# RETROSPECTIVE EVALUATION OF FACTORS THAT INFLUENCE THE IMPLEMENTATION OF C.A.T.C.H. IN SOUTHERN ILLINOIS SCHOOLS

by

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A Dissertation Defense Submitted for Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

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Abstract

PROCESS EVALUATION OF IMPLEMENTATION PRACTICES OF THE C.A.T.C.H. SCHOOL HEALTH PROGRAM IN SOUTHERN ILLINOIS

This study is a retrospective evaluation of the Coordinated Approach To Child Health (CATCH) coordinated school health program. An abundant amount of research has been conducted concerning CATCH, but no data exist that represents the characteristics and attitudes of individuals implementing the program. This study looked to examine organizational readiness, commitment to change, leadership, implementation barriers, innovation perceptions and their influence on the diffusion of CATCH. The primary purpose of this study is to describe and explain why schools in the same area that receive the same CATCH training result in different implementation practices. This study included a retrospective evaluation that evaluated school employees' motivation of CATCH implementation over the 2011-2012 school year.

A survey of 284 school employees and health department partners consisting of 33 school administers, 197 classroom teachers, 27 physical education teachers, 21 cafeteria supervisors, and 6 health department partners at elementary school located in the southernmost counties of southern Illinois was conducted.

Particular attention was focused upon the differences between classroom teachers, physical education teachers, cafeteria supervisors, and health department partners. Degree of CATCH implementation was the best among cafeteria supervisors and physical education teachers while classroom teachers implemented roughly 50% of the CATCH classroom curriculum. Organizational readiness was a significant predictor of classroom teacher degree of implementation while school leadership served as a significant predictor of degree of implementation by physical education teachers.

The study utilizes CATCH; however, this study could be helpful concerning other school health programs to enhance program implementation practices and delivery. The significance of these data provide health educators with evidence of why schools have different implementation practices, what constructs influence degree of implementation, and how addressed constructs that influence implementation can be rectified through school preparation and training protocols to enhance degree of implementation. Additional variables are also discussed that could account for further variation in school employee degree of implementation.

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# CHAPTER I

# INTRODUCTION

This study is a process evaluation of the Coordinated Approach To Child Health (CATCH®) coordinated school health program. CATCH focuses on physical activity and nutrition to address the national epidemic of childhood obesity. An abundant amount of research has been conducted concerning CATCH, but no data exist that represent the characteristics and attitudes of individuals implementing this program. This study examined organizational readiness, commitment to change, leadership, implementation barriers, and innovation perceptions and their influence on the diffusion of CATCH.

Schools foster a learning environment and many health innovators use schools as a place for preventative health practices (Allensworth & Kolbe, 1987). Two barriers associated with school program implementation are cost and time (Linn, 2002; Valli & Buese 2007). Most schools do not have resources to implement extensive health programs (Linn, 2002). Furthermore, fewer teachers have time to implement an extensive health program due to responsibilities their jobs require (Valli & Buese 2007). These two factors make it very difficult for schools to adopt innovative health programs.

Obesity is a complex problem that requires a comprehensive approach to address. Recently, a comprehensive approach was outlined in *The Surgeon General's Vision for a Healthy and Fit Nation* 2010 and the 2010 report of the White House Task Force on Childhood Obesity (U.S. Department of Health and Human Services, 2010). These reports highlight the need to 1) address both nutrition and physical activity, 2) work across multiple settings (e.g., medical-care sites, worksites, and communities) and multiple sectors (e.g., industry and government), and 3)

change individual behaviors as well as environments and policies that affect those behaviors (CDC's Division of Adolescent & School Health, 2011).

Statistics indicate current trends of childhood obesity have drastically increased in the past decade and could continue to rise (Flegal, Carroll, Ogden, & Curtin, 2010). To address health concerns for children, such as childhood obesity, Allensworth and Kolbe (1987) developed an eight-component model referred to as the Coordinated School Health Program (CSHP). Coordinated school health programs provide a systematic framework that address factors that contribute to health through (1) health education, (2) physical education, (3) health services, (4) nutritional services, (5) counseling, psychological, and social services, (6) health and safe school environments, (7) health promotion for staff, and (8) and family and community involvement. CSHPs serve as a framework for school health programs to follow to effectively address child health. However, only a limited number of programs include every component of the framework. CSHPs are great solutions for schools that having no financial restraints and unlimited resources; however, many schools do not have this luxury (Linn, 2002). In addition to financial restraints, Valli and Buese (2007) conducted a study that examined roles of teachers over a four-year period to determine if significant changes were present. They concluded the roles of teachers had drastically changed through increased expectations from school districts, parents, and students. As CSHPs may be the best overall program to address child health, implementing all eight components may not be feasible for all schools.

Coordinated Approach To Child Health (CATCH) is an example of a program that does not have all eight components to be considered a CSHP, but has a specific framework and components that focus on physical activity and nutrition (CATCH, 2012). CATCH is a limited coordinated school health program that promotes physical activity, healthy food choices, and

tobacco prevention in elementary and middle-aged children (CATCH, 2012).The goal of CATCH is to positively influence childrens behaviors and reduce or eliminate health risk factors and high risk behaviors (CATCH, 2012). CATCH is a multi-facet fitness package that addresses the uprising epidemic of obesity (CATCH, 2012). There are many factors that contribute to one becoming overweight and obese. CATCH focuses on physical activity and nutrition for children in pre-kindergarten through 8$^{th}$ grade (CATCH, 2012). The CATCH program is composed of four components: 1.) Classroom Curricula, 2.) Food Service Modifications, 3.) Physical Education, and 4.) Family Involvement. The CATCH curriculum uses all three recommendations of *The Surgeon General's Vision for a Healthy and Fit Nation Report* (U.S. Department of Health and Human Services, 2010) as shown in one of the first major studies conducted on CATCH (Luepker et all. 2011). Furthermore, studies related to impact and implementation of CATCH have shown the cost-effectiveness of the program, benefits from implementing, how implementation can address state mandates for health instruction, benefits of implementing over multiple years, importance of adoption and institutionalization, and suggests CATCH can have long-term impact on a community (Brown et al., 2007; Crawley, 2010; Coleman et al 2006; Franks et al., 2007, Heath & Coleman, 2003; Hoelscher et al. 2004; Kelder et al, 2003; Johnson et al., 2003; Lytle et al., 2003; Parcel et al., 2003; & Sharma, 2011).

CATCH has been heavily researched concerning program impact and outcome evaluation; however, very little process evaluation research exists up to date. CATCH research is saturated with data focused on proving and justifying that CATCH is effective and can foster behavior change (Franks et al., 2007, Heath & Coleman, 2003; Hoelscher et al. 2004; Kelder et al, 2003). As a result of impact and outcome research, CATCH has evolved into a program widely used and recognized as a school health standard in many parts of the United States

(Brown et al., 2007; Crawley, 2010). As impact and outcome research is plentiful, more process evaluation research is needed to improve quality of implementation performance and program delivery. In addition, organizational readiness, commitment to change, leadership, implementation barriers, and innovation perceptions to provide framework in describing why some school employees chose to implement CATCH while other do not.

Data exist in organizational research on different constructs that influence implementation such as organizational readiness, employee commitment, leadership, and implementation barriers. However, no data exist that compares organizational constructs on school health programs. These constructs were used to describe school employees' CATCH implementation practices.

## Purpose of the Study

The primary purpose of this study is to describe and explain why schools in the same area that receive the same CATCH training result in different implementation practices. This study evaluated school employees' motivation toward CATCH implementation. It is hypothesized that implementation motivation which for this study includes: organizational readiness, employee commitment, leadership, implementation barriers, and perceptions of CATCH will have a significant effect on degree of implementation practices.

## Research Questions

1. What is the degree of implementation for each component across all CATCH trained schools in the southernmost counties of southern Illinois?

2. How do school administrators rate organizational readiness, commitment to change, implementation barriers, and innovation perceptions towards CATCH?

3. How does organizational readiness in classroom teachers, physical education teachers, cafeteria supervisors, and health department partners relate to degree of implementation for each implementated component of CATCH?

4. How does employee commitment in classroom teachers, physical education teachers, cafeteria supervisors, and health department partners relate to degree of implementation for each implementated component of CATCH?

5. How do school staff and CRHSSD partners rate school administers' leadership towards CATCH?

6. How do school staff and CATCH onto Health partners' perceptions of school administration leadership relate to degree of implementation?

7. How do implementation barriers mentioned by classroom teachers, physical education teachers, cafeteria supervisors, and health department partners relate to degree of implementation for each implementation component of CATCH?

8. How do innovation perceptions by classroom teachers, physical education teachers, cafeteria supervisors, and health department partners relate to degree of implementation for each implementation component of CATCH?

9. How do the five factors (organizational readiness, employee commitment, leadership, implementation barriers, and innovation perception) collectively influence degree of implementation?

## Need for the Study

All schools located in the Delta region southernmost 16 counties of southern Illinois have access to CATCH program, materials, and equipment provided through services of the Center for Rural Health and Social Service Development (CRHSSD) at Southern Illinois University. Once a school agrees to implement CATCH they receive CATCH training. Even though schools are required to be trained prior to implementation, some schools execute CATCH better than others. This study searched to determine differences concerning how and why certain schools can effectively implement CATCH, while others struggle.

It is important schools are ready and prepared to take on the responsibility of CATCH. This included school administration and teachers being knowledgeable about CATCH. Schools that adopt CATCH but are not ready can result in partial implementation and program extinction. School readiness includes financial and educational resources, preparation and instructional time, and enough employees for implementation (Weiner, 2009). Problems occur when organizations take on more responsibilities than they can uphold (Weiner, 2009). As a result, many organizations neglect responsibilities associated with programs or tasks that are not mandatory (Weiner, 2009).

As organizational readiness is important in implementation, it is equally crucial school employees are committed to implement. According to Conner and Patterson (1982), "the most prevalent factor contributing to failed change projects is a lack of commitment by the people" (p. 18). It would be easy for schools to decide to partially implement or eliminate efforts if the school could not meet the demand of CATCH. Meyer and Allen 1991; Allen & Meyer, 1990) define organizational commitment as a psychological state that increases the likelihood an employee remains a member of an organization. This study is important because it analyzes employee commitment by degree of implementation.

Leadership is a common concept used in program implementation and educational change (Blasé & Blasé, 2004). Leaders can change an organization away from the status quo and explore different alternatives (Joiner, 1987). Lastly, this study addresses barriers associated with implementation. Implementation barriers are important to be identified because they can possibly lead to extinction of CATCH. Schools may have program problems, but not the time or resources to correct or rectify the problem during implementation. Continuous problems with voluntary programs can lead to program extinction. This study can help bridge the gap between partial and full school health implementation.

## Significance of the Study

Numerous studies have been cited concerning the success of CATCH and effectiveness of the school health framework (Brown et al., 2007; Crawley, 2010; Coleman et al 2006; Franks et al., 2007; Heath et al, 2003; Hoelscher et al. 2004; Kelder et al, 2003; Johnson et al., 2003; Lytle et al, 2003; Owen et al., 2006; Parcel et al., 2003; & Sharma, 2011). However, to date, there is little research concerning why administrators, teachers, and cafeteria supervisors choose not to implement all components of CATCH. This study allows health educators to address how organizational readiness, commitment to change, leadership, and implementation barriers influence the diffusion of CATCH. CATCH data exist in the form of impact and outcome evaluation, but no process data are present that represent school administrators, teachers, physical education teachers, and cafeteria supervisors. The problem does not only include defining readiness of schools but also includes making sure that school employees are committed to continue implementation and sustainability. Health educators can use information from this study to formulate preparatory training courses that addresses the organization (school) and individual (school employee), bridge organizational and individual implementation barriers with

school specific solutions, and create additional resources to enhance school health programs. This study utilizes CATCH; however, data from this study can be used for different school health programs to prepare and enhance school health program implementation practices for more efficient program delivery.

Quality of implementation is important and data from this study will address areas of concern during implementation, which could lead to enhanced implementation and program delivery. Data provides educators a way to assess implementation design and tactics to strengthen school infrastructure. CATCH is actively being implemented in many schools across the nation. Process evaluation as well contributing characteristics of implementation can aid implementation practices and improve program impact and long-term outcomes of school health programs. The significance of these data provides health educators with evidence of areas that need to be addressed within CATCH school preparation and training protocols prior to implementation to increase employee participation.

## Research Design and Methods

This study used a retrospective evaluation that examined factors and organizational constructs that influence program implementation. Retrospective research is a way to take a look back at events that have already occurred (Hess, 2004). The purpose of this evaluation is to examine if organizational factors influence implementation practices of CATCH. Data from this study enhance implementation practices. The present study looked to examine five different constructs: organizational readiness, commitment to change, leadership, implementation barriers, and perceptions of CATCH. School administers, classroom teachers, physical education teachers, cafeteria supervisors, and health department partners were assessed as the primary implementers of CATCH. This study will include quantitative methodology. This study involves a census of all

elementary schools in the Delta region southernmost counties of southern Illinois that have been CATCH trained by the Fall of 2011.

The first step included determining the degree of implementation on a continuous scale. Prior to data collection, classroom teachers and physical education teachers completed a CATCH checklist. The CATCH checklist included all lessons and activities included in the Kindergarten through 5$^{th}$ grade classroom curriculum and the total number of PE games implemented. Elementary classroom teachers and physical education teachers "checked" the lessons and activities they implemented last school year. Percentages of implementation were calculated to determine degree of implementation. Since cafeteria supervisors do not have a curriculum, they were responsible to check whether or not they attended the School Health Rocks and emphasize CATCH cafeteria food modifications and portion education to students. Cafeteria supervisors checked whether food and nutrition education posters are present and addressed during food service. Degree of implementation for cafeteria supervisors was determined on the percentage of implementation practices. School administers have very little involvement in CATCH implementation, but play an important role in diffusion. School administers were not included in determining the degree of school implementation.

This study examined school readiness, commitment to implement CATCH, leadership, and implementation barriers in elementary schools located in southern Illinois. Staffs at participating schools were asked to complete a survey assessing organizational readiness, individual commitment to adopt and implement CATCH, School Leadership Self-Assessment, Implementation Barriers, and Innovation Perceptions.

Access to schools was granted through the Center for Rural Health and Social Services Development (CRHSSD) of Southern Illinois University Carbondale Project Coordinator.

Schools have been working exclusively with the CRHSSD through a Health consortium that involves local health departments and Southern Illinois Healthcare (SIH). Prior to CATCH implementation each school actively participates in a CATCH training seminar. The CATCH training course prepares teachers and administrators to effectively implement the school health program. Schools used in this study included a census of all schools that were trained by August 2011.

Criteria for inclusion included one full school year after completing CATCH training prior to this research project. In addition, this study only utilized elementary schools grades kindergarten through 5$^{th}$ grade. CATCH *GO For Health* classroom curricula is intended for students kindergarten through 5$^{th}$ grade (CATCH, 2012). There is no classroom curriculum for grades 6-8. CATCH PE has age-specific activities for students' kindergarten through 8$^{th}$ grade; however, many students in southern Illinois participated in competitive team sports rather than physical education. CATCH Cafeteria food service employees are trained at the elementary school level but not at the middle school or high school level in southern Illinois therefore, it does not seem necessary to include middle school (grades 6-8) in this study because very few staff would be involved or aware that CATCH is being implemented. Therefore, elementary schools will be the only school levels evaluated because they consistently implement the four CATCH components. This study utilized five surveys to be administered to school administration (which includes school principals), classroom teachers, physical education teachers, cafeteria supervisors, and health department partners. Surveys addressed school readiness, commitment to change, leadership, implementation barriers, and perceptions of CATCH associated with each school's degree of implementation.

Participants were asked to complete the *Organizational Readiness* (Holt et al., 2007) ,C*ommitment to Organizational Change* (Meyer & Allen, 1991; Herscovitch & Meyer, 2002) , *School Leadership Self-Assessment* (Bartholomay, 2001)*, Innovation Barriers* (Yasar & Neczan, 2010)*,* and *Perceptions of CATCH* surveys (Pankratz, Hallfors, & Cho, 2002). Survey administration took place at each of the schools at a convenient time. Data was analyzed using Excel and SPSS.

## Theory

This study utilized one foundation theory, Diffusion of innovation (Rogers, 2003), and three constructs within theoretical organization which include readiness to change (Weiner, 2009), commitment to change (Meyer & Allen, 1991), and leadership (Chemers, 1987). The foundation theory and additional organizational constructs contributed significant insight in describing how CATCH (an educational innovation) diffuses throughout a school and how administrators, classroom teachers, physical education teachers, and cafeteria supervisors implement through constructs of organizational readiness, employee commitment, and leadership. In addition, this study examined barriers associated with program implementation. This study seeks to describe the effect organizational readiness, employee commitment to change, leadership, implementation barriers, innovation perception, and diffusion of a school health program in southern Illinois. Diffusion of Innovation (Rogers, 2003) describes how an innovation diffuses throughout a social unit. Rogers explained adoption as a process influenced by certain communication channels within a social system about the innovation (Rogers, 2003). The most recent edition of the theory includes four components affecting adoption and diffusion of the innovation, social system, communication channels, and amount of time it takes for diffusion to occur (Rogers, 2003). This study focused primarily on the

social system which includes all boundaries in which the innovation diffuses (Rogers, 2003). The innovation in this study is the Coordinated School Health Program framework. This study focused on perceptions and intrinsic characteristics that influence if school employees decide to adopt and implement CATCH and include relative advantage, compatibility, complexity, trialability, and observability (Rogers, 2003). This study investigated how and why diffusion is lost in schools.

The diffusion of innovation theory has broadened and expanded over time to include more external factors that are pertinent to this study. Barriers can sometimes facilitate or motivate implementation practices, while others have negative effects on the innovation (Yasar & Neczan, 2010). This study focused on barriers resulting in negative effects on CATCH. Barriers include time, resources, prior obligations, and attention. As school health programs have been heavily researched, school health program implementation barriers have not been heavily addressed. This study looks to examine CATCH implementation barriers during implementation. In addition, organizational theory constructs was applied to this research study to further explain why school administrators and teachers choose not to implement CATCH.

Organizational readiness refers to members of an organization's appropriateness, change efficacy, and personal valence to implement (Weiner, 2008). Weiner (2009) and colleagues have concluded there needs to be a strong emphasis on establishing and analyzing readiness to change. Individual readiness has been heavily researched; however, organizational readiness is a sector that is limited in research (Weiner, 2009). Establishing whether or not an organization is ready to adopt and implement can be an important factor that dictates if a school is able to sustain program implementation (Weiner, 2009). Appropriateness refers to context and content of change (Holt et al., 2007). Change efficacy refers to an organization's shared beliefs in their

collective capabilities to organize a course of action for implementation (Bandura, 1997). Personal valence refers to self-interest (Armenakis & Haris, 2002). Organizational readiness influences implementation, therefore, affects diffusion of innovations. If an organization is not prepared to implement a program, program diffusion can be limited, slowed, or stopped.

Employee commitment to change (Meyer & Allen, 1991; Herscovitch & Meyer, 2002) is a three component model of organizational commitment and conceptualized as a psychological state that increases the likelihood an employee remains in the organization. The labels Meyer and Allen (1991) used were *affective* commitment which represents the desire to remain, *continuance* commitment which represents perceived cost of leaving, and *normative* commitment which represents perceived obligation to remain within the organization. Commitment is confirmation of adoption of the innovation and a central component in the model of effective innovation implementation in the workplace which connects how vital employee commitment is to organizational change (Klein & Sorra, 1996; Rogers, 2003). Commitment focuses on the relationship between social system and innovation adoption (Rogers, 2003). These three components represent different mindsets employees experience during organizational change. These three components of organizational commitment (affective, continuance, and normative) contribute to describe how committed an individual is to the organization. Like organizational readiness, individual commitment can influence diffusion by a lack in knowledge, commitment to vision by school leader(s), and workplace motivation. The commitment to change construct has profound connections to diffusion and can aid health educators in assessing tactics to enhance individual commitment and engage school opinion leaders.

Leadership is a term located in organizational and social research and described as social influence that an individual has to enlist support for a common theme (Chemers, 1987). An

important aspect of understanding leadership includes understanding a social system hierarchy (Rogers, 2003). The Diffusion of Innovation theory does not include a leadership construct however, it is noted that leadership plays important role in innovation diffusion (Rogers, 2003). Within social systems certain people have influence while others do not (Rogers, 2003). Within the Diffusion of Innovation, Rogers (2003) refers to influential individuals as opinion leaders. Opinion leaders have significant influence on the decisions that individuals have. Social systems exist in every workplace. Leaders can include the principal, classroom teacher, physical education teacher, cafeteria supervisor, or health department partner. Leadership is an important concept for this study because it assessed the infrastructure of leadership concerning the implementation of CATCH. Without leadership diffusion is limited (Rogers, 2003). The Diffusion of Innovation theory, implementation barriers, and organizational theory constructs: organizational readiness, commitment to change, and leadership provided sound theoretical framework to this study.

## Study

Data from the CRHSSD was used to identify each of the schools in the Delta region southernmost counties that have implemented CATCH. Criteria for study inclusion included participating schools that have been CATCH trained one year prior to this study, or trained by Fall 2011. This study only utilized elementary schools; middle schools were excluded from this study. Data obtained included implementation practices of the previous year. This study included a census of all CATCH-trained schools in the Delta region southernmost 16 counties.

Respondents included all school administrators, classroom teachers, physical education teachers, cafeteria supervisor, and health department partners in selected schools. School administrators included only school principals because they come in contact with the CATCH

program more than any other school administrators. In addition, many superintendents are not present at the elementary schools, and therefore, are distant from CATCH implementation practices. Classroom and physical education teachers include individuals who are licensed teachers and primary instructors for grades Kindergarten through 5th grade at CATCH trained schools. Cafeteria supervisors include employees who are in charge of food purchasing and cafeteria management during the school year. Health department partners include CATCH onto Health consortium members: Egyptian Health Department, Jackson County Health Department, Southern Illinois Healthcare, and Southern Seven Health Department. Health department partners serve as school resources and occasionally aid in implementing the CATCH curriculum. A further description will be included in Chapter II and III.

Access to potential participants was be granted by the CRHSSD. CRHSSD Project Coordinator agreed to provide contact information from partners associated with the schools within their county. A training course was conducted at a monthly meeting to address survey administration protocol. A survey administration checklist provided framework for distribution.

## Data Collection

Degree of implementation was established by a CATCH checklist. The CATCH checklist included the CATCH curriculum, PE guidelines, unique cafeteria components, and CATCH Family Fun Night accessibility hosted by health department partners. Each participant checked specific lessons and activities that were implemented in the previous year. Each activity and lesson was weighed equally. School administrators don't directly implement CATCH; therefore, it is not necessary for school administrators to complete the CATCH checklist. Furthermore, classroom teachers, physical education teachers, cafeteria supervisors, and health department

partners each identified what activities, lessons, and games were implemented during the 2011-2012 school year. Degree of implementation is a continuous variable represented by percentages.

The CATCH classroom curriculum has a set lesson plan that classroom teachers follow. Each grade level has a different classroom curriculum but the same across grade levels in different schools. For example, the Kindergarten curriculum is different than the 5$^{th}$ grade curriculum but the same at Kindergarten programs of different schools. Classroom teachers degree of implementation was established but dividing the number of lessons taught by the total number of lessons. Physical education degree of implementation was determined by the number of CATCH games implemented during a typical week, number of different games implemented, and utilization of CATCH posters and physical activity concepts. Cafeteria supervisors degree of implementation was determined on CATCH *Eat Smart* concepts (GO, SLOW, & Whoa), posters, food modifications, and food selection during the 2011-2012 school year.

The degree of implementation is the baseline of comparison. Quantitative data was used to describe the study constructs of organizational readiness, individual commitment, leadership, implementation barriers, and individual perceptions concerning CATCH. Each of the five construct used in this study has an associated survey. The five surveys were combined into one assessment.

## Data Analysis

Survey responses of school administrators, classroom teachers, physical education teachers, cafeteria supervisors, and health department partners were analyzed using descriptive statistics, more specifically means, standard deviations, frequencies, and percentages. In addition, correlations were used to determine if relationships are present between the degree of implementation and school readiness, employee commitment, leadership, implementation

barriers, and innovation perceptions. Each survey has a scoring method that is used to quantify each measure. More detail concerning scoring will be provided in Chapter III. A regression analysis was used to analyze the combined effect of the group of independent variables on the dependent variables. Data from this analysis help describe which of the five measurable constructs (organizational readiness, commitment to change, leadership, implementation barriers, or innovation perceptions) is most influential on degree of implementation.

## Assumptions

For the purposes of this study, the following assumptions were made:

1. Participants respond honestly to survey items
2. Participants accurately recalled the lessons and activities they implemented from the previous year.
3. Participants attended the CATCH training course prior to the 2011-2012 school year.
4. Teachers who were not present attended a CATCH training course at another site or were educated by their colleagues.

## Limitations

1. Participants who received funding to implement CATCH and responses may be biased to protect funding.
2. Participants may have forgotten details about CATCH implementation.
3. Participants may have stopped CATCH involvement due to change of school administration and leadership.
4. Nutrition standards in the National School Lunch (NSLP) and School Breakfast Programs (SBP) were mandated to be implemented by July 1, 2012.

## Delimitations

1. Participants are employees of schools located within the Delta region southernmost counties of Illinois.
2. Study participants attended at least 1 CATCH training course prior to the 2011-2012 school year.
3. Only elementary schools were used in this study.
4. Schools participated in the CATCH training course prior to the 2011-2012 school year.
5. There are overlaps between the NSLP and CATCH nutrition guidelines and recommendations; however, CATCH has unique cafeteria components that are not included in the NSLP that were used in my study to determine cafeteria supervisors' degree of implementation.
6. School employees implementing CATCH in middle schools are omitted from this study (notably physical education teachers).

## Definition of Key Terms

For the purposes of this study, the following terms were operationally defined

*Affective commitment* - Meyer and Allen (1991) note that individuals who have a desire to remain in the organization will perform regularly with little extra help.

*Appropriateness* - Appropriateness refers to context and content of change (Holt et al., 2007). It is a combination of content and context that dictates employee appropriateness whether they agree that change is needed within the organization (Holt et al., 2007). School employees address the discrepancy between the present state of the organization the desired end state. Childhood obesity is a national epidemic and not new to the health scene. A school's end state

includes a CATCH implementation which promotes a healthy school environment and student health behaviors.

*Cafeteria supervisor* – Any food service member of a CATCH trained school responsible for food preparation and distribution.

*Change efficacy* - Change efficacy refers to an organization's shared beliefs in their collective capabilities to organize a course of action for implementation (Bandura, 1997; Holt et al., 2007). Self-efficacy is important to create readiness to change through individual motivation to change (Armenakis et al., 1993).

*Classroom teacher* – To be included in this study classroom teachers must be currently employed by a CATCH trained elementary school.

*Continuance commitment* - Lastly, when school employees remain at the school to avoid the costs of not being employed will do little more than what is required to remain an employee.

*Coordinated Approach To Child Health (CATCH)* – An evidenced-based coordinated school health program that focuses on physical activity and nutrition. CATCH includes 4 components; classroom curriculum, food service modifications, physical education, and family involvement.

*Coordinated School Health Program (CSHP)* – A planned and sequential school-based program designed to improve child and adolescent health by coordinating the following eight components: healthy school environment; health services; health education; physical education; counseling, psychological, and social services; nutrition services; family and community involvement; and health promotion for staff (Allensworth & Kolbe, 1987).

*Counseling, psychological, and social services* – Interventions that focus on cognitive, emotional, behavioral, and social needs of individuals, groups, and families. These services

many times include helping individuals develop personal and social skills to prevent and address problems, facilitate positive learning and health behavior, and enhance health development (Allensworth & Kolbe, 1987).

*CRHSSD Health Department Partners* – The CRHSSD has five partners that aid in CATCH implementation and evaluation. Partners include: Egyptian Health Department, Health Resources and Services Administration, Jackson County Health Department, Southern Illinois Healthcare, and Southern Seven Health Department.

*CSHP infrastructure* – A framework of policies, financial, human resources, organizational structures, communication channels, community linkages that aid in establishing and sustaining programs (IOM, 1997).

*Employee commitment* – a psychological state, or mind-set, that increases the likelihood an employee will maintain membership in an organization (Herscovitch & Meyer, 2002).

*Family and community involvement* – Partnership among schools, families, community groups, and individuals are needed to coordinate and advocate for development of children, youth, and their families (Allensworth & Kolbe, 1987).

*Health promotion staff* – Assessment, education, and fitness activities to aid school faculty and staff who serve as role models for students (Allensworth & Kolbe, 1987).

*Healthy school environment* – Includes psychological climate and physical surrounding of the school which should include a safe, healthy, and supportive psychosocial environment that fosters learning (Allensworth & Kolbe, 1987).

*Management support* - Hierarchical support and belief in change is described as management support (Holt et al., 2007). Management support is an important process with change. As noted by Fetro (1998) & Lohrmann (2007), systems of support are crucial for

successful change. Armenakis et al (1993) notes the importance of management support as managers create circumstances that allow change to take place. School employees have no reason to engage in change if their leaders are reluctant to support change (Armekakis, Harris, & Mossholder, 1993; Armenakis & Harris, 2002; Holt et al., 2007).

*Normative commitment* - Others who remain in an organization out of obligation, such as teachers staying for retirement or benefits will do likewise if it is a part of their daily schedule or incentives are included (*normative* commitment) (Meyer & Allen, 1991).

*Nutritional Services* – This service provides affordable and appealing meals; nutrition education; and an environment that fosters healthy behaviors (Allensworth & Kolbe, 1987).

*Obesity* – is a term used to describe body weight that is much greater ($\geq$ 30 kg/m2) than what is considered healthy using the body mass index (BMI).

*Organizational Readiness* – refers to organizational members' change commitment and change efficacy to implement organizational change (Weiner, 2009).

*Overweight* – is a term used to describe body weight that is much greater ($\geq$ 25-30kg/m2) than what is considered healthy using the body mass index (BMI).

*Personal valence* - Personal valence refers to self-interest (Armenakis & Haris, 2002; Holt et al. 2007). Personal valence refers to whether or not the individual believes that change is personally beneficial (Armenakis & Harris, 2002). Personal valence will be between individuals but refers to what is important to him or her (Armenakis & Harris, 2002).

*Physical education* – Planned, sequential instruction of lifelong physical activity skills, motor performance skills, and physical fitness to enhance mental, social, and emotional abilities (Allensworth & Kolbe, 1987).

*Physical education teacher* – To be included in this study physical education teachers must be employees of CATCH trained schools.

*School administrator* – For this study, only principals were included in this study.

*School health services* – Preventative services through health promotion, interventions, case findings, emergency care, and management of acute and chronic health conditions for students, staff, and faculty (Allensworth & Kolbe, 1987).

## Summary

Obesity is rapidly increasing and becoming a major health concern for people in the United States and contributes an estimate of 112,00 deaths each year (Flegal, K., Graubard, B., Williamson, D., & Gail, M., 2005). Parents, teachers, school administration, and community members have a responsibility to address this problem and help slow the rapidly increasing obesity epidemic. Benefits of having a healthy young generation far outweigh the not putting effort into prevention. Components of CATCH framework strive to ensure a collective partnership to work together to help foster the health of children. CATCH is an effective way to address an ongoing problem while promoting healthy lifestyles for and serve to be feasibly implemented (Crawley, 2010). Implemented takes a lot of collaboration between the school, student, and family however, it is hypothesized that diffusion is limited and schools neglect CATCH lessons and activities due to organizational constructs. This study examined organizational readiness, employee commitment, and leadership as constructs that contribute to diffusion of CATCH. The primary purpose of this study is to describe and explain why schools in the same area and receive the same CATCH training still results in different implementation practices.

# CHAPTER II

# REVIEW OF LITERATURE

In this chapter the researcher reviews the literature relevant to childhood obesity in southern Illinois, coordinated school health programs, CATCH, advantages of implementing CATCH, defining the relevance CATCH diffusion associated with organizational readiness, employee commitment, leadership, and implementation barriers is reviewed.

## PURPOSE OF THE STUDY

The primary purpose of this study is to describe and explain why schools in the same area that receive the same CATCH training result in different implementation practices. It is hypothesized that organizational readiness, employee commitment, leadership, and implementation barriers have a significant effect on implementation practices. This study examined how school (organizational) readiness to adopt an education innovation (CATCH), employee commitment, school leadership, and associated implementation barriers that prevent diffusion of CATCH in southern Illinois schools.

This study is a retrospective evaluation of the Coordinated Approach To Child Health (CATCH) coordinated school health program (CITE). CATCH focuses on physical activity and nutrition to address the national epidemic of childhood obesity. An abundant amount of research has been conducted concerning CATCH but no data exists that represents the individuals implementing the program. This study examines organizational readiness, commitment to change, leadership, and implementation barriers and their influence on the diffusion of CATCH.

### Childhood Obesity

Obesity can be considered a “process” because it is not the result of a single behavior but the combination of multiple behaviors over a period of time. Since 1980, the percentage of

overweight or obese children ages 2-5 has risen from 5% to 10.4%, children ages 6-11 went from 6.5% to 19.6%, and adolescents aged 12-19 went from 5.0% to 18.1% (CDC, 2012). It is noted that being overweight or obese as a child can lead to many problems as an adult (CDC, 2012; Flegal, Graubard, Williamson, & Gail, 2005). Some severe problems can contribute and lead to future problems that are not acquired until adulthood (Flegal, et al., 2005). The delayed response to poor health decisions is based on habitual eating and physical activity inadequacies. In 2009, the Illinois Department of Public Health administered the Behavioral Risk Factor Surveillance Survey. It revealed that 55.4% of people who lived in Jackson County Illinois were overweight or obese, and 65.3% of people who lived in Union County Illinois, an adjacent county were overweight or obese (CDC, 2011). The statistics reported document the obesity problem in southern Illinois. This statistic also shows that obesity is not a foreign epidemic to which southern Illinois is not susceptible.

Obesity is a complex problem that will take a comprehensive approach to solve. Recently, this type of approach was outlined in *The Surgeon General's Vision for a Healthy and Fit Nation* 2010 and the 2010 report of the White House Task Force on Childhood Obesity (U.S. Department of Health and Human Services, 2010). These reports highlight the need to 1) address both nutrition and physical activity, 2) work across multiple settings (e.g., medical-care sites, worksites, and communities) and multiple sectors (e.g., industry and government), and 3) change individual behaviors as well as environments and policies that affect those behaviors (CDC's Division of Adolescent & School Health, 2011). Between the ages of 5 to 18 children/teens spend up to 6 hours a day at school for up to 13 years (CDC's Division of Adolescent & School Health, 2011). During those years teachers are in direct contact with 95% of all young children in the United States. In addition, the 13 years a child attends school, a

child's develops social, psychological, physical, and intellectual states. As stated previously, a child's health is strongly linked to academic performance and in return academic performance is strongly linked to a child's health. Childhood obesity has become a major health concern for people in the United States due to an estimated of 112,000 American obesity deaths each year (Flegal, Graubard, Williamson, & Gail, 2005). Statistics indicates that current trends of childhood obesity have drastically increased in the past decade and could continue to rise (Flegal, Carroll, Ogden, & Curtin, 2010).

## School Environment

A healthy school building can contribute and enhance a student's learning experience (Kolbe, 2002). In a study by Haapasalo, Valimaa, and Kannas (2010), data were collected that looked at attitudes of students concerning their school. Many students had very positive attitudes towards their school. However, a significant portion of students reported negative attitudes in reference toward school engagement and school strain (Haapasalo et al., 2010). Negative attitudes towards schools can influence the way a student learns and ultimately limit his/her education. Kolbe (2002) described that a healthy school environment can help foster a healthy student.

With the effects of No Child Left Behind (NCLB) still in the working phase of the United States education system, it is easy to conclude that schools have newly defined roles and responsibilities. School strains come not only from test scores, but also in the form of school funding and job security. NCLB guidelines have placed additional roles and responsibilities on not only the educational employees but the school environment. Allensworth and Kolbe (1987) define a healthy school environment to be one that "includes the psychological climate and physical surrounding in which students and school personnel are expected to work" (p.411). A

healthy school is one that makes children feel safe and is conducive to a positive learning experience. The overall goal is for a school to have an environment where all students are healthy, safe, well educated, and happy (Shepardson, 1994). The job of achieving these aspects is not easy. Student achievement of education is dictated by state school requirements, while the school environment is regulated by school districts.

A healthy school environment is vital for optimal student health. When students are not healthy, they do not learn as well as if they were healthy (CITE). Therefore, the environment of a school can impact educational outcomes (Kelly, 1981). The school environment includes the physical school constructs as well as the school curriculum. A healthy school also includes properties of educational instruction (Kolbe, 2002; Kelly, 1981). Educational instruction is based on the basic needs of individuals to be successful post education. The school environment affects a child's attitude towards school as well as the magnitude of learning.

## Academics and Health

Schools are considered a house of learning and education are the building blocks for an individual's future (CITE). There is a strong relationship between a child's health and their academic performance (Vernez, Krop, & Rydell, 1999). This link predicts that if a child is healthy then he/she will have enhanced academic performance (Vernez et al., 1999). Children learn better if they are healthy (Vernez et al., 1999). A healthy child ensures that their body is properly working. Children are not adequately prepared to learn if their health status is neglected or ignored. Dunkle and Nash (1991) suggested that factors, such as hunger, physical and emotional abuse and chronic illness can lead to poor academic performance. In addition, Vernez, Krop, and Rydell (1999) suggested that academic success is an excellent indicator for a child's overall well-being and a predictor of adult health. In addition, risky health behaviors like

violence are linked to poor academic performance (Carlson et al., 2008, Srabstein, & Piazza, 2008). This link further illustrates negative effects that high risk behaviors have on academic performance as well as indirectly indicating the importance of a child's health, school, and the school environment. These links outline the case the importance of the health of children and its effect on school performance. Furthermore, they make it easy to conclude that a healthy child is a better prepared student. Health should be an important aspect of a school's mission. Without healthy students, it is difficult for a school to obtain their primary goal of providing an optimal education.

