat hunger in their classrooms. Currently, teachers spend their own money to combat food insecurity or they depend on schoolwide programs to provide this. Based on this information, I decided to use a need assessment to understand what RWON might need additionally.

I had several reactions to the needs assessment findings. First, it was difficult for me to read the open-ended comment area. Within this area only ninety-four teachers responded, but it was emotional to read since the information confirmed that there were a lot of hungry children, the teachers appeared to be doing their best, and that there was for a need for support, such as RWON – in Rutherford County schools.

Second, there were areas I had not included in the three topic areas. For example, I did not realize teachers did not know a lot about their students. The data showed teachers needed more knowledge about their students' home situations in relation to food insecurity. By gauging their rating on statements tied to food insecurity I was able to understand that additional RWON units were needed to help educate teachers dealing with this.

Third, high school teachers responded more than I expected. I thought elementary and middle school teachers were my main audience. Even the reply of teachers in high school shows that more needs to be done to understand their students. RWON will need additional units to also address high school students dealing with hunger.

When I began my Master's degree, I knew what I wanted to become an Extension educator. I was, at the time I began this project employed as an Extension Program Assistant and now I see clearly how I want to work with Extension to make a difference within my county. My creative component has encouraged me to continue my work with education and Extension to find solutions. Coffey et al. (2014) states that Extension provides educational opportunities to help the public combat big issues, like food insecurity. I look forward to working more with Extension and finding solutions to make our world a better place by combating big issues. Iowa State University's Master of Science program has also helped me to understand how to be a better instructor for not only children but also for adults. By understanding my audience and their needs, I can help my students to learn better no matter their age. It was interesting to see how individuals who are older will have different needs than young children. By understanding the differences, I can be prepared for possible situations within the classroom helping me to be a productive teacher. The electives I selected also helped me to understand more about adolescents, both at home and within the classroom. It also helped me to see how teens think and process which will be helpful as I begin the process of becoming an agricultural high school teacher. Overall, I feel that the Iowa State University MS program has prepared me for my future career as a teacher and as a parent.

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Appendix I

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office for Responsible Research
Vice President for Research
2420 Lincoln Way, Suite 202
Ames, Iowa 50014
515 294-4566

Date: 09/25/2019

To: Priscilla Hogue Nancy Grudens-Schuck

From: Office for Responsible Research

Title: Online Extension program for K-12 teachers on how to address food insecurity

IRB ID: 19-468

Submission Type: Initial Submission **Exemption Date:** 09/25/2019

The project referenced above has been declared exempt from most requirements of the human subject protections regulations as described in 45 CFR 46.104 or 21 CFR 56.104 because it meets the following federal requirements for exemption:

2018 - 2 (i): Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) when the information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects.

The determination of exemption means that:

- **You do not need to submit an application for continuing review. Instead, you will receive a request for a brief status update every three years. The status update is intended to verify that the study is still ongoing.**
- **You must carry out the research as described in the IRB application.** Review by IRB staff is required prior to implementing modifications that may change the exempt status of the research. In general, review is required for any *modifications to the research procedures* (e.g., method of data collection, nature or scope of information to be collected, nature or duration of behavioral interventions, use of deception, etc.), any change in *privacy or confidentiality protections*, modifications that result in the *inclusion of participants from vulnerable populations*, removing plans for informing participants about the study, any *change that may increase the risk or discomfort to participants*, and/or any change such that the revised procedures do not fall into one or more of the [regulatory exemption categories](#). The purpose of review is to determine if the project still meets the federal criteria for exemption.
- All **changes to key personnel** must receive prior approval.
- **Promptly inform the IRB of any addition of or change in federal funding for this study.** Approval of the protocol referenced above applies only to funding sources that are specifically identified in the corresponding IRB application.

Detailed information about requirements for submitting modifications for exempt research can be found on our [website](#). For modifications that require prior approval, an amendment to the most recent IRB application must be submitted in IRBManager. A determination of exemption or approval from the IRB must be granted before implementing the proposed changes.

Non-exempt research is subject to many regulatory requirements that must be addressed prior to implementation of the study. Conducting non-exempt research without IRB review and approval may constitute non-compliance with federal regulations and/or academic misconduct according to ISU policy.

Additionally:

- All research involving human participants must be submitted for IRB review. **Only the IRB or its designees may make the determination of exemption**, even if you conduct a study in the future that is exactly like this study.
- **Please inform the IRB if the Principal Investigator and/or Supervising Investigator end their role or involvement with the project** with sufficient time to allow an alternate PI/Supervising Investigator to assume oversight responsibility. Projects must have an [eligible PI](#) to remain open.
- **Immediately inform the IRB of (1) all serious and/or unexpected [adverse experiences](#) involving risks to subjects or others; and (2) any other [unanticipated problems](#) involving risks to subjects or others.**
- **Approval from other entities may also be needed.** For example, access to data from private records (e.g., student, medical, or employment records, etc.) that are protected by FERPA, HIPAA or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required by their policies. **An IRB determination of exemption in no way implies or guarantees that permission from these other entities will be granted.**
- Your research study may be subject to [post-approval monitoring](#) by Iowa State University's Office for Responsible Research. In some cases, it may also be subject to formal audit or inspection by federal agencies and study sponsors.
- Upon completion of the project, transfer of IRB oversight to another IRB, or departure of the PI and/or Supervising Investigator, please initiate a Project Closure in IRBManager to officially close the project. For information on instances when a study may be closed, please refer to the [IRB Study Closure Policy](#).

Please don't hesitate to contact us if you have questions or concerns at 515-294-4566 or IRB@iastate.edu.

Appendix II.

Food Insecurity Teacher Survey

Q1	<p>Select your level of agreement about the statement about students who may be experiencing food insecurity in classes you taught in the last 12 months (Strongly Agree, Agree, Disagree, or Disagree Strongly)?</p> <p style="padding-left: 40px;">Q1.1 - Students have trouble concentrating in class due to hunger. Q1.2 - Students focus better when hunger is not an issue. Q1.3 - Students are irritable when hungry. Q1.4 - Students at recess are sluggish and tired when hungry. Q1.5 - Students are absent from class more often when they are hungry.</p>
Q2	How many times in the past month did a student who you believed was hungry ask for food right before, during, or after class (0 times, 1-3 times, 4-6 times, or 7+ times)?
Q3	How many students total in the last school year did you provide snacks/food right before, during, or after class (0 times, 1-10 times, 11-20 times, or 21 or more times)?
Q4	How would you rate your knowledge about parent/guardian access to supermarkets (Very low, Low, Medium, High, or Very high)?
Q5	How would you rate your knowledge about parent/guardian knowledge about healthy food (Very low, Low, Medium, High, or Very high)?
Q6	How would you rate your knowledge about private or public programs that parents/guardians may access to feed their families (Very low, Low, Medium, High, or Very high)?
Q7	Select all programs that your school or classroom sponsors (beyond free and reduced meals) to address food insecurity (Classroom food pantry, School food pantry, Fresh produce from school garden, Share table, Obesity education, Illness prevention, Other please comment).
Q8	For how many years have you been teaching or working directly with K-12 students?
Q9	What is your gender (Male, Female, or Other)?
Q10	What is the grade band that you taught during the last 12 months (Elementary (grades PreK thru 5), Middle (grades 6 thru 8), High (grades 9 thru 12)?
Q11	Tell me anything you want about your teaching experience with students who are hungry in your classes.