## Coordinated School Health Programs

To address health concerns for children, such as childhood obesity Allensworth and Kolbe (1987) developed an eight component model referred to as the Coordinated School Health Program (CSHP) framework. The framework provides a systematic way to organize programs and address specific components that contribute to health. They are (a) health education, (b) physical education, (c) health services, (d) nutritional services, (e) counseling, psychological, and social services, (f) health and safe school environments, (g) health promotion for staff, and (h) and family and community involvement.

### *Health Education*

Health education gives children the tools necessary to make healthy decisions, which are not limited to, but include knowledge, attitudes, and skills. These tools aid in achieving health literacy, promoting health behavior change, and health advocacy. Coordinated school health education includes classroom curriculum for students in pre-K through 12$^{th}$ grade (Allensworth & Kolbe, 1987).

### *Physical Education*

Physical education provides children a base of skills and knowledge of how to incorporate physical activity along with the long term benefits. Physical education is offered from pre-K through 12th grade and serves as sequential steps of obtaining physical fitness through various activities (Allensworth & Kolbe, 1987).

*Health Services*

Services are provided to students to protect and promote health. Health services provide instant access to health care and a creditable resource for students and school officials (Allensworth & Kolbe, 1987).

*Nutrition Services*

Nutrition services offer an outlet to obtain nutritious and appealing meals that meet the nutritional needs of students. School nutrition meets the standards and guidelines of the U.S. Dietary Guidelines for Americans. Nutrition services also serve as an information instant access center where nutritional questions and myths can be answered (Allensworth & Kolbe, 1987).

*Counseling, Psychological, and Social Services*

These services provide students with mental, emotional, and social health support. Support can include individual as well as group mentoring sessions, interventions, and referrals. Counselors and psychologists aid students and foster the health of students as well as the health of the school environment (Allensworth & Kolbe, 1987).

*Healthy and Safe School Environment*

The psychosocial environment includes the physical, social, and emotional conditions that affect the well being of the students. This can include the physical environment of the school building, the common areas on school grounds, and the area that surrounds the school (Allensworth & Kolbe, 1987).

*Health Promotion for Staff*

This includes opportunities for school staff to improve their health through assessments, health education, and various fitness activities. The health of staff members will be encouraged with the same mission as for child health (Allensworth & Kolbe, 1987).

*Family and Community Involvement*

All three (school, parent, and community) components actively work together to enhance the health of students through health advisory councils, coalitions, and school health support systems (Allensworth & Kolbe, 1987).

The CSHPs serves as a framework for school health programs to follow to effectively address child health. However, only a limited number of programs include every component of the framework because of the extensive services. For example, many rural and small school districts do not have the means to have a health promotion staff or social and health services. CSHPs are great solutions for schools that have no financial restraints and bottomless resources; however, many schools do not have this luxury (Linn, 2002). As CSHPs may be the best framework to address child health, full 8-component CSHPs may not be fully feasible to implement in southern Illinois.

## CATCH

Coordinated Approach To Child Health (CATCH) is an example of a program that does not have all eight components of the CSHP framework, but has a specific framework and components that focus on physical activity and nutrition (CATCH, 2012; Osganian, Parcel, & Stone, 2003). CATCH is a coordinated school health program designed to promote physical activity, healthy food choices, and tobacco use for children in elementary and middle school (Osganian et al., 2003).

CATCH, as we know it today, was previously the Child and Adolescent Trial for Cardiovascular Health (also CATCH) which included a social-psychological model associated with risky health behaviors (Luepker, 1996; Osganian et al., 2003). Through the 1970s and 80s CATCH was used to demonstrate the effectiveness of school health education to motivate healthy behaviors (Luepker,1996). Mid-1990's the original CATCH program proved to be successful and change dietary behaviors and physical activity trends (Luepker, 1996).

CATCH was first piloted in a 3-year phase beginning in the fall 1991 to spring 1994 (Osganian et al., 2003). Twenty-four public elementary schools were recruited, one school in each study site which included: San Diego, California; New Orleans, Louisiana; Minneapolis, Minnesota; and Houston, Texas (Osganian et al., 2003). Over 5,000 students participated in the study. CATCH proved to be effective in lowering fat content of school lunches, increase moderate-to-vigorous physical activity in PE, and improve eating and physical activity behaviors (Osganian et al., 2003). Since 1989, CATCH has been researched and had publications concerning impact and summative evaluations in over 100 peer reviewed articles explaining benefits of using the CATCH curriculum within school districts (Luepker et al. 2011).

As the public health focus shifted from cardiovascular health to obesity, diabetes, chronic diseases, the CATCH acronym shifted to represent Coordinated Approach To Child Health (CATCH, 2012; Osganian et al., 2003). The goal of CATCH is to positively influence children's behaviors and reduce or eliminate health risk factors and high risk behaviors (CATCH, 2012). CATCH is a multi-facet fitness package that addresses the uprising epidemic of obesity (CATCH, 2012). There are many factors that contribute to one becoming overweight and obese but the largest denominators are physical inactivity and nutrition. CATCH focuses on physical activity and nutrition for children in pre-kindergarten through 8$^{th}$ grade (CATCH, 2012). In past

decades research has shown current trends of childhood obesity has tripled and suggest the trend could continue to rise (Flegal et al., 2010).

The CATCH program is a mulit-component health package that focuses on physical activity and nutrition and composed of four components that include: 1.) Classroom Curricula, 2.) Food Service Modifications, 3.) Physical Education, and 4.) Family Involvement. CATCH components were designed to collaborate as a CSHP to support the Center for Disease Control and Prevention (CDC) Coordinated School Health Model.

*Classroom Curricula*

The classroom curricula component, *Go For Health*, includes lessons and activities for students in kindergarten through 5$^{th}$ grade (CATCH, 2012). Each lesson and activity emphasizes the importance of physical activity and nutrition. *Go For Health* seeks to identify, practice, and adopt physical activity and nutritional habits that promote health through environmental and behavioral factors. *Go For Health* teaches students to make healthful food selections and identify physical activities that can be performed outside school during throughout the day (CATCH, 2012).

*Go For Health* is a structured curricula that teachers can implement with little preparation or additional materials. Each lesson includes detailed implementation instruction and procedures. In addition, *Go For Health* lessons can be taught alone; therefore, teachers do not have to plan additional lessons to include CATCH. However, CATCH lessons can supplement existing material, such as language arts, math or other health lessons (CATCH, 2012). *Go For Health,* classroom lessons support both the U.S. National Health Education Standards and the Canadian Quality School Health model (CATCH, 2012).

The CATCH curriculum uses all three recommendations of *The Surgeon General's*

*Vision for a Healthy and Fit Nation Report* as shown in one of the first major studies done on CATCH (Luepker et al., 2011). This study showed benefits of the CATCH curriculum which addressed modifications in physical activity and nutrition curricula, policy implementation to create an environment of non-tobacco use, and home-based program implementation to involve the family (Luepker et al., 2011).

*Physical Education*

CATCH PE includes activities that engage and promote physical activity (CATCH, 2012). CATCH PE includes activities that are age-specific from kindergarten through 8th grade (CATCH, 2012). CATCH PE boxes are categorized for students in kindergarten to 2nd grade, 3rd grade to 5th grade, and 6th grade to 8th grade. Each activity is non-elimination activities which motivates participation and inclusion. CATCH PE emphasizes fitness components that are associated with moderate to vigorous physical activity levels. CATCH PE focuses on educating students about physical activity but also teaching how to measure and evaluate personal physical activity levels.

The CATCH PE kit comes with guidelines, equipment lists, space requirements, and activity instructions for implementation. Each CATCH PE kit includes a box that has games listed with color coded tabbed sections for activity searches. Activities are age-specific and include activities that focus on cool-downs, fitness, cardio efficiency, aerobic games, muscular strength, endurance, and flexibility. Hundreds of games are available for PE teachers to implement. Equipment packages are available through Flag House, however many activities require the same types of equipment that many PE teachers already have.

*Food Service Modifications*

CATCH *Eat SMART* provides students with classroom nutrition reinforcement. *Eat*

*SMART* uses creative tactic to reinforce health while children eat at school. *Eat SMART*, promotes healthy eating and nutritional messaging (CATCH, 2012; McCullum, Gomez, Barroso, Hoelscher, Ward, & Kelder, 2006). *Eat SMART* teaches students how to plan meals and identify types of foods that are healthy to consume and those that are not. Lastly, cafeteria reinforcements include food portion modifications and not providing children the means to overeat.

*Eat Smart* requires cafeteria supervisors to do more work as more food preparation time is needed. Research shows that cafeteria supervisors agree that CATCH *Eat Smart* program was beneficial but did require additional preparation time (McCullum et al., 2006). Additional work time results in more food service training. Additional work includes trimming fat and skin from meat, whipping butter before using it in recipes, adding egg whites rather than whole eggs when preparing grains, breaks, and desserts, and adding peas and beans to entrees. More work is required to meet the demands of *Eat Smart* food; however, food is significantly healthier.

*Eat Smart* uses a simple way for cafeteria supervisors, teachers, and students to categorize foods as being GO, SLOW, or WHOA. GO foods describe things that can be eaten daily, low in fat, unprocessed, and have no added sugar (CATCH, 2012; McCullum, Hoelscher, Eagan, Ward, Kelder, & Barroso, 2004). SLOW describes foods that are processed, have added sugar, fat, or sugar (CATCH, 2012; McCullum, 2004). WHOA foods have the highest fat and sugar content and should be identified as foods that students should try to eat the least amount of. GO, SLOW, and WHOA are ways that students can categorize foods and monitor how much of certain food should be consumed. The purpose of *Eat SMART* is for students to be able to identify and monitor foods for meal planning (CATCH, 2012).

The role of CATCH *Eat Smart* component has been influenced by the National School Lunch Program (NSLP). The NSLP is national criteria that schools across the United States are

mandated to implement to enhance diet and health of children to help slow the childhood obesity trend (Department of Agriculture, 2012). The NSLP was mandated for immediate inclusion on July 1, 2012 (Department of Agriculture, 2012). The Richard B. Russell National School Lunch Act requires school meals to reflect the latest dietary guidelines for Americans and the NSLP aligns with the US Dietary guidelines. The NSLP was created as a preventative measure to fight the increasing obesity trends much like CATCH. The NSLP is based on providing dietary guidelines and planned lunches for students that include food with decreased calories, fat, and increased fruit and vegetable consumption (Department of Agriculture, 2012). As CATCH and the NSLP are very similar, CATCH has additional tactics to address childhood obesity that are unique aspects to its program.

The NSLP is very detailed concerning dietary requirements and NSLP officials understand that program implementation has to be phased in because of its dense criteria. The goal is for schools to start immediately phasing in the new NSLP guidelines over the next year. Monetary incentives are used to encourage schools to fully adopt the new NSLP but the majority of schools are choosing to slowly phase the guidelines into their kitchen. CATCH is voluntarily implemented where the NSLP is a federal mandated policy therefore; many schools in southern Illinois are obligated by federal policy to focus on transitioning to the NSLP. The NSLP guidelines are very similar to the CATCH guidelines such as serving food that is low in fat and increased availability of fruits and vegetables (Department of Agriculture, 2012). However, the major difference is the NSLP offers planned lunches based on age appropriate portion size to meet the 2010 Dietary Guidelines (Dietary Guidelines Advisory Committee, 2010). The dietary and nutritional recommendations between the NSLP and CATCH are very similar and overlap but federal policy trumps a voluntary school health recommendations. Schools in southern

Illinois are both phasing in the NSLP as well as implementing activities of the CATCH *Eat Smart* curriculum. CATCH *Eat Smart* activities compliment the NSLP.

CATCH *Eat Smart* cafeteria curriculum offers very unique activities and aspects that are not included in the NSLP. CATCH focuses on the entire cafeteria environment which includes the food, service, reinforcement visuals (posters), and teaching moments while the NSLP primarily focuses on dietary and nutritional guidelines (CATCH, 2012). The overlap between CATCH and NSLP makes it difficult to quantify whether dietary and nutritional practices by cafeteria supervisors are a result of the NSLP or CATCH. Unique CATCH *Eat Smart* program activities include utilizing the GO, SLOW, and WHOA to categorize foods while serving, providing nutritional facts to students of food being served, have CATCH nutrition posters hanging in the cafeteria, provide cafeteria tours to students, allow students to do taste testing of new foods, teach students how to prepare foods, emphasize meal planning, and purchase food from local vendors.

*Family Involvement*

CATCH aims to educate children with the intent that children can and will influence their family. CATCH family nights are provided to educate parents and provide a resource for health information. In addition to family nights, certain lessons and activities that are included in the CATCH *Go For Health* classroom curricula include the involvement of family members. Family involvement is a vital component for child behavior change and CATCH focuses on using a child's family to reinforce tactics from *Go For Health,* CATCH PE, and *Eat SMART*.

School health programs are examples of efficient ways to reduce or prevent risk behaviors and health problems with students (Kolbe, 2002). It is suggested school health programs and policies will aid in closing a gap between health education and children by

enhancing student health (Institute of Medicine, 1997).CATCH is a systematic approach that teaches health education in schools and proves to be a successful means of health information and knowledge when implemented appropriately (Luepker et al. 2011). Taking care of one's body is just as important as the core curriculum classes and should be placed as high priority.

Establishing healthy habits in children can help prevent many chronic health problems later in life attributable to unhealthy eating, sedentary lifestyle, and overweight. For this reason, many public health professionals are interested in working with school systems to reach children in school settings (Franks et al, 2007). With that being noted, children are accounted to be at school for a minimal of 6 hours a day across the United States. Coordinated health programs are created to meet the health needs of a child along with English, history, and science classes. Due to limited amount of funding and time restraints, many schools across the nation are handcuffed in the amount of attention they are able to give towards personal health, specifically obesity and preventative measures (Valli & Buese, 2007; Turner, 2001). As much research has been conducted that describes effectiveness of physical activity and nutrition interventions, more "real-world" research is lacking and needed to make more of a health impact (Owen, Glanz, Sallis, & Kelder, 2006).

Studies related to CATCH impact and implementation show the cost-effectiveness of CATCH, benefits from implementing, how CATCH implementation can address state mandates for health instruction, benefits of implementing CATCH over multiple years, importance of adoption and institutionalization, and how long term implementation can impact the whole community (Brown et al., 2007; Crawley, 2010; Coleman et al 2003; Franks et al., 2007, Heath & Coleman, 2003; Hoelscher et al. 2004; Johnson et al., 2003; Kelder et al, 2003; Lytle et al., 2003; Parcel et al., 2003; & Sharma, 2011).

## CATCH onto Health

The Center for Rural Health and Social Service Development at Southern Illinois University Carbondale has been the grant recipient for the Delta States Rural Network Development Grant Program since 2001 (CATCH onto Health, 2011). The purpose of the grant is to meet the needs of local health care and address health disparities with innovative projects and activities (CATCH onto Health, 2011). Funding for these projects come from Health Resources and Services Administration (HRSA). One of the many projects this grant supports is the implementation of CATCH in southern Illinois. CATCH is designed for grades kindergarten through 8th grade however, for the purposes of this grant CATCH implementation specifically focuses on elementary schools. The CATCH curriculum does not have a classroom curriculum for grades 6th – 8th but does have PE games. If middle schools in southern Illinois would like CATCH PE games, they are provided upon request.

The CRHSSD utilizes partnerships with Southern Illinois Healthcare (SIH), Southern Seven Health Department (S7HD), and Egyptian Health Department (EHD). The teams of partners, along with the CRHSSD make up the CATCH onto Health consortium. CATCH onto Health is a label given to the CRHSSD team. Partners receive stipends for CATCH involvement and have responsibilities. Each partner is required to host "family nights" where food, health education, and games are provided for family fun. Family nights are funded with grant money and serve to meet the guidelines in the CATCH family involvement component.

CRHSSD staff and partners serve to community by bringing CATCH into as many schools as possible in southern Illinois. Schools are recruited by the Project Coordinator and trained by CRHSSD staff and partners. Once schools adopt CATCH they receive training, classroom curriculum, and PE equipment. If additional equipment or materials are needed,

CRHSSD will provide them. Training is free to all implementing schools. Specific CRHSSD staff and partners are certified to train schools and training courses are taught throughout the year as schools are recruited. Training courses take an entire day and include school administrators, classroom teachers, physical education teachers, and cafeteria supervisors. It is mandatory for school principals, classroom teachers, physical education teachers, and cafeteria supervisors to attend however, school superintendents rarely attend. This is a result of having an office at different buildings and being in charge of multiple schools however, many times in small rural areas school principals also serve as superintendents. CATCH training includes going through each CATCH component and addressing lessons and activities. Teachers practice going through lessons and everyone participates in CATCH PE games/activities. The cafeteria component of CATCH is addressed in the training course but is also addressed at "School Health Rocks". School Health Rocks is a professional preparation convention which is sponsored by Southern Illinois Healthcare (SIH) which addresses specific food related services that cannot be addressed at the CATCH training course. By the end of the training course all attendees have experienced portions of each of the four CATCH components.

Elementary schools are provided the necessary materials to start implementation for all four components of CATCH using grant funds awarded to the CRHSSD. Each school is given a package that includes, a.) classroom curricula, b.) PE equipment package, and c.) cafeteria booklets, instructions, and posters for reinforcement. Each package includes necessary materials initially essential to implement CATCH. For many schools where resources are scarce, the HRSA grant awarded to CRHSSD allows schools to have an extensive school health program with limited investment. In addition, CRHSSD partners aid CATCH implementation by serving as information resources and substitute CATCH instructors. CRHSSD and partners travel the

southernmost counties of southern Illinois implementing *Go For Health,* CATCH PE, *Eat SMART*, and hosting "CATCH family nights." CRHSSD and partners serve as reinforcements that implementation is feasible and aid with implementation barriers.

CATCH onto Health Consortium Partners

*Egyptian Health Department*

Egyptian Public and Mental Health Department provides human services to the people in Saline, Gallatin, and White counties in southern Illinois. Public health services include home health, nutritional programs, immunizations, family planning, and health education (Egyptian County Health Department, 2012; CATCH onto Health, 2012).

*Jackson County Health Department*

Jackson County Health Department (JCHD) has been serving since 1950. JCHD promotes health, illness prevention, environmental awareness and precautions, and emergency preparedness. JCHD is comprised of six different divisions that collectively work together and include: administration and support services, nursing, family services, environment health, HIV services, and health education (Jackson County Health Department, 2012; CATCH onto Health, 2012).

*Southern Illinois Healthcare*

Southern Illinois Healthcare (SIH) is a not for profit hospital that was created in 1946. The purpose of SIH is to improve the health and quality of life for the residents of southern Illinois. The Community Benefits department (CBD) is the section is delivered through four areas: school, community, faith, and worksites. The CBD assists with CATCH implementation in southern Illinois (Southern Illinois Healthcare, 2012).

*Southern Seven Health Department*

Southern Seven health department serves seven counties that include Alexander, Hardin, Johnson, Massac, Pope, Pulaski, and Union. These seven counties cover over 2000 square miles and cover a larger geographic area than any other health department in the state of Illinois. Within these seven counties include a population of 69,008 people. Since 1930, southern seven has served its communities by providing basic public health services such as drinking water, controlling communicable disease, and aiding in child health (Southern Seven, 2012)

CRHSSD and partners address each of the four systems of support in some capacity described by Lohrmann et al. (1997) and Fetro (1998) which include authorization and funding, personnel and organizational involvement, resources and technical assistance, and communication and linkages. This next section will describe each of the four systems of support and how the CRHSSD team addresses needs. Family Fun Nights are provided by health department partners to meet requirements of CATCH (Family Involvement) and Delta grant. Degree of implementation from health department partners will determine if Family Fun Nights were provided to the students and families of all CATCH trained schools. Each health partner is in charge of specific schools therefore degree of implementation will be determined by the number of Family Fun Nights that were offered for each partner's associated schools and represented as percentages.

*Authorization and Funding*

Perks of the CATCH program are a multi-fitness package that is affordable and more feasible to implement compared to the full 8 component CSHP framework (Crawley, 2010). CATCH is one of the least expensive, effective school health programs available in the United States (Crawley, 2010). In southern Illinois, initial CATCH materials are provided by the CRHSSD therefore, very little monetary expense is required for schools to implement CATCH in

southern Illinois. This allows schools to make a very minimal, if any, monetary investment to implement the CATCH program. CATCH funding in southern Illinois allows school authorization very likely due to minimal implementation expense.

*Personnel and Organizational Involvement*

In southern Illinois, school employees are trained and educated on how to implement CATCH. Addition employees are not required to implement CATCH which eliminates another possible cost. Another bonus includes having additional personnel from the services of CRHSSD and CATCH onto Health consortium partners. As it has been noted that time and resources are major implementation barriers, CRHSSD and partners aid in implementing when needed. This collaborative approach helps schools adopt CATCH and aids in sustaining implementation.

*Resources and Technical Assistance*

Furthermore, additional school programs need to have information resources and support. These types of assistance aid school administrators, classroom teachers, physical education teachers, and cafeteria supervisors while implementing. Resources and technical assistance are addressed by CRHSSD and partners through classroom, gym, and cafeteria assistance, continuing education training courses, and CATCH evaluation.

*Communication and Linkages*

Communication and linkages are identified as each school is directly linked with one of the CRHSSD partners. Partners are in charge of staying in contact with schools through email, phone, observations, teaching a class, and evaluations. Schools are in contact with CRHSSD partners a minimum of four times each school year. CRHSSD partners are in charge of checking on schools and aiding in implementation.

Roles within schools have drastically changed throughout the past two decades. Valli and Buese (2007) conducted a study that examined the roles of school employees over a 4-year period to determine if significant changes were present. Valli and Buese (2007) concluded that the roles of school employees had drastically changed through increased expectations from school districts, parents, and students. It does not matter how great a program is if programs do not get implemented. This next section will discuss how the roles within schools have changed.

## School Employees and their Working Roles

Schools foster a learning environment and many health innovators use schools as a place for preventative health practices (Allensworth & Kolbe, 1987). As noted previously, two important barriers associated with school program implementation are cost and time (Linn et al., 2002; Valli & Buese 2007). Most schools do not have the resources to implement extensive health programs (Linn et al., 2002). Furthermore, fewer teachers have the time to implement an extensive health program due to the increased amount of responsibilities their job requires (Valli & Buese 2007). These two factors make it very difficult for schools to adopt innovative health programs. For this reason, many schools struggle to maintain additional school program implementation (Franks et al. 2007). This creates a problem as schools seem to be a simple solution for school health program implementation but implementation may not be feasible.

The goal of education has not changed, however the roles and responsibilities of educators have drastically changed (Valli & Buese, 2007). A central question of debate includes: what is important for children to know to be successful and how do we know that schools are accomplishing this task? Due to *No Child Left Behind* (NCLB) in the United States education system, it is easy to conclude that schools have newly defined roles and responsibilities (Linn et al., 2002). School strains come not only from standardized test scores but also in the form of

school funding and job security. National guidelines and requirements place additional weight on the shoulders of educational employees. Increased responsibilities make it difficult for employees to adopt additional school health programs such as CATCH even if employees think it is beneficial for students (Korkmaz, 2007).

## The Students' Role

The common student is faced with problems today that are different compared to students thirty years ago (Korkmaz, 2007). Students can come to school unprepared to learn due to problems that they face in their communities and home (Korkmaz, 2007). Korkmaz (2007) performed a study focusing on the perceptions and opinions of teachers concerning the roles of parents, schools, and teachers concerning education enhancement. This study (Korkmaz, 2007) identified specific characteristics that teachers felt were vital for student success. Parents should be loving, respectful, and caring about the needs of their children and take responsibility of their child's education (Korkmaz, 2007). This includes being involved in their child's educational process by providing a good place to study, facilitate a learning environment at home, and not putting an immense amount of pressure on their child.

Students need their school to be able to facilitate a positive learning environment which includes having adequate materials. In addition, schools should have good communication with parents and students educational progress while enforcing social rules and monitor students' behaviors (Korkmaz, 2007). Lastly, teachers should know, respect, and care for their students by being alert about individual differences, motivate student success and serve as a positive role model (Korkmaz, 2007).

These components illustrated by Korkmaz (2007) are components that have previously been identified and described by Lohrmann et al. (1997). CATCH implementation is comprised

of school administrators, classroom teachers, physical education teachers, cafeteria supervisors (food service), students, and their families. CATCH is a program that enlists key school employees that could be influential in a student's health behaviors. It is clear to see how components described by Korkmaz (2007) are very similar to the components of CATCH and the roles and duties of the CATCH onto Health team in southern Illinois.

## The Teachers' "Role"

Valli and Buese (2007) present three terms: role increase, role intensification, and role expansion. As education sophistication has evolved the number of tasks that a teacher is assumed to perform increases. Valli and Buese (2007) revealed that throughout their study teachers' work load increased, intensified, and expanded due to federal, state, and local education policies. Teachers have to learn new policies directed by federal, state, and local policies. Increased workload really discourages teachers in the classroom and outside the classroom. Role intensification is a result of teachers having to work under greater pressures to comply with federal, state, and local policies such as NCLB (Valli & Buese, 2007). Role intensification is a result of abiding to new policies and federal deadlines (Valli & Buese, 2007). These drastic workload changes have significant effects on teachers that could ultimately affect student success and performance. Under conditions of role increases and intensification teachers are dominated by external plans. Both role increase and role intensification both contributed to role expansion. These three terms are a result of the next section.

Over the past decade many notions have been made concerning the roles of teachers. Teachers are the focal point to a child's learning and fundamental development. Valli and Buese (2007) conducted a study that examined the role of teachers over a 4 year period to determine if significant changes were present. Valli and Buese (2007) concluded that roles of teachers' had

drastically changed through increased expectations, in four main areas: instructional, institutional, collaborative, and learning. This study (Valli & Buese, 2007) revealed that professional changes resulted in negative consequences on teachers' relationships with students, teaching strategies, and professional well-being. CATCH is not mandated to be implemented in school. CATCH implementation is many times voluntary. Regardless the need of health education, many administrators and teachers choose not to implement CATCH because of their role expansion.

Much debate has surfaced around the roles and responsibilities that teachers should be held accountable for. Teacher "roles" are referred to as a multi-dimensional construct that includes a different set of organizational positions (Turner, 2001). Understandably, teachers are expected to acclimate and change educational tactics in order to be effective in the classroom. Many times teachers take on more positional roles within the school and overload themselves (Turner, 2001). However, changing expectations for teacher roles and responsibilities has led to high-stakes accountability due to *No Child Left Behind* Act of 2001 (NCLB) (Linn et al., 2002; Valli & Buese, 2007). The NCLB Act is considered by many as one of the most significant federal policy initiative of its kind (Coble & Azordegan, 2004). The purpose of NCLB was to systematically evaluate if children met educational standards of the state they reside (Coble & Azordegan, 2004). NCLB not only includes evaluation for children but most importantly the teachers. Determined state standards served as a framework for teachers. Teachers and administrators are evaluated by their performance which places additional pressure on personal performance results rather than student academic progression. The NCLB Act is one factor that increased pressure on schools through administrators and teacher performance and affects teacher professional well being (Linn et al., 2002).

A classroom is a teacher's sanctuary of instruction. Additional pressures on teaching methods have made classrooms hierarchically controlled (Valli & Buese, 2007). Teachers are stripped of the dynamic teaching approach by being monitored through their instructional role. In the short time of the NCLB Act many teachers have lost the flexibility of teaching. The inclusion of new classroom programs to help schools perform successfully on standardized state tests resulted in teachers having to relearn and change current curriculum to meet the demands of the state. Additional pressures of controlled classrooms have influenced a teachers' role by placing a negative stigma on all additional classroom programs such as CATCH. Experiences with past mandated classroom programs have influenced teachers and their attitudes towards implementing voluntary classroom programs. Many schools across the nation receive funds to enhance the academic experience for children. When funds are presented, many schools apt to adopting programs but hesitate due to fear or teacher overload. For this reason, many administrators and teachers are hesitant to implement additional school health programs.

## The Administrator's Role

As the roles and responsibilities of students and teachers have changed school administration has had to adjust. School administration refers to the school principals and superintendents that oversee the responsibilities of school functions. School administration's role has changed due to the *NCLB* ACT, lack of time, and financial restraints.

School administrators much like teachers are held responsible and accountable by *NCLB* (Pederson, 2007; Valli & Buese, 2007). School evaluation is a reflection of teacher performance therefore, school administers are actively involved in classroom management to help enhance school results (Linn et al., 2002; Pederson, 2007). State funding is very much dependent on school output (Pederson, 2007). School output includes student and teacher performance

therefore, performance is vital for continuous funding. As a result many school administrators place a high hierarchical priority on state testing (Pederson, 2007).

It is noted that one of the biggest concerns that school administrators and teachers have includes lack of time (Linn et al., 2002). As a result, many administrators are hesitant to ask teachers to take on additional responsibility of implementing school health programs. If school administrators feel their teachers are not supplied with enough time during the day to implement, there is a small chance that the implementation of external programs will occur. External programs such as CATCH do not offer additional pay for teachers. Incentives in southern Illinois include equipment discounts and implementation initiatives which include training courses and start up kits (CATCH onto Health, 2011).

Due to the economic climate extra money is within the education system is sacred and scarce. School administrators must provide sound justification for the spending of additional monies for external purposes. Southern Illinois is a special circumstance due to the HRSA grant funding that is used on CATCH implementation. The HRSA grant eliminates many problems that school administrators face when making sense of CATCH adoption. The CRHSSD and partners provide assistance for school administrators and teachers. The CRHSSD and partners serve to make CATCH implementation as seamless and simple as possible.

## School Barriers

The roles of school employees have greatly influenced school environments. Changing work roles affects how employees view worksite change. Previously it has been noted how school employees' roles have changed through increased demands from school districts and state or federal requirements (Pederson, 2007; Valli & Buese, 2007). Because of external school demands many schools have a difficult time institutionalizing external programs that are not

required to be implemented (Heath & Cole, 2003; Orlandi, 1986). This section will discuss various barriers that are associated with new program implementation in schools.

Argon, Berends, Ellis, and Gonzalez (2010), note the biggest initial school barrier is funding. Funding for is a necessity for program implementation and vital for program sustainability. As this presents to be a major problem for many schools across the nation, this is not a major problem in southern Illinois concerning CATCH implementation. CATCH materials and training is provided to schools for no cost through the Delta grant received by CRHSSD.

Barriers can come from various different perspectives but are most important to the individuals implementing the program. Time is the biggest barrier that contributes to whether or not a program is implemented (Argon et al., 2010; Linn et al., 2002; Portman, 1993). In addition to time, school employees have to accommodate competing priorities that come from school administration. School administration and teachers can value things different because they come from different perspectives of education (Argon, et al., 2010). School administrators and classroom teachers have an increased responsibility to meet state and federal requirements that absorb the majority of their extra time. Increased responsibility results in additional stress, preparation, and training courses and are all considered barriers (Pederson, 2007). School administrator have to be considerate of their school employee's time therefore, hesitant to implement new and additional programs not to overwork their teachers (Linn et al., 2002; Orlandi, 1986).

Orlandi (1986) conducted a barrier analysis of a worksite innovation program. This study assessed possible barriers that are present in implementing a new program in a new environment (Orlandi, 1986). Orlandi presents a model that explains that program diffusion consists of four different constructs which include: environment, organization, administration, and finally the

individual. Different barriers are associated with each construct but all contribute to implementation difficulties. In order for an innovation to fully diffuse each level must attempt to eliminate possible barriers. Orlandi (1986) describes this elimination of barriers as making a program "fit". Many times programs are presented as a *one size fits all* which is not always the case.

Prior to adoption, a school's mission and focus should be similar to the mission and goals of the program. Being unfamiliar with the program can result in employees feeling lost or confused which are both implementation barriers (Orlandi, 1986). Furthermore, when school administration and teachers are not familiar with the program additional time is spent learning and modifying the program which result in users being less-effective during implementation. Another important barrier includes not having sufficient support (Pederson, 2007; Linn et al., 2003). Support motivates employees to act in a desirable manner. When support is present, users are more efficient implementers (Orlandi, 1986). Orlandi (1986) provides a list of additional program barriers which include: program being hard to explain, difficult to understand, confusion, unprepared for unique situations, providers feel it is only important to implement part of the intervention, and lastly the switch from research intervention to real-world application. The barriers listed by Orlandi (1986) are generic program barriers that were found in a worksite health promotion intervention but can applicable in explaining the diffusion and implementation of CATCH.

Lastly Argon et al. (2010) noted that a significant barrier is gaining the support of key-non-staff stakeholders which includes the students. Perceptions and acceptance by students, faculty, parents, and the community was found to be significant in program implementation (Argon et al., 2010). Program acceptance by school employees serves as an important factor that

can affect whether or not a program is fully adopted. Different barriers are presented to school employees at every level of hierarchy. Many barriers are associated with changing roles and increased responsibilities mentioned earlier in an earlier section of the text. If barriers are not identified and addressed, a problem could become extinct. School health programs are great means to address school health concerns but it is hypothesized that school barriers as mentioned above limit degree of implementation by school employees.

## Problem

Many schools in southern Illinois adopt CATCH but do not implement all of what CATCH has to offer. School may be the only place where children receive health education and if CATCH is partially implemented, children could fail to receive important information. This research study will examine the constructs of organizational (school) readiness, employee commitment, leadership, and implementation barriers and their influence on the Rogers (1983) Diffusion of Innovation.

## Theory

This study will utilize one foundation theory which includes the Diffusion of innovation (Rogers, 2003) and three constructs within theoretical organization which includes, readiness to change (Weiner, 2009), commitment to change (Meyer & Allen, 1991), and leadership. The original CATCH model for change is based on Diffusion of Innovation (Osganian, 2003). Therefore the foundation theory for this study will be the Rogers (2003) Diffusion of Innovation theory and three organizational constructs. Each will contribute significant insight in describing how CATCH (educational innovation) diffuses throughout a school and affects levels of implementation. This study seeks to describe how organizational readiness, employee

commitment, and leadership affect diffusion of CATCH in southern Illinois as well as how and why diffusion is lost in schools.

Everett Rogers published a book that described how new ideas, products, or innovations diffused throughout society (Rogers, 2003). An innovation is a new idea or practice viewed by an individual or social system (Rogers, 2003). The Diffusion of Innovation (Rogers, 2003) describes how an innovation diffuses throughout a society. Rogers explains adoption is a process influenced by certain channels within a social system through communication channels about the innovation (Rogers, 2003). The most recent edition of the theory includes four components that include the innovation, social system, communication channels, and amount of time it takes for diffusion to occur (Rogers, 2003). This study will focus primarily on the social system which includes all boundaries in which the innovation diffuses within (Rogers, 2003). The innovation in this study is CATCH.

This study will look to describe how organizational readiness, employee commitment, leadership, and implementation barriers affect the diffusion of CATCH. The Diffusion of Innovation theory has broadened and expanded over time to include more external factors that are pertinent to this study that could possibly describe diffusion barriers. These variables are often referred to as barrier and include time, resources, prior obligations, and attention. In addition, organizational theory constructs will also be applied to this research study to further explain why school administrators and teachers choose not to implement CATCH.

After an innovation is introduced to society people are faced with making the decision as to whether or not to adopt (Rogers, 2003). Rogers classified people into adoption categories which include innovators; which are the first people to adopt followed by early adopters, early majority adopters, late majority adopters, and lastly laggards which are the last people to adopt

an innovation (Rogers, 1962). In Rogers (2003) most recent edition ($5^{th}$) four main factors are present in affecting diffusion which include the innovation, social system, communication channels, and the amount of time it takes for diffusion to occur. Each of these four components each collectively describes the diffusion of an innovation.

Innovation adoption is associated with five different elements which include: relative advantage, compatibility, complexity, trialability, and observability (Rogers, 2003). Each of these five elements explains perceived attributes of the innovation to the individual or social system (Rogers, 2003). Relative advantage describes how the new innovation is better than the existing practice that it is possibly replacing (Rogers, 2003). Compatibility describes how consistent the new innovation is with the current values or needs of the adopter (Rogers, 2003). Complexity describes the difficulty of adoption and implementation of the new innovation or practice (Rogers, 2003). Trialability is described as to the extent that the innovation can be trialed or experimented prior to adoption (Rogers, 2003). Lastly, the extent to where results of adopting can be viewed by the possible adopter is described as observability (Rogers, 2003). Each of the five factors influence adoption and are described as to how individuals balance the decision making process of adoption. This study will examine perceptions of CATCH by school employees using Rogers' (2003) five elements of innovation adoption as a framework.

The social system includes everything that contributes to adoption in the social structure, social norm, opinion leaders, change agents, and current and past experiences concerning the social system (Rogers, 2003). Each of these different factors affects the magnitude of diffusion. Opinion leaders and change agents are those who have influence on those adopting and have the ability to sway individuals into moving towards adoption. Opinion leaders and change agents in schools could include veteran teachers, principals, or school administrators who other school

employees look up too. In addition to school employees, opinion leaders and change agents come from outside school realm and include parents or community leaders.

In addition to social system, communication channels are equally important for diffusion of any type of innovation (Rogers, 2003). Communication channels include the way information travels from one place to another, including how information is shared (media or newsletter), and individual interaction (Rogers, 2003). Communication channels can either enhance or constrict diffusion. Rogers generalizes that it is equally important that innovation information needs to accurately portray the innovation in a way that the innovator intends. This means CATCH needs to be presented accurately prior implementation. Poor innovation perception can result in individuals or social groups not adopting. If schools employees received information that CATCH was hard to implement and more of a burden from previous implementers then it is likely they would be hesitant to adopt as compared to if communication was positive.

## Innovation Adoption

Following Rogers' (2003) five stage process, the first stage includes gaining knowledge about the innovation. The *knowledge stage* is where information is presented about the innovation and how it works as well as the benefits and consequences about the innovation. Additional knowledge is obtained as an individual learns not only what the innovation is but how the innovation works as well as how the innovation is going to help or aid an individual. This could include the overall advantages of practices. The questions of what, why, when, where, and how related to the innovation are answered in this stage (Rogers, 2003). Characteristics of this stage concerning the innovation (CATCH program) would include the socioeconomic status of the school, previous practice, support or resistance for innovations from school staff, and

communication patterns (Fetro, 1998). The goal of this stage is for the individual to have a better understanding of the innovation and what they (the individual) will obtain by implementing it.

The next stage of the model is the *persuasion stage* which includes the individual forming an either favorable or non favorable concerning the innovation. Perceptions an individual has about an innovation are directly linked to the adoption of the innovation (Fetro, 1998). There are five distinct characteristics that contribute to one adopting an innovation which include: relative advantage, compatibility, complexity, trialability, and observability (Rogers, 1983). This stage can be very difficult if an individual or organization has had poor past experiences. If an innovation fits within the daily regime of an individual and the benefits of the innovation out weight the possible risks of not implementing; individuals are more likely to be persuaded in favor of adopting.

The next stage is the *decision stage*. This stage is where an individual or organization makes the decision to either adopt or reject the innovation. Many times, the innovator will provide demonstrations or trails to try to additionally provoke adoption of their innovation. This stage is a pinnacle point for the existence of the innovation.

The fourth stage is the *implementation stage* which includes the innovation taking on full effect. This stage includes the training of individuals that are going to be involved in implementation. It is also very important that individuals and organizations have support and or technical assistance to ensure proper implementation. This stage can be very difficult if problems or barriers cannot be bridged. This can lead to partial altered implementation.

Finally, the *confirmation stage* is where individuals or organizations confirm the decision concerning implementation of the innovation. This stage answers the question to whether implement was a good decision which directly affects the longevity of the innovation. Good and

bad experiences can last for a long period of time after adoption or rejection of the innovation (Rogers, 1983).

## Education Innovation

"An innovation is an idea, practice, or object that is perceived as new by an individual, or other unit of adoption" (Rogers, 2003). Education innovations are brought to the attention through conferences or professional preparation classes that serve as a way to sell new ideas, practices, possible programs, or products (Fetro, 1998). Education innovations can be very beneficial for students if properly implemented by school staff. However, many factors such as knowledge, attitudes, or personal beliefs can limit and create roadblocks for successful implementation. CATCH is a relatively new when first piloted in 1991-1994. For this reason the CATCH program should be viewed as an educational innovation because it has not been fully adopted.

The decision in which school administers decides whether or not to implement the CATCH program (educational innovation) is a process. If an individual adopts the idea of the innovation early, there is an increased likelihood the individual will adopt the innovation (Rogers, 1983). Rogers (1983) describes the innovation decision as a 5 stage process which includes gaining knowledge, forming an attitude toward the innovation, marking a decision to adopt of reject the innovation, implementing the new idea, and finally confirming the decision about the innovation.

Researchers have been interested in the diffusion of health behaviors such as high blood pressure screening and immunizations (Osganian et al., 2003). Diffusion of Innovations theory has a lot to offer researchers in efforts to promote public health programs especially if the body of evidence can be used for action to enhance implementation. As of late, the diffusion theory

has served as the foundation for numerous health promotion interventions (Green, Gottlieb, & Parcel, 1987; Parcel, Perry, & Taylor, 1990). Multiple CATCH studies have used constructs from Rogers' diffusion framework which include program adoption and dissemination (Hoelscher et al., 2001; Owen et al., 2006). As CATCH was introduced and disseminated across the country, research was then conducted focusing on enhancing implementation practices of the classroom curriculum, PE component, and through process evaluation (Edmundson et al. 1994). CATCH is a school health program that has been heavily researched; however, little research is present that addresses why CATCH is not implemented.

Previous research has primarily focused on implementation practices and results but it has been noted that more "real-world" research is lacking and needed to make more of a health impact (Owen, Glanz, Sallis, & Kelder, 2006). Most of what we know about CATCH implementation is based on diffusion characteristics that influence implementation and based solely on individuals; little is known about how organizational characteristics influence CATCH implementation (Osganian et al., 2003). A recent shift in research interest as occurred from innovation attributes and characteristics towards organizational attributes and characteristics such as organizational climate, administrative support, and resources (Huberman & Miles, 1984; Orlandi, 1986; Osganian et al., 2003). The current research study used Rogers' (2003) five diffusion adoption characteristics to establish perceptions of CATCH along with theoretical organization constructs.

For this study, all the schools that will participate agreed to adopt CATCH. However, it is possible that administrators skip directly to the decision process without acquiring adequate knowledge about the innovation and base their decision off misconceptions that may include myths, negative tales of implementation, or the possible positive effects of program

implementation. In addition, it is not uncommon that school decisions are made without input from school employees. The perception of CATCH from school employees can be skewed depending on their source of information. Rogers (2003) identified and defined five elements which include relative advantage, compatibility, complexity, trialability, and observability as being significant contributors to individual adoption. This study will primarily focus on the five elements of adoption that Rogers (2003) list as factors that influence individual adoption.

## Innovations in School

Health educators understand the need for CSHPs and actively advocate and promote schools to implement programs. Little, if any background information is required by CSHP implementers prior to selecting schools. Schools are recruited, trained, and expected to implement school health programs. During the training seminar, schools are given a great deal of information that is needed for implementation. Many schools in southern Illinois make the decision to implement CATCH without adequate knowledge and minimal persuasion because of minimal financial investment required to implement. Simply because the *knowledge* and *persuasion* stages are minimally emphasized it is important to note that they are equally important in program adoption and implementation because it affects the perception of the innovation. As it is necessary for schools to have adequate information concerning CATCH, it is just as important for CATCH leaders to be able to have information concerning newly recruited schools. This study will focus on the five elements that influence innovation adoption.

Lohrmann et al. (1997) concluded that one of the most important aspects for program implementation was institution readiness. Organization readiness refers to an organization being prepared to take on the responsibilities to change (Weiner, 2009). This means that when schools make the decision to adopt CATCH, they are prepared for all responsibilities that come with

CATCH. In addition, one cannot assume that since a school administrator decided to adopt CATCH that all school employees are committed to the change and implementation. Furthermore, leadership is key for CATCH success and implementation. As it was noted earlier, CATCH is accessible in southern Illinois. It is not unlikely that schools neglect the *persuasion stage* and lack knowledge about the program. This creates implementation problems. These three organizational constructs are closely linked to the Diffusion of Innovation and are hypothesized to have significant influence on the school overall level of CATCH implementation. The next couple of sections will discuss each component in further detail.

## Organizational Readiness

Establishing whether or not an organization is ready to change and implement a program can be an important factor that dictates if a school is able to sustain program implementation (Weiner, 2009). Organizational readiness to change refers to members of an organization's appropriateness, change efficacy, and personal valence (Holt et al., 2007; Weiner, 2008). Weiner (2009) and colleagues have concluded there needs to be a strong emphasis on establishing and analyzing readiness to change because change is difficult; individuals and organizations need to be ready and prepared prior to change. Individual readiness has been heavily researched however organizational readiness is a sector that is limited in research (Weiner, 2009).

Holt et al. (2007) proposed a theoretical framework for readiness to change. Much like Weiner (2008), this theory seeks to explain influencing factors, consequences of potential change, and willingness to support change. Holt et al. (2007) concluded that readiness to change has four dimensions: appropriateness (what is being changed/content and context), management support (social support), self-efficacy (belief in ability to change), and personal valence (What's in it for me?).

### *Appropriateness*

Appropriateness refers to context and content of change (Holt et al., 2007). It is a combination of content and context that dictates employee appropriateness whether they agree that change is needed within the organization (Holt et al., 2007). School employees address the discrepancy between the present state of the organization the desired end state. Childhood obesity is a national epidemic and not new to the health scene. A school's end state includes a CATCH implementation which promotes a healthy school environment and student health behaviors.

### *Management support*

Hierarchical support and belief in change is described as management support (Holt et al., 2007). Management support is an important process with change. As noted by Fetro (1998) & Lohrmann (2007), systems of support are crucial for successful change. Armenakis et al (1993) notes the importance of management support as managers create circumstances that allow change to take place. School employees have no reason to engage in change if their leaders are reluctant to support change (Armekakis, Harris, & Mossholder, 1993; Armenakis & Harris, 2002; Holt et al., 2007).

### *Change efficacy*

Change efficacy refers to an organization's shared beliefs in their collective capabilities to organize a course of action for implementation (Bandura, 1997; Holt et al., 2007). Self-efficacy is important to create readiness to change through individual motivation to change (Armenakis et al., 1993).

### *Personal valence*

Personal valence refers to self-interest (Armenakis & Haris, 2002; Holt et al. 2007). Personal valence refers to whether or not the individual believes that change is personally beneficial (Armenakis & Harris, 2002). Personal valence will be between individuals but refers to what is important to him or her (Armenakis & Harris, 2002).

Possible readiness problems include when organizations take on more responsibilities than they can uphold (Weiner, 2009). As a result many organizations neglect responsibilities associated with programs or tasks that are not mandatory (Weiner, 2009). With constantly changing roles within schools, school health innovators need to make sure that schools have the capacity to implement CATCH prior to implementation. If a school is not ready or prepared to implement CATCH, CATCH diffuses out of a school's priority list.

The four readiness dimensions (appropriateness, management support, self-efficacy, and personal valence) provide a framework for organizational readiness to change. Holt et al. (2007) summarized that the four dimensions interact simultaneously to shape readiness and provide a foundation for either resistance or adoptive behavior. These four dimensions constitute readiness for change (Holt et al., 2007). Organizational readiness influences implementation therefore, will have an effect on diffusion. Before schools implement CATCH they need to be ready for change. Possible organizational changes includes: addition teaching, lessons, materials, finding time to fit lessons or activities into daily schedule, and preparation time. Organizational readiness refers to schools understanding the appropriateness for CATCH, having support from school administrators, and believing that implementation is possible. If an organization is not ready and prepared to implement CATCH, CATCH diffusion can be limited, slowed, or stopped.

## Commitment to Change

Commitment to change is referred as a three-component model of organizational commitment and conceptualized as a psychological state that increases the likelihood an employee will remain in the organization (Meyer & Allen, 1991; Herscovitch & Meyer, 2002). Commitment to change has been viewed as a mindset that blinds individuals to a certain course of action necessary for successful implementation of a change initiative (Herscovitch & Meyer, 2002).

The labels Meyer and Allen (1991) uses to describe commitment to change are *affective* commitment, *continuance* commitment, and *normative* commitment. *Affective* commitment represents the desire to remain within an organization and provide support for change because individuals believe it is beneficial (Herscovitch & Meyer, 2002). *Continuance* commitment represents recognition of perceived costs associated with leaving or not supporting change (Herscovitch & Meyer, 2002). Lastly, *normative* commitment represents perceived obligation to remain and support change within the organization. These three labels describe school administrators', classroom teachers', physical education teachers', and cafeteria supervisors' mindsets and how they perceive the CATCH program and their role associated with implementation.

Commitment is confirmation of innovation adoption and a central component in the model of effective innovation implementation in the workplace connecting employee commitment and organizational change (Klein & Sorra, 1996; Rogers, 2003). Commitment focuses on the relationship between social systems and innovation adoption (Rogers, 2003). These three components (*affective* commitment, *continuance* commitment, and *normative* commitment) represent different mindsets employees experience during organizational change. They describe how committed an individual is to the organization's decision of change. Like

organizational readiness, individual commitment can influence diffusion by a lack in knowledge, commitment to mission by school opinion leader(s), and workplace motivation.

Furthermore, it is not uncommon for individuals remain within an organization when they are not committed to change within an organization. As a result, those uncommitted can have a significant effect on implementation practices (Meyer & Allen, 1991). Meyer and Allen (1991) note that individuals who have a desire to remain in the organization will perform regularly with little extra help (*affective* commitment). Others who remain in an organization out of obligation, such as teachers staying for retirement or benefits will do likewise if it is a part of their daily schedule or incentives are included (*normative* commitment) (Meyer & Allen, 1991). Lastly, when school employees remain at the school to avoid the costs of not being employed will do little more than what is required to remain an employee (*continuance* commitment).

According to Conner and Patterson (1982), "the most prevalent factor contributing to failed change projects is a lack of commitment by the people" (p. 18). Those uncommitted to CATCH implementation could be destructive to implementation. CATCH is a voluntarily school health program and requires additional effort from school employees to implement. Without committed employees, it is difficult for students to reap all the benefits CATCH has to offer. The commitment to change construct has profound connections to diffusion and can aid health educators in assessing tactics to enhance individual commitment and engage school opinion leaders.

## Leadership

Leadership is described social influence that an individual has to enlist support for a common theme (Chemers, 1987). An important aspect of understanding leadership includes understanding a social system hierarchy (Rogers, 2003). Within social systems certain people

have influence on others while others do not (Rogers, 2003). Within the Diffusion of Innovation, Rogers (2003) refers to influential individuals as opinion leaders. Opinion leaders have significant influence on the decisions that individuals have. As opinion leaders are typically described during the *adoption* and *decision stages,* opinion leaders for this section will discuss their involvement after adoption and during implementation. This section of the paper will discuss leadership within school social systems and school culture as well as the effects leadership has on implementation.

Social systems exist in every workplace (O'Brien, Draper, & Murphy, 2008). Leaders can change an organization away from the status quo and explore different alternatives (Joiner, 1987). Leaders can be anyone within the school social system and include principals, classroom teachers, physical education teachers, or cafeteria supervisors (O'Brien et al., 2008). A study by Sahin (2011) looked to describe the effects of leadership on school culture. This study (Sahin, 2011) found when principals execute positive leadership skills, school employees respond positively. This concept can transition into CATCH implementation. School principals are leaders and if they endorse something, teachers and school employees will follow. As the workload, roles, and responsibilities of teachers have transformed over the past decade many teachers feel overwhelmed. Principals can positively influence teachers and cafeteria supervisors and aid CATCH implementation.

In addition, leaders are needed at different organizational levels of the social system (Osganian et al., 2003). Implementation issues are different between school administrators, teachers, and cafeteria supervisors. As principals are leaders, teachers and cafeteria supervisors can also be leaders to ensure CATCH institutionalization (Osganian et al., 2003). Teachers learn from each other and Suhin (2011) concluded that teacher collaboration is one of the most

important factors that influence a positive school culture (Blasé & Blasé, 2004). Collaboration ignites leaders to address issues similar to their implementation tasks. Leaders aid in solving implementation problems, give comfort during hardships, and serve as a resource (Blasé & Blasé, 2004).

Leadership is an important concept for this study because it will assesses the infrastructure of leadership concerning implementation of CATCH. Without leadership diffusion is limited (Rogers, 2003). The Diffusion of Innovation describes opinion leaders as individuals who influence others to adopt an innovation (Rogers, 2003). It is further noted that opinion leaders are vital for program institutionalization (Osganian et al., 2003; Rogers, 2003). When faced with implementation barriers, lack of leadership could result in teachers not implementing. Without implementation, institutionalization cannot occur.

## Implementation Barriers

The Diffusion of Innovation theory has broadened and expanded over time to include more external factors that are pertinent to this study. External factors are referred to as barriers. Barriers are what limit and keep people from performing optimally (Yasar & Neczan, 2010). Program barriers limit program implementation and skew delivery. Skewed program delivery can limit the impact and overall outcome of the intended purpose of a program. The market for program innovations has become extremely competitive due to the increased number of available innovations (Yasar & Neczan, 2010). As a result, many innovators attempt to tailor programs to ensure efficient implementation per protocol. Innovation implementation practices always have barriers. Barriers can sometimes facilitate or motivate implementation practices while others have negative effects on the innovation (Yasar & Neczan, 2010). Barriers include time, resources, prior obligations, and attention. Implementation barriers are present in every work

place. School employee roles and responsibility change could create additional barriers that limit efficient work performance. In addition, implementation barriers can serve as the sole reason why school employees chose not implement CSHPs. If a teacher feels like implementation is going to create more problems (barriers) for activities that are mandatory within the curriculum teachers may choose to refrain from participation. Additional barriers may not be directly affect program implementation but indirectly affect other aspects within the classroom, gym, or cafeteria. As school health programs have been heavily researched, school health program implementation barriers have never been addressed.

CATCH have been proven to be effective but many teachers are choosing not to implement these programs because they already have too much teaching pressure that focuses on testing subjects, do not have health education knowledge or training, and obligations within their school with extracurricular activities (Valli & Buese, 2007).. Many administrators see the overload of pressure on teachers and choose not to participate in implementing programs such as CATCH in order to preserve their teachers from deterioration or burnout (Linn et al., 2002). Implementation barriers not only affect implementers but also affect individuals who fail to receive the intended program, in this case CATCH. This is a major problem that may have greater negative consequences for young students as they are progress through grade school and adulthood. It is hypothesized that in addition to organizational leadership, commitment to change, and leadership; implementation barriers will have a significant influence on the degree of implemenation of CATCH in southern Illinois.

The Diffusion of Innovation theory along with organizational theory constructs of organizational readiness, commitment to change, and leadership will provide conceptual and theoretical framework to this study.

## Evaluation Design

In 1999, the Centers for Disease Control and Prevention (CDC, 1999b) created an evaluation framework to be used for public health programs. The framework was developed by health program professionals, state and local health officials, researchers, and CDC staff. The framework includes six different steps that provide an evaluation foundation. The six different steps include: engaging stakeholders, describing the program, focus the evaluation design, gather credible evidence, justify conclusions, and ensure use and share lessons learned (CDC, 1999b). The current study will utilize each of these steps to evaluate CATCH. Capwell, Butterfoss, and Francisco (2000), summarized six reasons why program evaluation is valued. Program evaluation provides a means to evaluate whether or not program objectives have been met, improve implementation, provide accountability to funders, increase community support, contribute to scientific base, and inform policy decisions (Capwell, et al., 2000).

The purpose of program evaluation is to improve program implementation (Morris & Fitz-Gibbon, 1978). Research and evaluation are two separate disciples. "Evaluation is a process of reflection whereby the value of certain actions in relation to projects, programs, or policies are assessed" (Springett, 2003). There are two types of evaluation; process or formative evaluation and impact and outcome or summative evaluation. This study will utilize process evaluation. Process evaluation is a combination of any form of measurements that are obtained during implementation (Green & Lewis, 1986). Process evaluation seeks to identify and/or predict in process, defects in program design or implementation (Worthen & Sanders, 1987). By assessing program activity and potential procedural barriers program implementers are able to anticipate and rectify unanticipated problems (Worthern & Sanders, 1987). Process evaluation obtains specific information that is related to program implementation that involves the individuals

implementing the program, implementation environment, and perceptions of the program (Worthern & Sanders, 1987).

Furthermore, evaluation is categorized as being retrospective or prospective (Green & Lewis, 1986). Retrospective studies examine the past while prospective studies examine the present. This study will also utilize a retrospective evaluation design that will examine organizational constructs that influence program implementation. Retrospective research is a way to take a look back at events that have already occurred (Hess, 2004). Furthermore, retrospective research allows the investigator to formulate ideas about possible current and future relationships (Hess, 2004). Retrospective research designs have been widely used in medical research (Doll, 2001; Hess, 2004). This technique was most notably used comparing past and current health status to predict and prepare for outcomes in the future. The use of retrospective research design has broadened in scope and much research currently focuses on individual behaviors and practices (Doll, 2001; Hess, 2004). The current research study will examine the practices of school employees of the previous year. Retrospective studies can be used to establish comparison of events that have taken place in the past.

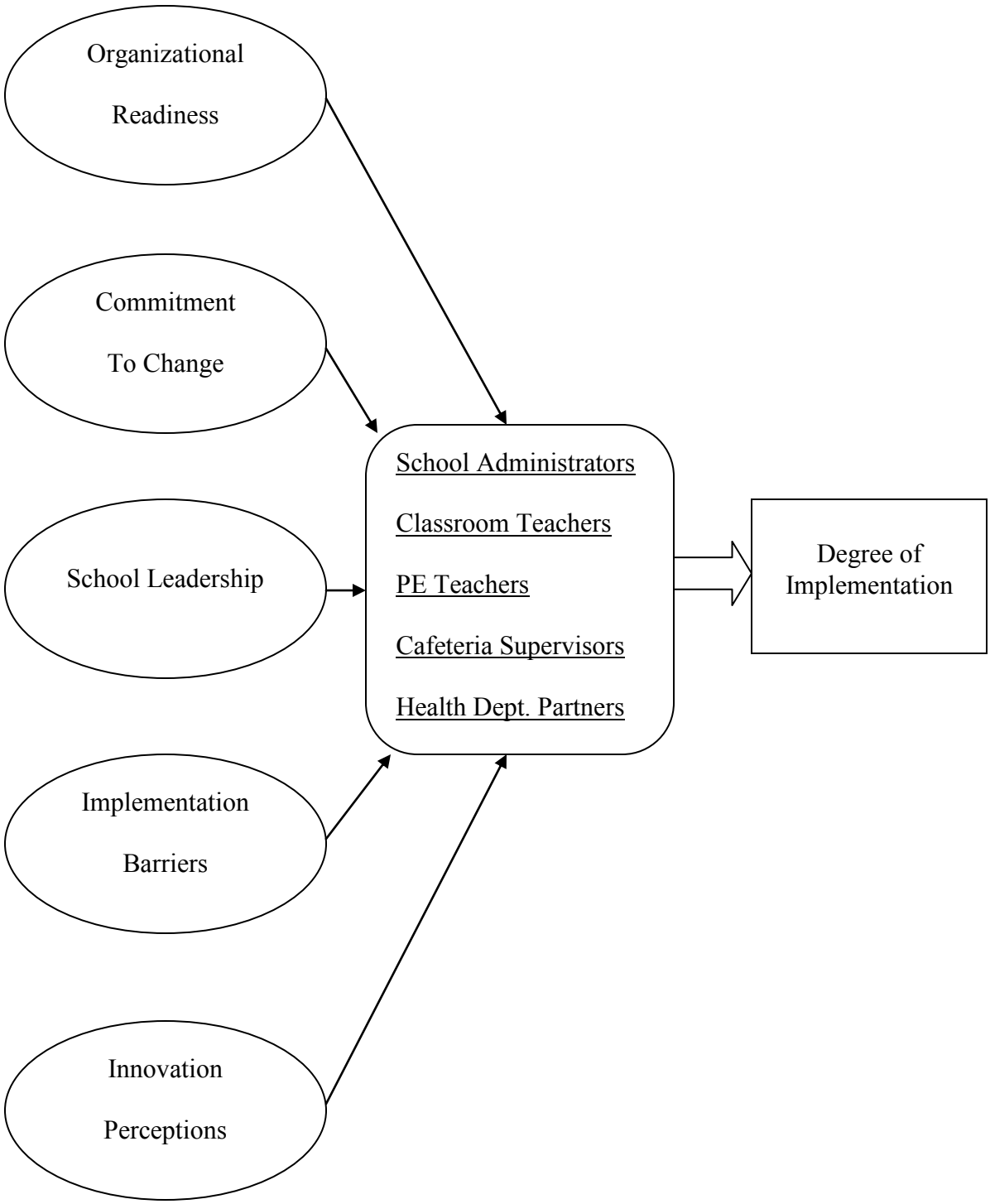
This study will involve an evaluation that will examine school employees, implementation practices of CATCH, and the association of organizational constructs concerning degree of implementation. Best practices of evaluation include using a variety of different methods for data collection that include qualitative and quantitative methodology (Stufflebeam, 1971; Stufflebeam & Shinkfield, 1985). Systematic evaluation includes having a plan of data collection and instruments must focus on the program and implementation practices (Stufflebeam, & Shinkfield, 1985). The use of an evaluation framework can aid researcher in addressing specific issues related to implementation practices. Furthermore, Stufflebeam (1971)

notes that obtaining data from all stakeholders and parties involved in the program will give the richest evaluation for implementation barriers.

The proposed study will include doing an evaluation to improve implementation. CATCH is implemented by school employees that do not receive any additional incentive. This study will evaluate school employees concerning 5 different constructs (organizational readiness, commitment to change, leadership, implementation barriers, and innovation perceptions) in reference to degree of implementation. This study will use the CDC program evaluation framework (1999b) focusing on program implementers. The goal would be to determine specific constructs that contribute to implementation.

## Summary

Obesity is rapidly increasing and becoming a major health concern for people in the United States and contributes an estimate of 112,00 deaths each year (Flegal, K., Graubard, B., Williamson, D., & Gail, M., 2005). Parents, teachers, school administration, and community members have a responsibility to address the obesity problem and help slow the rapidly increasing epidemic. Benefits of having a healthy young generation far outweigh the not putting effort into prevention. Components of the CATCH framework strive to ensure a collective partnership will work together to help foster the health of children. CATCH is an effective way to address an ongoing problem while promoting healthy lifestyles for and serve to be feasibly implemented (Crawley, 2010). Implementation takes a lot of collaboration between the school, student, and family. This study will examine organizational readiness, employee commitment, leadership, and implementation barriers as constructs that contribute to diffusion of CATCH. The primary purpose of this study is to describe and explain why schools in the same area and receive the same CATCH training still results in different implementation practices.


Organizational Readiness
Commitment To Change
School Leadership
Implementation Barriers
Innovation Perceptions
School Administrators
Classroom Teachers
PE Teachers
Cafeteria Supervisors
Health Dept. Partners
Degree of Implementation

# CHAPTER III

# METHODS

The primary purpose of this study was to describe and explain why schools in the same geographical area that receive the same CATCH training result in different implementation practices. It was hypothesized that organizational readiness, employee commitment, leadership, and implementation barriers would have a significant effect on implementation practices. This study examined how school (organizational) readiness to adopt an education innovation (CATCH), employee commitment, school leadership, associated implementation barriers, and perceptions of CATCH prevent diffusion of CATCH in southern Illinois schools.

## Research Questions

This research study has nine research questions:

## Research Questions

1. What is the degree of implementation for each component across all CATCH trained schools in the southernmost counties of southern Illinois?

2. How do school administrators rate organizational readiness, commitment to change, implementation barriers, and innovation perceptions towards CATCH?

3. How does organizational readiness in classroom teachers, physical education teachers, cafeteria supervisors, and health department partners relate to degree of implementation for each implementated component of CATCH?

4. How does employee commitment in classroom teachers, physical education teachers, cafeteria supervisors, and health department partners relate to degree of implementation for each implementated component of CATCH?

5. How do school staff and CRHSSD partners rate school administers' leadership towards CATCH?

6. How do school staff and CATCH onto Health partners' perceptions of school administration leadership relate to degree of implementation?

7. How do implementation barriers mentioned by classroom teachers, physical education teachers, cafeteria supervisors, and health department partners relate to degree of implementation for each implementation component of CATCH?

8. How do innovation perceptions by classroom teachers, physical education teachers, cafeteria supervisors, and health department partners relate to degree of implementation for each implementation component of CATCH?

9. How do the five factors (organizational readiness, employee commitment, leadership, implementation barriers, and innovation perception) collectively influence degree of implementation?

## Research Design

This study used a retrospective evaluation framework which examined organizational constructs that influence program implementation. Retrospective research examines events that have already occurred (Hess, 2004). Furthermore, retrospective research allows the investigator to formulate ideas concerning possible current and future relationships (Hess, 2004). This study also utilized a descriptive research design. The purpose of descriptive research is to describe facts and characteristics of a given population in an area of interest using a systematic structure (Van Dalen, 1979). Van Dalen (1979) concluded that research utilizing surveys is often used in descriptive research. Surveys are useful research tools for social analysis. Van Dalen (1979)

suggested three methods to obtain data which include: self-administered surveys, interview surveys, and telephone surveys. This study included self-administered surveys to collect data. Capwell, Butterfoss, and Francisco (2000), summarized six reasons why program evaluation is valued. Program evaluation provides a means to determine whether or not program objectives have been met, improve implementation, provide accountability to funders, increase community support, contribute to scientific base, and lastly inform policy decisions (Capwell, et al., 2000).

The current evaluation examined implementation practices of school employees and activities of CATCH implementation during last school year (2011-2012). This study focused on how the delivery of CATCH was diffused throughout schools in southern Illinois in order to enhance implementation practices. The present study examined five different constructs that include organizational readiness, commitment to change, leadership, implementation barriers, and perceptions of CATCH. School administers, classroom teachers, physical education teachers, cafeteria supervisors, and health department partners were assessed as the primary implementers of the selected four components CATCH (classroom curriculum, PE components, unique CATCH cafeteria components, and family involvement). This study included quantitative methodology.

A combination of different quantitative measures can be used to analyze a specific population. Measure are combined to answer questions, assess needs, solve problems, and describe what exists and in what context (Babbie, 1998). This study utilized self-administered survey administration. Survey limitations include only obtaining data from participants that are available and cooperative. The current studies research design compared degree of CATCH implementation and its association with organizational readiness, commitment to change, leadership, implementation barriers, and innovation perceptions. Furthermore, the current study

included a census which included all elementary schools in the Delta region southernmost counties of southern Illinois that had been CATCH-trained by the Fall of 2011.

## Study Sample

The Delta States Rural Network Development Grant Program is a program the CRHSSD received which funds CATCH implementation in southern Illinois. Money received has been used over the years to fund and provide schools with CATCH training, materials, and support. Schools who receive fund money include all schools in the southernmost counties of southern Illinois willing and dedicated to implement CATCH. The Delta States Rural Network Development Grant Program is a 3-year grant that has served as continuous funding for the past 7 years. Since the inclusion of the grant, there are currently a total of 52 schools implementing CATCH in some form. Schools are classified as being pre-implementing, CATCH after-school, and fully implementing CATCH. Pre-implementation CATCH schools include schools that are in their first year of implementation. Schools gain full implementation status in their second implementation school year after CATCH training and continuous supervision. Presently, there are 18 pre-implementing schools (2012 first year), 23 CATCH after-school programs, and 36 elementary schools that have been trained to fully implement CATCH. This was a census. All personnel in all 36 implementing schools were recruited to participate. CRHSSD data was used to identify each participating school.

## Study Criteria

Criteria for study inclusion included participating schools to have been CATCH trained and implementing for a minimum of one year prior to this study. This means schools must have been trained and implementing CATCH since the fall school year of 2011. Schools are classified by the CRHSSD as pre-implementing during the first year of implementation. Therefore, pre-

implementation schools were excluded from this study. A total of 36 school participated in this study. This study only utilized elementary schools. Middle schools were excluded from this study because CATCH plays a smaller role in middle schools compared to elementary schools in southern Illinois. CATCH is designed to have the PE component and *Eat Smart* component for kindergarten through 8th grade but CATCH does not a classroom curriculum for grades 6th – 8th grade; therefore, this study only used elementary schools. This study included a census of all CATCH-trained elementary schools in the southernmost 16 counties.

This study only included school employees who were employed by CATCH implementing schools in 2011-2012. School employees must have been trained to participate in this study. The sample included: school administrators (principals), classroom teachers, physical education teachers, cafeteria supervisors, and health department partners. School administrators included only school principals because they come in contact with the CATCH program more than any other school administrators. Superintendents are school administrators; however, superintendent offices are typically located off-campus and they are not present during daily activities of CATCH implementation. It is not necessary for school superintendents to be involved. Classroom and physical education teachers include individuals who are the primary teacher for grades kindergarten through 5th grade and physical education classes at CATCH trained schools. Cafeteria supervisors include employees who are in charge of food purchasing, preparation, and distribution.

*School administrator* – For this study, only principals were included. Principals play a vital role in the diffusion of CATCH. As principals are not involved in the daily activities and lessons of CATCH implementation they still play a crucial role. School principals were not involved in establishing degree of implementation; however, they were assessed on the

constructs of organizational readinesss, commitment to change, implementation barriers, and innovation perceptions.

*Classroom teacher* – To be included in this study classroom teachers were currently employed by a CATCH trained school. Degree of implementation was determined for classroom teachers by how much of the CATCH classroom curriculum was implemented last year (2011-2012). Degree of implementation determined how much of the CATCH classroom curriculum each teacher implemented. In addition, classroom teachers were assessed on the constructs of organizational readinesss, commitment to change, leadership, implementation barriers, and innovation perceptions.

*Physical education teacher* – To be included in this study physical teacher were currently employed by a CATCH trained school. Degree of implementation revealed how much of the CATCH PE curriculum components were implemented last year (2011-2012). In addition, physical education teachers were assessed on the constructs of organizational readinesss, commitment to change, leadership, implementation barriers, and innovation perceptions.

*Cafeteria supervisor* – Cafeteria supervisors included only food service members of a CATCH trained schools who were responsible for food purchasing, preparation, and distribution. The number of cafeteria supervisors varied depending on size of school. All school cafeteria staff members are included in CATCH training and are instructed to follow the New School Lunch Program (NSLP) and state food requirements; however, this study only utilized cafeteria supervisors. Degree of implementation represented implementation practices of the unique CATCH cafeteria components by survey completion of only cafeteria supervisors.

*Health Department Partner*- Health Department partners are not school employees. Health departments located in southern Illinois receive funding to aid CATCH implementation.

Participating health departments designate paid employees that focus primarily on CATCH implementation. Health departments are considered partners due to their involvement with the CATCH onto Health consortium. Health department partners are required by the funder (CRHSSD) to organize and facilitate Family Fun Nights which meet the requirements of Family Involvement (CATCH component). Family Fun Nights are available to each CATCH trained school (pre-implementing, fully implementing, and schools offering the CATCH after school program) in southern Illinois and serve as a way to educate parents and further reinforce health concepts taught by CATCH at home. Health department partners' degree of implementation represented the total number of CATCH Family Fun Nights available to CATCH trained schools.

## Access to Participants

Access to participants was granted by the CRHSSD Project Coordinator. The Project Coordinator provided contact information for partners associated with CATCH schools within their county. Appointments were set up at convenient times that accommodated partners. Meetings were held with partners to plan survey administration and data collection.

## Degree of Implementation

Degree of implementation was measured on a continuous scale represented as percentages. Prior to data collection, classroom teachers and physical education teachers completed a CATCH checklist. The CATCH checklist included all lessons and activities that are included in the Kindergarten through 5$^{th}$ grade classroom curriculum and CATCH PE components. For example, each CATCH lesson for an associated grade level was listed and classroom teachers checked which lessons were taught last year. Elementary classroom teachers, physical education, cafeteria supervisors, and health department partners' teachers checked the

lessons and activities that they implemented last school year. Percentages were calculated to determine degree of implementation. Each activity or lesson was weighted equally.

The cafeteria does not have a classroom curriculum; therefore, their degree of implementation was determined by implementation practices of the unique CATCH cafeteria components. CATCH *Eat Smart* cafeteria component offers very unique activities and aspects that are not included in the NSLP. CATCH focuses on the entire cafeteria environment which includes the food, service, reinforcement visuals (posters), and teaching moments, while the NSLP primarily focuses on dietary and nutritional guidelines (CATCH, 2012). The overlap between CATCH and NSLP makes it difficult to quantify whether dietary and nutritional practices by cafeteria supervisors are a result of the NSLP or CATCH. Therefore, degree of implementation for CATCH cafeteria supervisors was quantified and measured on unique tactics and program requirements and not include dietary guidelines. Unique CATCH *Eat Smart* program activities included utilizing the GO, SLOW, and WHOA to categorize foods while serving, providing nutritional facts to students of food being served, have CATCH nutrition posters hanging in the cafeteria, provide cafeteria tours to students, allow students to do taste testing of new foods, teach students how to prepare foods, emphasize meal planning, and purchase food from local vendors. These eight unique activities were used to measure degree of implementation of cafeteria staff. Degree of implementation was determined by the number of unique CATCH activities cafeteria staff exhibit. In addition cafeteria supervisors were responsible to check whether or not they attended the School Health Rocks.

Lastly, degree of implementation for health department partners was calculated. Family Fun Nights are provided by health department partners to meet requirements of CATCH (Family Involvement) and Delta grant. Degree of implementation from health department

partners determined if Family Fun Nights were provided to the students and families of all CATCH trained schools. Each health partner is in charge of specific schools; therefore, degree of implementation was determined by the number of Family Fun Nights that were offered for each partner's associated schools and represented as percentages.

Degree of implementation was calculated for each of the four CATCH components: 1.) Classroom Curricula, 2.) Food Service Modifications, 3.) Physical Education, and 4.) Family Involvement for each participant.

| | Degree of Implementation | Calculated | Measured |
|---|---|---|---|
| School Administrators | N/Applicable | N/Applicable | N/Applicable |
| Classroom Teachers | % of lessons taught | Lessons taught / Total number of lessons * 100 | % Percentage |
| Physical Education Teachers | % of CATCH PE components implemented | Implemented components / Total # CATCH PE components * 100 | % Percentage |
| Cafeteria supervisors | % of unique cafeteria CATCH components | # of implemented cafeteria components / Total # of CATCH cafeteria components * 100 | % Percentage |
| Health Department Partners | # of Family Fun Nights provided to CATCH schools | # of CATCH Family Fun Nights offered / Total # of CATCH trained schools * 100 | % Percentage |

## Instrument Selection

### *Readiness to Change (Organizational Readiness)*

Quantitative data was collected using *Readiness to Change* survey which was administered to school administrators, classroom teachers, physical education teachers, cafeteria supervisors, and health department partners (Holt et al., 2007). This survey was established for researchers specializing in management and has not been used in schools; however, it has been widely used in the health industry (Holt, Helfrich, Hall, Weiner, 2008). This survey provides structure for organizational readiness that is applicable to use in school settings. Theoretical

framework for the *Readiness to Change* survey is based on readiness, organizational, and change constructs (Holt et al., 2007). The *Readiness to Change* survey is based on theoretical framework and reflects readiness for change as a multi-dimensional construct which includes four different factors which include: *appropriateness*, *management support*, *change efficacy*, and *personal valence*. (Holt et al., 2007). Content and construct validity was used for instrument item development to appropriately measure organizational readiness to change/adopt (Holt et al., 2007). Factor analysis showed that four distinct factors were present as opposed to a single readiness factor. Replication samples were used in instrument administration and no significant differences were present (Holt, et al., 2007). This survey has a 7-part Likert-type scale with representing agreement levels of strongly disagree (1), disagree (2), somewhat disagree (3), neither agree or disagree (4), somewhat agree (5), agree (6), and strongly agree (7). Coefficient alphas were *appropriateness* (.80), *management support* (.79), *change efficacy* (.79), and *personal valence* (.65) (Holt et al., 2007). Lastly, convergent validity was assessed using a second sample concluding that findings were consistent with previous findings indicating that the readiness factors were correlated with each other (Holt et al., 2008). School administrators, classroom teachers, physical education teachers, cafeteria supervisors, and health department partners each were asked to complete this survey.

### *Commitment to Organizational Change*

Employee commitment was assessed using a *Commitment to Organizational Change Scale* (Meyer & Allen, 1991; Herscovitch & Meyer, 2002). This instrument has been validated and assesses employee commitment using the three component concept that was determined through factor analysis which includes four different factors: *affective commitment* (reliability = .94)*, continuance commitment* (reliability = .71)*,* and *normative commitment* (reliability = .78)

(Herscovitch & Meyer, 2002). This survey has a 7-part Likert-type scale with representing agreement levels of strongly disagree (1), disagree (2), somewhat disagree (3), neither agree or disagree (4), somewhat agree (5), agree (6), and strongly agree (7). In addition, this instrument was validated with content, construct, and predictive validity (Allen & Meyer, 1996). Klein and Sorra (1996) concluded that commitment is central in innovation implementation. This survey has been used in organizational research, but not used in schools. This survey provides sufficient evidence that suggests the survey is generalizable and that differences are meaningful (Meyer et al., 2002). School administrators, classroom teachers, physical education teachers, cafeteria supervisors, and health department partners each were asked to complete this survey.

### *School Leadership Self-Assessment*

The *School Leadership Self-Assessment,* published in a Beacons of Excellence named *The Leadership Factor: Key to Effective Inclusive High schools* (Bartholomay, 2001). The survey includes leadership attributes that are associated with school leaders and the challenges that school employees are faced with concerning decisions made for school employees. This survey was developed to assess the degree in which an individual views school leadership. This survey has a 3-part Likert-type scale with representing agreement levels of yes, somewhat, and no. Scoring for this scale include yes (3), somewhat (2), and no (1). This survey does not have psychometric scales. This survey was only administered to classroom teachers, physical education teachers, cafeteria supervisors, and health department partners. School administrators were omitted from this portion of the survey because they were the subject of evaluation.

### *Implementation Barriers*

Implementation barriers were assessed using *Innovation Barriers* scale (Yasar & Neczan, 2010). Innovations are rapidly changing and the chance of innovation survival is becoming

increasingly competitive (Yasar & Neczan, 2010). Innovation adoption is evaluated on characteristics associated with Rogers' (2003) Diffusion of Innovation theory including: relative advantage, compatibility, complexity, trialability, and observability. This instrument was not specifically designed to assess Rogers' (2003) constructs; however, it was established to assess barriers associated with innovations to decrease implementation problems. This instrument was established in Turkey, but translated into English. This survey defines barriers pertinent to innovation implementation. Instrument development began with 61 barriers defined in current research and minimized to 12 total items through an extensive evaluation (Yasar & Neczan, 2010). This instrument (Yasar & Neczan, 2010) has been tested for content validity by means of an exhaustive literature review and detailed evaluations by academicians using the DELPHI technique. No psychometric data is available for this survey; however, the extensive methodology to establish validity should be noted. School administrators, classroom teachers, physical education teachers, cafeteria supervisors, and health department partners were each asked to complete this survey.

*Perceived Characteristics of the Innovation (CATCH)*

Lastly, participants were asked to complete a seventeen question survey that assessed *Innovation Perception (CATCH*). The survey was developed by Pankratz, Hallfors, and Cho (2002) as a way to assessing the perceptions of new innovations using the Diffusion of Innovation as the theoretical foundation. Each question is associated with the five elements noted to influence innovation adoption of the Diffusion of Innovation theory which include: relative advantage/compatability, complexity, and observability (Rogers, 2003). Factor analysis determined that the 3 groups rather than 5 were the underlying factors and that relative advantage and compatability would be combined which is consistent with other studies (Pankratz et. al.,

2002; Halloway, 1977). This survey will assess individual's level of agreement about CATCH concerning its *relative advantage/compatibility, complexity,* and *observability* (Rogers, 2003). *Innovation Perception* has been tested through a factor analysis to establish groups and found to be reliable; *relative advantage* (reliability = .89), *complexity* (reliability = .81)*, and observability* (reliability = .71). Lastly, this survey has been used in schools assessing a newly implemented innovative program and noted to be easily adapted to other health education interventions (Pankratz et al., 2002). School administrators, classroom teachers, physical education teachers, cafeteria supervisors, and health department partners were each asked to complete this survey.

## Data Collection

This study included self-administered surveys. Participants who complete the surveys were chosen based on their employment at elementary schools located in the southernmost counties of southern Illinois that had been CATCH trained by Fall 2011. This studies data is based on participant's implementation practices of last school year (2011-2012). New employees who were not employed at the time a school was trained or not present for CATCH training were encouraged to complete surveys and evaluated separately. After approval by the SIUC Human Subjects Committee (See Appendix A) surveys were distributed to CRHSSD health department partners and distributed to CATCH trained schools. This next section will discuss in detail how data was collected.

Self-administered surveys have several advantages, such as minimal costs and time, few incomplete or ambiguous responses, and lack of bias from interviews (Issac & Michael, 1997). In addition, school employees are familiar to administering surveys, therefore, the process of completing a survey was routine. There were five different surveys which were grouped together into one survey packet. Survey packets were separated and color coded to represent each of the

five different participant groups (school administers, classroom teachers, physical education teachers, cafeteria supervisors, and health department partners). Survey packets differed because each group has different CATCH components that determine degree of implementation. Surveys were also coded by the letters CC (classroom curriculum), PE (physical education), ES (*Eat Smart* food modifications), and FFN (Family involvement) to distinguish the different CATCH components.

## Pilot Test

Pilot testing is a way to preliminary test the instrumentation of a research project (Borg, 1963). A pilot test provided the researcher with ideas, approaches, or clues that might have gone unnoticed before data collection. A pilot test was conducted using two classroom teachers, one physical education teacher, and one cafeteria supervisor. Pilot test participants were selected by the primary investigator and CRHSSD Project Coordinator. All pilot test participants were trained prior to the Fall 2011 school year. It was important that pilot test participants were not new or veteran CATCH implementers. Pilot test participants were employees of a specific school that were implementing CATCH but were identified as being a school that had experienced and reported implementation barriers. Participants were contacted by the CHRSSD Project Coordinator and contact information was forwarded to the primary investigator.

Pilot test participants met in the teacher lounge during employee lunch hour. Each pilot study participant received one survey and were asked to complete the survey and take notes. Prior to testing, participants were informed that their participation was an attempt to enhance CATCH and asked to take notes concerning readability and understandability about the CATCH survey they were completing. Specific interest concerning the surveys included survey instructions, survey definitions (organization and change), if a Likert-type scale in establishing

*Degree of Implementation* for physical education teachers (*Physical education survey)* was needed, and whether or not additional implementation barriers need to be added to the survey.

On average survey completion took 16 minutes to complete. After surveys were complete, participants were asked to share their concerns. It was concluded that the survey was easy to read and understand. It was advised that bolded definitions would draw further attention to reader concerning the term organization and change. The physical education teacher noted that CATCH PE components are so distinct that survey identification (Degree of Implementation) was very simple. It was also noted by the physical education teacher that using a frequency scale would be too difficult to recall each of the different CATCH components and could be confusing. Participants concluded that the current format would be the best. Discussion concerning the physical education *Degree of Implementation* scale included the two classroom teachers and cafeteria supervisor who also agreed with the physical education teacher's conclusion. Lastly, each implementation barrier that was mentioned by participants fell under at least one of the listed implementation barrier included on the existing survey.

After pilot testing and prior to data collection health department partners participated in a training protocol that described in detail how surveys were to be distributed and administered. The training protocol was held on November 16, 2013. The training protocol included specific instructions for survey distribution, dates for survey delivery, and a specific timeline for survey administration (See Appendix R). The training protocol was held at the Bi-County Health Department during a CATCH onto Health consortium meetings. CATCH representatives from each of the CATCH onto Health partners were present at the meeting. The meeting lasted one hour and served as a forum to instruct and answer questions.

Principals, classroom teachers, physical education teachers, cafeteria supervisors, and health department partners were all asked to participate and complete the survey from all schools that were CATCH trained prior to Fall 2011. Survey data was collected over a two-week period (November 26, 2012 – December 7, 2013). Surveys were distributed to health department partners on the November 16, 2012 at the survey administration training. Partners had one full week to deliver surveys to CATCH elementary schools (November 19-23). Each school received a survey drop box/envelope which was located in each of the participating schools main office. Drop boxes provided a central location for surveys to be collected when surveys were complete. Furthermore, drop boxes made it easy for school office staff to keep track of incoming surveys and simple collection process for health department partners when data collection ended. Health department partners individually placed each survey in each of the teacher's mailbox. Health department partners contacted CATCH representatives located at each school via phone call or email to remind school employees of CATCH survey completion at the end of the first week of data collection (November 30, 2012). Health department partners collected surveys after data collection ended (December 7, 2012) and returned them to the primary investigator (December 10-12, 2012).

Data was input into SPSS by the primary investigator within two weeks of receiving it. Each question was coded and responses recorded. The primary investigator input all of the data. Self administered input data checks were done every 2 surveys to make sure that data was accurately recorded. This type of self check methodology is encouraged and widely used (Merriam, 2009; Maxwell, 2005).

## Data Analysis

Survey responses of school administrators, classroom teachers, physical education teachers, cafeteria supervisors, and health department partners was analyzed using descriptive statistics, more specifically means and standard deviations for each group. All data will be input and analyzed using SPSS.

### *Degree of implementation*

Degree of implementation is represented using percentages. Classroom teachers, physical education teachers, cafeteria supervisors, and health department partners each completed the CATCH checklist. The CATCH checklist provided program guidelines that are required from each group for implementation. Each lesson/activity was weighted equally and represented by percentages. Degree of implementation for classroom teachers was established by the total number of implemented lessons during the previous year divided by the total number of lessons in the curriculum. Degree of implementation for physical education teachers was determined by the total number of PE components implemented the previous year divided by the total number of components. Degree of implementation for cafeteria supervisors was determined by implementation practices of the unique CATCH cafeteria techniques of the CATCH *Eat Smart* requirements divided by the total number of techniques. Degree of implementation for health department workers was determined on the percent of schools that are provided the Family Fun Nights by each health partner. Degrees of implementation (percentages) were established at the individual level and together within each group. Each group (classroom teachers, physical education teachers, cafeteria supervisors, and health partners) checklist included the total number of implemented lessons/activities divided by the total number of components then multiplied by 100. Each group and component was weighed equally.

### *Organizational Readiness*

This survey used a 7-point Likert scale. Scoring will be represented by points. Strongly Disagree = 1 point, Disagree = 2 points, Somewhat Disagree = 3 points, Neither Agree or Disagree = 4 points, Somewhat Agree = 5 points, Agree = 6 points, and Strongly Agree = 7 points. Anjani and Dhanapal (2012) found that bank employees reported an overall readiness to change average score of 3.9. This will serve as a baseline of comparison. Scoring will be determined by using total mean scores for each of the organizational readiness factors including: appropriateness, management support, change efficacy, and personally beneficial. Averages will be compared to each participant group and degree of implementation. Data was collected from school administrators, classroom teachers, physical education teachers, cafeteria supervisors, and health department partners.

### *Commitment to Change*

The survey used a 7-point Likert scale. Scoring will be represented by points. Strongly Disagree = 1 point, Disagree = 2 points, Somewhat Disagree = 3 points, Neither Agree or Disagree = 4 points, Somewhat Agree = 5 points, Agree = 6 points, and Strongly Agree = 7 points. Herscovitch and Meyer (2002) defined scoring intervals as scores between 0-20 corresponded to active resistance, 21-40 corresponded to passive resistance, 41-60 corresponded to compliance, scores 61-80 corresponds to cooperation, and scores between 81-100 corresponded to championing. Championing is defined as demonstrating extreme enthusiasm for change above what is formally required (Hersovitch & Meyer, 2002). Scores were averaged by overall commitment as well as individual commitment items. Mean scores were compared to each participant group and degree of implementation. Data was collected from school

administrators, classroom teachers, physical education teachers, cafeteria supervisors, and health department partners.

### *School Leadership*

The leadership survey utilized a 3-point Likert scale ranging from yes, somewhat, and no. The leadership survey is comprised of questions that assess factors of: building an inclusive and collaborative community of learning, fostering a school culture of innovation and creativity, and promote professional development. Scoring includes yes (3), somewhat (2), and no (1). Mean scores for each factor were assessed as well individual items within each factor. Mean scores were compared to each participant group and degree of implementation. Data was collected from classroom teachers, physical education teachers, cafeteria supervisors, and health department partners.

### *Implementation Barriers*

Program barriers were assessed as one total group of 10. The original barrier list has 12 items however 2 items will be removed because they are not pertinent to the current study. This study include a 5-point scale ranging from strongly agree (1), agree (2), neutral (3), disagree (4), and strongly disagree (5). Participants marked their agreement with each barrier in relation to CATCH implementation. Data was collected from school administrators, classroom teachers, physical education teachers, cafeteria supervisors, and health department partners. Individual means were analyzed to determine which barriers present the most problems with CATCH implementation. Participant group averages were used to and correlated with degree of implementation.

### *Perceptions of Innovation*

Perceptions of innovation (CATCH) were calculated in three different factors: relative advantage/compatability, complexity, and observability. Best practices with this survey include having a 5-point Likert scale ranging from strongly agree (1), agree (2), neutral (3), disagree (4), and strongly disagree (5). Participants marked their individual agreement and perceptions of CATCH. Factor averages were assessed as well as individual items within each factor to determine the overall perception of CATCH.

Descriptive statistics were analyzed for each of the five groups including group and individual item means and standard deviations. Furthermore, each of the five constructs were analyzed to determine if associations were present among school administrators, classroom teachers, physical education teachers, cafeteria supervisors, and health partners and degree of implementation. Correlations were used to determine if associations were present between the degree of implementation and organizational readiness, employee commitment, leadership, implementation barriers, and individual perceptions of CATCH. Additionally, regression analysis was used to analyze the combined effect of the group of independent variables on the dependent variable. A regression analysis was used to analyze and describe the combined effect of the measurable constructs (organizational readiness, commitment to change, leadership, implementation barriers, or innovation perceptions) on degree of implementation as well as which construct is most influential on degree of implementation. Correlation and regression statistical significance were determined with $p < 0.05$.

| RQ | Dependent Variable | Independent Variable | Group (s) | Analysis |
|---|---|---|---|---|
| 1. | N/A | Degree of Implementation (%) | SA, CT, PET, CS, & HDP | Descriptive |
| 2. | N/A | OR, CC, IB, & PI | SA | Descriptive |
| 3. | Degree of implementation (%) | Organizational Readiness | CT, PET, CS, & HDP | Descriptive Correlation |
| 4. | Degree of implementation (%) | Commitment to Change | CT, PET, CS, & HDP | Descriptive Correlation |
| 5. | N/A | Leadership | CT, PET, CS, & HDP | Descriptive |
| 6. | Degree of implementation (%) | Leadership | CT, PET, CS, & HDP | Descriptive Correlation |
| 7. | Degree of implementation (%) | Implementation Barriers | CT, PET, CS, & HDP | Descriptive Correlation |
| 8. | Degree of implementation (%) | Perceptions of Innovation | CT, PET, CS, & HDP | Descriptive Correlation |
| 9. | Degree of implementation (%) | 5 constructs (OR, CC, L, IB, & PI) | CT, PET, CS, & HDP | Regression |

*SA = School administrator*
*CL = Classroom teacher*
*PET = Physical education teacher*
*CS = Cafeteria supervisor*
*HDP = Health department worker*
*RQ = Research Question*
*OR = Organizational Readiness*
*CC = Commitment to Change*
*L = Leadership*
*IB = Implementation Barriers*
*PI = Perceptions of Innovation*

## Summary

This chapter provides an explanation of the methods and procedures that were used in this study. A research design using quantitative methods was used to explore and examine organizational readiness, commitment to change, leadership, implementation barriers, and perceptions of CATCH with elementary schools located in southern Illinois. Data was gathered from a self-administered survey. Self administered surveys were analyzed by using statistical analysis.

# CHAPTER IV

## RESULTS OF THIS STUDY

The primary purpose of this study was to describe and explain why schools in the same area that receive the same CATCH training result in different implementation practices. The current study included a retrospective evaluation of school employees' motivation to implement CATCH over the 2011-2012 school year. Nine research questions were answered:

1. What is the degree of implementation for each component across all CATCH trained schools in the southernmost counties of southern Illinois?
2. How do school administrators rate organizational readiness, commitment to change, implementation barriers, and innovation perceptions towards CATCH?
3. How does organizational readiness in classroom teachers, physical education teachers, cafeteria supervisors, and health department partners relate to degree of implementation for each implementated component of CATCH?
4. How does employee commitment in classroom teachers, physical education teachers, cafeteria supervisors, and health department partners relate to degree of implementation for each implementated component of CATCH?
5. How do school staff and CRHSSD partners rate school administers' leadership towards CATCH?
6. How do school staff and CATCH onto Health partners' perceptions of school administration leadership relate to degree of implementation?
7. How do implementation barriers mentioned by classroom teachers, physical education teachers, cafeteria supervisors, and health department partners relate to degree of implementation for each implementation component of CATCH?

8. How do innovation perceptions by classroom teachers, physical education teachers, cafeteria supervisors, and health department partners relate to degree of implementation for each implementation component of CATCH?

9. How do the five factors (organizational readiness, employee commitment, leadership, implementation barriers, and innovation perception) collectively influence on degree of implementation?

The following sections of this chapter present the findings of the current study, the establishment of the degree at which CATCH was implemented (classroom teachers, physical education teachers, cafeteria supervisors, and health department partners) that will aid health educators to formulate preparatory training courses that address the organization (school) and individual (school employee), bridge organizational and individual implementation barriers with school specific solutions, and create additional resources to enhance school health programs. Furthermore, comparisons across schools were made based on organizational readiness, commitment to change, leadership, implementation barriers, and perceptions of the innovation. The chapter is organized into the following sections: 1) assessment of the instrument's reliability using data from the study sample; 2) demographics of the study; and 3) findings that are pertaining to the research questions. To conclude the chapter, a summary has been provided.

Reliability

For the purposes of this study, the *Readiness to Change* (Holt et al., 2007), *Commitment to Organizational Change* (Meyer & Allen, 1991; Herscovitch & Meyer, 2002), *School Leadership Self-Assessment* (Bartolomay, 2001), *Innovation Barriers* (Yasar & Neczan, 2010), and *Innovation Perception* (Pankratz et al., 2002) surveys were used. The five independent

surveys were combined into one survey packet for each individual. Survey packets were self-administered using a pen or pencil.

The 25-item *Readiness to Change* yielded an internal consistency reliability (Cronbach's Coefficient Alpha) of 0.937 (N = 282). The 18-item *Commitment to Organizational Change* yielded an internal consistency reliability (Cronbach's Coefficient Alpha) of 0.674 (N = 281). The 19-item *School Leadership* yielded an internal consistency (Cronbach's Coefficient Alpha) of 0.937 (N = 250). The 15-item *Innovation Barriers* yielded an internal consistency (Cronbach's Coefficient Alpha) of 0.888 (N = 281). The 17-item *Innovation Perceptions* yielded an internal consistency (Cronbach's Coefficient Alpha) of 0.773 (N = 281). All of the surveys used in this study are considered reliable sources of data collection for the specific sample used in this health education research project (Green & Lewis, 1986).

Study Participants

Surveys were distributed to health department partners on November 16 during the monthly CATCH onto Health consortium meeting. Representatives from each of the partners were present at the meeting/training. Health department partners distributed surveys to each school participating school by November 23. Data collection lasted two weeks and started on November 26$^{th}$ and ended on December 7$^{th}$. Surveys were picked up by the primary investigator over the week of December 10$^{th}$ – 14$^{th}$. Data was input into SPSS upon collection.

A total of 534 surveys were distributed to 36 different schools located in the southernmost counties of southern Illinois. A total of 284 surveys were completed by school administrators, classroom teachers, physical education teachers, cafeteria supervisors, and health department partners (Table 1). Respondents represent 53% of the total number of surveys that were distributed. Classroom teachers in this study were trained from Fall 2008 to Fall 2011,

physical education teachers in this study were trained from Fall from 2005 to Fall 2011, and cafeteria supervisors in this study were trained from Fall 2004 to Fall 2011. Health department partners had all been CATCH trained prior to this project and all participate in CATCH training seminars for schools which include classroom teachers, physical education teachers, and cafeteria supervisors.

There were 43 school administrators that met the criteria to participate in this study, 33 school administrators participated, and yielded a 77% response rate. School administers participants represented 11.6% of the total sample. A total of 417 classroom teachers met the criteria to participate in this study, 197 classroom teachers participated, and yielded a 47% response rate. Classroom teachers represented 69.4% of the total sample. There were 33 Kindergarten teachers, 35 1$^{st}$ grade teachers, 31 2$^{nd}$ grade teachers, 34 3$^{rd}$ grade teachers, 31 4$^{th}$ grade teachers, and 33 5$^{th}$ grade teachers that participated in this study (Table 2). A total of 38 physical education teachers met study criteria to participate in this study, 27 physical education teachers participated, and yielded a 71% response rate. Physical education teachers represented 9.5% of the total sample. A total of 36 cafeteria supervisors met the criteria to participate in this study, 21 cafeteria supervisors participated, and yielded a 58% response rate. Cafeteria supervisors represented 7.4% of the total sample. There are six health department partners and all partners met the criteria and participated in this study (Table 1 & Table 2).

Table 1

*Participant Descriptives*

| Group | N | Teaching Experience Years | SD | CATCH Training Range |
|---|---|---|---|---|
| School administrators | 33 | N/A | | Fall 2006 – Fall 2011 |
| Classroom teachers | 197 | 14.1 | 9 | Fall 2008 – Fall 2011 |
| PE teachers | 27 | 15.3 | 9.9 | Fall 2005 – Fall 2011 |
| Cafeteria supervisors | 21 | 14.5 | 5.7 | Fall 2004 – Fall 2011 |
| Health Dept. partners | 6 | N/A | | Fall 2000 – Fall 2010 |

Table 2

*Participant frequency, sample percent, and response rate*

| | Frequency | Sample Percent (%) | Response Rate (%) |
|---|---|---|---|
| School administrator | 33 | 11.6 | 76.74 |
| Teacher – Kindergarten | 33 | 11.6 | 42.9 |
| Teacher – 1st Grade | 35 | 12.3 | 47.9 |
| Teacher – 2nd Grade | 31 | 10.9 | 45.5 |
| Teacher – 3rd Grade | 34 | 12 | 47.2 |
| Teacher – 4th Grade | 31 | 10.9 | 50 |
| Teacher – 5th Grade | 33 | 11.6 | 49.2 |
| PE teacher | 27 | 9.5 | 71.1 |
| Cafeteria supervisor | 21 | 7.4 | 58.3 |
| Health department partner | 6 | 2.1 | 100 |

*Note: Health department partners only included paid CATCH staff described in Chapter III*

## Research Questions

### *Research Question 1*

Research Question One: "What is the degree of implementation for each component across all CATCH trained schools in the southernmost counties of southern Illinois?"

Degree of implementation represents the degree at which CATCH implementers executed the program during the 2011-2012 school year. Degree of implementation for this study is represented by classroom teachers (N = 197), physical education teachers (N = 27), cafeteria supervisors (N = 21), and health department partners (N =6). Individual participant's degree of

implementation was determined by each classroom teacher, physical education teacher, cafeteria supervisor, and health department partner. Individual percentages were then averaged together to create group percentages. Health department partners accounted for the highest degree of implementation of 95% with a standard deviation of 12.6%, while physical education teachers reported a degree of implementation of 84.8% with a standard deviation of 9.4%, cafeteria supervisors reported a degree of implementation of 53.6% and a standard deviation of 22.1%, and classroom teachers reported degree of implementation to be 52.97% with a standard deviation of 32.5% (Table 3).

Kindergarten teachers (N = 33) had a degree of implementation mean of 54.89% (SD $\pm$ 34.3%), 1st grade teachers (N = 35) had a degree of implementation mean of 58% (SD $\pm$ 32.8%), 2nd grade teachers (N = 31) had a degree of implementation mean of 53.5% (SD $\pm$ 22.9%), 3rd grade teachers (N = 34) had a degree of implementation mean of 52% (SD $\pm$ 38.7%), 4th grade teachers (N = 31) had a degree of implementation mean of 42.7% (SD $\pm$ 29.4%), and 5th grade teachers (N = 33) had a degree of implementation mean of 56.9% (SD $\pm$ 34.6%) (Table 3 & 4).

Table 3

*Degree of Implementation*

| | N | Degree of Implementation (%) | Degree of Implementation (STDEV %) | Degree of Implementation Range – Individual Participants (%) |
|---|---|---|---|---|
| Classroom teachers | 197 | 52.97 | 32.5 | 0% - 100% |
| Kindergarten | **33** | **54.89** | **34.3** | **0% - 100%** |
| 1st Grade | **35** | **58** | **32.8** | **0% - 100%** |
| 2nd Grade | **31** | **53.5** | **22.9** | **17% -100%** |
| 3rd Grade | **34** | **52** | **38.7** | **0% - 100%** |
| 4th Grade | **31** | **42.7** | **29.4** | **0% - 100%** |
| 5th Grade | **33** | **56.9** | **34.6** | **0% - 100%** |
| PE teachers | 27 | 84.8 | 9.4 | 64% -100% |
| Cafeteria supervisors | 21 | 53.6 | 22.1 | 25% -100% |
| Health department partners | 6 | 95 | 12.6 | 67% - 100% |

*Degree of Implementation Range – By School*

Table 4

*Degree of Implementation Range by School*

| School | Min (%) | Max (%) | Average (%) |
|---|---|---|---|
| *Christopher Elementary* | 40 | 100 | 72.1 |
| *Adams School* | 90 | 90 | 90 |
| *Desoto Grade School* | 90 | 90 | 90 |
| *Giant City Grade School* | 90 | 100 | 95 |
| *Jefferson Elementary* | 0 | 100 | 56.7 |
| *Lincoln Elementary* | 70 | 100 | 85 |
| *Washington Elementary* | 0 | 100 | 50.4 |
| *Prairie Du Rocher Elementary School* | 20 | 100 | 73.3 |
| *St. Andrew Catholic School* | 50 | 100 | 86 |
| *St. Bruno Catholic School* | 50 | 100 | 86.3 |
| *Unity Point Elementary School* | 70 | 100 | 94.3 |
| *Duquoin Elementary* | 80 | 100 | 90 |
| *Crab Orchard Elementary* | 0 | 100 | 72.5 |
| *East Side McLeansboro Elementary* | 25 | 100 | 61.8 |
| *Gallatin County* | 50 | 75 | 55.6 |
| *Eldorado Elementary* | 0 | 100 | 54.9 |
| *Carrier Mills-Elementary* | 33 | 100 | 63.7 |
| *Lincoln Attendance Center* | 33 | 100 | 62.2 |
| *Jefferson Attendance Center* | 33 | 53 | 47.8 |
| *Crossville Attendance Center* | 15 | 100 | 59.6 |
| *Harrisburg East Side Intermdiate* | 23 | 100 | 62.7 |
| *Harrisburg West Side Primary* | 0 | 100 | 57.5 |
| *Dahlgren Elementary* | 40 | 100 | 85 |
| *Pope County Elementary* | 12.5 | 100 | 56.3 |
| *Hardin County Elementary* | 20 | 100 | 68.8 |
| *Brookport* | 30 | 100 | 64 |
| *Dongola* | 40 | 100 | 61.7 |
| *Century* | 50 | 100 | 80 |
| *Metropolis* | 50 | 100 | 66 |
| *Vienna* | 0 | 100 | 57.8 |
| *Cairo* | 20 | 100 | 55.1 |
| *Anna* | 64 | 100 | 84.1 |
| *Buncombe* | 81 | 100 | 90.9 |
| *Unity* | 27 | 100 | 55.7 |
| *Egypitan* | 62.5 | 100 | 75.4 |
| *Meridian Elementary* | 0 | 70 | 15.7 |

*Research Question 2*

Research Question Two: "How do school administrators rate organizational readiness, commitment to change, implementation barriers, and innovation perceptions towards CATCH?"

School administrators represented 91.27% of the 36 schools that participated in this study (N = 33). Thirty-two school administrators completely filled out the survey while one participant only filled out the *Innovation Perception* section. Organizational readiness and commitment to change survey were scored on a Likert scale ranging from strongly disagree (1) to strongly agree (7). Mean scores over 4 (neither agree or disagree) represented agreement while mean scores below 4 represented disagreement with survey question. The implementation barrier and innovation perception surveys were scored on a Likert scale ranging from strongly disagree (1) to strongly agree (5). Means over 3 (neither agree or disagree) representing agreement while mean scores below 3 represented disagreement with survey question.

Anjani and Dhanapal (2012) found that bank employees reported an overall readiness to change average score of 3.9. The current study reported to have an average of 5.57. School administrators reported to agree that the organization would benefit from CATCH (O1; M = 6.03), rational reasons for CATCH implementation (O3; M = 5.81), implementation would be worthwhile (O6; M = 5.87), and disagreed that time spent on CATCH should be spent on something else (O9; M = 2.4) (Table 5). School administrators reported an average commitment to change score of 80.25. Herscovitch and Meyer (2002) defined scoring intervals as scores between 0-20 corresponded to active resistance, 21-40 corresponded to passive resistance, 41-60 corresponded to compliance, scores 61-80 corresponds to cooperation, and scores between 81-100 corresponded to championing. Championing is defined as demonstrating extreme enthusiasm for change above what is formally required (Hersovitch & Meyer, 2002). School

administrators' score would categorize their commitment as borderline cooperative and championing. Furthermore, school administrators reported to agree in the value of CATCH (C1; M = 5.97), felt that CATCH is a good strategy for the organizational (C2; M = 5.88), believes that CATCH serves an important purpose (C4; M = 5.78), that CATCH is necessary within their organization (C6; M = 5.78), that they felt a sense of duty to work towards implementing CATCH (C13; M = 5.25) and that they were confident that they could implement CATCH (B13; M = 4.0) (Table 6). Individual comparative norms were not available. School administrators reported to disagree that a lack of qualified personnel (B1; M = 2.3), lack of incentive (B4; 2.4), competing priorities (B11; M = 2.6), or that standardized tests (ISAT) (B14; M = 2.5) served as significant barriers towards implementing CATCH (Table 7). Lastly, school administrators reported that CATCH is compatible with other activities within the district (P1; M 4.09) and that CATCH fits well with the way they like to work (P2; 3.97) (Table 8).

Table 5

*Organizational Readiness – School Administrators*

**Descriptive Statistics**

| | Mean | Std. Deviation |
|---|---|---|
| O1- Organization will benefit from change | 6.0313 | .89747 |
| OR2 – Doesn't make sense to change | 6.0313 | .93272 |
| O3 – Legitimate reasons for change | 5.8125 | 1.11984 |
| O4 – Improve organization efficiency | 5.6250 | .94186 |
| O5 – Rational reasons for change | 5.7188 | .95830 |
| O6 – Worthwhile for organization to adopt | 5.8750 | .87067 |
| O7 – Makes my job easier | 4.7188 | 1.34966 |
| OR8 – Nothing to gain from change | 5.5000 | 1.16398 |
| OR9 – Time spent on change should be spent on something else | 5.5937 | 1.13192 |
| O10 – Change matches priorities of organization | 5.4687 | 1.16354 |
| O11 – Leaders encourage change | 5.3750 | 1.21150 |
| O12 – Decision makers support change | 5.4375 | 1.07576 |
| O13 – Leaders have stressed the importance of change | 5.1250 | 1.21150 |
| O14 – Leaders are committed to change | 5.5312 | 1.01550 |
| OR15 – Time spent is not wanted by leaders | 5.4688 | 1.21773 |
| O16 – Clear message that organization is going to change | 4.6875 | 1.44663 |
| O17 – Do not anticipate problems | 5.1875 | 1.17604 |
| OR18 – Tasks for change | 5.0313 | 1.23090 |
| O19 – I can handle change with ease | 5.4063 | 1.04293 |
| O20 – Skills needed for change | 5.6562 | .90195 |
| O21 – I can learn what is required for change | 5.8750 | .97551 |
| O22 – Experience gives me confidence for change | 5.8750 | 1.00803 |
| OR23 – Status loss with change | 5.7500 | 1.29515 |
| OR24 – Disrupt personal relationships with change | 6.0000 | 1.16398 |
| OR25 – Limited future | 6.1563 | 1.01947 |

*Note: Organizational readiness questions are coded by the letter O and associated survey question, i.e.O1 represents Organizational Readiness question 1. Question codes are only descriptors; entire questions are in the appendices.*

Table 6

*Commitment to Change – School Administrators*

**Descriptive Statistics**

| | Mean | Std. Deviation |
|---|---|---|
| C1 – Value in change | 5.9688 | .86077 |
| C2 – Change is good strategy for organization | 5.8750 | .83280 |
| CR3 – Management is making mistake | 5.7813 | 1.06965 |
| C4 – Change serves important purpose | 5.7812 | 1.09939 |
| CR5 – Better without change | 5.7812 | 1.06965 |
| CR6 – Change is not necessary | 5.6563 | 1.15310 |
| C7 – No choice but change | 3.0937 | 1.53159 |
| C8 – Pressure to change | 3.0000 | 1.50269 |
| C9 – Resist change | 2.9687 | 1.51305 |
| C10 – Costly to resist change | 2.8438 | 1.39375 |
| C11 – Risky to resist change | 2.4062 | 1.13192 |
| C12 – Resisting is not viable option | 3.1250 | 1.62143 |
| C13 – Duty to change | 5.2500 | 1.36783 |
| C14 – Not right to oppose change | 4.7500 | 1.48106 |
| CR15 – Feel bad opposing change | 4.3438 | 1.55769 |
| C16 – irresponsible to resist change | 4.5938 | 1.60361 |
| C17 – Guilty opposing change | 4.2500 | 1.50269 |
| CR18 – Obligation to support change | 4.7812 | 1.51837 |

*Note: Commitment to Change questions are coded by the letter C and associated survey question, i.e. C1 represents Commitment to Change question 1. CR represents reversed questions. Question codes are only descriptors; entire questions are in the appendices.*

Table 7

*Implementation Barriers – School Administrators*

**Descriptive Statistics**

| | Mean | Std. Deviation |
|---|---|---|
| B1 – Lack of qualified personnel | 2.3125 | .99798 |
| B2 – Bureaucracy | 2.1562 | .67725 |
| B3 – Lack of materials | 2.2188 | .75067 |
| B4 – Lack of incentive | 2.4063 | .79755 |
| B5 – Competition | 2.1875 | .69270 |
| B6 – Technical problems | 2.1563 | .67725 |
| B7 – Time for return | 2.3125 | .85901 |
| B8 – Perception is risky | 2.1250 | .70711 |
| B9 – Difficult to control costs | 2.0625 | .71561 |
| B10 – Financing | 2.4375 | .94826 |
| B11 – Competing priorities | 2.6250 | 1.00803 |
| B12 – Time for preparation | 2.5313 | .84183 |
| B13 – Confidence to implement | 4.0000 | .62217 |
| B14 – Standardized tests take priority | 2.5000 | 1.04727 |
| B15 – No experience | 2.3125 | .93109 |
| TotalIB | 35.2424 | 9.32748 |
| Valid N (listwise) | | |

*Note: The letter B represents Implementation barrier questions with numbers which represent survey questions, i.e. B1 represents Implementation Barrier question 1. Question codes are only descriptors; entire questions are in the appendices.*

Table 8

*Innovation Perception – School Administrators*

**Descriptive Statistics**

| | Mean | Std. Deviation |
|---|---|---|
| P1 – Catch is compatible | 4.0909 | .67840 |
| P2 – CATCH fits well with the way I work | 3.9697 | .68396 |
| PR3 – CATCH would require substantial changes | 3.6667 | .85391 |
| PR4 – Difficult to train teachers and staff | 3.6970 | .63663 |
| PR5 – CATCH will be complicated to implement | 3.8485 | .66714 |
| PR6 – CATCH activities need to be implemented | 2.9394 | .78817 |
| P7 – It is okay to try out new program before fully implementing | 3.6970 | .84723 |
| PR8 – Parents will not see changes | 3.3030 | .91804 |
| P9 – Teachers will like changes | 3.6364 | .69903 |
| P10 – CATCH will enhance my effectiveness | 3.2727 | .80128 |
| P11 – School will lose funding if we do not implement | 2.8485 | .93946 |
| P12 – CATCH will increase my ability to get funding for school | 3.3636 | .74239 |
| P13 – CATCH will increase the quality of preventative programs | 3.7273 | .67420 |
| PR14 – CATCH will have no effect on student obesity | 3.9394 | .60927 |
| PR15 – CATCH will require more work than can be done with funding | 3.4848 | .71244 |
| P16 – I would like to implement CATCH | 3.6667 | .81650 |
| P17 – Using CATCH is advantageous for my school | 3.9394 | .65857 |

*Note: Innovation perception questions are coded with the letter P and numbers represent survey questions, i.e. P1 represents Innovative Perception question 1. PR represents reversed questions. Question codes are only descriptors; entire questions are in the appendices.*

*Research Question 3*

Research Question Three: "How does organizational readiness in classroom teachers, physical education teachers, cafeteria supervisors, and health department partners relate to degree of implementation for each implemented component of CATCH?"

Organizational readiness and degree of implementation represent a statistically significant correlation with classroom teachers, physical education teachers, cafeteria supervisors, and health department partners grouped together. Classroom teachers, physical education teachers, cafeteria supervisors, and health department partners had a mean degree of implementation of 53.4 % (SD $\pm$ 32.07). Together (N = 251) a correlation of .252 deemed significant at $p < 0.000$ (Table 9). Statistical significance is a result of the study sample size but not necessarily a strong correlation.

Classroom teachers (N = 197) represent an association with organizational readiness and degree of implementation ($r = .222$; $p < 0.002$) (Table 10). Classroom teachers had a mean of 54.6 % (SD $\pm$ 32.8) for degree of implementation. Physical education teachers (N = 27; $r = -0.026$), cafeteria supervisors (N = 21; $r = -0.106$), and health department partners (N = 6; $r = -0.011$) separately did not have statistically significant correlations related with organizational readiness and degree of implementation ($p > 0.05$).

Table 9

*Organizational Readiness & Degree of Implementation Grouped*

| | | DEGREE | TotalOR |
|---|---|---|---|
| DEGREE | Pearson Correlation | 1 | .252** |
| | Sig. (2-tailed) | | .000 |
| | N | 251 | 251 |
| TotalOR | Pearson Correlation | .252** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 251 | 251 |

**. Correlation is significant at the 0.01 level (2-tailed).

Table 10

*Organizational Readiness & Degree of Implementation*

| Group | N | Pearson | Sig. (2-tailed) |
|---|---|---|---|
| Classroom teacher | 197 | .222 | .002* |
| PE teacher | 27 | .046 | .821 |
| Cafeteria Supervisor | 21 | .112 | .628 |
| Health Dept. Partner | 6 | -.219 | .677 |

*Research Question 4*

Research Question Four: "How does employee commitment in classroom teachers, physical education teacher, cafeteria supervisors, and health department partners relate to degree of implementation for each implemented component of CATCH?"

Commitment to change and degree of implementation represent a correlation of 0.022 and was not deemed statistically significant when classroom teachers, physical education teachers, cafeteria supervisors, and health department partners were grouped together (Table 11). When separated into individual groups, cafeteria supervisors reported a statistically significant

moderate association with degree of implementation and commitment to change ($r = 0.489$; $p < 0.025$) (Table 12).

Table 11

*Commitment to Change – Grouped*

| | | DEGREE | TotalCC |
|---|---|---|---|
| DEGREE | Pearson Correlation | 1 | .022 |
| | Sig. (2-tailed) | | .731 |
| | N | 251 | 251 |
| TotalCC | Pearson Correlation | .022 | 1 |
| | Sig. (2-tailed) | .731 | |
| | N | 251 | 251 |

Table 12

*Commitment to Change & Degree of Implementation*

| Group | N | Pearson | Sig. (2-tailed) |
|---|---|---|---|
| Classroom teacher | 197 | -.019 | .791 |
| PE teacher | 27 | .018 | .928 |
| Cafeteria supervisor | 21 | .489 | .025* |
| Health Dept. partner | 6 | -.170 | .747 |

*Research Question 5*

Research Question Five: "How do school staff and CRHSSD partners rate school administers' leadership towards CATCH?"

School leadership was rated by classroom teachers (N = 197), physical education teachers (N = 27), cafeteria supervisors (N = 21), and health department partners (N = 6). Overall, school employees (classroom teachers, physical education teachers, cafeteria supervisors, and health department partners) reported that school leadership did support CATCH implementation. Question were scored by responses of No (1 point), Somewhat (2 points), and Yes (3 points). No reverse questions were included in the 19-item instrument. A score of 57 would describe that

participants reported “yes” to all school leadership questions. Classroom teachers had an overall mean total score of 48.6 (Table 13). Physical education teachers reported an overall mean of 49.3 (Table 14). Cafeteria supervisors reported an overall mean of 52.81 (Table 15).Health department partners reported an overall mean of 51.7 (Table 16). These means report that school employees report in favor that school leadership does comply with aiding, promoting, and implementing CATCH.

Table 13

*School Leadership – Classroom Teachers*

| Descriptives | | | | |
|---|---|---|---|---|
| | | | Statistic | Std. Error |
| TotalSL | Mean | | 48.5990 | .61152 |
| | 95% Confidence Interval for Mean | Lower Bound | 47.3930 | |
| | | Upper Bound | 49.8050 | |
| | 5% Trimmed Mean | | 49.3542 | |
| | Median | | 51.0000 | |
| | Variance | | 73.670 | |
| | Std. Deviation | | 8.58312 | |
| | Minimum | | .00 | |
| | Maximum | | 57.00 | |
| | Range | | 57.00 | |
| | Interquartile Range | | 13.00 | |
| | Skewness | | -1.563 | .173 |
| | Kurtosis | | 4.645 | .345 |

Table 14

*School Leadership – Physical Education Teachers*

| **Descriptives** | | | | |
|---|---|---|---|---|
| | | | Statistic | Std. Error |
| TotalSL | Mean | | 49.3333 | 1.12217 |
| | 95% Confidence Interval for Mean | Lower Bound | 47.0267 | |
| | | Upper Bound | 51.6400 | |
| | 5% Trimmed Mean | | 49.4671 | |
| | Median | | 51.0000 | |
| | Variance | | 34.000 | |
| | Std. Deviation | | 5.83095 | |
| | Minimum | | 39.00 | |
| | Maximum | | 57.00 | |
| | Range | | 18.00 | |
| | Interquartile Range | | 9.00 | |
| | Skewness | | -.268 | .448 |
| | Kurtosis | | -1.180 | .872 |

Table 15

*School Leadership – Cafeteria Supervisor*

| **Descriptives** | | | | |
|---|---|---|---|---|
| | | | Statistic | Std. Error |
| TotalSL | Mean | | 52.8095 | 1.33563 |
| | 95% Confidence Interval for Mean | Lower Bound | 50.0235 | |
| | | Upper Bound | 55.5956 | |
| | 5% Trimmed Mean | | 53.3968 | |
| | Median | | 56.0000 | |
| | Variance | | 37.462 | |
| | Std. Deviation | | 6.12061 | |
| | Minimum | | 38.00 | |
| | Maximum | | 57.00 | |
| | Range | | 19.00 | |
| | Interquartile Range | | 5.00 | |
| | Skewness | | -1.594 | .501 |
| | Kurtosis | | 1.311 | .972 |

Table 16

*School Leadership – Health Department Partners*

| **Descriptives** | | | | |
|---|---|---|---|---|
| | | | Statistic | Std. Error |
| TotalSL | Mean | | 51.6667 | 1.99444 |
| | 95% Confidence Interval for Mean | Lower Bound | 46.5398 | |
| | | Upper Bound | 56.7935 | |
| | 5% Trimmed Mean | | 51.7407 | |
| | Median | | 52.5000 | |
| | Variance | | 23.867 | |
| | Std. Deviation | | 4.88535 | |
| | Minimum | | 45.00 | |
| | Maximum | | 57.00 | |
| | Range | | 12.00 | |
| | Interquartile Range | | 9.75 | |
| | Skewness | | -.392 | .845 |
| | Kurtosis | | -1.775 | 1.741 |

*Research Question 6*

Research Question Six: "How do school staff and CATCH onto Health partners' perceptions of school administration leadership relate to degree of implementation?"

When classroom teachers, physical education teachers, cafeteria supervisors, and health department partners were grouped together there was no statistically significant association with school leadership and degree of implementation (Table 17). Physical education teachers were the only group that represent a statistically significant association between degree of implementation and school leadership ($r = .452$; $p < .018$) (Table 18). Classroom teachers, cafeteria supervisors, and health department partners did not have statistically significant associations (Table 18).

Table 17

*School Leadership – Grouped*

| | | DEGREE | TotalSL |
|---|---|---|---|
| DEGREE | Pearson Correlation | 1 | .057 |
| | Sig. (2-tailed) | | .371 |
| | N | 251 | 251 |
| TotalSL | Pearson Correlation | .057 | 1 |
| | Sig. (2-tailed) | .371 | |
| | N | 251 | 251 |

Table 18

*School Leadership & Degree of Implementation*

| Group | N | Pearson | Sig. (two-tailed) |
|---|---|---|---|
| Classroom teacher | 197 | .028 | .693 |
| PE teacher | 27 | .452 | .018* |
| Cafeteria supervisor | 21 | -.027 | .907 |
| Health Dept. partner | 6 | .669 | .147 |

*Research Question 7*

Research Question Seven: "How do implementation barriers mentioned by classroom teachers, physical education teachers, cafeteria supervisors, and health department partners relate to degree of implementation for each implementation component of CATCH?"

Statistically significant associations were present between degree of implementation and implementation barriers when classroom teachers, physical education workers, cafeteria supervisors, and health department partners were combined ($r = -.273$; $p < 0.000$) (Table 19). Classroom teachers yielded a statistically significant association ($r = -.247$, $p < 0.000$) between implementation barriers and degree of implementation (Table 20). In addition, cafeteria

supervisors also reported a significant association between implementation barriers and degree of implementation (r = .421; p = 0.05) (Table 20).

Table 19

*Implementation Barriers Grouped*

| **Descriptive Statistics** | | | |
|---|---|---|---|
| | Mean | Std. Deviation | N |
| DEGREE | 58.4319 | 32.06575 | 251 |
| TotalIB | 39.8884 | 9.86567 | 251 |

| **Correlations** | | | |
|---|---|---|---|
| | | DEGREE | TotalIB |
| DEGREE | Pearson Correlation | 1 | -.273** |
| | Sig. (2-tailed) | | .000 |
| | N | 251 | 251 |
| TotalIB | Pearson Correlation | -.273** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 251 | 251 |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | |

Table 20

*Implementation Barriers & Degree of Implementation*

| Groups | N | Pearson | Sig. (two-tailed) |
|---|---|---|---|
| Classroom teacher | 197 | -.247 | .000** |
| PE teacher | 27 | -.016 | .937 |
| Cafeteria supervisor | 21 | -.421 | .05* |
| Health dept partner | 6 | .068 | .898 |

*Research Question 8*

Research Question Eight: "How do innovation perceptions by classroom teachers, physical education teachers, cafeteria supervisors, and health department partners relate to degree of implementation for each implementation component of CATCH?"

A statistical significant association was not present between degree of implementation and innovation perceptions in classroom teachers, physical education teachers, cafeteria supervisors, and health department partners when grouped together (p = .077) (Table 20). An association in classroom teachers between innovation perception and degree of implementation was present but was not deemed statistically significant (p = 0.051) (Table 21). Physical education teachers, cafeteria supervisors and health department partners did not report to have a statistically significant association between degree of implementation and innovation perception (Table 21).

Table 20

*Innovation Perceptions – Grouped*

| **Descriptive Statistics** | | | |
|---|---|---|---|
| | Mean | Std. Deviation | N |
| DEGREE | 58.4319 | 32.06575 | 251 |
| TotalIP | 53.9243 | 7.70962 | 251 |

| **Correlations** | | | |
|---|---|---|---|
| | | DEGREE | TotalIP |
| DEGREE | Pearson Correlation | 1 | -.112 |
| | Sig. (2-tailed) | | .077 |
| | N | 251 | 251 |
| TotalIP | Pearson Correlation | -.112 | 1 |
| | Sig. (2-tailed) | .077 | |
| | N | 251 | 251 |

Table 21

*Innovation Perceptions & Degree of Implementation*

| Group | N | Pearson | Sig. (two-tailed) |
|---|---|---|---|
| Classroom teacher | 197 | -.139 | .051 |
| PE teacher | 27 | .045 | .826 |
| Cafeteria supervisor | 21 | -.221 | .337 |
| Health Dept. partner | 6 | -.321 | .535 |

*Research Question 9*

Research Question Nine: "How do the five factors (organizational readiness, employee commitment, leadership, implementation barriers, and innovation perception) collectively influence degree of implementation?"

A regression analysis was administered to determine which of the five constructs (organizational readiness, commitment to change, school leadership, implementation barriers, or innovation perceptions) was most influential on degree of implementation by school employees. When all school employees were combined, significant predictors of degree of implementation were identified ($F = 5.362$; $p < 0.001$) (Table 22). The group represented a correlation of .314, $R^2 = 0.099$, and standard error of 30.98. The standardized coefficients show that of all the variables, organizational readiness ($B = .362$, $p < 0.014$) and implementation barriers ($B = .571$, $p < 0.019$) were identified be statistically significant and have the strongest relative effect on degree of implementation which suggest they are most significant predictors on school employee degree of implementation for classroom teachers, physical education teachers, cafeteria supervisors, and health department partners ($p < 0.001$) (Table22). Furthermore, this statistic reports that organizational readiness, commitment to change, school leadership, implementation barriers, and innovation perceptions only account for 10% of variation. This statistic will be discussed further in the next chapter.

Separately, each group of school employees presented different results. Classroom teachers reported statistical significance between the five measureable constructs (organizational readiness, commitment to change, school leadership, implementation barriers, and innovation perceptions) and degree of implementation ($F = 3.66$; $p < 0.003$) (Table 23). Standardized coefficients show that organizational readiness ($B = .388$; $p = .028$) had the strongest relative effect on degree of implementation in predicting degree of implementation of classroom teachers. Although not statistically significant, it is important to note that implementation barriers were not significant predictors of degree of implementation as hypothesized prior to this study. Classroom teachers yielded a correlation of .296 between degree of implementation and the five measureable constructs with a variation of 8.7%. This will be discussed further in the next chapter.

Physical education teachers did not report statistical significance between the five measureable constructs and degree of implementation ($F = 1.471$; $p = .241$) (Table 24). However, standardized coefficients show that school leadership proved to have a statistically significant relative effect on degree of implementation ($B = 1.793$) on degree of implementation ($t = 2.651$; $p < 0.015$) with a variation of 25.9%. Furthermore, standardized coefficients revealed that organizational readiness had the weakest relative effect on degree of implementation ($B = -0.070$).

The five measureable constructs were not statistically significant predictors of degree of implementation for both cafeteria supervisors and health department partners. Cafeteria supervisors reported to have the largest variation ($R^2 = .296$) but sample size was too small to be significant. This too will be discussed further in the next chapter.

Table 22

*Regression Grouped*

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .314[a] | .099 | .080 | 30.75225 |

a. Predictors: (Constant), TotalIP, TotalOR, TotalSL, TotalCC, TotalIB

**ANOVA[b]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 25356.224 | 5 | 5071.245 | 5.362 | .000[a] |
| | Residual | 231696.781 | 245 | 945.701 | | |
| | Total | 257053.005 | 250 | | | |

a. Predictors: (Constant), TotalIP, TotalOR, TotalSL, TotalCC, TotalIB

b. Dependent Variable: DEGREE

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 58.932 | 24.103 | | 2.445 | .015 |
| | TotalOR | .362 | .145 | .194 | 2.487 | .014 |
| | TotalCC | -.136 | .205 | -.046 | -.664 | .507 |
| | TotalSL | -.060 | .263 | -.015 | -.229 | .819 |
| | TotalIB | -.571 | .242 | -.176 | -2.361 | .019 |
| | TotalIP | -.138 | .279 | -.033 | -.495 | .621 |

a. Dependent Variable: DEGREE

Table 23

*Regression Classroom Teachers*

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .296[a] | .087 | .064 | 31.74187 |

a. Predictors: (Constant), TotalIP, TotalOR, TotalSL, TotalCC, TotalIB

**ANOVA[b]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 18438.856 | 5 | 3687.771 | 3.660 | .003[a] |
| | Residual | 192441.372 | 191 | 1007.546 | | |
| | Total | 210880.228 | 196 | | | |

a. Predictors: (Constant), TotalIP, TotalOR, TotalSL, TotalCC, TotalIB

b. Dependent Variable: DEGREE

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 63.527 | 27.092 | | 2.345 | .020 |
| | TotalOR | .388 | .175 | .200 | 2.219 | .028 |
| | TotalCC | -.218 | .246 | -.072 | -.887 | .376 |
| | TotalSL | -.059 | .295 | -.016 | -.201 | .841 |
| | TotalIB | -.435 | .291 | -.132 | -1.497 | .136 |
| | TotalIP | -.318 | .374 | -.069 | -.851 | .396 |

a. Dependent Variable: DEGREE

Table 24

*Regression Physical Education Teachers*

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .509[a] | .259 | .083 | 17.98592 |

a. Predictors: (Constant), ORTotal, TotalIB, TotalCC, TotalSL, TotalOR

**ANOVA[b]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 2379.044 | 5 | 475.809 | 1.471 | .241[a] |
| | Residual | 6793.361 | 21 | 323.493 | | |
| | Total | 9172.405 | 26 | | | |

a. Predictors: (Constant), ORTotal, TotalIB, TotalCC, TotalSL, TotalOR

b. Dependent Variable: DEGREE

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | -3.448 | 53.214 | | -.065 | .949 |
| | TotalOR | -.070 | .247 | -.069 | -.286 | .778 |
| | TotalCC | -.180 | .458 | -.084 | -.392 | .699 |
| | TotalSL | 1.793 | .677 | .557 | 2.651 | .015 |
| | TotalIB | .205 | .464 | .103 | .441 | .663 |
| | ORTotal | .218 | .267 | .158 | .817 | .423 |

a. Dependent Variable: DEGREE

Table 25

*Regression Cafeteria Supervisors*

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .544[a] | .296 | .062 | 21.36777 |

a. Predictors: (Constant), TotalIP, TotalSL, TotalCC, TotalOR, TotalIB

**ANOVA[b]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 2883.417 | 5 | 576.683 | 1.263 | .330[a] |
| | Residual | 6848.726 | 15 | 456.582 | | |
| | Total | 9732.143 | 20 | | | |

a. Predictors: (Constant), TotalIP, TotalSL, TotalCC, TotalOR, TotalIB

b. Dependent Variable: DEGREE

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 51.245 | 107.644 | | .476 | .641 |
| | TotalOR | -.081 | .441 | -.056 | -.184 | .857 |
| | TotalCC | .709 | .531 | .387 | 1.335 | .202 |
| | TotalSL | -.656 | .976 | -.182 | -.672 | .512 |
| | TotalIB | -.780 | .860 | -.305 | -.906 | .379 |
| | TotalIP | .355 | 1.301 | .089 | .273 | .789 |

a. Dependent Variable: DEGREE

## Summary of Findings

For this study, a census of all CATCH trained schools prior to Fall 2011 were surveyed. A total of 53% of the population participated (N =284) by completing the 94-item survey. Data

described, statistically analyzed, and presented in Chapter IV were derived from the Organizational Readiness to Change, Commitment to Change, School Leadership, Implementation Barriers, and Innovation Perceptions questionnaires. Of the 284 participants, there were 33 school administrators, 197 classroom teachers, 27 physical education teachers, 21 cafeteria supervisors, and 6 health department partners.

Statistical analysis revealed that modest associations and the measureable constructs do exist and have an effect on degree of implementation for classroom teachers, physical education teachers, cafeteria supervisors, and health department partners. These findings contribute to implementation of CATCH in southern Illinois and provide evidence, clarification, and serve as a foundation in determining best practices to enhance school health education programs.

# CHAPTER V

# SUMMARY, CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS

## Degree of Implementation

The primary purpose of this study was to describe and explain why schools in the same area that receive the same CATCH training result in different implementation practices. The examination include discovering whether organizational readiness, commitment to change, school leadership, implementation barriers, and innovation perceptions influenced degree of implementation of classroom teachers, physical education teachers, cafeteria supervisors, and health department partners. This study examined associations between measured constructs and groups as well as which construct influenced degree of implementation. Significant associations and predictors were discovered during the process of this study. This research should extend our knowledge concerning coordinated school health program implementation using predictors of implementation to enhance practices as well as addressing school employees separately by focusing on their direct involvement with the school health program.

In this chapter a summary of the study and discussion of the study is presented. Recommendations for future research and for the field of health education conclude this chapter.

## Introduction

Child health, specifically obesity, is a national problem that is not going away. Addressing health at schools in Illinois is important because health education is not included in the core curriculum. Many times health content received at school is the only source of health education children receive.

CATCH is a nationally recognized problem that has been proved to be successful. Schools located in the southernmost counties of southern Illinois have access to CATCH for

minimal cost, school-wide training, and immediate resources. Yet, many schools and school employees exhibit different degrees of implementation. Varying school implementation practices are a result of different individual implementation practices by those involved during implementation.

The resolve of this study was to identify key associations that are crucial in implementation practices of CATCH and the depth of influence between measureable constructs. We as health educators must make certain that we are foremost synergistic in our efforts to subdue childhood obesity and preventative measures for future generations. Health educators must be role models. We must take the time to determine how to effectively and efficiently implement school health programs to fully utilize school employees without overloading them. This next section will describe the major findings noted in Chapter IV and will include: a) degree of implementation, b) organizational readiness, c) commitment to change, d) implementation barriers, e) innovation perceptions, f) degree of implementation and measureable constructs, and g) predictors of degree of implementation.

## Summary of Results

### *Sample Characteristics*

A survey of 534 school employees including school administers, classroom teachers, physical education teachers, cafeteria supervisors, and health department partners at schools located in the southernmost counties of southern Illinois was conducted by the researcher November 26 – December 11, 2012, to assess CATCH implementation practices.

Schools included in this study had all been CATCH trained and familiar with implementation. A total of 36 schools participated in the research study. Each CATCH school completes CATCH evaluation surveys each year separate from the present study. The amount of

surveys returned for the present study accounts for the highest percentage of survey completion from CATCH evaluations at The Center for Rural Health and Social Service Development (CRHSSD). Survey return rate included school administers returning 77% (N = 33), classroom teachers 47% (N = 197), physical education teachers 71% (N =27), cafeteria supervisors 58% (N = 21), and health department partners 100% (N = 6).

## Discussion of findings

This study was limited in that it only included rural schools located in the southernmost counties of southern Illinois who may not be representation of schools with larger school employee population or schools in urban areas. It would be fallacious to make detailed demographic inferences between schools used in this study and urban schools; however, general inferences can be made with small or rural schools. Furthermore, this study only assessed theoretical organizational constructs (organizational readiness, commitment to change, leadership, and implementation barriers) and innovation perceptions from self administered surveys. Data from this study can be used to further investigate how theoretical organizational constructs and perceptions of CATCH influence degree of implementation.

## Degree of Implementation

### *School Administrators*

School administrators are faced with the decision to integrate additional school programs which increases the workload for typically overworked school employees. School administrators are aware the CATCH training is available and mandatory by criteria set by CRHSSD. The CRHSSD serves as a partner to schools and aides school administrators to ensure organizational readiness is accomplished prior to implementation. The CRHSSD and health department partners perform training seminars for both school administrators and school employees (classroom

teachers, physical education teachers, and cafeteria staff). Trainings help prepare organizations for change (implementation of CATCH). As a result, school administrators may be under the impression that their school (organization) is ready to implement because of CRHSSD involvement. This fact was exposed as school administrators reported favorably that their organization (school) was prepared for CATCH implementation. Partnerships between the CRHSSD and school administrators may explain why school administrators rated organizational readiness higher than classroom teachers, physical education teachers, and cafeteria supervisors. One problem is that school administrators serve a very limited role during CATCH implementation. Organizational readiness concerns may be present to classroom teachers, physical education teachers, and cafeteria supervisors but not to school administrators due to limited exposure.

As noted by classroom teachers and physical education teachers, CATCH is not implemented many times due to competing priorities. Being that CATCH is not mandatory to implement, school administrators prioritize mandatory requirements such as state requirements over CATCH. The Illinois Standardized Achievement Test (ISAT) is an example of an Illinois state requirement that school administrators prioritize as being exceptionally important and outweighs many extracurricular activities and programs. Another reason could be a result of lack of program ownership. The CRHSSD provides CATCH to all schools in the southernmost counties of southern Illinois for no cost. The CRHSSD project coordinator and CATCH representatives recruit schools to participate free of cost. As mentioned earlier, CATCH curriculum, training, and employees are funded to ensure implementation. It is stated within the literature that one of the biggest barriers in implementing coordinated school health programs is the lack of funding (Linn et al., 2002; McCullum et al.., 2006). Perhaps the lack of monetary

investment into CATCH contributes to why commitment rating (cooperative) was low by school administrators and not championing. Commitment is confirmation of innovation adoption (Klein & Sorra, 1996; Rogers, 2003). School administrators who reported lower levels of commitment to change (adopt CATCH) could present a detrimental barrier for school employees as they are attempt to integrate and implement CATCH. Classroom teachers reported that they supported school administrators' decision to adopt CATCH but stood a neutral stance that school administrators (organization management) had encouraged staff to embrace the change.

*Classroom Teachers*

Classroom teachers accounted for the lowest percentage of degree of implementation (52.97%; N = 197). This statistic represents the degree at which the CATCH lessons in the curriculum were implemented in the classroom. Classroom teachers are in contact with students more than any other employee group within schools. With that in mind, much research has been conducted on teachers and their job roles and responsibilities. It has been noted within the literature how the teacher job description has drastically changed over time (Turner, 2001; Linn et al., 2002; Coble & Azordegan, 2004; Valli & Buese, 2007). The integration of CATCH is an additional role and responsibility for classroom teachers. Furthermore, classroom teachers who implement CATCH are asked to do more work compared to physical education teachers and cafeteria workers in terms of work beyond their normal workload; therefore, additional workload could contribute to lower degree of implementation percentages by classroom teachers compared to the other groups. The CATCH curriculum is not included in the Illinois state curriculum; therefore, teachers must integrate individual lessons into their existing required classroom curriculum. The CATCH classroom curriculum lessons are chronological but many times implemented out of order depending on how and where lessons can be integrated into to

teacher's existing curriculum. Since health is not required in the state curriculum, many teachers are not penalized for not implementing CATCH. It is common for external programs to be omitted from implementation to meet the demands of the core curriculum due to the additional workload and responsibility within the classroom.

Classroom teacher organizational readiness and degree of implementation represented a statistically significant positive association. The Pearson correlation suggests that high rating of organizational readiness denotes high degree of implementation. The correlation between organizational readiness and degree of implementation describe that the two variables are significantly associated to each other and that organizational readiness does affect classroom teacher CATCH participation. If an organization is not ready to implement a program, degree of implementation can be negatively influenced. Classroom teachers reported in this study that their school will benefit from the change, legitimate reasons call for implementation, and that if they put their mind towards learning CATCH they would be prepared. However, if a schools, classroom, or teacher are not adequately prepared and ready to implement, degree of implementation decreases. Organizational readiness could be addressed during an initial school screening period where the demands of CATCH implementation are assessed within an organization prior to implementation. Overall, when an organization is prepared and ready to implement CATCH classroom teachers yield a high degree of implementation.

As stated within the literature, time and pressure for student performance serve as major barriers that affect external program implementation (Turner, 2001; Linn et al., 2002; & Valli and Buese 2007). Job changes in role and responsibilities for classroom teachers have created an increased demand for classroom structure to enhance teacher efficiency. School structure includes making sure that additional work is limited for classroom teachers. Additional work

discourages and negatively affects teacher output and program implementation. When an organization (school) is not ready for change such as not having adequate supplies, space, or management support; classroom teachers spend additional time, which they do not have, and work on things that should have been done prior to implementation. Since CATCH is not mandatory by schools in southern Illinois to implement, teachers are less likely to put additional time towards implementation and school administrators are less likely to ask teachers to do more than what they are expected to perform (Linn et al., 2002; Holt et al., 2007). Additional means of effort in terms of time could result in a negative perception of either the organization or CATCH. Organizational preparedness could prevent possible potential problems prior to implementation.

Classroom teachers had the second highest ratings of commitment to change between study groups. CATCH encourages curriculum lessons to be integrated into the yearly curriculum. Classroom teachers spend a significant amount of time preparing lessons and fitting them into the existing curriculum such as science and time commitment can be extensive. Degree of implementation can be explained by the overall commitment that classroom teachers must exhibit to implement CATCH. If teachers are not committed to CATCH implementation; classroom teachers may partially implement lessons, only implement certain lessons, or completely disregard and ignore CATCH lessons. This explains the importance of CATCH commitment from classroom teachers. Classroom teachers have the hardest job in integrating CATCH in terms of additional work for implementation. When teachers are not committed to implement CATCH; degree of implementation decreases. Classroom teacher commitment to CATCH is vital for program success. CATCH commitment is not specifically addressed during CATCH training but is assumed to be embodied by school employees. Commitment is a variable difficult to enhance with classroom teacher responsibility overload and no implementation

incentives (Valli and Buese, 2007). Classroom teachers do not receive any type of incentives for additional work to implement CATCH which could be detrimental to CATCH implementation.

Barriers themselves can hinder the practice and performance of individuals regardless of the settings. As mentioned throughout this chapter, the increasing roles and responsibilities of school employees spotlight the need to identify and eliminate things that will perturb implementation performance. Classroom teachers reported a statistically significant negative association between implementation barriers and degree of implementation. This association describes that high ratings of implementation barriers are associated with low degree of implementation. This statistic supports research in literature that describes the effect of program barriers on implementation (Yasar & Neczan, 2010). Implementation barriers can create additional work for school employees and result in school decision makers question implementation efforts. Programs can be proven to be effective but may not be feasible to implement.

A statistically significant association was reported between implementation barriers and degree of implementation ($p < 0.000$). Classroom teachers rated bureaucracy, difficulty controlling costs of CATCH, lack of incentive to implement, preparation time, and competing priorities such as ISAT as being the most prominent barriers faced during implementation. Bureaucracy is defined as being a group of non-elected officials that enforce laws, rules, or functions within an organizational or institution (Martin, 1970). Bureaucracy exists within many school organizations to help perform and accomplish daily functions such as the Parent Teacher Association (PTA), teacher aids, etc. In many cases organizational bureaucracy can be very beneficial but it can also create additional problems. Each school in the southernmost counties of southern Illinois has school health representatives. School health representatives bridge

communication links between health department partners and individual schools. School health representatives are in charge of relaying information to the CATCH onto Health consortium to receive additional materials, training, and serve as a CATCH resource. If school health representatives do not fulfill their CATCH responsibilities, bureaucracy can be viewed negatively and considered an implementation barrier. For example, if classroom teachers inform their school health representative that they need curriculum materials but do not receive additional materials, bureaucracy has failed and can serve as a major implementation barrier.

It was reported in the present study that classroom teachers agreed that time and lack of implementation incentives serve as a major implementation barriers. Current research supports the fact that teachers have increased responsibilities because more is asked from them (Turner, 2001; Linn et al., 2002; Valli & Buese, 2007). As CATCH does not necessarily require a significant amount of additional work, integration does require additional psychological work. Psychological work can be just as stressful and energy consuming as physical work. Psychological work could include mentally planning classroom lessons and integrating CATCH into existing curriculum as well as pressure from hierarchical powers to implement program. Furthermore, no additional incentives, recognition, or compensation are offered as reinforcement for classroom teachers for additional physical and psychological work that goes into implementing CATCH. Incentive, recognition, and compensation equally serve as motivational factors that influence implementation resilience. Overall, teachers reported they were confident of their abilities to implement because CATCH is not difficult to implement. Lack of incentive affects implementation motivation. Asking teachers to spend extra time to integrate an additional curriculum creates an additional physical and psychological responsibility that can affect degree of implementation on employees that are already overwhelmed and overworked.

*Physical Education Teachers*

Physical education teachers accounted for the second highest degree of implementation between participant groups in the present study. Physical education teachers have state requirements that provide a specific framework and guidelines that teachers are instructed to implement. CATCH PE meets national guidelines for physical education so many of the CATCH PE components overlap and are very similar to the national physical education guidelines (Kelder et al, 2003). Overlapping contents include safety rules, fair play, constant physical activity movements, appropriate competition, and the promotion of off-campus physical activity (CATCH, 2012). Overlap among mandatory national guidelines (National Association for Sport and Physical Education, NASPE) and CATCH aid integration of CATCH into existing physical education curriculum and help yield high degree of implementation.

The component that physical education teachers implemented the least was utilizing CATCH posters on the walls of the gym. All CATCH schools are provided CATCH materials which include PE posters; however, many rural schools use school gymnasiums for multiple purposes and posters may not be feasible to display daily. For example, gymnasiums are often used as gathering areas before and after school as well as an area for presentations, display student's artwork, projects, or presentations. Being that the gymnasium is used as a central gathering location, many schools utilize the gym differently which may have resulted in a lack of utilizing CATCH promoting visuals.

Organizational readiness was not reported to have a significant association with degree of implementation of physical education teachers. Much of what physical education teachers teach during their time with students follow overarching national education guidelines that serve as a framework to prepare students for physical demands of daily life (Kelder et al., 2003). CATCH

utilizes physical education classes to reinforce physical activity components that are emphasized in the CATCH classroom curriculum. CATCH is presumed to supplement and enhance existing practices of physical educators. Therefore, CATCH components complement existing activities and program similarities make for easy integration which may explain higher percentages of degree of implementation compared to classroom teachers. Since CATCH PE does not involve additional or intensive organizational change, organizational readiness may not play as important role compared to classroom teachers or cafeteria supervisors.

Physical education teachers and health department partners also did not present a significant association between commitment to change and degree of implementation. Physical education teachers and health department partners reported to have the second and third lowest rating between participant groups of commitment to change compared to the other groups. Differences between commitment to change and degree of implementation could be a result of the small sample sizes of physical education teachers and health department partners.

Physical education teachers reported to have a statistically significant association between school leadership and degree of implementation. The positive Pearson correlation (.452) between school leadership and degree of implementation suggests that more school leadership that is exhibited denotes a higher percent of degree of implementation. School leadership is much the same as leadership in other organizations. Roger's (2003) notes the influence of leadership during the innovation adoption process but leadership is also equally important after adoption. Employee support reinforces the purpose of the program and mission of the organization. Sahin (2011) describes that when school leadership executes positive leadership, school employees respond positively. This study (Sahin, 2011) suggests that when school

administrators are positive about their mission; including CATCH, physical education teachers respond with mission compliance and implementation.

It has been noted within the literature that leadership is an important component for organizational success (Osganian et al., 2003). School leadership is exceptionally important when it comes to implementation of external programs such as CATCH. Physical education teachers were the only group that reported to have a significant association between school leadership and degree of implementation. Many schools address health within the boundaries of physical education because presumably it makes sense to teach health when students are learning and practicing health skills. Furthermore, school administrators may encourage physical educators differently than classroom teachers or cafeteria supervisors because physical education teachers more curriculum flexibility. Flexible schedule allow physical education teachers to integrate areas of CATCH that were skipped or omitted in classrooms. School administrators understand restrictions school employees are faced with and presumably utilize physical education teachers differently due to their curriculum flexibility. It is important to note that each group (classroom teachers, physical education teachers, cafeteria supervisors, and health department partners) reported their school leadership was very supportive of change (CATCH implementation), recognized needs of the school, and their employees. Responses from study groups suggest school leadership can enhance the PE component of CATCH and that school administrators can be an important factor influencing CATCH implementation.

*Cafeteria Supervisors*

Explanation for degree of implementation for cafeteria supervisors is very similar to CATCH PE. Cafeteria supervisors are governed under the guidelines of the New School Lunch Program (NSLP) which was mandated for immediate inclusion on July 1, 2012 (Department of

Agriculture, 2012). Cafeteria supervisors yielded a CATCH degree of implementation of 53.6%. This means that of all the CATCH unique cafeteria components, roughly half of the components were implemented. The NSLP is a national nutritional framework that has drastically changed the way foods are prepared and served in schools across the United States. As many of the federal guidelines are very similar to the CATCH *Eat Smart* components, organizational change have increased supervisor's workload and could have had an effect on implementation of the unique cafeteria components that CATCH promotes. Unique cafeteria components that were consistently not implemented were cafeteria tours and taste testing. Lack of implementation of these two components could be a result that cafeteria supervisor's prioritize preparation time towards NSLP inclusion over CATCH unique components implementation. Components that take much less time such as hanging food posters that present nutritional facts were almost always implemented by cafeteria supervisors. This suggests that components that require less time are more likely to be implemented. Overall, more than half of the unique CATCH components were implemented throughout the 2010-2011 school year.

This past year marked the beginning of a new era in school lunches. New guidelines and strict criteria have been implemented to help educate and enhance nutritional intake of students. Cafeteria supervisors reported that they had high support for the organization (appropriateness) and management support. Management support could be result that many of the schools in the southernmost counties of southern Illinois were going through the transition of preparing to integrate and implement the NSLP and school administrators were encouraged to implement guidelines. Many schools across the nation received incentives for NSLP implementation which also could have influenced managerial support. Furthermore, high rating of support of the

organizational may have resulted from the inevitability that change (NSLP) was present and happening in the near future.

Cafeteria supervisors reported a statistically significant association ($r = -.421$; $p < 0.05$) between implementation barriers and degree of implementation. This association suggests that low ratings of implementation barriers denote high degree of implementation. No specific implementation barriers were reported by cafeteria supervisors as being significant contributors. This association could be a result that 91% of all participating schools are currently implementing the New School Lunch Program. Cafeteria guidelines, cooking ingredients, and food preparation has created a different workload with the inclusion of additional duties. Additional implementation barriers could be associated with new work experiences and work duties accompanied by the integration of the NSLP. Implementation barriers from NSLP inclusion could have been associated with implementation barriers with CATCH.

The most noted barrier listed by cafeteria supervisors was that implementation is too difficult to control the costs. Eating healthy is not cheap and food preparation for non-processed meals is more extensive. Research has shown that cafeteria workers agree that CATCH *Eat Smart* program was beneficial and agreed that implementation did require additional preparation time (McCullum et al., 2004). Additional time is spent trimming additional fat and skin, whipping butter before using it in recipes, adding egg whites rather than whole eggs when preparing grains, breaks, and desserts, and adding peas and beans to entrees. Additional work could result in not being able to give cafeteria tours, taste testing, and meal planning lessons. Furthermore, additional preparation time yields either overtime work for current employees or the hiring of additional help both of which are increased costs. Controlling costs could have also been associated with buying healthier foods which might exceed the cafeteria budget. Additional

costs could explain why cafeteria supervisors were not able to implement more of the unique CATCH cafeteria components.

*Health Department Supervisors*

Degree of implementation was the highest for health department partners (95%) which describes the availability of Family Fun Night that partnered health departments hold for CATCH trained schools. This statistic provides evidence that health department partners do, for the most part, fulfill their role to complete the family component of the CATCH school health program. Another reason that could account for high degree of implementation for health department partners is that Family Fun Nights are a requirement from the CRHSSD to receive grant funding which accounts for a percentage of partner's salaries.

*Regression*

A regression analysis was administered to determine which of the five constructs (organizational readiness, commitment to change, school leadership, implementation barriers, or innovation perceptions) was most influential on degree of implementation by school employees. This study reported a variation of 9.9% ($R^2 = 0.099$). This statistic means that the measured constructs explain roughly 10 % of the variation of implementation practices which is important in explaining implementation practices. Construct variation was small; it still provides vital evidence that can help enhance implementation practices. There are endless variables that contribute to school employee participation and work performance which may include: teaching experience, personality, professional stress, personal stress, or individual program adoption (ownership). This study suggests that organizational readiness, commitment to change, school leadership, implementation barriers, and innovation perceptions account for roughly 10 percent of variation. Furthermore, this study can report that significant associations and predictors were

identified between school employees that can be used as a foundation for future research, enhance current implementation practices, and increase degree of implementation.

The regression analysis revealed that organizational readiness and implementation barriers were both significant predictors of school employee degree of implementation ($p < 0.001$). Implementation barriers were identified to have the strongest significant relative effect on degree of implementation ($B = -.571$) which suggest it is most significant predictor between the measured constructs of degree of implementation for classroom teachers, physical education teachers, cafeteria supervisors, and health department partners ($p < 0.019$). Yasar & Neczan (2010) conclude that barriers can limit performance and influence the outcome of a program. Bureaucracy, lack of incentive, time for return for innovation, and lack of experience deemed to be the most significant individual barriers as rated by school employees and health department partners. Organizational readiness, commitment to change, school leadership, and innovation perceptions all pose different reactions from different school employees. Implementation barriers are one aspect of implementation that is very similar throughout implementation of all school employees. Implementation barriers are present in the classroom, gymnasium, and cafeteria. Some environments such as different schools, classrooms, and leadership facilitate constructs (organizational readiness, commitment to change, school leadership, and innovation perceptions) differently but implementation barriers are present in every setting. For this reason, it seems just that implementation barriers were shown to be the biggest contributor of degree of implementation. School employees and health department partners were then separated and statically analyzed which constructs were most influential on degree of implementation.

A regression analysis was then assessed individually for each group (classroom teachers, physical education teachers, and cafeteria supervisors) to determine which measureable construct

influenced degree of implementation the most for classroom teachers. Of the five constructs, organizational readiness had the strongest significant relative effect (B = .388) on degree of implementation in predicting degree of implementation of classroom teachers ($p < 0.028$). Organizational readiness is significantly important during implementation because they have to do the most work in terms of integrating and implementing CATCH compared to the other groups. This statistic reported a variation of 8.7% ($R^2 = 0.087$) which describes that the constructs account for roughly 9% of variation. Small variation suggests that 91% of the variance was unexplained and more variables are needed to address predictors of classroom teacher implementation practices.

Furthermore, the significant implementation barriers which were identified by classroom teachers included no implementation incentives, lack of time, and state requirements (ISAT) are all concerns noted and supported in previous research (Turner, 2001; Linn et al., 2002; Coble & Azordegan, 2004; Valli & Buese, 2007). Implementation barriers could promote additional stress to an already stretched professional. Many teachers are becoming burnt out due to increased roles and responsibilities (Pederson, 2007). Teacher retention becomes much harder for school administrators when teachers feel as if they are overworked and not compensated for their efforts. Implementation barriers are always going to be present but it is important to recognize specific barriers and address them during CATCH training prior to implementation. For example, many of CATCH curriculum integration prior to school starting could decrease physical and psychological work. Addressing barriers can increase teacher awareness and enhance organizational readiness and help preserve teachers.

Of the five constructs, school leadership had a statistically significant relative effect on degree of implementation in predicting physical education teacher degree of implementation ($R^2$

= 0.259). This statistic suggests that the measured constructs account for roughly 25.9% of variation for physical education teacher degree of CATCH implementation. As it was noted previously, physical education teachers have the most flexible curriculums. It is not unlikely to think that school administrators may encourage physical educators differently than classroom teachers or cafeteria supervisors. Physical education teachers have more flexibility within their curriculum which would allow them to teach a variety of different topics whenever needed. School administers may feel that classroom teachers may be overloaded and emphasize physical education teachers to pick up where classroom teachers are unable to integrate CATCH. Flexible schedules allow physical education teachers to integrate areas of CATCH that were skipped or omitted in the classroom. Timing when CATCH may be less prioritized could include dates when ISAT (or any other standardized test) is being administered. School administrators understand restrictions school employees are faced with and presumably could utilize physical education teachers differently due to their curriculum flexibility. Leadership is an important factor in enhancing any structured implementation practices. School leadership could have a more profound effect on physical education teachers than this study could reach.

The current study had a group variation of 9.9% when participants were grouped together. The low group variance could be a result of the number of sample participants in the groups of physical education teachers, cafeteria supervisors, and health department partners. Furthermore, higher variations were present between the measured constructs, cafeteria supervisors ($R^2 = 0.296$), and physical education teachers ($R^2 = 0.259$). As these variances are considerably higher than the overall group variation, a larger sample size could have revealed further significant findings.

In addition, moderate variation could be a result of high participation rates by cafeteria supervisors (58%), physical education teachers (71%), and health department partners (100%). High participation rates make it difficult to find variance. Classroom teachers were the only group with a large sample size (197) but reported to have the lowest variation ($R^2 = 0.087$) among the measurable constructs and degree of implementation. I thought that organizational readiness, commitment to change, school leadership, implementation barriers, and innovation perceptions would account for more; however, the current study has proved to set the foundation to begin the process of addressing implementation variables that affect implementation practices of school health programs by school employees.

This study reports theoretical organizational constructs do have moderate associations in school employees concerning degree of implementation; however, constructs statistically account for limited variance and suggests that more variables are needed to further explain school employee implementation practices. This study hypothesized that organizational readiness, commitment to change, school leadership, implementation barriers, and innovation perceptions would be large factors in explaining degree of implementation but proved to only moderately explain implementation practices. The literature extensively reports the five constructs used in the present study; however, personality, stress, and program ownership (adoption) have also been noted within the literature to influence and contribute to employee participation (Hough, 1992; Furnham, Forde, & Ferrari, 1999; Kyriacou, 1987; Kyriacou, 2001).

Researchers have reported that personality is not only a viable variable applied in psychology but also an alternative predictor of work performance (Hough, 1992). Different personalities yield different work performance rates and should be included as an additionally variable to examine with school employee implementation practices (Furnham, Forde, & Ferrari,

1999). Personality has been found to account for between 20-30% of the variance in work performance (Furnham et al,, 1999). Furnham et al., (1999) concluded that personality factors and traits could account for significant variation in work performance in numerous organizational settings. Much research has been conducted concerning schools; however, up to date no research exists examining school employee personality and degree of implementation of coordinated school health programs.

In addition, Kyriacou (2001) summarized that stress is also a major contributor to work performance. Kyriacou (2001) suggested that research geared towards teacher stress should move towards the direction of educational reforms generating high stress and how teachers deal with stress to name a few. Stress within the work environment of schools can include things that occur in the classroom, halls, playground, lunch meetings, or job responsibilities. Furthermore, stress can be carried from home to work (Kyriacou, 1987). School work stress can also lead to decreased work performance and teacher burnout (Kyriacou, 1987). Health education program implementation is a small part school employees' overall job. If health education programs become additional stressors or trigger stressful events, school employee degree of implementation can be negatively affected and decrease. School stress should be an additional variable examined as a determinant and contributing factor towards school employee degree of implementation.

Program ownership is very closely linked with individual innovation adoption (Rogers, 2003). Program ownership is a construct in the organizational agency theory but may be very applicable while examining school employees and degree of implementation (Oswald & Jahera Jr, 1991). It is not uncommon for schools to adopt school health programs without consulting school employees. Many teachers may choose not to implement because they simply haven't

adopted the program or not feel ownership of classroom, cafeteria, or gym implementation practices. Teacher burnout has resulted in school staffs changing periodically. As school employees change, dynamics of the school environment change as well which could affect individual adoption and ownership due to lack of training, changing responsibilities, and leadership changes. As much change occurs in elementary schools, program adoption and ownership should be examined as another variable to explain school employee degree of implementation.

Lastly, work experience is a variable that has been closely examined as being a predictor of work performance and program implementation (Baer, 2012; Barrick, Mount, & Li. 2013). As workers age, they acquire valuable experience that enhances their labor market productivity (Demiralp, Colburn, & Kock, 2010).Work experience provides individuals knowledge that can help them be more productive in the workforce. Teaching experience provides teachers with curriculum flexibility allowing them to alter or tweak aspects within the classroom to meet school goals. It could be speculated that teachers who have done the same thing within their classroom for prolonged periods of time do not want to change regardless of contributing factors such as: organizational readiness, commitment, school leadership, implementation barriers, or innovation perceptions. Furthermore, it could also be speculated that consistent repetition associated with work experience could be associated with innovation implementation laggards due to a lack of creativity (Baer, 2012). The current study collected data concerning specifically CATCH experience but not teaching experience. Future research should look to examine if work experience is a predictor of the implementation of educational innovations such as CATCH.

It could be speculated that the addition of these possible variables (personality, stress, program ownership/adoption, and work experience) could help explain more variation in school

employee participation practices. These variables have never been examined with school employees or participation practices and could provide further clarity in explaining school employee implementation practices. The findings from the current study provide a solid foundation in defining best implementation practice and will take several additional studies to complete the process.

Overall, this was successful and found conclusive evidence that statistically significant associations between school employees and the measureable constructs were present. Furthermore, significant predictors were identified that influence school employee degree of implementation. The purpose of this study was to determine if organizational readiness, commitment to change, school leadership, implementation barriers, and innovation perceptions could have an association and predict degree of implementation. This study provides suffice evidence that significant associations were present and certain constructs can serve as viable predictors of school employee degree of implementation. Even though variations between constructs were limited, predictions and associations can be great assets used in working with community health education programs. Furthermore, degree of implementation predictors were discovered when school employees were grouped together as well as separated. Classroom teachers and physical education teachers both reported to have significant associations and constructs that have a statistically significant relative affect on degree of implementation. These findings are very important for health educators as we attempt to address health education through coordinated school health programs.

As previous research has noted, successful program implementation is a result of collaborative efforts from all parties involved in the implementation process. Organizations are managed different and account for different implementation practices and strategies. This study

concludes that theoretical organizational constructs have an effect on school health program implementation, which has never been researched prior to this study. Health educators can use information from this study as a foundation for evaluation prior to implementation, CSHP training, and a bridge to increase degree of implementation. Organizational readiness, school leadership, and implementation barriers each uniquely affect school employees during implementation. Overall, this study can serve as foundation for future studies to further examine how programs can be tailored for implementation and train employees to be efficient implementers.

Schools used in this study were very cooperative with the researcher due to an existing relationship with the CRHSSD. School administration and health department partners encouraged school employees to complete surveys within the research timeframe. Surveys were able to be completed quickly because of the timing of survey administration. Surveys were administered during a period that school administrators deemed "slow". Every school in the southernmost counties of southern Illinois that met study criteria were involved in this study.

## Conclusions

The following conclusions can be drawn from the results of the analyses that were performed upon the research study sample.

1. This study reports that classroom teachers have the lowest CATCH degree of implementation compared to physical education teachers, cafeteria supervisors, and health department partners. Higher levels of implementation are associated with groups (physical education teachers and cafeteria supervisors) that have overlapping criteria between national, state, and local school requirements and CATCH.

2. School employees report a significant correlation association between degree of implementation and organizational readiness ($r = 0.252$; $p < 0.001$).
3. School employees report a significant correlation association between degree of implementation and implementation barriers ($r = -0.273$; $p < 0.001$).
4. Classroom teachers report a significant correlation association between degree of implementation and organizational readiness ($r = 0.222$; $p < 0.002$).
5. Classroom teachers report a significant correlation association between degree of implementation and implementation barriers ($r = -0.247$; $p < 0.001$)
6. Physical education teachers report a significant correlation association between degree of implementation and school leadership ($r = .452$; $p < 0.018$).
7. Cafeteria supervisors report a statistically significant correlation association between degree of implementation and implementation barriers ($r = -0.421$; $p < 0.05$).
8. Cafeteria supervisors report a statistically significant correlation association between degree of implementation and commitment to change and implementation barriers ($r = 0.489$; $p < 0.025$).
9. Implementation barriers were identified to have a statistically significant relative effect on degree of implementation which suggests it is a significant predictor on degree of implementation among the constructs used in the present study for classroom teachers, physical education teachers, cafeteria supervisors, and health department partners ($B = -0.571$; $p < 0.019$).
10. Organizational readiness was identified to have a significant relative effect on degree of implementation which suggests it is a predictor of degree of implementation among the

constructs used in the present study for classroom teachers, physical education teachers, cafeteria supervisors, and health department partners ($B = 0.362$; $p < 0.014$)

11. Organizational readiness was identified to have the strongest relative effect on degree of implementation which suggests it is most significant predictor to degree of implementation for classroom teachers between the constructs used in this study ($B = 0.388$; $p < 0.028$).
12. School leadership was identified to have the strongest relative effect on degree of implementation which suggests it is most significant predictor to degree of implementation for physical education teachers between the constructs used in this study ($B = 1.793$; $p < 0.015$).
13. Among physical education teachers, the measures accounts for 25.9% variation. Replication studies should be conducted with physical education teachers with a larger sample. A larger sample pool may reveal additional predictors of physical education teacher degree of implementation.
14. Among cafeteria supervisors, the measures accounted for 29.6% variation. Replication studies should be conducted with cafeteria supervisors with a larger sample. A larger sample may reveal additional predictors of cafeteria supervisor degree of implementation.

## Recommendations

### *Recommendations for Future Research*

Attitude toward the integration of coordinated school health programs (specifically CATCH) has drastically improved over the last two decades. Yet, many school employees still have trouble integrating and implementing school health programs. Research indicates that the overall progression of school health programs with longitudinal studies reporting the

effectiveness of program implementation. The problem exists though that program implementation is not universal. Problems faced by classroom teachers are different than those faced by physical education teachers. Many misconceptions are prevalent about implementation which needs to be addressed prior to implementation. The following are recommendations for future research:

1. Because of the small amount of information in regard to school health program implementation barriers, additional philosophical and research studies of both quantitative and qualitative need to be developed to determine depth of barriers associated with different school employees.
2. This study should be replicated using urban or inner-city schools.
3. This study should be replicated examining the same constructs but utilizing qualitative research design.
4. Studies should be conducted that measure the perception of CATCH from the perspective of students.
5. Research should be conducted examining various training protocols for employees.
6. Future research efforts need to be designed to assess how school administrators decide if their school is capable or prepared to implement school health programs.
7. Research should be designed to examine the effects of training classroom teachers, physical education teachers, and cafeteria supervisors separately rather than together.
8. Research needs to be designed to assess if one training course is an enough training to implement a school health program.
9. Research should be designed to assess the association between children's perception of school employee's health and their health status.

10. Future research needs to be done to reevaluate middle school and high school health curriculum to examine its compliance with the objective of Healthy People 2020 and health education standards.
11. Future research needs to be done examining personality as an additional variable. Personality has proven to be significant predictors to work performance but limited research exists concerning school employee work participation.
12. Stress should be examined as an additional predictor of school employee degree of implementation. Stress has been widely researched concerning teacher performance; however, not in relation to school health programs. Stress may account for additional variance and provide further clarity towards defining best implementation practices.
13. Program ownership should also be examined as an additional variable that contributes to school employee degree of implementation. Changing school staff and job descriptions can lead to a lack of program ownership/adoption.
14. Work experience should be examined as an additional variable that contributes to school employee degree of implementation. It would be interesting to see if work experience significantly influences degree of implementation.

*Recommendations for Health Education Profession*

The following recommendations for Health Education are based on the findings and conclusions of this study.

1. Much effort focuses on school health programs; however, there is a lack of scientific information about why school health programs are not being fully implemented and utilized. Health educators must recognize the serious gap in innovation adoption and implementation practices.

2. Health educators must assess the importance of collecting scientific data that addresses school health programs and the deficiencies that affect implementation.
3. Health educators should develop a way to assess schools and determine if schools are capable of school health program integration. This includes a school environment surveillance, resources checklist, and evidence of sustainability.
4. Methodological research must be developed to appropriately develop a standardized and verifiable set of procedures to train school employees on how to implement each component of CATCH. Furthermore, much more research should be collected and reported about reasons why teachers choose not to implement CATCH.
5. Time and state education requirements served as common implementation barriers. Integration protocols should be developed where health educators train school employees how to integrate school health programs lessons into their existing curriculums which could serve to save time and be more efficient.
6. Health educators should determine a best practice list of variables that significantly contribute to degree of implementation. Variables should be integrated into training protocols in order to help enhance implementation practices.
7. Health educators must aid schools to establish community outreach partners for program support. Program partners can help implement CATCH and serve as a way to expand associations. Health educators can serve as the bridge between local health departments, hospitals, and health agencies and elementary schools.
8. Health educators should be at the forefront of school health program development so that a supportive environment for school employees is established.

9. Health educators should involve school administrators more in CATCH implementation. A further understanding of CATCH implementation may have a significant influence on the amount of support provided to school employees.
10. Health educators should strive to increase school employee awareness of constructs that that negatively affect program implementation. Furthermore, health educators must be open to learn from school employees to improve understanding of program implementation.
11. Health educators should look to evaluate organizational and employee ownership of programs that are provided for free through grants.

*Recommendations for School Administrators*

1. School administrators need to be mindful of the school environment. This includes the physical structures, holding focus groups with school employees to address their attitudes, and assessing practicality of implementation of a program prior to adopting CATCH. Not every program is practical to implement in every setting.
2. Provide some sort of incentive to implement CATCH. Incentive could include a gift certificate, no lunch duty, or an employee luncheon for the grade level that has the highest degree of implementation over each semester.
3. Be more involved with CATCH implementation practices by helping with implementation either in the classroom during CATCH lessons, promoting physical activity components to students during physical education, or helping in the cafeteria while children are eating.
4. Work closely to CATCH representatives at each school and to be aware of possible implementation problems prior to problem diffusion. School administrators can stop,

limit, and attempt to change aspects within the environment and prevent potential problems that may occur during implementation.

*Recommendations for Project Coordinator*

1. CATCH training should be done at least once a year for each school to ensure that new teachers are trained as well to reinforce training to veteran teachers.
2. Train classroom teachers, physical education teachers, and cafeteria supervisors separately. Each has different needs and specific training will enhance the degree of implementation by each group.
3. Make sure that school administrators come to each group's training.
4. Create CATCH health resource teams that include representatives from each grade level, physical education, and cafeteria. Resources teams will have group representatives (classroom teachers, physical education teachers, and cafeteria supervisors) that will be used to address implementation problems and serve as direct communication links with health department partners.
5. Establish a way to continue funding if grant or supporting monies are eliminated. This means that when updates are made to the CATCH program, schools are provided with up to date material, content, and innovative ideas to enhance implementation and student learning.
6. Provide CATCH training for more health department partner employees. More CATCH trainers would enhance training and provide additional credible resources. This includes training graduate assistants who work at the CRHSSD, train staff who help during the Family Fun Nights, or parents that are willing to help.

7. Analyze school readiness prior to implementing the program. School readiness could be addressed when schools are pre-implementing. Readiness analysis should address all venues that the program with utilize and possible barriers. Furthermore, solutions should be given to school employees on how to rectify problems.
8. Expand CATCH partnership within the community. This could include utilizing private practitioners, physical therapists, local chefs, and the local produce industry.

## Summary

The subject of school health programs, specifically CATCH, is not a secret of its effectiveness concerning behavior change that enhances child health. Health educators, education administrators, university faculty, curriculum instruction professionals and others need to continue to accumulate more information to speak with authority on how to provide schools with school health programs, how to integrate curriculums, and how to evaluate implementation and effectiveness of program. Knowledge is changing everyday due to constantly changing environments. Yet, it is still not understood how to ensure effective implementation. Although an abundant amount of research has been gathered, social systems within school environments and varying school leadership styles affect implementation environment that constantly changes.

Regardless of all research and discussion concerning implementation, many factors contribute to implementation practices. This study shows that the extent of contributing factors are not equally weighted between school administrators, classroom teachers, physical education teachers, and cafeteria supervisors. Implementation problems limit and keep people from performing optimally (Yasar & Neczan, 2010). Problems differ due to the calling of the particular job, setting, and overarching guidelines.

School health programs are the most effective way for children to receive health education when health is not included in the core curriculum. The battle to provide CATCH to every school in southern Illinois was eliminated by grant funding. Establishing implementation consistency in southern Illinois is a problem that is present all over the country. CATCH is not effective if it is not being implemented. The quest of this study was to examine what constructs contributed to higher degree of implementation.

To the extent of this study, the researcher suggests that training protocols focus on component specific training rather than a universal crash course. Each component of CATCH has specific objectives to accomplish; therefore, training should reflect each component. As noted by previous research as well as the present study, time is the biggest barrier. This calls extensive collaboration between school employees, health department partners, and the project coordinator.

The subject of school health program implementation can no longer be ignored by health professionals. In many areas school health programs serve as the primary health education source. Knowledge regarding school health program implementation concerning organizational readiness, commitment to change, school leadership, implementation barriers, and innovation perceptions must be enhanced. Future research needs to expand on the variables used in this study to help identify specific variables that predict and contribute to the degree of implementation of school employees concerning school health education programs. The present research and the data associated with CATCH implementation practices in southern Illinois will provide a more accurate assessment of needs of program implementers and school employees.

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**SIUC HSC FORM A**

**REQUEST FOR APPROVAL TO CONDUCT RESEARCH ACTIVITIES INVOLVING HUMAN SUBJECTS**

**CERTIFICATION STATEMENT**

By making this application, I certify that I have read and understand the University's policies and procedures governing research activities involving human subjects. I agree to comply with the letter and spirit of those policies. I acknowledge my obligation to:

1. Accept responsibility for the research described, including work by students under my direction.
2. Obtain written approval from the Human Subjects Committee of any changes from the originally approved protocol **BEFORE** implementing those changes.
3. Retain signed consent forms in a secure location separate from the data for at least **three** years after the completion of the research.
4. Immediately report any adverse effects of the study on the subjects to the Chairperson of the Human Subjects Committee, SIUC, Carbondale, Illinois - 618-453-4533 and to the Director of the Office of Sponsored Projects Administration, SIUC.
   Phone 618-453-4531. E-mail: **siuhsc@siu.edu**

**Project Title**
Retrospective evaluation of factors that influence the implementation of C.A.T.C.H. in southern Illinois.

RESEARCH ADVISOR'S ASSURANCE: My signature on this application certifies that the student is knowledgeable about the regulations and policies governing research with human subjects. I am aware of my obligations stated on Form A and will be available to supervise the research. When on sabbatical leave or vacation, I will arrange for an alternate faculty sponsor to assume responsibility during my absence. I will advise the Human Subjects Committee by letter of such arrangements.

Researcher(s) or Project Director(s) Matthew Ryan Bice Date 10.30.12
Please print or type name below signature.

Researcher's Advisor (required for all student projects) Dr. Stephen Brown Date 10/30/12
Please print or type name below signature.

The request submitted by the above-named researcher(s) was approved by the SIUC Human Subjects Committee.

**This approval is valid for one year from the review date. Unless the protocol is approved as Category I (exempt), researchers must request an extension to continue the research after that date. This approval form must be included in all Master's theses/research papers and Doctoral dissertations involving human subjects that are submitted to the Graduate School.**

Chairperson, Southern Illinois University Human Subjects Committee 11-1-12 Date

SIU Southern Illinois University
CARBONDALE

HUMAN SUBJECTS COMMITTEE
OFFICE OF SPONSORED PROJECTS ADMINISTRATION
WOODY HALL – MAIL CODE 4709
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HSC Approval letter (exempt)

To: Matthew Bice

From: Jane L. Swanson, Ph.D.
Chair, Human Subjects Committee

Date: November 2, 2012

Subject: *Retrospective evaluation of factors that influence the implementation of C.A.T.C.H. in southern Illinois*

Protocol Number: 12460

The revisions to the above referenced study have been approved by the SIUC Human Subjects Committee. The study is determined to be exempt according to 45 CFR 46.101(b)2. This approval does not have an expiration date; however, any future modifications to your protocol must be submitted to the Committee for review and approval prior to their implementation.

Your Form A approval is enclosed.

This institution has an Assurance on file with the USDHHS Office of Human Research Protection. The Assurance number is FWA00005334.

JS:kr

Cc: Stephen L. Brown

Recruitment Letter – Appendix B

Hello,

I am a doctoral candidate in the Department of Health Education and Recreation, Southern Illinois University at Carbondale. I am seeking your voluntary participation in my doctoral degree. The purpose of the enclosed survey is to gather information concerning the Coordinated Approach To Child Health (CATCH) program your school was trained for. The survey will consist of organizational readiness, commitment to change, leadership, implementation barriers, and innovation perception questions. The primary purpose of this study is to describe and explain why schools in the same area and receive the same CATCH training still results in different implementation practices. This research project has been reviewed and approved by the SIUC Human Subjects Committee.

It is estimated that survey completion will take 20 minutes to complete. There is no risk associated with participation in this research project. There will be no penalty for you if you decide not to participate or choose to discontinue your participation at any time. The outcome of this study will contain basic demographic information but will not contain personally identifying information.

Thank for you for your time and consideration in this important research.

Matthew R. Bice

Phone number (432) 557-5657
Email: mattbice@siu.edu

Questions regarding this study may be directed to Matthew Bice or Dr. Stephen Brown, Ph.D., Health Education and Recreation, (618) 453-2777, Southern Illinois University at Carbondale, Carbondale, IL 62901 Email hed@siu.edu

This project has been reviewed and approved by the SIUC Human Subjects Committee. Questions concerning your rights as a participant in this research may be addressed to the Committee Chairperson, Office of Research Development and Administration, SIUC, Carbondale, IL 62901-4709. Phone (618) 453-4533. E-mail: siuhsc@siu.edu

School Principal – Appendix C

Age: _____

School: _____

Please indicate your level of involvement with CATCH.

| | Strongly Not involved | Not involved | Neutral | Involved | Strongly involved |
|---|---|---|---|---|---|
| 1. I actively participate in my school's wellness committee | 1 | 2 | 3 | 4 | 5 |
| 2. I support CATCH by encouraging school staff to implement the program. | 1 | 2 | 3 | 4 | 5 |
| 3. School staff feel I support CATCH | 1 | 2 | 3 | 4 | 5 |

**AFTER YOU FINISH THE SURVEY: Please separate the <u>consent</u> form from the <u>survey</u> and return the SIGNED consent and COMPLETED SURVEY to the CATCH envelope!**

Kindergarten Classroom Teachers – Appendix D

Demographics
Teaching experience (Number of years teaching):_____
School: _____
When were you CATCH trained? *Please circle* (Fall or Spring) Year (example 2010) _____

Please Check the CATCH lessons that you taught last year.

**Answers should reflect the 2011-2012 school year.**

| Lesson | Yes | No | |
|---|---|---|---|
| | | I did not implement | I do not remember |
| 1. Jump Into Health – Lesson # 1 | | | |
| 2. Jump Into Health – Lesson # 2 | | | |
| 3. Get Out There and Move | | | |
| 4. Move and Play Every Day | | | |
| 5. Let's Dance | | | |
| 6. All Kinds of Veggies | | | |
| 7. Vegetable Soup | | | |
| 8. Fruits, Fruits, and More Fruits | | | |
| 9. Fruit Salad | | | |
| 10. Let's Eat a Snack | | | |

**AFTER YOU FINISH THE SURVEY: Please separate the consent form from the survey and return the SIGNED consent and COMPLETED SURVEY to the CATCH envelope!**

1st Classroom Teachers – Appendix E

Demographics
Teaching experience (Number of years teaching):_____
School: _____
When were you CATCH trained? *Please circle* (Fall or Spring) Year (example 2010) _____

Please Check the CATCH lessons that you taught last year.

**Answers should reflect the 2011-2012 school year.**

| Lesson | Yes | No | |
|---|---|---|---|
| | | I did not implement | I do not remember |
| 1. What's For Dinner? | | | |
| 2. Fruits and Veggies Galore! | | | |
| 3. Fruit-y ways to Start the Day | | | |
| 4. Let's Eat Breakfast | | | |
| 5. What's Missing For Lunch? | | | |
| 6. Veggies in the Stew Pot | | | |
| 7. What an Amazing Muscle! | | | |
| 8. Please and Thank You | | | |
| 9. Please and Thank You (Part 2) | | | |
| 10. A Message From Hearty Heart & Dynamite Diet | | | |

**AFTER YOU FINISH THE SURVEY: Please separate the consent form from the survey and return the SIGNED consent and COMPLETED SURVEY to the CATCH envelope!**

2nd Classroom Teachers – Appendix F

Demographics
Teaching experience (Number of years teaching):_____
School: _____
When were you CATCH trained? *Please circle* (Fall or Spring) Year (example 2010) _____

Please Check the CATCH lessons that you taught last year.

**Answers should reflect the 2011-2012 school year.**

| Lesson | Yes | No | |
|---|---|---|---|
| | | I did not implement | I do not remember |
| 1. Fiber: The Amazing Stuff | | | |
| 2. Fun with Fiber | | | |
| 3. Fiber Graph | | | |
| 4. A Fiberific Snack | | | |
| 5. Hear the Beat | | | |
| 6. Fast, Faster, Fastest | | | |
| 7. The Mystery Moo Juice | | | |
| 8. Deceptive Dairy | | | |
| 9. Very Dairy-licious | | | |
| 10. Sometimes to Everyday | | | |
| 11. Freddy's Fast Food | | | |
| 12. Go For The Goal | | | |

**AFTER YOU FINISH THE SURVEY: Please separate the consent form from the survey and return the SIGNED consent and COMPLETED SURVEY to the CATCH envelope!**

3rd Classroom Teachers – Appendix G

Demographics
Teaching experience (Number of years teaching):_____
School: _____
When were you CATCH trained? *Please circle* (Fall or Spring) Year (example 2010) _____

Please Check the CATCH lessons that you taught last year.

**Answers should reflect the 2011-2012 school year.**

| Lesson | Yes | No | |
|---|---|---|---|
| | | I did not implement | I do not remember |
| 1. Hi There, Earthlings | | | |
| 2. Hearty Goes on a Mission | | | |
| 3. Cereal of the Stars | | | |
| 4. Hearty and His Friends Land on Earth | | | |
| 5. Hearty and Flash Meet Sittin' Sam | | | |
| 6. Flash's favorite Fast Food | | | |
| 7. Hearty and Dynamite meet Food Fat | | | |
| 8. Hearty and Dynamite Meet Food Fat…Again | | | |
| 9. Dynamite Sticks | | | |
| 10. Hearty and His Friends Learn about Salt and Sodium | | | |
| 11. Hearty and His Friends Go on a Salt Search | | | |
| 12. Hearty's Stellar Sundae | | | |
| 13. Hearty Learns about Heart Health Around the World | | | |
| 14. Hearty and His Friends Get Ready to Leave Earth | | | |
| 15. Supersonic Soda and Popcorn Party | | | |

**AFTER YOU FINISH THE SURVEY: Please separate the consent form from the survey and return the SIGNED consent and COMPLETED SURVEY to the CATCH envelope!**

4th Classroom Teachers – Appendix H

Demographics
Teaching experience (Number of years teaching):_____
School: _____
When were you CATCH trained? *Please circle* (Fall or Spring) Year (example 2010) _____

Please Check the CATCH lessons that you taught last year.

**Answers should reflect the 2011-2012 school year.**

| Lesson | Yes | No | |
|---|---|---|---|
| | | I did not implement | I do not remember |
| 1. Ready – Set – GO for Health | | | |
| 2. Go-SLOW – WHOA Foods | | | |
| 3. Physical Activity means GO | | | |
| 4. Fat Facts | | | |
| 5. Take Out the Sugar | | | |
| 6. So-o-o Much Sodium | | | |
| 7. The "Whole" Truth About Foods | | | |
| 8. Good Choices | | | |
| 9. On Your Mark – Set – GO! | | | |
| 10. Snack-vertising GO food | | | |
| 11. WHOA Busters | | | |
| 12. Snacks For Party GO-ers | | | |
| 13. Taking Off | | | |

**AFTER YOU FINISH THE SURVEY: Please separate the consent form from the survey and return the SIGNED consent and COMPLETED SURVEY to the CATCH envelope!**

5th Classroom Teachers – Appendix I

Demographics
Teaching experience (Number of years teaching):_____
School: _____
When were you CATCH trained? *Please circle* (Fall or Spring) Year (example 2010) _____

Please Check the CATCH lessons that you taught last year.

**Answers should reflect the 2011-2012 school year.**

| Lesson | Yes | No | |
|---|---|---|---|
| | | I did not implement | I do not remember |
| 1. Let's Get Go-ing | | | |
| 2. Go-ing for FIT | | | |
| 3. Pyramid of Go Eating | | | |
| 4. Bright Ideas for Breakfast | | | |
| 5. Plan of Action | | | |
| 6. Rap Out the Problems | | | |
| 7. Play Out the Options | | | |
| 8. Breaking through Barriers | | | |

**AFTER YOU FINISH THE SURVEY: Please separate the consent form from the survey and return the SIGNED consent and COMPLETED SURVEY to the CATCH envelope!**

Cafeteria Employees – Appendix J

Demographics

Cafeteria experience (Number of years working in a school cafeteria):_____

School: _____

When were you CATCH trained? *Please circle* (Fall or Spring) Year (example 2010) _____

When did you start implementing the Federal School Lunch guidelines?

(a) This year (b) Last year

Have you attended "School Health Rocks"? Yes No

Please mark an "X" that describes how often you followed the CATCH cafeteria food modification guidelines during the desired dates

| **CATCH Eat Smart** | Yes | No | |
|---|---|---|---|
| | | I did not implement | I do not remember |
| 1. Did you communicate GO, SLOW, & WHOA slogans while serving food? | | | |
| 2. Are nutritional facts available for students in the cafeteria? | | | |
| 3. Are CATCH posters present in your cafeteria? | | | |
| 4. Did you provide cafeteria tours to students? | | | |
| 5. Did you provide taste testing for new foods? | | | |
| 6. Did you teach students about food preparation? | | | |
| 7. Did your cafeteria staff emphasize meal planning to students? | | | |
| 8. Did you purchase local foods for your kitchen? | | | |

**AFTER YOU FINISH THE SURVEY: Please separate the consent form from the survey and return the SIGNED consent and COMPLETED SURVEY to the CATCH envelope!**

Physical Education Teacher – Appendix K

Demographics

Teaching experience (Number of years teaching):_____

School: _____

When were you CATCH trained? *Please circle* (Fall or Spring) Year (example 2010) _____

Please mark your compliance with CATCH PE components.

**Answers should reflect the 2011-2012 school year.**

| **CATCH PE Concepts** | Yes | No |
|---|---|---|
| 1. Did you communicate with classroom teachers to incorporate physical activity in the classroom? | | |
| 2. Did you play "non-elimination games"? | | |
| 3. Did you promote equity and fair play during CATCH games? | | |
| 4. Did you implement relay races? | | |
| 5. Did you emphasize CATCH physical activity components focusing on constant movement? For example relay races | | |
| 6. Did you incorporate concepts focused on in the classroom curriculum during physical education? For example, monitoring heart rate, breathing, stretching, | | |
| 7. Did you have CATCH health promoting posters in your gym? | | |
| 8. Did you incorporate CATCH safety protocols? (disruptive behavior, safe stretching, safety zones, emergency procedures) | | |
| 9. Did you promote appropriate competition during CATCH games? (This includes having all children participate with no exclusion) | | |
| 10. Did you modify CATCH games to accommodate different classes? | | |
| 11. Did you promote off-site physical activity? | | |

**AFTER YOU FINISH THE SURVEY: Please separate the consent form from the survey and return the SIGNED consent and COMPLETED SURVEY to the CATCH envelope!**

CATCH onto Health Partners – Appendix L

Demographics
CATCH experience (Number of years working with CATCH): _____
Partner Affiliation: _____

Please mark your compliance with Family Fun Night components.

| CATCH PE Concepts | | |
|---|---|---|
| 1. How many elementary schools (Kindergarten – 5th grade) are under your jurisdiction? | | |
| 2. How many schools in your jurisdiction are CATCH trained? | | |
| 3. How many Family Fun Nights did you host? | | |
| 4. Is a Family Fun Night available to all CATCH trained school? | Yes | No |
| 5. Are Family Fun Night available to non-CATCH trained schools? | Yes | No |

- Total CATCH Schools _____
- How many CATCH trained schools were accessible to a Family Fun Night? _____

**AFTER YOU FINISH THE SURVEY: Please separate the consent form from the survey and return the SIGNED consent and COMPLETED SURVEY to the CATCH envelope!**

# Organizational Readiness to Change – Appendix M

**For each of the areas listed, designate and "CIRCLE" your level of agreement or disagreement – strongly to strongly agree**

| **For the purposes of this study :**<br>**"Change"** refers to the integration and implementation of CATCH<br>**"Organization"** refers to your school<br>**"Manager & management"** refers to school administration | Strongly disagree | Disagree | Somewhat disagree | Neither Agree or Disagree | Somewhat Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|
| **1. I think that the organization will benefit from this change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **2. It doesn't make much sense for us to initiate this change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **3. There are legitimate reasons for us to make this change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **4. This change will improve our organization's overall efficiency.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **5. There are a number of rational reasons for this change to be made.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **6. In the long run, I feel it will be worthwhile for me if the organization adopts this change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **7. This change makes my job easier.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **8. When this change is implemented, I don't believe there is anything for me to gain.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **9. The time we are spending on this change should be spent on something else.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **10. This change matches the priorities of our organization.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **11. Our senior leaders have encouraged all of us to embrace this change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **12. Our organization's top decision makers have put all their support behind this change effort.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **13. Every senior manager has stressed the importance of this change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **14. This organization's most senior leader is committed to this change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **15. I think we are spending a lot of time on this change when the senior managers don't even want it implemented.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **16. Management has sent a clear signal this organization is going to change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **17. I do not anticipate any problems adjusting to the work I will have when this change is adopted.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **18. There are some tasks that will be required when we change that I don't think I can do well.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **19. When we implement this change, I feel I can handle it with ease.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **20. I have the skills that are needed to make this change work.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **21. When I set my mind to it, I can learn everything that will be required when this change is adopted.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **22. My past experiences make me confident that I will be able to perform successfully after this change is made.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **23. I am worried I will lose some of my status in the organization when this change is implemented.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **24. This change will disrupt many of the personal relationships I have developed.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **25. My future in this job will be limited because of this change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

# Commitment to Change – Appendix N

**For each of the areas listed, "CIRCLE" your level of agreement or disagreement – strongly disagree to strongly agree**

| **For the purposes of this study :**<br>**"Change"** refers to the integration and implementation of CATCH<br>**"Organization"** refers to your school<br>"**Management"** refers to school administration | Strongly disagree | Disagree | Somewhat disagree | Neither Agree or Disagreed | Somewhat Agree | Agree | Strongly Agree |
|---|---|---|---|---|---|---|---|
| **1. I believe in the value of this change** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **2. This change is a good strategy for this organization.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **3. Management is making a mistake by introducing this change** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **4. This change serves an important purpose.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **5. Things would be better without this change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **6. This change is not necessary.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **7. I have no choice but to go along with this change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **8. I feel pressure to go along with this change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **9. I have too much at stake to resist this change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **10. It would be too costly for me to resist this change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **11. It would be risky to speak out against this change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **12. Resisting this change is not a viable option for me.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **13. I feel a sense of duty to work toward this change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **14. I do not think it would be right of me to oppose this change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **15. I would not feel badly about opposing this change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **16. It would be irresponsible of me to resist this change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **17. I would feel guilty about opposing this change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **18. I do not feel any obligation to support this change.** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

# School Leadership – Appendix O

**For each of the areas listed, "CIRCLE" your level of agreement or disagreement – No (N), Somewhat (S), and Yes (Y)**

| Question | No | Somewhat | Yes |
|---|---|---|---|
| **1. Our school leadership has a clear vision of what our school should look like. We are committed, determined, enthusiastic, and hold the course.** | 1 | 2 | 3 |
| **2. Our school leadership expects that all students will participate in the general education curriculum and activities.** | 1 | 2 | 3 |
| **3. Our school leadership has established creative support mechanisms for all students.** | 1 | 2 | 3 |
| **4. Our school leadership has developed an accessible "open door" relationship with staff, students, parents, and others in the community.** | 1 | 2 | 3 |
| **5. Our school leadership consistently communicates and reinforces the value of inclusion, regularly clarifying the message that our school is one school serving all students.** | 1 | 2 | 3 |
| **6. Our school leadership promotes communication between school leadership and the school community.** | 1 | 2 | 3 |
| **7. Our school leadership involves parents and local businesses in decision-making processes regarding curriculum and extracurricular programs and activities.** | 1 | 2 | 3 |
| **8. Our school leadership facilitates and provides training and direct support for purposeful, intentional collaboration at all levels.** | 1 | 2 | 3 |
| **9. Our school leadership promotes staff, formally and informally, to reflect on their professional objectives.** | 1 | 2 | 3 |
| **10. Our school leadership infuses the school with applicable research to promote reflective thinking.** | 1 | 2 | 3 |
| **11. Our school leadership reassesses and updates the school mission and goals and evaluates programs on a routine basis.** | 1 | 2 | 3 |
| **12. Our school leadership promotes risk-taking as part of improvement by minimizing the negative connotations associated with unsuccessful efforts.** | 1 | 2 | 3 |
| **13. Our school leadership offers time and expertise to assist individuals and departments.** | 1 | 2 | 3 |
| **14. Our school leadership perceives and treats staff as highly trained, respected, and qualified professionals, and gives them significant autonomy.** | 1 | 2 | 3 |
| **15. Out school leadership displays a personal investment in staff development by attending professional development opportunities with staff.** | 1 | 2 | 3 |
| **16. Our school leadership makes effort to promote and facilitate the sharing of ideas and collaboration between colleagues.** | 1 | 2 | 3 |
| **17. Our school leadership entrusts teachers with administrative responsibilities that extend their professional capacities beyond the classroom and department.** | 1 | 2 | 3 |
| **18. Our school leadership approaches staff selection as an essential component to building the base for a quality school.** | 1 | 2 | 3 |
| **19. Our school leadership develops an improvement framework that is systematic and based on a vision.** | 1 | 2 | 3 |

# Implementation Barriers – Appendix P

**For each characteristic listed, "CIRCLE" your level of agreement or disagreement – strongly disagree (SD), disagree (D), unsure (U), agree (A), or strongly agree (SA)**

| Questions | Strongly Disagree | Disagree | Neither Disagree | Agree | Strongly Agree |
|---|---|---|---|---|---|
| **1. Lack of qualified personnel.** | 1 | 2 | 3 | 4 | 5 |
| **2. Bureaucracy** | 1 | 2 | 3 | 4 | 5 |
| **3. Problems with program materials** | 1 | 2 | 3 | 4 | 5 |
| **4. Lack of incentive to implement program** | 1 | 2 | 3 | 4 | 5 |
| **5. Competition policy with other school health programs** | 1 | 2 | 3 | 4 | 5 |
| **6. Technical problems during implementation** | 1 | 2 | 3 | 4 | 5 |
| **7. Time for return for innovation is too long** | 1 | 2 | 3 | 4 | 5 |
| **8. Perception of innovation as risky** | 1 | 2 | 3 | 4 | 5 |
| **9. Too difficult to control costs of program** | 1 | 2 | 3 | 4 | 5 |
| **10. Financing of innovation** | 1 | 2 | 3 | 4 | 5 |
| **11. CATCH implementation is difficult because of competing priorities such as extracurricular activities like art or music.** | 1 | 2 | 3 | 4 | 5 |
| **12. I do not have the time to prepare and implement CATCH.** | 1 | 2 | 3 | 4 | 5 |
| **13. I am confident that I can implement CATCH.** | 1 | 2 | 3 | 4 | 5 |
| **14. CATCH is not implemented because standardized tests (ISAT) take top priority.** | 1 | 2 | 3 | 4 | 5 |
| **15. I do not have the experience to implement CATCH.** | 1 | 2 | 3 | 4 | 5 |

# Innovation Perceptions – Appendix Q

**For each characteristic listed below, indicate and "CIRCLE" your level of agreement or disagreement – strongly disagree (SD), disagree (D), unsure (U), agree (A), or strongly agree (SA)**

| Questions | Strongly Disagree | Disagree | Unsure | Agree | Strongly Agree |
|---|---|---|---|---|---|
| **1. Using CATCH is compatible with the activities in my school district.** | 1 | 2 | 3 | 4 | 5 |
| **2. I think that using CATCH fits well with the way I like to work.** | 1 | 2 | 3 | 4 | 5 |
| **3. I believe that using CATCH would require my school district to make substantial changes to our present program.** | 1 | 2 | 3 | 4 | 5 |
| **4. It will be difficult to train teachers and staff to implement CATCH.** | 1 | 2 | 3 | 4 | 5 |
| **5. Overall, I believe that it will be complicated to implement CATCH.** | 1 | 2 | 3 | 4 | 5 |
| **6. I believe that each of the activities described in CATCH needs to be implemented this school year.** | 1 | 2 | 3 | 4 | 5 |
| **7. I believe that it is okay for me to try out a new program on a limited basis before fully implementing.** | 1 | 2 | 3 | 4 | 5 |
| **8. Parents will not be able to see any changes in student behavior if CATCH is implemented.** | 1 | 2 | 3 | 4 | 5 |
| **9. Teachers will like the changes if CATCH is implemented.** | 1 | 2 | 3 | 4 | 5 |
| **10. Using CATCH will enhance my effectiveness on the job.** | 1 | 2 | 3 | 4 | 5 |
| **11. My school district will lose funding if we do not use CATCH.** | 1 | 2 | 3 | 4 | 5 |
| **12. Using CATCH will increase my ability to get funds for my school district.** | 1 | 2 | 3 | 4 | 5 |
| **13. Using CATCH will increase the quality of prevention in my school.** | 1 | 2 | 3 | 4 | 5 |
| **14. Using CATCH will have no effect on student obesity rates.** | 1 | 2 | 3 | 4 | 5 |
| **15. CATCH requires more work than can be done with the current funding.** | 1 | 2 | 3 | 4 | 5 |
| **16. Even if CATCH was not encouraged, I would like to implement it in my school district.** | 1 | 2 | 3 | 4 | 5 |
| **17. Overall, I find CATCH to be advantageous for my school district.** | 1 | 2 | 3 | 4 | 5 |

**Please separate the consent form from the survey and return the SIGNED consent and COMPLETED SURVEY to the CATCH envelope!**

**THANK YOU FOR YOUR PARTICIPATION!**

Appendix R

School Survey Distribution and Administration

1. CATCH onto Health consortium partners will receive surveys on November 16th Participants include:

    - School principal (one survey for each school unless school has more than one principal)
    - Classroom teachers (Every classroom teacher in each of the CATCH trained schools)
    - Physical Education teacher(s)
    - Cafeteria manager (This includes ONLY cafeteria supervisor)

2. Surveys should only be delivered to schools that were CATCH trained prior to Fall 2011
    - Surveys are grade level specific so please make sure that teachers get the correct survey. Surveys will be color coordinated to prevent confusion.
        - Principal - GRAY
        - Kindergarten – CANARY
        - 1st grade – PINK
        - 2nd grade – BLUE
        - 3rd grade – TAN/CREAM
        - 4th grade - GREEN
        - 5th grade - PURPLE
        - PE teacher – GOLD
        - Cafeteria supervisor- SALMON
        - Partner – WHITE

3. Partners are to drop surveys in the mailboxes of the school principal, classroom and physical education teachers' and cafeteria supervisors school mailboxes.
   **If the cafeteria supervisor does not have a mailbox please deliver to cafeteria office**

4. Surveys delivered to schools by **November 26th**

5. Completed consent forms and surveys are to be placed in large envelopes (that are provided) located in the office of each school. Please write the name of each school on each envelope along with survey drop off instructions.

6. Partners are to contact each participating school to remind school employees about survey. A) Partners will be responsible to contact CATCH school leader at each participating school. CATCH school leaders include the person(s) who are the primary CATCH contact between the CATCH onto Health partners AND the specific school. B) CATCH school leaders will be in charge of communicating the survey reminder to school employees. Communication channels can include email, phone, or intercom announcement. Partners are encouraged to relate to CATCH team leaders to use the

communication channels they are accustomed to using for past surveys and CATCH information.
Reminders should be made on Monday, **December 3rd**.

7. Allow 2 - weeks for survey completion

8. Partners will pick up CATCH envelopes with completed surveys from schools by **December 7th**

9. Matt will pick surveys up from each partner on Monday **December 10th** and **11th**
**If anyone has questions please call Matt (432) 557-5657**

10. LASTLY, each partner will complete a survey
    - Partner surveys will be WHITE

11. If additional surveys are needed please contact Matt Bice immediately (432) 557-5657

Table 26

*Correlation Matrix – School Employees*

**Correlations**

| | | DEGREE | TotalOR | TotalCC | TotalSL | TotalIB | TotalIP |
|---|---|---|---|---|---|---|---|
| DEGREE | Pearson Correlation | 1 | .252** | .022 | .057 | -.273** | -.112 |
| | Sig. (2-tailed) | | .000 | .731 | .371 | .000 | .077 |
| | N | 251 | 251 | 251 | 251 | 251 | 251 |
| TotalOR | Pearson Correlation | .252** | 1 | .405** | .320** | -.458** | -.051 |
| | Sig. (2-tailed) | .000 | | .000 | .000 | .000 | .417 |
| | N | 251 | 251 | 251 | 251 | 251 | 251 |
| TotalCC | Pearson Correlation | .022 | .405** | 1 | .267** | .003 | .178** |
| | Sig. (2-tailed) | .731 | .000 | | .000 | .968 | .005 |
| | N | 251 | 251 | 251 | 251 | 251 | 251 |
| TotalSL | Pearson Correlation | .057 | .320** | .267** | 1 | -.165** | .198** |
| | Sig. (2-tailed) | .371 | .000 | .000 | | .009 | .002 |
| | N | 251 | 251 | 251 | 251 | 251 | 251 |
| TotalIB | Pearson Correlation | -.273** | -.458** | .003 | -.165** | 1 | .327** |
| | Sig. (2-tailed) | .000 | .000 | .968 | .009 | | .000 |
| | N | 251 | 251 | 251 | 251 | 251 | 251 |
| TotalIP | Pearson Correlation | -.112 | -.051 | .178** | .198** | .327** | 1 |
| | Sig. (2-tailed) | .077 | .417 | .005 | .002 | .000 | |
| | N | 251 | 251 | 251 | 251 | 251 | 251 |

**. Correlation is significant at the 0.01 level (2-tailed).

Table 27

*Correlation Matrix – Classroom Teachers*

**Correlations**

| | | DEGREE | TotalOR | TotalCC | TotalSL | TotalIB | TotalIP |
|---|---|---|---|---|---|---|---|
| DEGREE | Pearson Correlation | 1 | .222** | -.019 | .028 | -.247** | -.139 |
| | Sig. (2-tailed) | | .002 | .791 | .693 | .000 | .051 |
| | N | 197 | 197 | 197 | 197 | 197 | 197 |
| TotalOR | Pearson Correlation | .222** | 1 | .419** | .310** | -.444** | .019 |
| | Sig. (2-tailed) | .002 | | .000 | .000 | .000 | .796 |
| | N | 197 | 197 | 197 | 197 | 197 | 197 |
| TotalCC | Pearson Correlation | -.019 | .419** | 1 | .261** | .050 | .281** |
| | Sig. (2-tailed) | .791 | .000 | | .000 | .483 | .000 |
| | N | 197 | 197 | 197 | 197 | 197 | 197 |
| TotalSL | Pearson Correlation | .028 | .310** | .261** | 1 | -.153* | .278** |
| | Sig. (2-tailed) | .693 | .000 | .000 | | .032 | .000 |
| | N | 197 | 197 | 197 | 197 | 197 | 197 |
| TotalIB | Pearson Correlation | -.247** | -.444** | .050 | -.153* | 1 | .369** |
| | Sig. (2-tailed) | .000 | .000 | .483 | .032 | | .000 |
| | N | 197 | 197 | 197 | 197 | 197 | 197 |
| TotalIP | Pearson Correlation | -.139 | .019 | .281** | .278** | .369** | 1 |
| | Sig. (2-tailed) | .051 | .796 | .000 | .000 | .000 | |
| | N | 197 | 197 | 197 | 197 | 197 | 197 |

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 28

*Correlation Matrix – Physical Education Teachers*

**Correlations**

| | | DEGREE | TotalOR | TotalCC | TotalSL | TotalIB | TotalIP |
|---|---|---|---|---|---|---|---|
| DEGREE | Pearson Correlation | 1 | .046 | .018 | .452* | -.016 | .045 |
| | Sig. (2-tailed) | | .821 | .928 | .018 | .937 | .826 |
| | N | 27 | 27 | 27 | 27 | 27 | 27 |
| TotalOR | Pearson Correlation | .046 | 1 | .268 | .380 | -.490** | -.278 |
| | Sig. (2-tailed) | .821 | | .176 | .051 | .009 | .160 |
| | N | 27 | 27 | 27 | 27 | 27 | 27 |
| TotalCC | Pearson Correlation | .018 | .268 | 1 | .234 | .164 | -.135 |
| | Sig. (2-tailed) | .928 | .176 | | .241 | .414 | .503 |
| | N | 27 | 27 | 27 | 27 | 27 | 27 |
| TotalSL | Pearson Correlation | .452* | .380 | .234 | 1 | -.278 | -.168 |
| | Sig. (2-tailed) | .018 | .051 | .241 | | .160 | .402 |
| | N | 27 | 27 | 27 | 27 | 27 | 27 |
| TotalIB | Pearson Correlation | -.016 | -.490** | .164 | -.278 | 1 | .164 |
| | Sig. (2-tailed) | .937 | .009 | .414 | .160 | | .413 |
| | N | 27 | 27 | 27 | 27 | 27 | 27 |
| TotalIP | Pearson Correlation | .045 | -.278 | -.135 | -.168 | .164 | 1 |
| | Sig. (2-tailed) | .826 | .160 | .503 | .402 | .413 | |
| | N | 27 | 27 | 27 | 27 | 27 | 27 |

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 29

*Correlation Matrix – Cafeteria Supervisors*

**Correlations**

| | | DEGREE | TotalOR | TotalCC | TotalSL | TotalIB | TotalIP |
|---|---|---|---|---|---|---|---|
| DEGREE | Pearson Correlation | 1 | .112 | .489* | -.027 | -.421 | -.221 |
| | Sig. (2-tailed) | | .628 | .025 | .907 | .058 | .337 |
| | N | 21 | 21 | 21 | 21 | 21 | 21 |
| TotalOR | Pearson Correlation | .112 | 1 | .406 | .370 | -.423 | -.565** |
| | Sig. (2-tailed) | .628 | | .068 | .099 | .056 | .008 |
| | N | 21 | 21 | 21 | 21 | 21 | 21 |
| TotalCC | Pearson Correlation | .489* | .406 | 1 | .185 | -.643** | -.425 |
| | Sig. (2-tailed) | .025 | .068 | | .423 | .002 | .055 |
| | N | 21 | 21 | 21 | 21 | 21 | 21 |
| TotalSL | Pearson Correlation | -.027 | .370 | .185 | 1 | -.329 | .044 |
| | Sig. (2-tailed) | .907 | .099 | .423 | | .146 | .850 |
| | N | 21 | 21 | 21 | 21 | 21 | 21 |
| TotalIB | Pearson Correlation | -.421 | -.423 | -.643** | -.329 | 1 | .555** |
| | Sig. (2-tailed) | .058 | .056 | .002 | .146 | | .009 |
| | N | 21 | 21 | 21 | 21 | 21 | 21 |
| TotalIP | Pearson Correlation | -.221 | -.565** | -.425 | .044 | .555** | 1 |
| | Sig. (2-tailed) | .337 | .008 | .055 | .850 | .009 | |
| | N | 21 | 21 | 21 | 21 | 21 | 21 |

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 30

*Correlation Matrix – Health Department Partners*

**Correlations**

| | | DEGREE | TotalOR | TotalCC | TotalSL | TotalIB | TotalIP |
|---|---|---|---|---|---|---|---|
| DEGREE | Pearson Correlation | 1 | -.219 | -.170 | .669 | .068 | -.321 |
| | Sig. (2-tailed) | | .677 | .747 | .147 | .898 | .535 |
| | N | 6 | 6 | 6 | 6 | 6 | 6 |
| TotalOR | Pearson Correlation | -.219 | 1 | .632 | -.146 | -.035 | .929** |
| | Sig. (2-tailed) | .677 | | .178 | .782 | .947 | .007 |
| | N | 6 | 6 | 6 | 6 | 6 | 6 |
| TotalCC | Pearson Correlation | -.170 | .632 | 1 | .385 | -.015 | .422 |
| | Sig. (2-tailed) | .747 | .178 | | .451 | .977 | .405 |
| | N | 6 | 6 | 6 | 6 | 6 | 6 |
| TotalSL | Pearson Correlation | .669 | -.146 | .385 | 1 | .421 | -.383 |
| | Sig. (2-tailed) | .147 | .782 | .451 | | .405 | .454 |
| | N | 6 | 6 | 6 | 6 | 6 | 6 |
| TotalIB | Pearson Correlation | .068 | -.035 | -.015 | .421 | 1 | -.133 |
| | Sig. (2-tailed) | .898 | .947 | .977 | .405 | | .801 |
| | N | 6 | 6 | 6 | 6 | 6 | 6 |
| TotalIP | Pearson Correlation | -.321 | .929** | .422 | -.383 | -.133 | 1 |
| | Sig. (2-tailed) | .535 | .007 | .405 | .454 | .801 | |
| | N | 6 | 6 | 6 | 6 | 6 | 6 |

**. Correlation is significant at the 0.01 level (2-tailed).

Table 31

*Organizational Readiness Descriptive Data – School employees*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| O1 | 283 | 1.00 | 7.00 | 5.8304 | 1.11065 |
| OR2 | 283 | 1.00 | 7.00 | 5.5442 | 1.40187 |
| O3 | 283 | 1.00 | 7.00 | 5.6396 | 1.23374 |
| O4 | 283 | 2.00 | 7.00 | 5.3534 | 1.21262 |
| O5 | 282 | 1.00 | 7.00 | 5.5780 | 1.13311 |
| O6 | 283 | 1.00 | 7.00 | 5.4488 | 1.26043 |
| O7 | 283 | 1.00 | 7.00 | 4.3534 | 1.45703 |
| OR8 | 283 | 1.00 | 7.00 | 5.1519 | 1.43224 |
| OR9 | 283 | 1.00 | 7.00 | 4.8693 | 1.51606 |
| O10 | 283 | 1.00 | 7.00 | 4.9965 | 1.41295 |
| O11 | 283 | 1.00 | 7.00 | 5.0989 | 1.41575 |
| O12 | 283 | 1.00 | 7.00 | 5.0071 | 1.38121 |
| O13 | 283 | 1.00 | 7.00 | 4.8481 | 1.36635 |
| O14 | 283 | 1.00 | 7.00 | 5.0106 | 1.37218 |
| OR15 | 283 | 1.00 | 7.00 | 5.1378 | 1.36525 |
| O16 | 283 | 1.00 | 7.00 | 4.6113 | 1.45286 |
| O17 | 283 | 1.00 | 7.00 | 4.9152 | 1.40663 |
| OR18 | 283 | 1.00 | 7.00 | 4.6714 | 1.40470 |
| O19 | 283 | 1.00 | 7.00 | 5.1908 | 1.28231 |
| O20 | 283 | 2.00 | 7.00 | 5.4947 | 1.06980 |
| O21 | 283 | 2.00 | 7.00 | 5.7491 | 1.06389 |
| O22 | 283 | 1.00 | 7.00 | 5.6502 | 1.15526 |
| OR23 | 283 | 1.00 | 7.00 | 5.5300 | 1.34018 |
| OR24 | 283 | 1.00 | 7.00 | 5.6961 | 1.32604 |
| OR25 | 283 | 1.00 | 7.00 | 5.7597 | 1.25712 |
| Valid N (listwise) | 282 | | | | |

Table 32

*Commitment to Change Descriptive Data – School employees*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| C1 | 283 | 1.00 | 7.00 | 5.6325 | 1.11689 |
| C2 | 282 | 1.00 | 7.00 | 5.5532 | 1.09301 |
| CR3 | 283 | 1.00 | 7.00 | 5.5053 | 1.32988 |
| C4 | 282 | 1.00 | 7.00 | 5.4929 | 1.26052 |
| CR5 | 282 | 1.00 | 7.00 | 5.3865 | 1.34041 |
| CR6 | 282 | 1.00 | 7.00 | 5.2837 | 1.36205 |
| C7 | 282 | 1.00 | 7.00 | 3.5745 | 1.59060 |
| C8 | 282 | 1.00 | 7.00 | 3.0567 | 1.49148 |
| C9 | 282 | 1.00 | 7.00 | 2.9078 | 1.45098 |
| C10 | 282 | 1.00 | 7.00 | 2.9433 | 1.45770 |
| C11 | 282 | 1.00 | 7.00 | 2.8050 | 1.42957 |
| C12 | 282 | 1.00 | 7.00 | 3.4468 | 1.55527 |
| C13 | 282 | 1.00 | 7.00 | 5.1170 | 1.36965 |
| C14 | 282 | 1.00 | 7.00 | 4.6560 | 1.49927 |
| CR15 | 282 | 1.00 | 7.00 | 4.4078 | 1.54885 |
| C16 | 282 | 1.00 | 7.00 | 4.6809 | 1.52240 |
| C17 | 282 | 1.00 | 7.00 | 4.3617 | 1.60638 |
| CR18 | 282 | 1.00 | 7.00 | 5.0248 | 1.30810 |
| Valid N (listwise) | 281 | | | | |

Table 33

*School Leadership Descriptive Data – School employees*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| S1 | 250 | 1.00 | 3.00 | 2.6760 | .56240 |
| S2 | 250 | 1.00 | 3.00 | 2.8240 | .43101 |
| S3 | 250 | 1.00 | 3.00 | 2.6160 | .57083 |
| S4 | 250 | 1.00 | 3.00 | 2.7320 | .49513 |
| S5 | 250 | 1.00 | 3.00 | 2.7800 | .47803 |
| S6 | 250 | 1.00 | 3.00 | 2.6920 | .50414 |
| S7 | 250 | 1.00 | 3.00 | 2.2560 | .70459 |
| S8 | 250 | 1.00 | 3.00 | 2.5520 | .60062 |
| S9 | 250 | 1.00 | 3.00 | 2.6560 | .56829 |
| S10 | 250 | 1.00 | 3.00 | 2.4840 | .61584 |
| S11 | 250 | 1.00 | 3.00 | 2.5440 | .63377 |
| S12 | 250 | 1.00 | 3.00 | 2.3600 | .66345 |
| S13 | 250 | 1.00 | 3.00 | 2.4560 | .62741 |
| S14 | 250 | 1.00 | 3.00 | 2.6760 | .54793 |
| S15 | 250 | 1.00 | 3.00 | 2.6600 | .53059 |
| S16 | 250 | 1.00 | 3.00 | 2.7040 | .50736 |
| S17 | 250 | 1.00 | 3.00 | 2.4360 | .69847 |
| S18 | 250 | 1.00 | 3.00 | 2.6040 | .60052 |
| S19 | 250 | 1.00 | 3.00 | 2.5920 | .58214 |
| Valid N (listwise) | 250 | | | | |

Table 34

*Implementation Barrier Descriptive Data – School employees*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| B1 | 281 | 1.00 | 5.00 | 2.2740 | 1.03147 |
| B2 | 281 | 1.00 | 5.00 | 2.5907 | .92183 |
| B3 | 281 | 1.00 | 5.00 | 2.5836 | 1.02519 |
| B4 | 281 | 1.00 | 5.00 | 2.7046 | 1.07319 |
| B5 | 281 | .00 | 5.00 | 2.2811 | .85938 |
| B6 | 281 | .00 | 5.00 | 2.4484 | .95898 |
| B7 | 281 | .00 | 5.00 | 2.5338 | .85759 |
| B8 | 281 | .00 | 5.00 | 2.4057 | .86551 |
| B9 | 281 | .00 | 5.00 | 2.5267 | .96000 |
| B10 | 282 | .00 | 5.00 | 2.7660 | .99920 |
| B11 | 282 | 1.00 | 5.00 | 2.6596 | 1.08585 |
| B12 | 282 | 1.00 | 5.00 | 2.8369 | 1.14515 |
| B13 | 282 | 1.00 | 5.00 | 3.8723 | .81228 |
| B14 | 282 | 1.00 | 5.00 | 2.8475 | 1.18478 |
| B15 | 282 | 1.00 | 5.00 | 2.3759 | 1.04039 |
| Valid N (listwise) | 281 | | | | |

Table 35

*Innovation Perception Descriptive Data – School employees*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| P1 | 282 | 1.00 | 5.00 | 3.8972 | .76400 |
| P2 | 282 | 1.00 | 5.00 | 3.7695 | .83946 |
| PR3 | 282 | 1.00 | 5.00 | 3.2411 | .99751 |
| PR4 | 281 | 1.00 | 5.00 | 3.6370 | .93154 |
| PR5 | 282 | 1.00 | 5.00 | 3.5674 | .98606 |
| PR6 | 282 | 1.00 | 5.00 | 2.6773 | .88409 |
| P7 | 282 | 1.00 | 5.00 | 3.7376 | .78822 |
| PR8 | 282 | 1.00 | 5.00 | 3.4291 | .90684 |
| P9 | 282 | 1.00 | 5.00 | 3.5000 | .76046 |
| P10 | 282 | 1.00 | 5.00 | 3.3121 | .83632 |
| P11 | 282 | 1.00 | 5.00 | 3.0213 | .83915 |
| P12 | 282 | 1.00 | 5.00 | 3.2908 | .75495 |
| P13 | 282 | 1.00 | 5.00 | 3.5071 | .74625 |
| PR14 | 282 | 1.00 | 5.00 | 3.6099 | .95279 |
| PR15 | 282 | 1.00 | 5.00 | 3.1383 | .91178 |
| P16 | 282 | 1.00 | 5.00 | 3.5745 | .80686 |
| P17 | 282 | 1.00 | 5.00 | 3.9362 | .79332 |
| Valid N (listwise) | 281 | | | | |

Table 36

*Organizational Readiness Descriptive Data – Classroom Teachers*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| O1 | 197 | 2.00 | 7.00 | 5.7614 | 1.09681 |
| OR2 | 197 | 1.00 | 7.00 | 5.4416 | 1.40803 |
| O3 | 197 | 1.00 | 7.00 | 5.5990 | 1.23164 |
| O4 | 197 | 2.00 | 7.00 | 5.2335 | 1.24798 |
| O5 | 197 | 1.00 | 7.00 | 5.4975 | 1.18934 |
| O6 | 197 | 1.00 | 7.00 | 5.3096 | 1.34033 |
| O7 | 197 | 1.00 | 7.00 | 4.1523 | 1.44532 |
| OR8 | 197 | 1.00 | 7.00 | 5.0609 | 1.43084 |
| OR9 | 197 | 1.00 | 7.00 | 4.6244 | 1.54557 |
| O10 | 197 | 1.00 | 7.00 | 4.7817 | 1.43145 |
| O11 | 197 | 1.00 | 7.00 | 4.9695 | 1.47049 |
| O12 | 197 | 2.00 | 7.00 | 4.8782 | 1.42692 |
| O13 | 197 | 1.00 | 7.00 | 4.7310 | 1.36416 |
| O14 | 197 | 1.00 | 7.00 | 4.8477 | 1.38400 |
| OR15 | 197 | 1.00 | 7.00 | 5.0457 | 1.34504 |
| O16 | 197 | 1.00 | 7.00 | 4.5279 | 1.44825 |
| O17 | 197 | 1.00 | 7.00 | 4.7766 | 1.41452 |
| OR18 | 197 | 1.00 | 7.00 | 4.5025 | 1.40924 |
| O19 | 197 | 1.00 | 7.00 | 5.0914 | 1.30610 |
| O20 | 197 | 2.00 | 7.00 | 5.3503 | 1.10848 |
| O21 | 197 | 2.00 | 7.00 | 5.6447 | 1.10455 |
| O22 | 197 | 1.00 | 7.00 | 5.5025 | 1.17206 |
| OR23 | 197 | 2.00 | 7.00 | 5.4721 | 1.30364 |
| OR24 | 197 | 1.00 | 7.00 | 5.6447 | 1.31926 |
| OR25 | 197 | 1.00 | 7.00 | 5.6548 | 1.31810 |
| Valid N (listwise) | 197 | | | | |

Table 37

*Commitment to Change Descriptive Data – Classroom Teachers*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| C1 | 197 | 2.00 | 7.00 | 5.5736 | 1.09773 |
| C2 | 196 | 3.00 | 7.00 | 5.4949 | 1.05974 |
| CR3 | 197 | 1.00 | 7.00 | 5.4467 | 1.28311 |
| C4 | 196 | 1.00 | 7.00 | 5.4643 | 1.19989 |
| CR5 | 196 | 1.00 | 7.00 | 5.3010 | 1.31117 |
| CR6 | 196 | 2.00 | 7.00 | 5.2194 | 1.28416 |
| C7 | 196 | 1.00 | 7.00 | 3.6786 | 1.53715 |
| C8 | 196 | 1.00 | 7.00 | 3.0816 | 1.42270 |
| C9 | 196 | 1.00 | 7.00 | 2.8776 | 1.36450 |
| C10 | 196 | 1.00 | 7.00 | 2.8469 | 1.35762 |
| C11 | 196 | 1.00 | 7.00 | 2.8673 | 1.40064 |
| C12 | 196 | 1.00 | 7.00 | 3.4796 | 1.46571 |
| C13 | 196 | 1.00 | 7.00 | 5.0663 | 1.34762 |
| C14 | 196 | 1.00 | 7.00 | 4.5663 | 1.49895 |
| CR15 | 196 | 1.00 | 7.00 | 4.4439 | 1.47524 |
| C16 | 196 | 1.00 | 7.00 | 4.6786 | 1.47934 |
| C17 | 196 | 1.00 | 7.00 | 4.3520 | 1.57009 |
| CR18 | 196 | 2.00 | 7.00 | 4.9847 | 1.23818 |
| Valid N (listwise) | 195 | | | | |

Table 38

*School Leadership Descriptive Data – Classroom Teachers*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| S1 | 196 | 1.00 | 3.00 | 2.6429 | .58617 |
| S2 | 196 | 1.00 | 3.00 | 2.8214 | .44578 |
| S3 | 196 | 1.00 | 3.00 | 2.5918 | .58768 |
| S4 | 196 | 1.00 | 3.00 | 2.7194 | .51424 |
| S5 | 196 | 1.00 | 3.00 | 2.7551 | .50761 |
| S6 | 196 | 1.00 | 3.00 | 2.6786 | .52011 |
| S7 | 196 | 1.00 | 3.00 | 2.2347 | .71326 |
| S8 | 196 | 1.00 | 3.00 | 2.5357 | .61914 |
| S9 | 196 | 1.00 | 3.00 | 2.6122 | .59282 |
| S10 | 196 | 1.00 | 3.00 | 2.4439 | .63400 |
| S11 | 196 | 1.00 | 3.00 | 2.5051 | .66021 |
| S12 | 196 | 1.00 | 3.00 | 2.3061 | .66268 |
| S13 | 196 | 1.00 | 3.00 | 2.4235 | .64788 |
| S14 | 196 | 1.00 | 3.00 | 2.6480 | .57606 |
| S15 | 196 | 1.00 | 3.00 | 2.6480 | .54870 |
| S16 | 196 | 1.00 | 3.00 | 2.6939 | .51457 |
| S17 | 196 | 1.00 | 3.00 | 2.3980 | .71954 |
| S18 | 196 | 1.00 | 3.00 | 2.6122 | .59282 |
| S19 | 196 | 1.00 | 3.00 | 2.5765 | .59851 |
| Valid N (listwise) | 196 | | | | |

Table 39

*Implementation Barrier Descriptive Data – Classroom Teachers*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| B1 | 195 | 1.00 | 5.00 | 2.2974 | 1.06187 |
| B2 | 195 | 1.00 | 5.00 | 2.6359 | .90573 |
| B3 | 195 | 1.00 | 5.00 | 2.7179 | 1.05393 |
| B4 | 195 | 1.00 | 5.00 | 2.8564 | 1.09822 |
| B5 | 195 | .00 | 5.00 | 2.2718 | .82047 |
| B6 | 195 | .00 | 5.00 | 2.5077 | .97054 |
| B7 | 195 | .00 | 5.00 | 2.6308 | .80403 |
| B8 | 195 | .00 | 5.00 | 2.4974 | .85780 |
| B9 | 195 | .00 | 5.00 | 2.6462 | .93220 |
| B10 | 196 | .00 | 5.00 | 2.8622 | .96418 |
| B11 | 196 | 1.00 | 5.00 | 2.7806 | 1.07552 |
| B12 | 196 | 1.00 | 5.00 | 3.0255 | 1.17424 |
| B13 | 196 | 1.00 | 5.00 | 3.7653 | .83268 |
| B14 | 196 | 1.00 | 5.00 | 2.9337 | 1.21558 |
| B15 | 196 | 1.00 | 5.00 | 2.4847 | 1.04502 |
| Valid N (listwise) | 195 | | | | |

Table 40

*Innovation Perception Descriptive Data – Classroom Teachers*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| P1 | 196 | 1.00 | 5.00 | 3.8112 | .77795 |
| P2 | 196 | 1.00 | 5.00 | 3.6582 | .83542 |
| PR3 | 196 | 1.00 | 5.00 | 3.1276 | .94411 |
| PR4 | 195 | 1.00 | 5.00 | 3.6051 | .93774 |
| PR5 | 196 | 1.00 | 5.00 | 3.4592 | 1.00938 |
| PR6 | 196 | 1.00 | 5.00 | 2.6633 | .91083 |
| P7 | 196 | 1.00 | 5.00 | 3.7704 | .70408 |
| PR8 | 196 | 1.00 | 5.00 | 3.4337 | .87746 |
| P9 | 196 | 1.00 | 5.00 | 3.4847 | .75432 |
| P10 | 196 | 1.00 | 5.00 | 3.2449 | .80462 |
| P11 | 196 | 1.00 | 5.00 | 3.1020 | .75773 |
| P12 | 196 | 1.00 | 5.00 | 3.1786 | .72589 |
| P13 | 196 | 1.00 | 5.00 | 3.4337 | .74468 |
| PR14 | 196 | 1.00 | 5.00 | 3.5510 | .95673 |
| PR15 | 196 | 1.00 | 5.00 | 3.0663 | .89482 |
| P16 | 196 | 2.00 | 5.00 | 3.5153 | .81321 |
| P17 | 196 | 1.00 | 5.00 | 3.8929 | .80623 |
| Valid N (listwise) | 195 | | | | |

Table 41

*Organizational Readiness Descriptive Data – Physical Education Teachers*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| O1 | 27 | 1.00 | 7.00 | 6.0741 | 1.32798 |
| OR2 | 27 | 1.00 | 7.00 | 5.8148 | 1.52005 |
| O3 | 27 | 1.00 | 7.00 | 5.8148 | 1.27210 |
| O4 | 27 | 3.00 | 7.00 | 5.8519 | 1.09908 |
| O5 | 26 | 4.00 | 7.00 | 5.8462 | .88056 |
| O6 | 27 | 4.00 | 7.00 | 6.0000 | .87706 |
| O7 | 27 | 2.00 | 7.00 | 5.4444 | 1.31071 |
| OR8 | 27 | 1.00 | 7.00 | 5.2222 | 1.73944 |
| OR9 | 27 | 2.00 | 7.00 | 5.4444 | 1.31071 |
| O10 | 27 | 3.00 | 7.00 | 5.4444 | 1.31071 |
| O11 | 27 | 2.00 | 7.00 | 5.3704 | 1.41824 |
| O12 | 27 | 1.00 | 7.00 | 5.0000 | 1.49358 |
| O13 | 27 | 1.00 | 7.00 | 4.8148 | 1.61810 |
| O14 | 27 | 1.00 | 7.00 | 5.1111 | 1.62512 |
| OR15 | 27 | 3.00 | 7.00 | 5.2963 | 1.29540 |
| O16 | 27 | 1.00 | 7.00 | 4.7037 | 1.58878 |
| O17 | 27 | 1.00 | 7.00 | 5.4815 | 1.42425 |
| OR18 | 27 | 1.00 | 7.00 | 5.2222 | 1.42325 |
| O19 | 27 | 1.00 | 7.00 | 5.6296 | 1.41824 |
| O20 | 27 | 4.00 | 7.00 | 6.1852 | .78628 |
| O21 | 27 | 4.00 | 7.00 | 6.2222 | .80064 |
| O22 | 27 | 1.00 | 7.00 | 6.1852 | 1.24150 |
| OR23 | 27 | 1.00 | 7.00 | 5.8889 | 1.36814 |
| OR24 | 27 | 1.00 | 7.00 | 5.8519 | 1.40613 |
| OR25 | 27 | 4.00 | 7.00 | 6.1111 | .97402 |
| Valid N (listwise) | 26 | | | | |

Table 42

*Commitment to Change Descriptive Data – Physical Education Teachers*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| C1 | 27 | 1.00 | 7.00 | 5.8519 | 1.26198 |
| C2 | 27 | 1.00 | 7.00 | 5.7778 | 1.31071 |
| CR3 | 27 | 1.00 | 7.00 | 5.4444 | 1.84669 |
| C4 | 27 | 2.00 | 7.00 | 5.7407 | 1.22765 |
| CR5 | 27 | 2.00 | 7.00 | 5.7037 | 1.38160 |
| CR6 | 27 | 1.00 | 7.00 | 5.0741 | 1.83818 |
| C7 | 27 | 1.00 | 7.00 | 3.0000 | 1.73205 |
| C8 | 27 | 1.00 | 7.00 | 2.4815 | 1.57798 |
| C9 | 27 | 1.00 | 6.00 | 2.5185 | 1.45100 |
| C10 | 27 | 1.00 | 7.00 | 3.0370 | 1.89090 |
| C11 | 27 | 1.00 | 7.00 | 2.5185 | 1.62600 |
| C12 | 27 | 1.00 | 7.00 | 3.1852 | 1.90217 |
| C13 | 27 | 1.00 | 7.00 | 5.1111 | 1.52753 |
| C14 | 27 | 1.00 | 7.00 | 4.5926 | 1.67008 |
| CR15 | 27 | 1.00 | 7.00 | 4.3333 | 1.75412 |
| C16 | 27 | 1.00 | 7.00 | 4.4815 | 1.71801 |
| C17 | 27 | 1.00 | 7.00 | 4.1852 | 2.00071 |
| CR18 | 27 | 2.00 | 7.00 | 5.4815 | 1.36918 |
| Valid N (listwise) | 27 | | | | |

Table 43

*School Leadership Descriptive Data – Physical Education Teachers*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| S1 | 27 | 1.00 | 3.00 | 2.6667 | .55470 |
| S2 | 27 | 2.00 | 3.00 | 2.8148 | .39585 |
| S3 | 27 | 2.00 | 3.00 | 2.5926 | .50071 |
| S4 | 27 | 2.00 | 3.00 | 2.7407 | .44658 |
| S5 | 27 | 2.00 | 3.00 | 2.8519 | .36201 |
| S6 | 27 | 2.00 | 3.00 | 2.6667 | .48038 |
| S7 | 27 | 1.00 | 3.00 | 2.1852 | .62247 |
| S8 | 27 | 1.00 | 3.00 | 2.4815 | .57981 |
| S9 | 27 | 2.00 | 3.00 | 2.7407 | .44658 |
| S10 | 27 | 2.00 | 3.00 | 2.5185 | .50918 |
| S11 | 27 | 1.00 | 3.00 | 2.5185 | .57981 |
| S12 | 27 | 1.00 | 3.00 | 2.5185 | .64273 |
| S13 | 27 | 1.00 | 3.00 | 2.5185 | .57981 |
| S14 | 27 | 2.00 | 3.00 | 2.7407 | .44658 |
| S15 | 27 | 2.00 | 3.00 | 2.6667 | .48038 |
| S16 | 27 | 2.00 | 3.00 | 2.6667 | .48038 |
| S17 | 27 | 1.00 | 3.00 | 2.4815 | .64273 |
| S18 | 27 | 1.00 | 3.00 | 2.4074 | .69389 |
| S19 | 27 | 2.00 | 3.00 | 2.5556 | .50637 |
| Valid N (listwise) | 27 | | | | |

Table 44

*Implementation Barrier Descriptive Data – Physical Education Teachers*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| B1 | 27 | 1.00 | 5.00 | 2.0370 | 1.09128 |
| B2 | 27 | 1.00 | 5.00 | 2.5556 | 1.21950 |
| B3 | 27 | 1.00 | 5.00 | 2.3704 | 1.14852 |
| B4 | 27 | 1.00 | 4.00 | 2.1481 | .98854 |
| B5 | 27 | 1.00 | 5.00 | 2.2593 | 1.19591 |
| B6 | 27 | 1.00 | 5.00 | 2.2222 | 1.12090 |
| B7 | 27 | 1.00 | 4.00 | 2.1111 | 1.05003 |
| B8 | 27 | 1.00 | 4.00 | 2.0741 | .95780 |
| B9 | 27 | 1.00 | 5.00 | 2.1852 | 1.07550 |
| B10 | 27 | 1.00 | 5.00 | 2.6296 | 1.27545 |
| B11 | 27 | 1.00 | 4.00 | 1.7778 | .75107 |
| B12 | 27 | 1.00 | 4.00 | 1.9259 | .87380 |
| B13 | 27 | 2.00 | 5.00 | 4.4815 | .70002 |
| B14 | 27 | 1.00 | 5.00 | 2.7407 | 1.19591 |
| B15 | 27 | 1.00 | 4.00 | 1.5926 | .84395 |
| Valid N (listwise) | 27 | | | | |

Table 45

*Innovation Perception Descriptive Data – Physical Education Teachers*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| P1 | 26 | 3.00 | 5.00 | 4.3462 | .56159 |
| P2 | 26 | 1.00 | 5.00 | 4.2692 | .96157 |
| PR3 | 26 | 1.00 | 5.00 | 3.5769 | 1.23849 |
| PR4 | 26 | 1.00 | 5.00 | 3.9231 | 1.12865 |
| PR5 | 26 | 1.00 | 5.00 | 3.9615 | 1.07632 |
| PR6 | 26 | 1.00 | 5.00 | 2.5385 | .90469 |
| P7 | 26 | 1.00 | 5.00 | 3.8077 | 1.13205 |
| PR8 | 26 | 1.00 | 5.00 | 3.6538 | 1.01754 |
| P9 | 26 | 1.00 | 5.00 | 3.3846 | .85215 |
| P10 | 26 | 1.00 | 5.00 | 3.6154 | 1.13409 |
| P11 | 26 | 1.00 | 5.00 | 2.6923 | 1.08699 |
| P12 | 26 | 1.00 | 5.00 | 3.6923 | .88405 |
| P13 | 26 | 1.00 | 5.00 | 3.5769 | .85665 |
| PR14 | 26 | 1.00 | 5.00 | 3.6923 | 1.15825 |
| PR15 | 26 | 1.00 | 5.00 | 3.3462 | 1.01754 |
| P16 | 26 | 1.00 | 5.00 | 3.9231 | .84489 |
| P17 | 26 | 1.00 | 5.00 | 4.2308 | .86291 |
| Valid N (listwise) | 26 | | | | |

Table 46

*Organizational Readiness Descriptive Data – Cafeteria Supervisors*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| O1 | 21 | 3.00 | 7.00 | 5.5714 | 1.20712 |
| OR2 | 21 | 1.00 | 7.00 | 5.0476 | 1.59613 |
| O3 | 21 | 2.00 | 7.00 | 5.1905 | 1.32737 |
| O4 | 21 | 2.00 | 7.00 | 5.2381 | 1.26114 |
| O5 | 21 | 3.00 | 7.00 | 5.4286 | 1.02817 |
| O6 | 21 | 4.00 | 7.00 | 5.1429 | 1.10841 |
| O7 | 21 | 1.00 | 6.00 | 4.0000 | 1.09545 |
| OR8 | 21 | 2.00 | 7.00 | 5.0476 | 1.39557 |
| OR9 | 21 | 3.00 | 7.00 | 5.1429 | 1.38873 |
| O10 | 21 | 3.00 | 7.00 | 5.2857 | 1.23056 |
| O11 | 21 | 3.00 | 7.00 | 5.3810 | 1.07127 |
| O12 | 21 | 4.00 | 7.00 | 5.3810 | 1.07127 |
| O13 | 21 | 4.00 | 7.00 | 5.3810 | 1.11697 |
| O14 | 21 | 4.00 | 7.00 | 5.3810 | 1.16087 |
| OR15 | 21 | 1.00 | 7.00 | 5.0476 | 1.77415 |
| O16 | 21 | 1.00 | 7.00 | 5.0476 | 1.32198 |
| O17 | 21 | 3.00 | 7.00 | 5.1429 | 1.15264 |
| OR18 | 21 | 3.00 | 7.00 | 4.6190 | 1.32198 |
| O19 | 21 | 3.00 | 7.00 | 5.0000 | 1.09545 |
| O20 | 21 | 4.00 | 7.00 | 5.5714 | .87014 |
| O21 | 21 | 4.00 | 7.00 | 5.7619 | .99523 |
| O22 | 21 | 4.00 | 7.00 | 5.7619 | .88909 |
| OR23 | 21 | 1.00 | 7.00 | 4.9524 | 1.59613 |
| OR24 | 21 | 1.00 | 7.00 | 5.2857 | 1.55380 |
| OR25 | 21 | 3.00 | 7.00 | 5.5714 | 1.20712 |
| Valid N (listwise) | 21 | | | | |

Table 47

*Commitment to Change Descriptive Data – Cafeteria Supervisors*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| C1 | 21 | 2.00 | 7.00 | 5.1429 | 1.31475 |
| C2 | 21 | 2.00 | 7.00 | 5.0476 | 1.28360 |
| CR3 | 21 | 2.00 | 7.00 | 5.3333 | 1.35401 |
| C4 | 21 | 1.00 | 7.00 | 4.6667 | 1.74165 |
| CR5 | 21 | 2.00 | 7.00 | 4.8571 | 1.74028 |
| CR6 | 21 | 2.00 | 7.00 | 5.1905 | 1.60060 |
| C7 | 21 | 1.00 | 7.00 | 4.2857 | 1.70713 |
| C8 | 21 | 1.00 | 7.00 | 3.8571 | 1.74028 |
| C9 | 21 | 1.00 | 7.00 | 3.7143 | 1.76473 |
| C10 | 21 | 2.00 | 7.00 | 3.8095 | 1.56905 |
| C11 | 21 | 1.00 | 7.00 | 3.4286 | 1.69031 |
| C12 | 21 | 2.00 | 7.00 | 4.0476 | 1.77415 |
| C13 | 21 | 2.00 | 7.00 | 5.0952 | 1.48003 |
| C14 | 21 | 2.00 | 7.00 | 5.2857 | 1.27055 |
| CR15 | 21 | 1.00 | 7.00 | 4.3333 | 1.93218 |
| C16 | 21 | 1.00 | 7.00 | 4.9524 | 1.68749 |
| C17 | 21 | 2.00 | 7.00 | 4.8095 | 1.53685 |
| CR18 | 21 | 1.00 | 7.00 | 5.1905 | 1.43593 |
| Valid N (listwise) | 21 | | | | |

Table 48

*School Leadership Descriptive Data – Cafeteria Supervisors*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| S1 | 21 | 2.00 | 3.00 | 2.9524 | .21822 |
| S2 | 21 | 2.00 | 3.00 | 2.9048 | .30079 |
| S3 | 21 | 1.00 | 3.00 | 2.8571 | .47809 |
| S4 | 21 | 2.00 | 3.00 | 2.8571 | .35857 |
| S5 | 21 | 2.00 | 3.00 | 2.9524 | .21822 |
| S6 | 21 | 2.00 | 3.00 | 2.8571 | .35857 |
| S7 | 21 | 1.00 | 3.00 | 2.4286 | .74642 |
| S8 | 21 | 2.00 | 3.00 | 2.7143 | .46291 |
| S9 | 21 | 1.00 | 3.00 | 2.9048 | .43644 |
| S10 | 21 | 1.00 | 3.00 | 2.7619 | .53896 |
| S11 | 21 | 2.00 | 3.00 | 2.8571 | .35857 |
| S12 | 21 | 1.00 | 3.00 | 2.6190 | .58959 |
| S13 | 21 | 2.00 | 3.00 | 2.6667 | .48305 |
| S14 | 21 | 2.00 | 3.00 | 2.8095 | .40237 |
| S15 | 21 | 2.00 | 3.00 | 2.7143 | .46291 |
| S16 | 21 | 1.00 | 3.00 | 2.8095 | .51177 |
| S17 | 21 | 1.00 | 3.00 | 2.6667 | .57735 |
| S18 | 21 | 1.00 | 3.00 | 2.7619 | .53896 |
| S19 | 21 | 1.00 | 3.00 | 2.7143 | .56061 |
| Valid N (listwise) | 21 | | | | |

Table 49

*Implementation Barrier Descriptive Data – Cafeteria Supervisor*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| B1 | 21 | 1.00 | 4.00 | 2.3333 | .79582 |
| B2 | 21 | 1.00 | 4.00 | 2.6667 | .79582 |
| B3 | 21 | 1.00 | 3.00 | 2.4286 | .74642 |
| B4 | 21 | 1.00 | 4.00 | 2.4286 | .87014 |
| B5 | 21 | 1.00 | 5.00 | 2.5238 | .98077 |
| B6 | 21 | 1.00 | 5.00 | 2.7143 | .95618 |
| B7 | 21 | 1.00 | 3.00 | 2.4762 | .81358 |
| B8 | 21 | 1.00 | 3.00 | 2.3810 | .80475 |
| B9 | 21 | 1.00 | 5.00 | 2.7143 | 1.14642 |
| B10 | 21 | 1.00 | 5.00 | 2.7619 | .94365 |
| B11 | 21 | 1.00 | 5.00 | 2.7619 | 1.17918 |
| B12 | 21 | 1.00 | 5.00 | 2.9048 | .88909 |
| B13 | 21 | 3.00 | 5.00 | 3.7143 | .64365 |
| B14 | 21 | 1.00 | 5.00 | 2.6667 | .96609 |
| B15 | 21 | 1.00 | 5.00 | 2.7143 | .90238 |
| Valid N (listwise) | 21 | | | | |

Table 50

*Innovation Perception Descriptive Data – Cafeteria Supervisor*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| P1 | 21 | 2.00 | 5.00 | 3.6667 | .73030 |
| P2 | 21 | 3.00 | 5.00 | 3.6667 | .65828 |
| PR3 | 21 | 2.00 | 5.00 | 3.3333 | .91287 |
| PR4 | 21 | 2.00 | 5.00 | 3.3333 | .85635 |
| PR5 | 21 | 2.00 | 5.00 | 3.3810 | .86465 |
| PR6 | 21 | 2.00 | 4.00 | 2.7143 | .64365 |
| P7 | 21 | 2.00 | 5.00 | 3.3333 | .85635 |
| PR8 | 21 | 2.00 | 5.00 | 3.0476 | .86465 |
| P9 | 21 | 1.00 | 4.00 | 3.4286 | .74642 |
| P10 | 21 | 2.00 | 4.00 | 3.4286 | .59761 |
| P11 | 21 | 1.00 | 4.00 | 2.9524 | .80475 |
| P12 | 21 | 3.00 | 4.00 | 3.5238 | .51177 |
| P13 | 21 | 3.00 | 4.00 | 3.5238 | .51177 |
| PR14 | 21 | 2.00 | 5.00 | 3.3333 | .96609 |
| PR15 | 21 | 1.00 | 5.00 | 2.8571 | 1.01419 |
| P16 | 21 | 3.00 | 4.00 | 3.3810 | .49761 |
| P17 | 21 | 2.00 | 5.00 | 3.8095 | .67964 |
| Valid N (listwise) | 21 | | | | |

Table 51

*Organizational Readiness Descriptive Data – Health Department Partners*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| O1 | 6 | 6.00 | 7.00 | 6.8333 | .40825 |
| OR2 | 6 | 6.00 | 7.00 | 6.8333 | .40825 |
| O3 | 6 | 6.00 | 7.00 | 6.8333 | .40825 |
| O4 | 6 | 5.00 | 7.00 | 6.0000 | .89443 |
| O5 | 6 | 6.00 | 7.00 | 6.8333 | .40825 |
| O6 | 6 | 5.00 | 7.00 | 6.3333 | .81650 |
| O7 | 6 | 3.00 | 7.00 | 5.3333 | 1.50555 |
| OR8 | 6 | 5.00 | 7.00 | 6.3333 | .81650 |
| OR9 | 6 | 2.00 | 7.00 | 5.5000 | 1.76068 |
| O10 | 6 | 4.00 | 7.00 | 6.5000 | 1.22474 |
| O11 | 6 | 4.00 | 7.00 | 5.6667 | 1.36626 |
| O12 | 6 | 4.00 | 7.00 | 5.6667 | 1.21106 |
| O13 | 6 | 4.00 | 7.00 | 5.5000 | 1.37840 |
| O14 | 6 | 4.00 | 7.00 | 5.8333 | 1.16905 |
| OR15 | 6 | 4.00 | 7.00 | 6.0000 | 1.26491 |
| O16 | 6 | 3.00 | 7.00 | 5.0000 | 1.54919 |
| O17 | 6 | 2.00 | 7.00 | 4.6667 | 2.33809 |
| OR18 | 6 | 5.00 | 7.00 | 6.0000 | .89443 |
| O19 | 6 | 4.00 | 7.00 | 6.0000 | 1.09545 |
| O20 | 6 | 4.00 | 7.00 | 6.0000 | 1.09545 |
| O21 | 6 | 5.00 | 7.00 | 6.3333 | .81650 |
| O22 | 6 | 6.00 | 7.00 | 6.5000 | .54772 |
| OR23 | 6 | 6.00 | 7.00 | 6.6667 | .51640 |
| OR24 | 6 | 6.00 | 7.00 | 6.5000 | .54772 |
| OR25 | 6 | 4.00 | 7.00 | 6.1667 | 1.16905 |
| Valid N (listwise) | 6 | | | | |

Table 52

*Commitment to Change Descriptive Data – Health Department Partners*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| C1 | 6 | 6.00 | 7.00 | 6.5000 | .54772 |
| C2 | 6 | 6.00 | 7.00 | 6.5000 | .54772 |
| CR3 | 6 | 6.00 | 7.00 | 6.8333 | .40825 |
| C4 | 6 | 6.00 | 7.00 | 6.6667 | .51640 |
| CR5 | 6 | 6.00 | 7.00 | 6.5000 | .54772 |
| CR6 | 6 | 6.00 | 7.00 | 6.6667 | .51640 |
| C7 | 6 | 1.00 | 4.00 | 2.8333 | 1.32916 |
| C8 | 6 | 1.00 | 4.00 | 2.3333 | 1.36626 |
| C9 | 6 | 1.00 | 6.00 | 2.5000 | 2.07364 |
| C10 | 6 | 1.00 | 6.00 | 3.1667 | 1.83485 |
| C11 | 6 | 1.00 | 4.00 | 2.0000 | 1.09545 |
| C12 | 6 | 1.00 | 4.00 | 3.1667 | 1.32916 |
| C13 | 6 | 5.00 | 7.00 | 6.1667 | .75277 |
| C14 | 6 | 4.00 | 7.00 | 5.1667 | 1.32916 |
| CR15 | 6 | 2.00 | 7.00 | 4.1667 | 1.94079 |
| C16 | 6 | 4.00 | 7.00 | 5.1667 | 1.16905 |
| C17 | 6 | 2.00 | 7.00 | 4.5000 | 1.87083 |
| CR18 | 6 | 3.00 | 7.00 | 5.0000 | 1.54919 |
| Valid N (listwise) | 6 | | | | |

Table 53

*School Leadership Descriptive Data – Health Department Partners*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| S1 | 6 | 2.00 | 3.00 | 2.8333 | .40825 |
| S2 | 6 | 2.00 | 3.00 | 2.6667 | .51640 |
| S3 | 6 | 2.00 | 3.00 | 2.6667 | .51640 |
| S4 | 6 | 2.00 | 3.00 | 2.6667 | .51640 |
| S5 | 6 | 2.00 | 3.00 | 2.6667 | .51640 |
| S6 | 6 | 2.00 | 3.00 | 2.6667 | .51640 |
| S7 | 6 | 2.00 | 3.00 | 2.6667 | .51640 |
| S8 | 6 | 2.00 | 3.00 | 2.8333 | .40825 |
| S9 | 6 | 2.00 | 3.00 | 2.8333 | .40825 |
| S10 | 6 | 2.00 | 3.00 | 2.6667 | .51640 |
| S11 | 6 | 2.00 | 3.00 | 2.8333 | .40825 |
| S12 | 6 | 1.00 | 3.00 | 2.5000 | .83666 |
| S13 | 6 | 2.00 | 3.00 | 2.5000 | .54772 |
| S14 | 6 | 2.00 | 3.00 | 2.8333 | .40825 |
| S15 | 6 | 2.00 | 3.00 | 2.8333 | .40825 |
| S16 | 6 | 2.00 | 3.00 | 2.8333 | .40825 |
| S17 | 6 | 2.00 | 3.00 | 2.6667 | .51640 |
| S18 | 6 | 2.00 | 3.00 | 2.6667 | .51640 |
| S19 | 6 | 2.00 | 3.00 | 2.8333 | .40825 |
| Valid N (listwise) | 6 | | | | |

Table 54

*Implementation Barrier Descriptive Data – Health Department Partners*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| B1 | 6 | 1.00 | 3.00 | 2.1667 | .75277 |
| B2 | 6 | 2.00 | 4.00 | 3.3333 | .81650 |
| B3 | 6 | 1.00 | 2.00 | 1.6667 | .51640 |
| B4 | 6 | 1.00 | 5.00 | 2.8333 | 1.47196 |
| B5 | 6 | 1.00 | 3.00 | 2.3333 | .81650 |
| B6 | 6 | 1.00 | 3.00 | 2.1667 | .75277 |
| B7 | 6 | 1.00 | 4.00 | 2.6667 | 1.21106 |
| B8 | 6 | 1.00 | 4.00 | 2.5000 | 1.22474 |
| B9 | 6 | 1.00 | 3.00 | 2.0000 | .63246 |
| B10 | 6 | 1.00 | 3.00 | 2.0000 | .63246 |
| B11 | 6 | 1.00 | 4.00 | 2.5000 | 1.22474 |
| B12 | 6 | 1.00 | 4.00 | 2.1667 | 1.16905 |
| B13 | 6 | 4.00 | 5.00 | 4.5000 | .54772 |
| B14 | 6 | 1.00 | 5.00 | 3.0000 | 1.41421 |
| B15 | 6 | 1.00 | 3.00 | 1.5000 | .83666 |
| Valid N (listwise) | 6 | | | | |

Table 55

*Innovation Perception Descriptive Data – Health Department Partners*

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| P1 | 6 | 4.00 | 5.00 | 4.5000 | .54772 |
| P2 | 6 | 4.00 | 5.00 | 4.5000 | .54772 |
| PR3 | 6 | 1.00 | 5.00 | 2.8333 | 1.72240 |
| PR4 | 6 | 2.00 | 5.00 | 4.1667 | 1.16905 |
| PR5 | 6 | 4.00 | 5.00 | 4.5000 | .54772 |
| PR6 | 6 | 1.00 | 3.00 | 2.1667 | .98319 |
| P7 | 6 | 3.00 | 5.00 | 4.0000 | .89443 |
| PR8 | 6 | 3.00 | 5.00 | 4.3333 | .81650 |
| P9 | 6 | 3.00 | 5.00 | 4.0000 | .89443 |
| P10 | 6 | 3.00 | 5.00 | 4.0000 | .89443 |
| P11 | 6 | 1.00 | 5.00 | 3.0000 | 1.41421 |
| P12 | 6 | 3.00 | 5.00 | 4.0000 | .89443 |
| P13 | 6 | 3.00 | 5.00 | 4.3333 | .81650 |
| PR14 | 6 | 3.00 | 5.00 | 4.3333 | .81650 |
| PR15 | 6 | 3.00 | 5.00 | 3.6667 | 1.03280 |
| P16 | 6 | 3.00 | 5.00 | 4.1667 | .75277 |
| P17 | 6 | 3.00 | 5.00 | 4.5000 | .83666 |
| Valid N (listwise) | 6 | | | | |

VITA

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Major Professor: Dr. Stephen Brown

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Graduate Research Assistant, Southern Illinois University-Carbondale, PEP Grant
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Graduate Teaching Assistant, Southern Illinois University-Carbondale, Dept of Health Education Aug. 2011-Present

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Undergraduate

KINE 3350: Exercise Physiology
KINE 3350: Exercise Physiology (Lab Sections)
KINE 4300: Measurement and Performance (Teaching Assistant)
KINE 4360: Exercise for Special Populations (Teaching Assistant)
KINE 1125: Soccer
KINE 1156: Aerobics
KINE 1159: Weight Training
KINE 1159: Advanced Soccer
HED 101: Foundations of Health

## III. PROFESSIONAL SERVICE

Illinois Rural Health Association — April 25-27, 2012
Conference Presider

Eta Sigma Gamma- President — May 2010 – May 2011
Southern Illinois University

LDSSA- Vice President — August 2009 – August 2010
Southern Illinois University-Carbondale

AAHE Conference – videographer — March 2010
Dr. Roberta Ogletree -advisor

Student Organizer – First Annual Meeting of the South Central Regional Chapter of the American Society of Biomechanics

President – Kinesiology Club
The University of Texas of the Permian Basin — Aug. 2004 – May 2007

## IV. RESEARCH INTERESTS

- School & child/adolescent health
  - Coordinated School Health Programs
  - C.A.T.C.H.
- Physical Inactivity & Aging
  - Obesity and factors associated with obesity
  - CV disease and factors associated with inactivity

V. Publications

1. **Bice, M.R.,** Ramsey, A., Ball, J. (2012). *Implementation and Evaluation of the C.A.T.C.H. Health Education Classroom Curriculum.* Eta Sigma Gamma Student Monograph Volume 29, (2), p. 13-18.

2. **Bice, M.R.**, Hanson, N.J., Renshaw, D., Eldridge, J., Reneau, P., Powell, D. (2011) *Neuromuscular adaptations in elderly adults are task-specific during stepping and obstacle clearance tasks*. International Journal of Exercise Science, Vol. 4(1), p. 278-86.

3. Renshaw, D., **Bice, M.R.**, Cassidy, C., Eldridge, J., Powell, D. (2010) *A comparison of three computer-based methods of determining EMG signal amplitude.* International Journal of Exercise Science, Vol. 3 (1), p. 44-48.

VI. PRESENTATIONS

1. **Bice, M.** Coordinated School Health Programs – Success and Failures.
   American Association for Health Education/AAHPERD
   ACCEPTED April 23-27, 2013

2. **Bice, M.** & Ball, J. High School Sport Participation and Current Adult Physical Activity Trends. National Association for Kinesiology in Higher Education Conference
   Fort Lauderdale, Florida January 2-5, 2013

3. **Bice, M.** Relationship between adult BMI and sport participation.
   Illinois Association for Health, Physical Education, Recreation and Dance
   November 15, 2012

4. **Bice, M.,** & Ball, J. Results and the Phenomenon of CATCH Implementation in Rural Midwest.
   Midwest District of AAHPERD Centennial Convention April 25-27, 2012

5. Ball, J. & **Bice, M.** The Diffusion of Distance Education in Health Education and Promotion.
   Midwest District of AAHPERD Centennial Convention April 25-27, 2012

6. Franklin, J., Wright, A., & **Bice, M.** C.A.T.C.H: A Coordinated School Health Program – Outcomes of Implementing the CATCH Program and the projected plans for future implementation efforts.
   Illinois Rural Health Association April 14, 2011

7. **Bice, M.** Relationship Between Lean Mass and Coactivity in Young and Old Adults.
   South Central American Society of Biomechanics February 2010

8. **Bice, M.** Inter-segmental Coordination and Variability within High- and Low-Arched Feet during Running.

1st Annual Meeting of the South Central Region of the American Society of Biomechanics March 2008

VII. Poster Presentations

1. **Bice, M.,** Ball, J., Ramsey, A., & Franklin, J. "C.A.T.C.H. Implementation in rural southern Illinois.
   Illinois Rural Health Association Annual Conference April 2012

2. **Bice, M.,** Ball, J., Ramsey, A., & Franklin, J. C.A.T.C.H. Implementation – Teacher Hesitation – Barriers, Beliefs, & Complications.
   AAHPERD 127th National Convention & Expo. [a] March 2012

3. **Bice, M.,** Ball, J., Ramsey, A., & Franklin, J. APPLICATION & Evaluation of "C.A.T.C.H" IMPLEMENTATION.
   AAHPERD 127th National Convention & Expo.[a] March 2012

4. Hudson, H., Bliss, K., Lodyga, M., & **Bice, M.** Channel Surfing Contraceptives: Instructors Tuning In or Changing the Channel.
   AAHPERD 126th National Convention & Expo March 30, 2011

[a] = *Not presented due to conference cancelation*

VIII. Research Abstracts

1. Bastin, H. , Renshaw, D. , **Bice, M.** , Renshaw, D., Hanson, N.J., Eldridge, J., Ryan, M., Reneau, P, Powell, D. *Relationship between lean mass and coactivation during downward stepping with advancing age.* 59th Annual Meeting of the American College of Sports Medicine, San Francisco, CA. May 29th-June 2nd, 2012.

2. Powell, D., **Bice, M.**, Renshaw, D., Hanson, N.J., Eldridge, J., Ryan, M., Reneau, P. *Effect of advancing age and lean mass on neuromuscular activation patterns and coactivation ratios during a downward stepping task*. 34th Annual Meeting of the Mid-Atlantic Regional Chapter of the American College of Sports Medicine, Harrisburg, PA. November 4th – 5th, 2011.

3. **Bice, M.**, Renshaw, D., Eldridge, J., Cassidy, C., Powell, D. *Relationship between lean mass and coactivity in young and old adults*. Third Meeting of the South Central American Society of Biomechanics. Dallas, Texas. February 25th-26th, 2011.

4. Renshaw, D., **Bice, M.R.**, Cassidy, C., Eldridge, J., Powell, D. Methods Used to Calculate EMG Amplitude, 2nd Meeting of the South Central American Society of Biomechanics. Denton, TX. February 12-13, 2010.

5. Chalambaga, Elizabeth T., Powell, Douglas; Renshaw, Doug; **Bice, Matthew**; and Long, Benjamin (2009) "Lower Extremity Kinetics in High and Low-Arched Athletes during Landing," *International Journal of Exercise Science: Conference Abstract Submissions*: Vol. 2: Iss. 1, Article 10.

6. Powell D., Zhang S., Milner C., **Bice M.**, and Long B. *Coordination in Running within High- and Low-Arched Feet*. 1st Meeting of the International Foot and Ankle Biomechanics Congress. Bologna, Italy, Sept. 4-6, 2008.

7. Powell D., Zhang S., Milner C., Long B. and **Bice M.** *Differences in Lower Extremity Coordination in High- Compared Low-Arched Female Athletes during Running*. 32nd Meeting of the American Society of Biomechanics. Ann Arbor, MI, Aug. 5-9th, 2008.

8. **Bice M**., Zant A., Long B., Powell D**.** *Inter-segmental Coordination and Variability within High- and Low-Arched Feet during Running.* 1st Annual Meeting of the South Central Region of the American Society of Biomechanics, Odessa, TX, Feb. 29-Mar 1, 2008.

IX. Conference Abstract

1. Ruano, Crystal; Powell, Douglas; Renshaw, Doug; Chalambaga, Elizabeth; and **Bice, Matthew** (2009) "The Effects of Insoles on Loading Rate in Level Running," *International Journal of Exercise Science: Conference Abstract Submissions*: Vol. 2: Iss. 1, Article 9.

Manuscripts in Process

1. **Bice, M,** Ball, J. & Brown, S. Current physical activity levels and high school sport participation.
2. **Bice, M.** Process evaluation and implementation practices of CATCH.

TECHNICAL EXPERIENCE

**SPSS:** Version 18
**Microsoft Office:** All versions and programs
**Motion Analysis:** Vicon Motion Capture
**Kinetics:** AMTI force plates
**EMG:** BTS Pre-amplified surface electrodes
**Isokinetics:** Biodex dynamometer
**Programming:** Visual 3D (C-Motion, Inc.), Microsoft Visual BASIC
**Body Composition:** Skin-fold Assessment, BodPod, Dexascan

GRANTS AND AWARDS

Most Outstanding Graduate Student, College of Arts & Sciences
The University of Texas of the Permian Basin May 2009

Best Abstract Award, 1st Annual Meeting of the South Central Region of the American Society of Biomechanics March 2008

Neotoma Micropus Model for Diabetes Research Grant (Unfunded) - Research Assistant
The University of Texas of the Permian Basin August 2007

Most Outstanding Undergraduate Student 2007, College of Arts & Sciences
The University of Texas of the Permian Basin May 2007

Outstanding Undergraduate Student, Dept. of Kinesiology 2007
The University of Texas of the Permian Basin May 2007

PROFESSIONAL MEMBERSHIPS

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|---|---|
| Texas Chapter of the American College of Sports Medicine | 2007-present |
| South Central Region of the American Society of Biomechanics | 2007-2011 |
| International Foot and Ankle Biomechanics Community | 2007-2011 |
| Eta Sigma Gamma-Alpha Alpha Chapter | 2009-present |
| American Association of Health Education | 2009-present |
| American Alliance for Health, Physical Education, Recreation and Dance | 2010-present |
| Illinois Rural Health Association | 2010-present |